This file contains the parameter estimates of all linear and non-linear models, fitted to each response variable in turn. Only models that converged are shown.

The models are grouped by

(i) response variable
(ii) type of model (both separated by dollar signs).

Models per type are numbered consecutively.

Abbreviated model types:

L.......Linear
M.......Michaelis-Menten models
E.......Exponential models
P.......Power models
AS......Self-starting asymptotic models
BIEXP...Self-starting biexponential models
LG......Self-starting logistic models

Models contained blocks (B1-B4), grass presence, legume presence and number of plant functional groups in addition to the main explanatory variable (sowndiv, plant species richness).

For a ranking of models, see Table S2.

###

L$`Microbial biomass `$L01
Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 61.26038

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interceppt</td>
<td>blockB2</td>
<td>blockB3</td>
<td>blockB4</td>
</tr>
<tr>
<td>sowndiv</td>
<td>1.166613956</td>
<td>0.185699231</td>
<td>0.217197034</td>
</tr>
<tr>
<td>0.033482250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>funcgr</td>
<td>grass</td>
<td>leg sowndiv:funcgr</td>
<td></td>
</tr>
<tr>
<td>sowndiv:grass</td>
<td>-0.288413458</td>
<td>-0.541249029</td>
<td>-0.528399323</td>
</tr>
<tr>
<td>0.005421499</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sowndiv:leg</td>
<td>funcgr:grass</td>
<td>funcgr:leg</td>
<td>grass:leg</td>
</tr>
<tr>
<td>-0.013746113</td>
<td>0.113116715</td>
<td>0.145606663</td>
<td>0.220482784</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  power
  0.655927
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2281479

$`Microbial biomass `\$L02
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
  Log-likelihood: 61.9346

Coefficients:
  (Intercept)        blockB2        blockB3        blockB4
sowndiv      1.076203913    0.180388317    0.217389470    0.158597014
0.033698018
funcgr          grass            leg sowndiv:funcgr
sowndiv:grass -0.267735228   -0.477924193   -0.481581418   -0.005632530
0.007267982
sowndiv:leg   funcgr:grass     funcgr:leg      grass:leg
-0.014876138    0.097714359    0.142691024    0.189994151

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~fitted(.)
  Parameter estimates:
    expon
    2.038393

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.05295806

$`Microbial biomass `\$L011
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
  Log-likelihood: 57.84676

Coefficients:
  (Intercept)        blockB2        blockB3        blockB4
sowndiv      1.291682412    0.182847550    0.199292019    0.140312999
0.018740795
funcgr          grass            leg sowndiv:funcgr
sowndiv:grass -0.293453870   -0.535141839   -0.563782438   -0.003333745
0.004909450
sowndiv:leg   funcgr:grass     funcgr:leg      grass:leg
-0.007305964    0.109432669    0.137695814    0.209942310

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.04494402
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.1117926

Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 57.76887

Coefficients:
(Intercept) blockB2 blockB3 blockB4
sowndiv 1.407071420 0.180799812 0.195369582 0.134301219
0.015543597
funcgr
grass
sowndiv:grass -0.314183436 -0.590966569 -0.610526591 -0.002842570
0.004666344
sowndiv:leg funcgr:grass funcgr:leg grass:leg
-0.005909582 0.121337183 0.138905351 0.232584327

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon -0.002285044

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.1219897

Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 39.31563

Coefficients:
(Intercept) sowndiv funcgr leg
0.383907 0.002804 0.016636 -0.048376

Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 39.31563

Coefficients:
(Intercept) sowndiv funcgr leg
0.372506932 0.003088426 0.018528600 -0.045070543

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
power
0.3925366
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2221355

`Microbial biomass `L22
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 39.21234
Coefficients:
  (Intercept)     sowndiv      funcgr         leg
  0.37581178  0.00305587  0.01786584 -0.04602664

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~fitted(.)
  Parameter estimates:
    expon
    0.7428834
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1137764

`Microbial biomass `L211
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 39.16279
Coefficients:
  (Intercept)      sowndiv       funcgr          leg
  0.374469011  0.002931848  0.018037502 -0.045684910

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.03070032
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1434010

`Microbial biomass `L222
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 39.57724
Coefficients:
  (Intercept)      sowndiv       funcgr          leg
  0.395044418  0.002279406  0.016064979 -0.051553441

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.00784338
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1597333

$`Microbial biomass `$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
          a     b
      0.4732  0.8767
residual sum-of-squares: 1.760

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.649e-07

$`Microbial biomass `$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
          Vm     k
      0.4732  0.8767
residual sum-of-squares: 1.760

Number of iterations to convergence: 3
Achieved convergence tolerance: 1.335e-06

$`Microbial biomass `$M2
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
          a     b     d
      0.3463 1.9691 0.1466
residual sum-of-squares: 1.755

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.819e-06

$`Microbial biomass `$M211
Generalized nonlinear least squares fit
  Model:  response ~ d + a * sowndiv/(b + sowndiv)
  Data:  DF
Log-likelihood: 41.48849

Coefficients:
          a     b     d
  0.3595576 1.6806960 0.1273808

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
0.058389
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1362937

$`\text{Microbial biomass }^\text{M222}$
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 41.56385

Coefficients:
  a         b         d
0.3313970 2.6705047 0.1761445

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.006281512
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1567270

$`\text{Microbial biomass }^\text{M3}$
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 42.87916

Coefficients:
  a.(Intercept)         a.leg b.(Intercept)         b.leg
0.6333594 -0.1177495 1.7604516 -0.6276455

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1470695

$`\text{Microbial biomass }^\text{M311}$
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 42.93783

Coefficients:
  a.(Intercept)         a.leg b.(Intercept)         b.leg
0.6291894 -0.1150229 1.7156729 -0.6009236

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.02917223
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1407354

$`^\text{Microbial biomass $`^M321$
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 43.37478

Coefficients:
\begin{align*}
a.(\text{Intercept}) & \quad a.\text{leg} & b.(\text{Intercept}) & \quad b.\text{leg} \\
0.6425148 & \quad -0.1228591 & 1.8456693 & \quad -0.6730959
\end{align*}

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      \begin{align*}
      \text{expon} & = -0.007472615
      \end{align*}

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1558691

$`^\text{Microbial biomass $`^M4$
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 41.48285

Coefficients:
\begin{align*}
a.(\text{Intercept}) & \quad a.\text{grass} & b.(\text{Intercept}) & \quad b.\text{grass} \\
0.40790291 & \quad 0.05179107 & 0.63962616 & \quad 0.20621206
\end{align*}

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1495953

$`^\text{Microbial biomass $`^M411$
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 41.76829

Coefficients:
\begin{align*}
a.(\text{Intercept}) & \quad a.\text{grass} & b.(\text{Intercept}) & \quad b.\text{grass} \\
0.39566014 & \quad 0.05794642 & 0.51247693 & \quad 0.26924749
\end{align*}

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      \begin{align*}
      \text{power} & = 0.06290398
      \end{align*}

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1357841
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 41.6134

Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass
0.42948921 0.04021002 0.84128192 0.10048097

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.004117594
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1547317

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 41.51328

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
0.41291925 0.02488170 0.45059642 0.22252802

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1495398

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 41.6941

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
0.41639747 0.02303531 0.48508055 0.19884014

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.05142434
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1382431
Data: DF
Log-likelihood: 41.92676

Coefficients:

<table>
<thead>
<tr>
<th>a. (Intercept)</th>
<th>a.funcgr</th>
<th>b. (Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.40691037</td>
<td>0.02833383</td>
<td>0.39736464</td>
<td>0.26139975</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007048674
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1580696

$`$Microbial biomass `$M6
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 43.17232

Coefficients:

<table>
<thead>
<tr>
<th>a. (Intercept)</th>
<th>a.funcgr</th>
<th>a.leg</th>
<th>b. (Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.77557872</td>
<td>-0.02632395</td>
<td>-0.16609042</td>
<td>2.49196149</td>
<td>-0.09117077</td>
</tr>
<tr>
<td>b.leg</td>
<td>-0.91014333</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1484604

$`$Microbial biomass `$M611
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 43.22154

Coefficients:

<table>
<thead>
<tr>
<th>a. (Intercept)</th>
<th>a.funcgr</th>
<th>a.leg</th>
<th>b. (Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.77312414</td>
<td>-0.02681783</td>
<td>-0.16403091</td>
<td>2.46379225</td>
<td>-0.09803511</td>
</tr>
<tr>
<td>b.leg</td>
<td>-0.88862338</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.142638

$`$Microbial biomass `$M622
Generalized nonlinear least squares fit

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.02654467
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.142638

$`$Microbial biomass `$M622
Generalized nonlinear least squares fit
Model: \( \text{response} \sim a \times \frac{sowndiv}{(b + sowndiv)} \)
Data: DF
Log-likelihood: 43.63443

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.leg} & \text{b. (Intercept)} & \text{b.funcgr} \\
0.76222586 & -0.02083043 & -0.16367523 & 2.36417645 & -0.02997730 \\
b.leg & -0.88461424 & \\
\end{array}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: \( \sim \text{sowndiv} \)

Parameter estimates:
- expon
  -0.007277595

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1571441

```
$\text{Microbial biomass \$M7}$
Generalized nonlinear least squares fit
  Model: \( \text{response} \sim a \times \frac{sowndiv}{(b + sowndiv)} \)
  Data: DF
  Log-likelihood: 42.4971

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{b. (Intercept)} & \text{b.funcgr} \\
0.2167675 & 0.0460553 & 0.1061114 & -0.4412272 & 0.3005945 \\
b.grass & 0.5006104 & \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1496879

```
$\text{Microbial biomass \$M711}$
Generalized nonlinear least squares fit
  Model: \( \text{response} \sim a \times \frac{sowndiv}{(b + sowndiv)} \)
  Data: DF
  Log-likelihood: 42.62053

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{b. (Intercept)} & \text{b.funcgr} \\
0.21998083 & 0.04430573 & 0.10616151 & -0.41550221 & 0.27965590 \\
b.grass & 0.50357884 & \\
\end{array}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: \( \sim \text{sowndiv} \)

Parameter estimates:
- power
  -0.04184964

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1404593
**Generalized nonlinear least squares fit**

Model: \( \text{response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)

Data: DF

Log-likelihood: 42.87197

<table>
<thead>
<tr>
<th>Coefficients:</th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
<th>b.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.21788866</td>
<td>0.04921181</td>
<td>0.10175733</td>
<td>-0.44729198</td>
<td>0.34037629</td>
<td>0.46980628</td>
<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.006690928

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1578152

**Generalized nonlinear least squares fit**

Model: \( \text{response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)

Data: DF

Log-likelihood: 43.19536

<table>
<thead>
<tr>
<th>Coefficients:</th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.grass</th>
<th>b.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.57101657</td>
<td>0.05231126</td>
<td>-0.12013190</td>
<td>1.55935750</td>
<td>0.25339056</td>
<td>-0.69594933</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1484187

**Generalized nonlinear least squares fit**

Model: \( \text{response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)

Data: DF

Log-likelihood: 43.25356

<table>
<thead>
<tr>
<th>Coefficients:</th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.grass</th>
<th>b.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.56389921</td>
<td>0.05369995</td>
<td>-0.11693862</td>
<td>1.47992196</td>
<td>0.26671081</td>
<td>-0.66199293</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.02880191
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1421053

$`Microbial biomass `\$M832
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 43.62374

Coefficients:
  a.(Intercept)    a.grass    a.leg  b.(Intercept)    b.grass  b.leg
  0.59547052  0.04402642  -0.12731519  1.77186657  0.19313709 -0.76154671

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
      -0.007035876

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1568388

$`Microbial biomass `\$M91
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 43.24014

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    a.leg  b.(Intercept)    b.funcgr    b.grass    b.leg
  0.656871962  -0.011760065  0.035153055  -0.141493922  1.793927603  -0.007281231  0.207308545  -0.766211143

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1503288

$`Microbial biomass `\$M921
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 43.29431

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    a.leg  b.(Intercept)
  0.64930098  -0.01171344  0.03674372  -0.13832938  1.73299414
  b.funcgr  b.grass  b.leg
  -0.01138088  0.21833340  -0.73791883

Variance function:
   Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.02780186
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1441552

$`Microbial biomass`$M932
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 43.68027
Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg b.(Intercept)
  0.666487281  -0.009098335   0.028501484  -0.143955056   1.800321906
  b.funcgr       b.grass         b.leg
  0.037522135   0.169539328  -0.770210989

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
-0.007136876
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1589724

$`Microbial biomass`$M111
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 42.02787
Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass d.(Intercept)
  0.1366246     0.1492708    25.3762544   -11.8437813     0.4785390
  d.grass
  -0.1925723

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1505469

$`Microbial biomass`$M1132
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 42.43559
Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass d.(Intercept)
  0.1317396     0.1553871    26.0499692   -12.2713542     0.4946508
  d.grass
  -0.2081471
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.006937727
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1589938

$\text{Microbial biomass } M131$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 44.33896

Coefficients:
a.(Intercept)      a.funcgr         a.leg b.(Intercept)      b.funcgr
0.12270701    0.05776488    0.04584730  -93.06234456   27.75784481
b.leg d.(Intercept)      d.funcgr         d.leg
41.06748999    0.31711072    0.01684919   -0.02846671
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1493403

$\text{Microbial biomass } M1332$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 43.22579

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
-0.1901386     0.1008317     0.1237712   -20.7500219     5.5736804
b.leg d.(Intercept)      d.funcgr         d.leg
10.2600737     0.4245506    -0.0216960    -0.0668219

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.006965124
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1607099

$\text{Microbial biomass } M141$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 48.04177

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
SUPPLEMENTARY INFORMATION

$\text{Microbial biomass } \text{"M1621} 
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 43.82867

Coefficients:
\begin{align*}
\text{a. (Intercept)} & : 1.33504316 \\
\text{a. funcgr} & : -0.09457035 \\
\text{a. grass} & : -0.18670183 \\
\text{a. leg} & : -0.42626870 \\
\text{b. (Intercept)} & : 36.94835850 \\
\text{b. funcgr} & : -2.21002466 \\
\text{b. grass} & : -8.72463308 \\
\text{b. leg} & : -12.01205779 \\
\text{d. (Intercept)} & : -0.09245285 \\
\text{d. funcgr} & : 0.03928225 \\
\text{d. grass} & : 0.07375816 \\
\text{d. leg} & : 0.09791911
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
\text{power} & : 0.02574381
\end{align*}

Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1477045

$\text{Microbial biomass } \text{"E2} 
Nonlinear regression model
model: response ~ a + b * \exp(sowndiv)
data: DF
\begin{align*}
a & : 3.643e-01 \\
b & : 1.360e-27
\end{align*}
residual sum-of-squares: 2.084

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.222e-08

$\text{Microbial biomass } \text{"E4} 
Nonlinear regression model
model: response ~ a + \exp(sowndiv)
data: DF
\begin{align*}
a & : 1
\end{align*}
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

$\text{Microbial biomass } \text{"E5} 
Nonlinear regression model
model: response ~ b * exp(sowndiv)

data: DF

b
4.55e-27

residual sum-of-squares: 12.44

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.650e-08

$\text{Microbial biomass}\ E21$

Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(sowndiv)
  Data: DF
  Log-likelihood: 34.22429

Coefficients:
  a            b
3.635465e-01 1.366553e-27

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.00613502

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1599219

$\text{Microbial biomass}\ E22$

Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(sowndiv)
  Data: DF
  Log-likelihood: 34.84026

Coefficients:
  a            b
3.696510e-01 1.313098e-27

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.008872625

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1728556

$\text{Microbial biomass}\ E31$

Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 36.78189

Coefficients:
a   c
-0.66341259  0.00369182

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.02756984
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1501559

$`Microbial biomass `$E32
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 37.16667

Coefficients:
   a             c
-0.654360178  0.003070372

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007778773
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1664499

$`Microbial biomass `$E41
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1729.079

Coefficients:
a
-2.462211

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
15.07020
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.06724473

$`Microbial biomass `$E42
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.9884

Coefficients:
  a
-3.099336

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014765

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6999242

$`Microbial biomass `E51
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -1656.492

Coefficients:
  b
0.07776686

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.43074

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.07169706

$`Microbial biomass `E52
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -38.41257

Coefficients:
  b
4.549951e-27

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01258417

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4333031

$`Microbial biomass `E61
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -25.83710

Coefficients:
c
-0.9774835

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.3505123
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1982788

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -31.04317

Coefficients:
c
-0.6919993

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
0.01705533
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.3070777

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)         a.leg
-2963126        911706

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -29.32285

Coefficients:
c.(Intercept)         c.leg
0.5483713    -0.7065756

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3502891

$`

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 38.94326

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.5325662079 -0.0877833815 -0.0009775838  0.0037441116

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.01055477

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1519019

$`

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 39.53611

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.517567126  -0.094386991  -0.001603329   0.003912477

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.008542137

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.164846

$`

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1728.390

Coefficients:
a.(Intercept)  a.leg
-2.38346200  -0.04499927

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  15.07342
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.06677758

Microbial biomass $E_{a1021}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -800.886

Coefficients:
  a.(Intercept)  a.leg
  -3.9000608    0.4616403

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  1.014838
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7029687

Microbial biomass $E_{a121}$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -24.80916

Coefficients:
  c.(Intercept)  c.leg
  -0.2173166    -0.4285978

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.3322020
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2024580

Microbial biomass $E_{a1221}$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
Log-likelihood: -27.4095

Coefficients:
c.(Intercept)       c.leg
  0.4437789    -0.6635958

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.01308981
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.3058346

$\text{Microbial biomass $Eb16$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)       a.grass
  -3508713       1286426

  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 2.553606e+25

$\text{Microbial biomass $Eb18$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -30.73342

Coefficients:
c.(Intercept)       c.grass
  0.4277878    -0.6521125

  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.3563669

$\text{Microbial biomass $Eb1511$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 38.74081

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
  -0.598645888 -0.055059506 -0.006526529 0.009641372

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
0.04625037
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1444178

$ \text{Microbial biomass } Eb1521$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 38.96318

Coefficients:
  a.(Intercept)    a.grass    c.(Intercept)    c.grass
   -0.592388690   -0.05394553    -0.005974365    0.008737063

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
   -0.006920597

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1637068

$ \text{Microbial biomass } Eb1611$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1729.038

Coefficients:
  a.(Intercept)    a.grass
   -2.48151154    0.01102905

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.07039

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.0676108

$ \text{Microbial biomass } Eb1621$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -800.8691

Coefficients:
  a.(Intercept)    a.grass
   -3.9630805     0.4979842
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014856
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7027132

$\text{Microbial biomass } \$Eb1811$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -24.8741

Coefficients:
  c.(Intercept)       c.grass
  -0.2044469    -0.4273689

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.3214632
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2058746

$\text{Microbial biomass } \$Eb1821$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -28.06223

Coefficients:
  c.(Intercept)       c.grass
  0.3087346    -0.6034059

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.01603783
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3005742

$\text{Microbial biomass } \$Ec22$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a. (Intercept)     a. funcgr
252095.8     -912137.5

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Microbial biomass `$Ec24
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -25.82217

Coefficients:
c. (Intercept)     c. funcgr
-0.9396606     0.2096280

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3356496

$`Microbial biomass `$Ec1921
Generalized nonlinear least squares fit
Model: response ~ a + b * exp(c * sowndiv)
Data: DF
Log-likelihood: -2877.534

Coefficients:
a. (Intercept)     a. funcgr b. (Intercept)     b. funcgr c. (Intercept)
0.4481109050 -0.2042303971 0.0025138369 -0.0006284561 0.9998429581
  c. funcgr
1.0000392604

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
4.81646

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.0004807627

$`Microbial biomass `$Ec2121
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 40.37348

Coefficients:
a. (Intercept)     a. funcgr c. (Intercept)     c. funcgr
-0.757878116  0.042592404  0.012514505 -0.002690194

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007441648
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1616368

$`Microbial biomass `$Ec2211
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1729.079

Coefficients:
a.(Intercept)     a.funcgr
  2.107968     -4.570178

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.07020
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.06766368

$`Microbial biomass `$Ec2221
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -794.3282

Coefficients:
a.(Intercept)     a.funcgr
  3.506409     -6.220623

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.022193
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6092293

$`Microbial biomass `$Ec2411
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -16.77887

Coefficients:
c.(Intercept)     c.funcgr
  -1.2873857     0.2861425

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.3588624
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1764474

$\text{Microbial biomass } \text{Ec2421}$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -22.01001

Coefficients:
  c.(Intercept)      c.funcgr
-1.0072283     0.2213265

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
0.0195956
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2707897

$\text{Microbial biomass } \text{Ed28}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)      a.funcgr         a.leg
872779.2     -990730.5     -307654.7

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$\text{Microbial biomass } \text{Ed2811}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1728.390

Coefficients:
  a.(Intercept)      a.funcgr         a.leg
  2.19796605   -4.58142803   -0.04499927

Variances function:
  Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
15.07342
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.06719888

$`\text{Microbial biomass `}$Ed2821
Generalized nonlinear least squares fit
    Model: response ~ a + exp(sowndiv)
    Data: DF
    Log-likelihood: -794.3276
Coefficients:
a. (Intercept)         a.funcgr         a.leg
3.56986977   -6.22854831   -0.03173434

Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        expon
        1.022194
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6130616

$`\text{Microbial biomass `}$Ed3021
Generalized nonlinear least squares fit
    Model: response ~ exp(c * sowndiv)
    Data: DF
    Log-likelihood: -21.87297
Coefficients:
c. (Intercept)         c.funcgr         c.leg
-0.6762935     0.1809676    -0.1678372

Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        expon
        0.01923615
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2728840

$`\text{Microbial biomass `}$Ee40
Generalized nonlinear least squares fit
    Model: response ~ a + exp(sowndiv)
    Data: DF
    Log-likelihood: -4912.516
Coefficients:
a. (Intercept)         a.funcgr         a.grass
-335850.6     -839615.5     296563.3

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$``Microbial biomass $Ee341
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1729.038

Coefficients:
  a.(Intercept)      a.funcgr       a.grass
  2.08590943   -4.56742096    0.01102904

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.07039
  Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.06803735

$``Microbial biomass $Ee342
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.3282

Coefficients:
  a.(Intercept)      a.funcgr       a.grass
  3.495194768  -6.219221340   0.005607121

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.022193
  Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6130727

$``Microbial biomass $Ef40
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)      a.grass         a.leg
  -5251826       1394676       1054750

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$``Microbial biomass $Ef3721

Supplementary Information
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Generalized nonlinear least squares fit
Model: response ~ a + b * exp(c * sowndiv)
Data: DF
Log-likelihood: -2719.873

Coefficients:
\[
\begin{align*}
  a. & \text{( Intercept)} & a. & \text{grass} & a. & \text{leg} & b. & \text{( Intercept)} & b. & \text{grass} \\
  3.386504 \times 10^{-01} & -1.611308 \times 10^{-03} & -4.623395 \times 10^{-02} & 1.801116 \times 10^{-04} & -7.609184 \times 10^{-05} \\
  b. & \text{ leg} & c. & \text{( Intercept)} & c. & \text{grass} & c. & \text{ leg} \\
  -1.260945 \times 10^{-05} & 9.999884 \times 10^{-01} & 1.000005 \times 10^{00} & 1.000001 \times 10^{00}
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
4.527347

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.0008582994

$Microbial biomass $Ef3921
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 40.85162

Coefficients:
\[
\begin{align*}
  a. & \text{( Intercept)} & a. & \text{grass} & a. & \text{leg} & c. & \text{( Intercept)} & c. & \text{grass} \\
  -0.471064993 & -0.056608918 & -0.075798403 & -0.006928818 & 0.007711895 \\
  c. & \text{ leg} & & & & & & & & \\
  0.001292316
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007490311

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1628658

$Microbial biomass $Ef4011
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1728.384

Coefficients:
\[
\begin{align*}
  a. & \text{( Intercept)} & a. & \text{grass} & a. & \text{leg} \\
  -2.373038886 & -0.004467048 & -0.046488281
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  
  power
  15.07344

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.06719103

Microbial biomass
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -800.6425

Coefficients:
  a.(Intercept)       a.grass         a.leg
  -5.6870078       0.7593425          0.7325372

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.015019

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7042094

Microbial biomass
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -18.45191

Coefficients:
  c.(Intercept)       c.grass         c.leg
  1.0150746      -0.5875177      -0.5877623

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.3077127

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1955177

Microbial biomass
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -22.29754

Coefficients:
  c.(Intercept)       c.grass         c.leg
  0.8367020      -0.4877268      -0.4777367
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.0171708
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2792077

`Microbial biomass `\$\text{Eg46}\擢
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>a.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>292091.8</td>
<td>-918391.4</td>
<td>183181.3</td>
<td>-199834.2</td>
</tr>
</tbody>
</table>
Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

`Microbial biomass `\$\text{Eg4611}\擢
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1728.384
Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>a.leg</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2.209878210</td>
<td>-4.582917053</td>
<td>-0.004467059</td>
<td>-0.046488292</td>
</tr>
</tbody>
</table>

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.07344
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.06762035

`Microbial biomass `\$\text{Eg4621}\擢
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.3276
Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>a.leg</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3.591182637</td>
<td>-6.231212076</td>
<td>-0.007701756</td>
<td>-0.034689198</td>
</tr>
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</table>

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
expon
1.022194
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6169784

Microbial biomass \( Pa2 \)
Nonlinear regression model
   model: response ~ a + b * sowndiv
   data: DF
     a   b
     0.336476 0.004126
   residual sum-of-squares: 1.949
Number of iterations to convergence: 1
Achieved convergence tolerance: 2.776e-10

Microbial biomass \( Pa3 \)
Nonlinear regression model
   model: response ~ a + sowndiv^c
   data: DF
     a   c
     -0.71888 0.05716
   residual sum-of-squares: 1.765
Number of iterations to convergence: 8
Achieved convergence tolerance: 1.625e-07

Microbial biomass \( Pa4 \)
Nonlinear regression model
   model: response ~ b * sowndiv^c
   data: DF
     b   c
     0.2898 0.1580
   residual sum-of-squares: 1.778
Number of iterations to convergence: 8
Achieved convergence tolerance: 5.803e-07

Microbial biomass \( Pa5 \)
Nonlinear regression model
   model: response ~ sowndiv^c
   data: DF
     c
     -0.5422
   residual sum-of-squares: 14.22
Number of iterations to convergence: 14
Achieved convergence tolerance: 7.2e-06

Microbial biomass \( Pb21 \)
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
Log-likelihood: 36.96076

Coefficients:
\[
\begin{align*}
a & = 0.336476164 \\
b & = 0.004125718
\end{align*}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1560883

$`Microbial biomass `Pb31
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 41.02073

Coefficients:
\[
\begin{align*}
a & = -0.71888046 \\
c & = 0.05715492
\end{align*}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1485483

$`Microbial biomass `Pb41
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 40.73806

Coefficients:
\[
\begin{align*}
b & = 0.2897725 \\
c & = 0.1580283
\end{align*}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1490613

$`Microbial biomass `Pb51
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -44.52038

Coefficients:
\[
c = -0.5422031
\]

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4190052

$`Microbial biomass `Pc221
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 37.02406
Coefficients:
   a           b
0.332444210 0.004359331

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.032711

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1485747

**Microbial biomass** $Pc231$

Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 37.34375

Coefficients:
   a           b
0.342814527 0.003487978

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.007503355

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1656986

**Microbial biomass** $Pc321$

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 41.21007

Coefficients:
   a          c
-0.7211767  0.0585016

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.05264561

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1370635

**Microbial biomass** $Pc331$

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 41.40456

Coefficients:
   a   c
-0.71618166  0.05507333

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      expon
  -0.006869461
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1568369

$`Microbial biomass `\textsuperscript{Pc421}$
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 40.91377

Coefficients:
   b   c
  0.2870557  0.1631600

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      power
  0.0509429
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1379078

$`Microbial biomass `\textsuperscript{Pc431}$
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 41.11141

Coefficients:
   b   c
  0.2930870  0.1499929

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      expon
  -0.006844048
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1573642
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -31.05171

Coefficients:
c -0.3141903

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.3696795

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6155098

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -43.2067

Coefficients:
c -0.431136

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01015067

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4498931

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 43.04026

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr c.(Intercept) c.funcgr
-2.56016479 0.60779410 2.83080359 -0.60253586 -0.01139930

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1486996
Generalized nonlinear least squares fit
    Model: response ~ a + b * sowndiv
    Data: DF
    Log-likelihood: 40.03284

Coefficients:
a.(Intercept)   a.funcgr   b.(Intercept)   b.funcgr
  0.237093292  0.042712670  0.014651932  -0.003169064

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1522641

$\text{Microbial biomass}$ $^\text{Pd81}$
Generalized nonlinear least squares fit
    Model: response ~ a + sowndiv^c
    Data: DF
    Log-likelihood: 41.28237

Coefficients:
a.(Intercept)   a.funcgr   c.(Intercept)   c.funcgr
  -0.748641079   0.019907020  0.063995466  -0.005284921

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1499615

$\text{Microbial biomass}$ $^\text{Pd91}$
Generalized nonlinear least squares fit
    Model: response ~ b * sowndiv^c
    Data: DF
    Log-likelihood: 41.27506

Coefficients:
b.(Intercept)   b.funcgr   c.(Intercept)   c.funcgr
  0.24411294   0.02709654    0.21193026   -0.02991555

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1499748

$\text{Microbial biomass}$ $^\text{Pd101}$
Generalized nonlinear least squares fit
    Model: response ~ sowndiv^c
    Data: DF
    Log-likelihood: -42.13097

Coefficients:
c.(Intercept)   c.funcgr
  -1.0099876    0.1726411

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4095076
Data: DF
Log-likelihood: 40.20746

Coefficients:
  a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr
  0.233130958   0.043369891   0.015394330  -0.003345766

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.05118879

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1408215

$`Microbial biomass `$Pe731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 40.48165

Coefficients:
  a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr
  0.238640497   0.042978491   0.014021152  -0.003036082

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007389384

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1613513

$`Microbial biomass `$Pe821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 41.47642

Coefficients:
  a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
  -0.750757579   0.020444507   0.066071133  -0.005839522

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.05329022

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1382271
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 41.69914

Coefficients:
  a.(Intercept)      a.funcgr c.(Intercept)      c.funcgr
  -0.748159839   0.020260379   0.062507185  -0.005063292

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon -0.007073773

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1585432

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 41.4661

Coefficients:
  b.(Intercept)      b.funcgr c.(Intercept)      c.funcgr
  0.24214943    0.02772196    0.21863072   -0.03194872

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power 0.05292123

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1383203

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 41.69461

Coefficients:
  b.(Intercept)      b.funcgr c.(Intercept)      c.funcgr
  0.24523734    0.02676648    0.20583548   -0.02803624

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon -0.007100683
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1585886

$\text{Microbial biomass } \text{Pe1021}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -23.00411
Coefficients:
c.(Intercept)      c.funcgr
  -0.6273438     0.1062891
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4753241
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6567864

$\text{Microbial biomass } \text{Pe1031}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -33.60828
Coefficients:
c.(Intercept)      c.funcgr
  -0.8666610     0.1739901
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03261438
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4883471

$\text{Microbial biomass } \text{Pf121}$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 38.854
Coefficients:
a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.403745475  -0.056539696  -0.007394764   0.010755847
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1544689
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 41.72147

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-0.69642385   -0.01770846    0.02449197    0.02635335

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1491606

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.48720

Coefficients:
b.(Intercept)       b.grass c.(Intercept)       c.grass
0.31111204   -0.01743101    0.06293662    0.07865262

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1495874

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -44.03444

Coefficients:
c.(Intercept)       c.grass
-0.2523209    -0.2201906

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4191247

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 39.03842

Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
0.4653169804 -0.0869936693 -0.0007470766  0.0038195204

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1541219
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.12215

Coefficients:
a.(Intercept) a.leg c.(Intercept) c.leg
-0.67294907 -0.02470195 0.07132477 -0.01486690

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1484335

$`Microbial biomass `Pg191
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.85989

Coefficients:
b.(Intercept) b.leg c.(Intercept) c.leg
0.34900711 -0.03409829 0.15802005 -0.01552544

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.148909

$`Microbial biomass `Pg201
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -43.04784

Coefficients:
c.(Intercept) c.leg
-0.03783580 -0.38355360

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4141121

$`Microbial biomass `Ph221
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 41.69544

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
0.231109492 0.043224533 0.001701334 0.037000878 -0.006146820
b.leg
-0.010415420

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1511585

$`Microbial biomass `Ph231
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.00363

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.leg} & \text{c. (Intercept)} & \text{c.funcgr} & \text{c.leg} \\
-0.77437683 & 0.02211231 & 0.01289246 & 0.16273666 & -0.01776095 & -0.04797342
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1487661

$`Microbial biomass `Ph241
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 43.11686

Coefficients:
\[
\begin{array}{cccccc}
\text{b. (Intercept)} & \text{b.funcgr} & \text{b.leg} & \text{c. (Intercept)} & \text{c.funcgr} & \text{c.leg} \\
0.20043676 & 0.03385176 & 0.01984171 & 0.51634235 & -0.07014217 & -0.14761289
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1485608

$`Microbial biomass `Ph251
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -41.96952

Coefficients:
\[
\begin{array}{cccc}
\text{c. (Intercept)} & \text{c.funcgr} & \text{c.leg} \\
-0.6908294 & 0.1345153 & -0.1653919
\end{array}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4112807

$`Microbial biomass `Pi271
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 40.78295

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{b. (Intercept)} & \text{b.funcgr} & \text{b.grass} \\
0.215032512 & 0.045333997 & 0.010285549 & 0.004914165 & -0.002058117 & 0.005306966
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1528499

Microbial biomass \[\Pi_{281}\]
Generalized nonlinear least squares fit
Model: response \sim a + sowndiv^c
Data: DF
Log-likelihood: 42.35526

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.016024023</td>
<td>-0.014074953</td>
<td>-0.009087851</td>
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<tr>
<td></td>
<td>0.037599247</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1499470

Microbial biomass \[\Pi_{291}\]
Generalized nonlinear least squares fit
Model: response \sim b * sowndiv^c
Data: DF
Log-likelihood: 42.35735

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>c.grass</td>
<td>0.254792448</td>
<td>0.026342524</td>
<td>-0.006103272</td>
<td>0.028461943</td>
<td>-0.008164079</td>
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<tr>
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<td>0.094039450</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1499432

Microbial biomass \[\Pi_{301}\]
Generalized nonlinear least squares fit
Model: response \sim sowndiv^c
Data: DF
Log-likelihood: -42.00313

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1.3130587</td>
<td>0.2114817</td>
<td>0.1474538</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4114493

Microbial biomass \[\Pi_{321}\]
Generalized nonlinear least squares fit
Model: response \sim a + b * sowndiv
Data: DF
Log-likelihood: 40.56554

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.519974491</td>
<td>-0.060795213</td>
<td>-0.069706221</td>
<td>-0.008224235</td>
<td>0.009724642</td>
</tr>
<tr>
<td>Generalized nonlinear least squares fit</td>
<td>Log-likelihood: 42.93356</td>
<td></td>
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<tr>
<td>----------------------------------------</td>
<td>--------------------------</td>
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</tr>
<tr>
<td>Model: response ~ a + sowndiv^c</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Data: DF</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Coefficients:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. (Intercept)</td>
<td>-0.63617578</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. grass</td>
<td>-0.03449706</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. leg</td>
<td>-0.01638429</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. leg</td>
<td>-0.01638429</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (Intercept)</td>
<td>0.03704288</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. grass</td>
<td>0.03227001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. leg</td>
<td>-0.02045317</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Generalized nonlinear least squares fit</th>
<th>Log-likelihood: 42.74853</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model: response ~ b * sowndiv^c</td>
<td></td>
</tr>
<tr>
<td>Data: DF</td>
<td></td>
</tr>
<tr>
<td>Coefficients:</td>
<td></td>
</tr>
<tr>
<td>b. (Intercept)</td>
<td>0.38735537</td>
</tr>
<tr>
<td>b. grass</td>
<td>-0.03378377</td>
</tr>
<tr>
<td>b. leg</td>
<td>-0.02794488</td>
</tr>
<tr>
<td>c. (Intercept)</td>
<td>0.05498936</td>
</tr>
<tr>
<td>c. grass</td>
<td>0.09739673</td>
</tr>
<tr>
<td>c. leg</td>
<td>-0.03181284</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Generalized nonlinear least squares fit</th>
<th>Log-likelihood: -42.41599</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model: response ~ sowndiv^c</td>
<td></td>
</tr>
<tr>
<td>Data: DF</td>
<td></td>
</tr>
<tr>
<td>Coefficients:</td>
<td></td>
</tr>
<tr>
<td>c. (Intercept)</td>
<td>0.2478340</td>
</tr>
<tr>
<td>c. grass</td>
<td>-0.2209077</td>
</tr>
<tr>
<td>c. leg</td>
<td>-0.3803795</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Generalized nonlinear least squares fit</th>
<th>Log-likelihood: 41.72244</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model: response ~ a + b * sowndiv</td>
<td></td>
</tr>
<tr>
<td>Data: DF</td>
<td></td>
</tr>
<tr>
<td>Coefficients:</td>
<td></td>
</tr>
<tr>
<td>c. (Intercept)</td>
<td>0.2478340</td>
</tr>
<tr>
<td>c. grass</td>
<td>-0.2209077</td>
</tr>
<tr>
<td>c. leg</td>
<td>-0.3803795</td>
</tr>
</tbody>
</table>
Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
  0.186133894  0.0488467826  0.0146439813  0.0095467830  0.0394972558
b.funcgr  b.grass  b.leg
  -0.0064586381  -0.0008434272  -0.0108211248

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1531371

Microbial biomass $P_k381
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 43.08294

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  c.(Intercept)
  -0.740556181  0.017917230  -0.011056430  0.006998392  0.114107912
c.funcgr  c.grass  c.leg
  -0.011722228  0.014951569  -0.038518987

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1506173

Microbial biomass $P_k391
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 43.1627

Coefficients:
b.(Intercept)  b.funcgr  b.grass  b.leg  c.(Intercept)
  0.19777752  0.03413374  0.00174404  0.01953692  0.44409223
c.funcgr  c.grass  c.leg
  -0.06106459  0.01979614  -0.13141387

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1504709

Microbial biomass $P_k401
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -41.9481

Coefficients:
c.(Intercept)  c.funcgr  c.grass  c.leg
  -0.93046600  0.16467446  0.07506066  -0.12162601

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4138006

Microbial biomass $Pm1221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 39.01313

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.40146045   -0.05807734   -0.00788716    0.01141821

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.04895204
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1433628

$\text{Microbial biomass}$
$Pm1231$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 39.19321

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.40820907   -0.05695188   -0.00717501    0.01024767

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.006722681
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1629711

$\text{Microbial biomass}$
$Pm1321$
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 41.9164

Coefficients:
  a.(Intercept)       a.grass c.(Intercept)       c.grass
  -0.69474233   -0.01950539    0.02301555    0.02788350

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.05246447
  Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1376561

`Microbial biomass `Pm1331
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.06854

Coefficients:
a. (Intercept) a.grass c.(Intercept) c.grass
-0.69942850 -0.01535618 0.02713550 0.02407854

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.006512847
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1570723

`Microbial biomass `Pm1421
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.67821

Coefficients:
b. (Intercept) b.grass c.(Intercept) c.grass
0.31228180 -0.01927817 0.05847143 0.08418369

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.05213795
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1381235

`Microbial biomass `Pm1431
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.83636

Coefficients:
b. (Intercept) b.grass c.(Intercept) c.grass
0.31035532 -0.01610096 0.06739311 0.07313190

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -29.44967

Coefficients:
  c.(Intercept)   c.grass
  -0.1248195    -0.1470732

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3996867

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6350306

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -40.7658

Coefficients:
  c.(Intercept)   c.grass
  0.1345091    -0.3296981

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03044903

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.523074

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 39.04898

Coefficients:
  a.(Intercept)   a.leg b.(Intercept)   b.leg
  0.4625749331   -0.0860090871   -0.0006997079   0.0038467139

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.01316943
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1511184

$`\text{Microbial biomass `}$Pn1731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 39.61339
Coefficients:
  a.(Intercept)         a.leg b.(Intercept)         b.leg
  0.479431671  -0.093436642  -0.001555517   0.004099001

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.00843563
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1645402

$`\text{Microbial biomass `}$Pn1821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 42.20786
Coefficients:
  a.(Intercept)         a.leg c.(Intercept)         c.leg
  -0.67763884   -0.02307313    0.07289764   -0.01503849

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.03566375
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1406319

$`\text{Microbial biomass `}$Pn1831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 42.52942
Coefficients:
  a.(Intercept)         a.leg c.(Intercept)         c.leg
Variance function:
Structure: Exponential of variance covariate
Formula: $\sim$sowndiv
Parameter estimates:
expon
-0.007055654
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1569215

$`Microbial biomass `$Pn1921
Generalized nonlinear least squares fit
Model: response $\sim$ b * sowndiv^c
Data: DF
Log-likelihood: 41.93729
Coefficients:
<table>
<thead>
<tr>
<th>b.(Intercept)</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.34408340</td>
<td>-0.03229861</td>
<td>0.16346815</td>
<td>-0.01640692</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: $\sim$sowndiv
Parameter estimates:
power
0.03410354
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1414239

$`Microbial biomass `$Pn1931
Generalized nonlinear least squares fit
Model: response $\sim$ b * sowndiv^c
Data: DF
Log-likelihood: 42.27679
Coefficients:
<table>
<thead>
<tr>
<th>b.(Intercept)</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.363627161</td>
<td>-0.041082811</td>
<td>0.133337142</td>
<td>-0.004564306</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: $\sim$sowndiv
Parameter estimates:
expon
-0.007178055
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1575712

$`Microbial biomass `$Pn2021
Generalized nonlinear least squares fit
Model: response $\sim$ sowndiv^c
Data: DF
Log-likelihood: -25.44735

-0.65737150  -0.03214449  0.06289819  -0.0111236
Coefficients:
c.(Intercept) c.leg
0.02439203 -0.26065920

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.4481359
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6498823

Microbial biomass $Pn2031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -37.75472
Coefficients:
c.(Intercept) c.leg
0.2486636 -0.4335888

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.03196687
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5108284

Microbial biomass $Pp2221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 41.779
Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
0.225269184 0.044072903 0.003287601 0.038052206 -0.006335945
  b.leg
-0.010688302

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.03517119
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1433222
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 42.17617

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} &\quad 0.238803278 \\
\text{a.funcgr} &\quad 0.042676037 \\
\text{a.leg} &\quad -0.001350002 \\
\text{b.(Intercept)} &\quad 0.035127811 \\
\text{b.funcgr} &\quad -0.005853422 \\
\text{b.leg} &\quad -0.009805219 \\
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} &\quad -0.007494411 \\
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1602618

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.06334

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} &\quad -0.77372462 \\
\text{a.funcgr} &\quad 0.02218492 \\
\text{a.leg} &\quad 0.01201465 \\
\text{c.(Intercept)} &\quad 0.16236615 \\
\text{c.funcgr} &\quad -0.01785417 \\
\text{c.leg} &\quad -0.04728633 \\
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} &\quad 0.02925296 \\
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.14234

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.48732

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} &\quad -0.77247286 \\
\text{a.funcgr} &\quad 0.02227757 \\
\text{a.leg} &\quad 0.01215010 \\
\text{c.(Intercept)} &\quad 0.16046633 \\
\text{c.funcgr} &\quad -0.01747570 \\
\text{c.leg} &\quad -0.04747493 \\
\end{align*}
\]
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007395065
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1575851

$`Microbial biomass `Pp2421
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 43.18075
Coefficients:
  b.(Intercept) b.funcgr b.leg c.(Intercept) c.funcgr
c.leg
  0.20107203 0.03400912 0.01899989 0.51701315 -0.07091827
  -0.14615421

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.03019153
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1419384

$`Microbial biomass `Pp2431
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 43.584
Coefficients:
  b.(Intercept) b.funcgr b.leg c.(Intercept) c.funcgr
  c.leg
  0.20498604 0.03259207 0.01851749 0.50162072 -0.06655219
  -0.14374157

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007298736
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1572693

$`Microbial biomass `Pp2521
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -22.31842

Coefficients:
c.(Intercept)       c.funcgr       c.leg
    -0.40072821    0.07843802   -0.11445421

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4810318
 Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6610038

$`Microbial biomass `Pp2531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -33.35057

Coefficients:
c.(Intercept)       c.funcgr       c.leg
    -0.6101750     0.1431063    -0.1328996

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03263521
 Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4899738

$`Microbial biomass `Pq2631
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 45.38668

Coefficients:
a.(Intercept)       a.funcgr       a.grass b.(Intercept)       b.funcgr
    -1.01282003    0.14209722    0.62913268    1.35045417   -0.14234013
    b.grass c.(Intercept)       c.funcgr       c.grass
    -0.67066334    0.83878558    0.07806126   -0.87776507

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.006764649
 Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1562610

$\text{Microbial biomass}$

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 40.935

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
</tr>
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<tbody>
<tr>
<td>Coefficients</td>
<td>0.221738698</td>
<td>0.044645721</td>
<td>0.005092552</td>
<td>-0.002048883</td>
<td>-0.006035999</td>
<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.04773811

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1421285

$\text{Microbial biomass}$

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 41.18965

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficients</td>
<td>0.206352158</td>
<td>0.046841297</td>
<td>0.015418021</td>
<td>0.006097190</td>
<td>-0.002145218</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007064159

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1616034

$\text{Microbial biomass}$

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.50516

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficients</td>
<td>-0.719567523</td>
<td>0.016080309</td>
<td>-0.015554378</td>
<td>-0.009699953</td>
<td>0.003490436</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

c.grass
0.038727143

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power 0.04592993
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1398076

Microbial biomass $Pq2831
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.71661
Coefficients:
a.(Intercept) a.funcgr a.grass c.(Intercept) c.funcgr
-0.726718447 0.017117787 -0.010904120 -0.004657297 0.003128925
 c.grass 0.034734502

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon -0.006585009
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1579708

Microbial biomass $Pq2921
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 42.5143
Coefficients:
b.(Intercept) b.funcgr b.grass c.(Intercept) c.funcgr
0.257384236 0.026525808 -0.008393974 0.023921829 -0.008847298
 c.grass 0.099362226

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power 0.04717589
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1395337

Microbial biomass $Pq2931
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 42.71182

Coefficients:

\[
\begin{array}{cccc}
\text{b.(Intercept)} & \text{b.funcgr} & \text{b.grass} & \text{c.(Intercept)} & \text{c.funcgr} \\
0.250244301 & 0.026356937 & -0.003016204 & 0.040766269 & -0.008234453 \\
\text{c.grass} & \\
0.084869176 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} \quad -0.00655037
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1579330

Microbial biomass $Pq3021
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -22.75071

Coefficients:

\[
\begin{array}{ccc}
\text{c.(Intercept)} & \text{c.funcgr} & \text{c.grass} \\
-0.76248625 & 0.12322157 & 0.06720479 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} \quad -0.4749447
\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6585198

Microbial biomass $Pq3031
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -33.50686

Coefficients:

\[
\begin{array}{ccc}
\text{c.(Intercept)} & \text{c.funcgr} & \text{c.grass} \\
-1.02988611 & 0.19479893 & 0.07991391 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon}
\]
-0.03256152
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4905981

$`Microbial biomass `$Pr3221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 40.65128
  Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  0.5168612613 -0.0625377335 -0.0677386764 -0.0086045264  0.0102274546
  b.leg
  0.0009871547
  Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
      power
      0.03605914
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1451155

$`Microbial biomass `$Pr3231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 41.00305
  Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  0.528073139  -0.059714719  -0.074030635  -0.008020193   0.009011539
  b.leg
  0.001270468
  Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
      expon
      -0.007342647
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1623593

$`Microbial biomass `$Pr3321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 43.01911
  Coefficients:
  a.(Intercept)       a.grass         a.leg c.(Intercept)       c.grass

-0.63754499 -0.03461126 -0.01620579 0.03656193 0.03282452
c.leg
-0.02008047

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.03477835
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1412533

$`Microbial biomass `$Pr3331
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.34004

Coefficients:
a.(Intercept) a.grass a.leg c.(Intercept) c.grass
c.leg
-0.62789496 -0.03501659 -0.01984176 0.03466192 0.03130126
-0.01900136

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.00689536
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1571926

$`Microbial biomass `$Pr3421
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 42.83898

Coefficients:
b.(Intercept) b.grass b.leg c.(Intercept) c.grass
c.leg
0.38565454 -0.03432817 -0.02724757 0.05328494 0.10033143
-0.03135258

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.03594588
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1413188
$\text{Microbial biomass}$

Generalized nonlinear least squares fit

Model: response ~ b * sowndiv^c

Data: DF

Log-likelihood: 43.15433

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b. (Intercept)</th>
<th>b. grass</th>
<th>b. leg</th>
<th>c. (Intercept)</th>
<th>c. grass</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.39461733</td>
<td>-0.03399994</td>
<td>-0.03113385</td>
<td>0.04939747</td>
<td>0.09349555</td>
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</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate

Parameter estimates:

<table>
<thead>
<tr>
<th></th>
<th>expon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.006914078</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual

Residual standard error: 0.1575743

$\text{Microbial biomass}$

Generalized nonlinear least squares fit

Model: response ~ sowndiv^c

Data: DF

Log-likelihood: -23.32972

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c. (Intercept)</th>
<th>c. grass</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.1696281</td>
<td>-0.1318883</td>
<td>-0.2480324</td>
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</table>

Variance function:
Structure: Power of variance covariate

Parameter estimates:

<table>
<thead>
<tr>
<th></th>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.4767493</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual

Residual standard error: 0.6649652

$\text{Microbial biomass}$

Generalized nonlinear least squares fit

Model: response ~ sowndiv^c

Data: DF

Log-likelihood: -34.58352

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c. (Intercept)</th>
<th>c. grass</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.4646305</td>
<td>-0.2561756</td>
<td>-0.3824112</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate

Formula: ~sowndiv
Parameter estimates:

-0.03274933

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4978843

$Microbial biomass \text{Ps3721}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 41.79784

Coefficients:

- a.(Intercept) 0.1936962863
- a.funcgr 0.0480115407
- a.grass 0.0104766644
- a.leg 0.0086542858
- b.(Intercept) 0.0386663089
- b.funcgr -0.0064112141
- b.grass -0.0002788291
- b.leg -0.0107234248

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

- power 0.03381456

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1455055

$Microbial biomass \text{Ps3731}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 42.2173

Coefficients:

- a.(Intercept) 0.176120253
- a.funcgr 0.050523945
- a.grass 0.020253493
- a.leg 0.009778975
- b.(Intercept) 0.040923822
- b.funcgr -0.006573030
- b.grass -0.001855361
- b.leg -0.010869356

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:

- expon -0.007618332

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1625044

$Microbial biomass \text{Ps3821}$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.15511
Coefficients:
\[ \begin{align*}
\text{a. (Intercept)} & = -0.733578776 \\
\text{a.funcgr} & = 0.017216942 \\
\text{a.grass} & = -0.013254450 \\
\text{a.leg} & = 0.005105006 \\
\text{c. (Intercept)} & = 0.108156571 \\
\text{c.funcgr} & = -0.011133934 \\
\text{c.grass} & = 0.016776387 \\
\text{c.leg} & = -0.036820287
\end{align*} \]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.03215278

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1434704

$\text{Microbial biomass ~Ps3831}$

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.5326

Coefficients:
\[ \begin{align*}
\text{a. (Intercept)} & = -0.751120541 \\
\text{a.funcgr} & = 0.019615046 \\
\text{a.grass} & = -0.006825007 \\
\text{a.leg} & = 0.008272530 \\
\text{c. (Intercept)} & = 0.125225482 \\
\text{c.funcgr} & = -0.013096155 \\
\text{c.grass} & = 0.010701009 \\
\text{c.leg} & = -0.040470763
\end{align*} \]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007197967

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1593425

$\text{Microbial biomass ~Ps3921}$

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 43.23408

Coefficients:
\[ \begin{align*}
\text{b. (Intercept)} & = 0.207653644 \\
\text{b.funcgr} & = 0.033167299 \\
\text{b.grass} & = -0.001115847 \\
\text{b.leg} & = 0.016900738 \\
\text{c. (Intercept)} & = 0.421924819 \\
\text{c.funcgr} & = -0.059052672 \\
\text{c.grass} & = 0.026722767 \\
\text{c.leg} & = -0.125349574
\end{align*} \]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.03212689
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1433378

$\text{Microbial biomass } \$Ps3931$
Generalized nonlinear least squares fit
Model: response $\sim b * \text{sowndiv}^c$
Data: DF
Log-likelihood: 43.60998

Coefficients:
\begin{align*}
&b.(\text{Intercept}) & b.\text{funcgr} & b.\text{grass} & b.\text{leg} & c.(\text{Intercept}) \\
&0.188467028 & 0.034604517 & 0.005811227 & 0.021019747 & 0.474973713 \\
&c.\text{funcgr} & c.\text{grass} & c.\text{leg} \\
&-0.063207629 & 0.006548958 & -0.136916708
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: $\sim \text{sowndiv}$
Parameter estimates:
expon
-0.007201753

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1591973

$\text{Microbial biomass } \$Ps4021$
Generalized nonlinear least squares fit
Model: response $\sim \text{sowndiv}^c$
Data: DF
Log-likelihood: -22.31840

Coefficients:
\begin{align*}
&c.(\text{Intercept}) & c.\text{funcgr} & c.\text{grass} & c.\text{leg} \\
&-0.4032618087 & 0.0787560188 & 0.0007762873 & -0.1139730226
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: $\sim \text{sowndiv}$
Parameter estimates:
power
-0.4809996

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6651956

$\text{Microbial biomass } \$Ps4031$
Generalized nonlinear least squares fit
Model: response $\sim \text{sowndiv}^c$
Data: DF
Log-likelihood: -33.34910

Coefficients:
\begin{align*}
&c.(\text{Intercept}) & c.\text{funcgr} & c.\text{grass} & c.\text{leg} \\
&-0.64678069 & 0.14772337 & 0.01152149 & -0.12629269
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
    expon  -0.03262592
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4930565

$`\text{Microbial biomass}`$AS1
Nonlinear regression model
    model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
    data:  DF
    Asym      R0     lrc
    0.4592  0.2098 -1.2930
    residual sum-of-squares: 1.77

Number of iterations to convergence: 10
Achieved convergence tolerance: 8.682e-06

$`\text{Microbial biomass}`$AS2
Nonlinear regression model
    model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
    data:  DF
    Asym     lrc      c0
    0.4592 -1.2931 -2.2241
    residual sum-of-squares: 1.77

Number of iterations to convergence: 10
Achieved convergence tolerance: 9.487e-06

$`\text{Microbial biomass}`$AS3
Nonlinear regression model
    model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
    data:  DF
    Asym     lrc
    0.4281 -0.2150
    residual sum-of-squares: 1.811

Number of iterations to convergence: 6
Achieved convergence tolerance: 6.154e-06

$`\text{Microbial biomass}`$LG2
Nonlinear regression model
    model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
    data:  DF
    Asym     xmid     scal
    0.45479 -0.08847  2.64378
    residual sum-of-squares: 1.775

Number of iterations to convergence: 9
Achieved convergence tolerance: 5.392e-06

$`\text{Microbial respiration}`$L01
Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2  
Data: DF  
Log-likelihood: 66.29191  

Coefficients:  
(Intercept)  blockB2  blockB3  blockB4  
sowndiv  0.0971726254  0.0523450999  0.0796403354  0.0629400645  
0.0249253472  
funcgr  grass  leg  sowndiv:funcgr  
sowndiv:grass  -0.0081160347  -0.0499426079  0.0460419844  -0.0051481232  
0.0011418402  
sowndiv:leg  funcgr:grass  funcgr:leg  grass:leg  
-0.0021583241  0.0396741576  -0.0001113372  -0.0257695886  

Variance function:  
Structure: Power of variance covariate  
Formula: ~fitted(.)  
Parameter estimates:  
  power  0.6649813  
Degrees of freedom: 82 total; 68 residual  
Residual standard error: 0.3048384  

$`Microbial respiration `$L02  

Generalized least squares fit by maximum likelihood  
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2  
Data: DF  
Log-likelihood: 67.29897  

Coefficients:  
(Intercept)  blockB2  blockB3  blockB4  
sowndiv  -0.117696265  0.045130996  0.084416647  0.067752814  
0.039911176  
funcgr  grass  leg  sowndiv:funcgr  
sowndiv:grass  0.036124557  0.041696967  0.141733792  -0.007603072  
0.002710302  
sowndiv:leg  funcgr:grass  funcgr:leg  grass:leg  
-0.005643991  0.024931403  -0.014500042  -0.063829707  

Variance function:  
Structure: Exponential of variance covariate  
Formula: ~fitted(.)  
Parameter estimates:  
  expon  3.952133  
Degrees of freedom: 82 total; 68 residual  
Residual standard error: 0.04342441  

$`Microbial respiration `$L011  

Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 63.31731

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.1902</td>
<td>0.0594</td>
<td>0.0789</td>
</tr>
<tr>
<td>blockB2</td>
<td>0.0160</td>
<td>0.0766</td>
<td>0.0195</td>
</tr>
<tr>
<td>blockB3</td>
<td>0.0790</td>
<td>0.0157</td>
<td>0.0063</td>
</tr>
<tr>
<td>blockB4</td>
<td>0.0725</td>
<td>0.0041</td>
<td>0.0792</td>
</tr>
<tr>
<td>sowndiv</td>
<td>0.0160</td>
<td>0.0766</td>
<td>0.0195</td>
</tr>
<tr>
<td>funcgr</td>
<td>-0.0180</td>
<td>-0.0766</td>
<td>-0.0157</td>
</tr>
<tr>
<td>grass</td>
<td>-0.0018</td>
<td>-0.0039</td>
<td>-0.0003</td>
</tr>
<tr>
<td>leg</td>
<td>0.0007</td>
<td>0.0006</td>
<td>0.0009</td>
</tr>
<tr>
<td>sowndiv:funcgr</td>
<td>0.0017</td>
<td>0.0001</td>
<td>0.0004</td>
</tr>
<tr>
<td>sowndiv:grass</td>
<td>-0.0766</td>
<td>-0.0039</td>
<td>-0.0003</td>
</tr>
<tr>
<td>sowndiv:leg</td>
<td>0.0003</td>
<td>0.0006</td>
<td>0.0009</td>
</tr>
<tr>
<td>funcgr:grass</td>
<td>0.0035</td>
<td>0.0051</td>
<td>0.0051</td>
</tr>
<tr>
<td>funcgr:leg</td>
<td>0.0003</td>
<td>0.0006</td>
<td>0.0009</td>
</tr>
<tr>
<td>grass:leg</td>
<td>0.0002</td>
<td>0.0035</td>
<td>0.0051</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
| power |
| 0.1848 |

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.08496138

$\text{Microbial respiration}$ $L021$

Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 62.58916

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.4306</td>
<td>0.0859</td>
<td>0.0978</td>
</tr>
<tr>
<td>blockB2</td>
<td>0.0036</td>
<td>0.0016</td>
<td>0.0006</td>
</tr>
<tr>
<td>blockB3</td>
<td>0.0640</td>
<td>0.1562</td>
<td>0.0107</td>
</tr>
<tr>
<td>blockB4</td>
<td>0.0009</td>
<td>0.0009</td>
<td>0.0013</td>
</tr>
<tr>
<td>sowndiv</td>
<td>0.0036</td>
<td>0.0016</td>
<td>0.0006</td>
</tr>
<tr>
<td>funcgr</td>
<td>-0.0767</td>
<td>-0.1562</td>
<td>-0.1071</td>
</tr>
<tr>
<td>grass</td>
<td>0.0027</td>
<td>0.0055</td>
<td>0.0028</td>
</tr>
<tr>
<td>leg</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
</tr>
<tr>
<td>sowndiv:funcgr</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
</tr>
<tr>
<td>sowndiv:grass</td>
<td>-0.0767</td>
<td>-0.1562</td>
<td>-0.1071</td>
</tr>
<tr>
<td>sowndiv:leg</td>
<td>0.0027</td>
<td>0.0055</td>
<td>0.0028</td>
</tr>
<tr>
<td>funcgr:grass</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
</tr>
<tr>
<td>funcgr:leg</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
</tr>
<tr>
<td>grass:leg</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
| expon   |
| -0.0114 |

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.1244126

$\text{Microbial respiration}$ $L2$
Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
```
                (Intercept)      sowndiv       funcgr        leg
                0.140284     0.001500     0.029908     0.004830
```

Microbial respiration

Generalized least squares fit by maximum likelihood
```
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 52.79872
```

Coefficients:
```
                (Intercept)      sowndiv       funcgr        leg
                0.143902019 0.001335543 0.029251588 0.004486356
```

Variance function:
```
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
          power
-0.2067939
```

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.09294533

Microbial respiration

Generalized least squares fit by maximum likelihood
```
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 52.93664
```

Coefficients:
```
                (Intercept)      sowndiv       funcgr        leg
                0.145929326 0.001190281 0.028903010 0.004444837
```

Variance function:
```
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
          expon
-1.633253
```

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1829401

Microbial respiration

Generalized least squares fit by maximum likelihood
```
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 54.15545
```

Coefficients:
```
                (Intercept)      sowndiv       funcgr        leg
```

SUPPLEMENTARY INFORMATION
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1748227
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.09643274

$`Microbial respiration `$L222
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 52.83896

Coefficients:
  (Intercept) sowndiv funcgr leg
  0.141246787 0.001076389 0.030578405 0.005890471

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.004416224
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1319409

$`Microbial respiration `$M1
Nonlinear regression model
  model: response ~ a * sowndiv/(b + sowndiv)
  data: DF
  a      b
  0.3299 1.6653
  residual sum-of-squares: 1.119

Number of iterations to convergence: 5
Achieved convergence tolerance: 9.095e-06

$`Microbial respiration `$M1a
Nonlinear regression model
  model: response ~ SSmicmen(sowndiv, Vm, k)
  data: DF
  Vm      k
  0.3299 1.6652
  residual sum-of-squares: 1.119

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.314e-06

$`Microbial respiration `$M2
Nonlinear regression model
model: response ~ d + a * sowndiv/(b + sowndiv)
data: DF

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6982</td>
<td>0.4204</td>
<td>-0.3874</td>
</tr>
</tbody>
</table>

residual sum-of-squares: 1.107

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.358e-06

$\text{Microbial respiration}$ M211
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 62.40936

Coefficients:

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6982302</td>
<td>0.4213176</td>
<td>-0.3871629</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

<table>
<thead>
<tr>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1968301</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.08598322

$\text{Microbial respiration}$ M222
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 60.22406

Coefficients:

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7365635</td>
<td>0.3867678</td>
<td>-0.4271569</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:

<table>
<thead>
<tr>
<th>expon</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.003411667</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1217906

$\text{Microbial respiration}$ M3
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 59.73087

Coefficients:
a. (Intercept)    a.leg  b. (Intercept)    b.leg
0.326857306 0.002134018 1.580649196 0.055836495

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1197489

$`Microbial respiration `\$M311
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 61.88362

Coefficients:
 a. (Intercept)    a.leg  b. (Intercept)    b.leg
0.350182583 -0.006611364 2.086126769 -0.149449496

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power
0.1914648

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.08778568

$`Microbial respiration `\$M321
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 59.79978

Coefficients:
 a. (Intercept)    a.leg  b. (Intercept)    b.leg
0.318884361 0.006170269 1.445764619 0.123928778

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
-0.003098961

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1228743

$`Microbial respiration `\$M4
Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 60.32581

Coefficients:
 a. (Intercept)    a.grass  b. (Intercept)    b.grass
0.30852874 0.01107377 0.25432498 0.87657993
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1188832

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 62.78314

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.29748555    0.02550948    0.07653057    1.11295941

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.2053818

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.08505241

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 60.38679

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.30765905    0.01031516    0.23997157    0.86679435

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.002894638

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1217840

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 59.76359

Coefficients:
  a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
  0.341962837  -0.005576186   1.947615931  -0.156629792

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1197011
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 61.90018

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
0.357479510 -0.007701292 2.119998278 -0.145758240

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.1905368
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.08788896

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 59.84582

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
0.342099584 -0.006588195 1.969395994 -0.185622278

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.003361687
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1230827

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 59.76729

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
0.356797882 -0.007476935 -0.007273931 2.178676081 -0.185088294
  b.leg
-0.115659288
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1212604
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 61.94042

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
  0.41212059 -0.01489927 -0.02623709 2.96425571 -0.25368091
b.leg
  -0.41162572

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.1924045
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08874778

$`Microbial respiration`\$M622
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 59.84676

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
  0.348854101  -0.007428589  -0.003346935   2.088197741  -0.199585643
b.leg
  -0.060346018

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.003327552
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1246537

$`Microbial respiration`\$M7
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 60.42249

Coefficients:
a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr
  0.330218449  -0.002816289   0.005040695  0.010246555  0.135937683
b.grass
  0.954642430

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1202954

$\text{Microbial respiration}$

Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 62.96

Coefficients:
   a.(Intercept)   a.funcgr   a.grass   b.(Intercept)   b.funcgr   b.grass
   0.330496980    -0.002702145  0.015185593  -0.171520726   0.208918092  1.167337593

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
   power
   0.2090193

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08551557

$\text{Microbial respiration}$

Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 60.47483

Coefficients:
   a.(Intercept)   a.funcgr   a.grass   b.(Intercept)   b.funcgr   b.grass
   0.333460840    -0.004137084  0.003323164   0.081568402   0.102649347  0.925372082

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
   expon
   -0.002732781

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1230725

$\text{Microbial respiration}$

Generalized nonlinear least squares fit
   Model: response ~ a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 60.3689

Coefficients:
   a.(Intercept)   a.grass   a.leg   b.(Intercept)   b.grass   b.leg
   0.292826611    0.013941225  0.006823199  -0.384575772   0.972583546

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1230725
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.120374

$`Microbial respiration `$M821
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 62.82142

Coefficients:
\[
\begin{array}{cccc}
\text{a.} & \text{a.grass} & \text{a.leg} & \text{b.} \\
(\text{Intercept}) & 0.281162809 & 0.029396713 & -0.543957271 \\
\text{b.} & 0.005355821 & 1.222374072 \\
\text{b.leg} & 0.261221620 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{power} \\
0.2054305 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08611782

$`Microbial respiration `$M832
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 60.43926

Coefficients:
\[
\begin{array}{cccc}
\text{a.} & \text{a.grass} & \text{a.leg} & \text{b.} \\
(\text{Intercept}) & 0.28821010 & 0.01329618 & -0.48335725 \\
\text{b.} & 0.00965758 & 0.97179928 \\
\text{b.leg} & 0.35047670 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{expon} \\
-0.003128149 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1235446

$`Microbial respiration `$M91
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 60.71974

Coefficients:
$\text{Microbial respiration} \quad \text{M921}$
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 63.32324

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & : 0.443380448 \\
\text{a. funcgr} & : -0.019535072 \\
\text{a. grass} & : -0.003904994 \\
\text{a. leg} & : -0.032708805 \\
\text{b. (Intercept)} & : -1.059270648 \\
\text{b. funcgr} & : 0.251000536 \\
\text{b. grass} & : 1.361808883 \\
\text{b. leg} & : 0.343654253
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power: 0.2113500

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.08598242

$\text{Microbial respiration} \quad \text{M932}$
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 60.76561

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & : 0.352695795 \\
\text{a. funcgr} & : -0.008450712 \\
\text{a. grass} & : 0.002447687 \\
\text{a. leg} & : -0.004328447 \\
\text{b. (Intercept)} & : -2.075788816 \\
\text{b. funcgr} & : 0.316448356 \\
\text{b. grass} & : 1.388942036 \\
\text{b. leg} & : 0.721717945
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon: -0.002567479

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1241068

$\text{Microbial respiration} \quad \text{M1221}$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 61.63093

Coefficients:
a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr  d.(Intercept)
-0.07777128  0.09703965  -6.28270783  5.05122860  0.19983042
d.funcgr
-0.01357152

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.2199258
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08551698

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 63.11021

Coefficients:
a.(Intercept)  a.funcgr  a.grass  b.(Intercept)  b.funcgr  b.grass  d.(Intercept)  d.funcgr  d.grass
-0.041726774  0.095817035  0.024516224  -8.375442872  6.592756538  0.367180114  0.227690151  -0.015220441  -0.008020673

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.2331689
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.08402812

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 59.11157

Coefficients:
a.(Intercept)  a.funcgr  a.grass  b.(Intercept)  b.funcgr  b.grass  d.(Intercept)  d.funcgr  d.grass
-2.110903e-01  1.785503e-01  6.264926e-02  -8.136022e+00  1.085236e+02  0.3185106e-01  3.185106e-01  3.741374e-03  -8.633738e-02

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.001468909
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1263031

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 63.31914

Coefficients:
\[
\begin{array}{cccccc}
  a & a & a & b & b & b \\
   (Intercept) & grass & leg & (Intercept) & grass & leg \\
  1.3835343 & 0.7580737 & -0.7275315 & 0.4253561 & -0.1805788 & \\
   b & d & d & d & d & \\
   leg & (Intercept) & grass & leg & \\
  0.0388338 & -0.9912137 & -0.7944077 & 0.7028837 & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{power} \\
  0.2052779
\end{array}
\]

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.0873576

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 59.88302

Coefficients:
\[
\begin{array}{cccccc}
  a & a & a & b & b & b \\
   (Intercept) & funcgr & grass & leg & (Intercept) & \\
  -0.896803384 & 0.111343830 & 0.190501991 & 0.427096788 & -56.440350555 & \\
  b & b & b & d & d & d \\
   funcgr & grass & leg & (Intercept) & funcgr & \\
  7.855060479 & 11.994529357 & 19.329392532 & 0.314998580 & -0.004740474 & \\
  d & d & d & d & \\
   grass & leg & \\
  -0.030622876 & -0.085686439 & \\
\end{array}
\]

Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1261723

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 61.22538

Coefficients:
\[
\begin{array}{cccccc}
  a & a & a & b & b & b \\
   (Intercept) & funcgr & grass & leg & (Intercept) & \\
  -1.47363339 & 0.14957965 & 0.37653744 & 0.65176733 & -208.44454855 & \\
  b & b & b & d & d & d \\
   funcgr & grass & leg & (Intercept) & funcgr & \\
  29.20168083 & 41.97985415 & 71.49079035 & 0.24507155 & 0.01725007 & \\
\end{array}
\]
\begin{verbatim}
0.1646066
0.09721314
`Microbial respiration` $E2$
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF

a  b
2.203e-01 6.220e-28

residual sum-of-squares: 1.480

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.857e-08

`Microbial respiration` $E4$
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF

a
1

residual sum-of-squares: 5.217e+52
\end{verbatim}
Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

\$\text{Microbial respiration \$E5}\$
Nonlinear regression model
  \text{model: response} \sim b \times \text{exp(sowndiv)}
  \text{data: DF}
  b
  2.551e-27
  \text{residual sum-of-squares: 5.265}

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.079e-08

\$\text{Microbial respiration \$E22}\$
Generalized nonlinear least squares fit
  Model: response \sim a + b \times \text{exp(sowndiv)}
  Data: DF
  Log-likelihood: 48.70784
  Coefficients:
    a           b
    2.250835e-01 5.800307e-28
  Variance function:
    \text{Structure: Exponential of variance covariate}
    \text{Formula: ~sowndiv}
    \text{Parameter estimates:}
    \text{expon}
    -0.007947522
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1448064

\$\text{Microbial respiration \$E31}\$
Generalized nonlinear least squares fit
  Model: response \sim a + \text{exp(c \times sowndiv)}
  Data: DF
  Log-likelihood: 51.40519
  Coefficients:
    a           c
    -0.817961541 0.003531556
  Variance function:
    \text{Structure: Power of variance covariate}
    \text{Formula: ~sowndiv}
    \text{Parameter estimates:}
    \text{power}
    0.1417875
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1060356

\$\text{Microbial respiration \$E32}\$
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 50.66772

Coefficients:
\[
\begin{array}{cc}
a & c \\
-0.794014932 & 0.002078811 \\
\end{array}
\]

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.004647726

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1374371

Microbial respiration

Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1705.469

Coefficients:
\[
\begin{array}{c}
a \\
-2.615066 \\
\end{array}
\]

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.18052

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.0428033

Microbial respiration

Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -800.9376

Coefficients:
\[
\begin{array}{c}
a \\
-3.250971 \\
\end{array}
\]

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014825

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6991326
Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ b * exp(sowndiv)
Data: DF
Log-likelihood: -0.1826411

Coefficients:
  b
2.550977e-27

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  0.2473099
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1690217

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ b * exp(sowndiv)
Data: DF
Log-likelihood: -3.732239

Coefficients:
  b
2.550977e-27

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
  -0.003886036
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2634411

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 4.333655

Coefficients:
  c
-2.028304

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.3818898
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1309945

$\text{Microbial respiration}$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2.728685

Coefficients:
  c
-1.836439

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
0.01390992

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2233649

$\text{Microbial respiration}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept) a.leg
-2963126 911706

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$\text{Microbial respiration}$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -4.268699

Coefficients:
  c.(Intercept) c.leg
-1.3624178 -0.2566368

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2580673

$\text{Microbial respiration}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 54.45759
Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. leg} & \quad \text{c. (Intercept)} & \quad \text{c. leg} \\
-0.717243363 & -0.071810143 & -0.007058127 & 0.009266933
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- power
  -0.1164607

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1074268

$\text{Microbial respiration}$

Generalized nonlinear least squares fit
- Model: response ~ a + exp(c * sowndiv)
- Data: DF
- Log-likelihood: 54.09506

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. leg} & \quad \text{c. (Intercept)} & \quad \text{c. leg} \\
-0.685245234 & -0.083555175 & -0.007859084 & 0.009126230
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- expon
  -0.006524177

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1356582

$\text{Microbial respiration}$

Generalized nonlinear least squares fit
- Model: response ~ a + exp(sowndiv)
- Data: DF
- Log-likelihood: -1705.442

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. leg} \\
-2.625047071 & 0.005703349
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- power
  15.18065

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.04304777

$\text{Microbial respiration}$
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.816

Coefficients:
a. (Intercept)     a.leg
    -4.1222359     0.5023206

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014918
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7018862

$`Microbial respiration `$Ea121
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 4.3412

Coefficients:
c. (Intercept)     c.leg
   -1.88896853    -0.07879736

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.3816182
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1318517

$`Microbial respiration `$Ea1221
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2.699643

Coefficients:
c. (Intercept)     c.leg
   -1.4148567    -0.2366533

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.01391670
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2246639
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a. (Intercept)   a.grass
-3508713        1286426

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -3.830379

Coefficients:
c. (Intercept)   c.grass
-0.2058422      -0.9182494

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2566915

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 56.1161

Coefficients:
a. (Intercept)   a.grass c. (Intercept)   c.grass
-0.679921503     -0.098689090    -0.007494082    0.009754511

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
        power
0.1787663

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.09597483

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 54.59126

Coefficients:
a. (Intercept)   a.grass c. (Intercept)   c.grass
-0.654465384 -0.101965262 -0.006881406 0.008066124

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.004111777

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1320758

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1703.664

Coefficients:
a.(Intercept)  a.grass
-2.53478386   -0.04587563

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
15.18896

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.04160783

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.8393

Coefficients:
a.(Intercept)  a.grass
-4.0341765     0.4515378

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.014894

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7022306

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 4.923836
Coefficients:
c.(Intercept)    c.grass
  -0.9781530     -0.6100284

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.3879937
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1296849

$\text{Microbial respiration }$Eb1821
Generalized nonlinear least squares fit
  Model: response \sim \exp(c \times sowndiv)
  Data: DF
  Log-likelihood: -2.195488

Coefficients:
c.(Intercept)    c.grass
  -0.3066110     -0.8735264

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.01426320
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2226236

$\text{Microbial respiration }$Ec22
Generalized nonlinear least squares fit
  Model: response \sim a + \exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)    a.funcgr
    252095.7     -912137.5
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 2.553606e+25

$\text{Microbial respiration }$Ec24
Generalized nonlinear least squares fit
  Model: response \sim \exp(c \times sowndiv)
  Data: DF
  Log-likelihood: 0.6148857

Coefficients:
c.(Intercept)    c.funcgr
\[ -2.1229396 \quad 0.4730984 \]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2431466

\$\text{\textbackslash{} Microbial respiration \textbackslash{} Ec1921} \$
Generalized nonlinear least squares fit
  Model: response \sim a + b \times \exp(c \times \text{sowndiv})
  Data: DF
  Log-likelihood: -2845.25

Coefficients:
  a.(Intercept) \quad a.funcgr \quad b.(Intercept) \quad b.funcgr \quad c.(Intercept)
  0.640058154 \quad -0.561425071 \quad 0.005069170 \quad -0.001267290 \quad 0.999683335
  c.funcgr
  1.000079166

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    4.823858

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.0003043408

\$\text{\textbackslash{} Microbial respiration \textbackslash{} Ec2121} \$
Generalized nonlinear least squares fit
  Model: response \sim a + \exp(c \times \text{sowndiv})
  Data: DF
  Log-likelihood: 56.30016

Coefficients:
  a.(Intercept) \quad a.funcgr \quad c.(Intercept) \quad c.funcgr
  -0.905521178 \quad 0.045086157 \quad 0.013966989 \quad -0.003392665

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.004824038

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1301452

\$\text{\textbackslash{} Microbial respiration \textbackslash{} Ec2211} \$
Generalized nonlinear least squares fit
  Model: response \sim a + \exp(\text{sowndiv})
  Data: DF
  Log-likelihood: -1705.469

Coefficients:
  a.(Intercept) \quad a.funcgr
  2.002441 \quad -4.617507
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.18053
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.04306996

$`Microbial respiration`$Ec2221
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.1537

Coefficients:
  a.(Intercept)      a.funcgr
    3.399746     -6.262941

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.022475
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6064625

$`Microbial respiration`$Ec2411
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 10.15619

Coefficients:
  c.(Intercept)      c.funcgr
    -2.4843649     0.5531454

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.3884654
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1215831

$`Microbial respiration`$Ec2421
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 2.869752
Coefficients:
c.(Intercept)    c.funcgr
   -2.1625707     0.4786686

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.01714776
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2041686

$`Microbial respiration `\$Ed28
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)    a.funcgr    a.leg
    872779.0    -990730.5    -307654.7

  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 2.569717e+25

$`Microbial respiration `\$Ed2811
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1705.442

Coefficients:
a.(Intercept)    a.funcgr    a.leg
    1.991033965   -4.616081018   0.005703342

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.18065
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.04331934

$`Microbial respiration `\$Ed2821
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.1537

Coefficients:
a.(Intercept)    a.funcgr    a.leg
    3.386720391   -6.261312260   0.006512855
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon 1.022475
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6102883

`Microbial respiration` $Ed3021$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 2.872662
Coefficients:
  c.(Intercept)  c.funcgr  c.leg
  -2.01162275  0.46019826  -0.07678796

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon 0.01713342
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2054748

`Microbial respiration` $Ee40$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:
  a.(Intercept)  a.funcgr  a.grass
  -335850.5  -839615.5  296563.2

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

`Microbial respiration` $Ee341$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1703.664
Coefficients:
  a.(Intercept)  a.funcgr  a.grass
  2.09419192  -4.62897576  -0.04587563

Variance function:
  Structure: Power of variance covariate
Formula: \(~\text{sowndiv}\)
Parameter estimates:
  power
  15.18896
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.04187031

$`\text{Microbial respiration `}$Ee342
Generalized nonlinear least squares fit
  Model: response \sim a + \exp(\text{sowndiv})
  Data: DF
  Log-likelihood: -794.1525

Coefficients:
a.(Intercept)       a.funcgr       a.grass
  3.49036542   -6.27425360   -0.04531730

Variance function:
  Structure: Exponential of variance covariate
  Formula: \(~\text{sowndiv}\)
Parameter estimates:
  expon
  1.022477
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6102664

$`\text{Microbial respiration `}$Ef40
Generalized nonlinear least squares fit
  Model: response \sim a + \exp(\text{sowndiv})
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)       a.grass         a.leg
  -5251826       1394676       1054750

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`\text{Microbial respiration `}$Ef3721
Generalized nonlinear least squares fit
  Model: response \sim a + b * \exp(c \times \text{sowndiv})
  Data: DF
  Log-likelihood: -2708.06

Coefficients:
a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  2.017897e-01 -4.797664e-02 -9.065392e-03  1.908278e-04 -4.412649e-05
  2.017897e-01 -4.797664e-02 -9.065392e-03  1.908278e-04 -4.412649e-05
  b.leg c.(Intercept)       c.grass         c.leg
  -4.966808e-05  9.999876e-01  1.000003e+00  1.000003e+00

Variance function:
  Structure: Exponential of variance covariate
  Formula: \(~\text{sowndiv}\)
Parameter estimates:
   expon 4.570895
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.000511331

$`Microbial respiration `$Ef3911
Generalized nonlinear least squares fit
   Model: response ~ a + exp(c * sowndiv)
   Data: DF
   Log-likelihood: 58.20031
Coefficients:
   a.(Intercept)       a.grass         a.leg c.(Intercept)       c.grass
   -0.591295723  -0.092825407  -0.064825592  -0.012796461   0.007336161
   c.leg
   0.006692929

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power 0.1721915
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.09571905

$`Microbial respiration `$Ef3921
Generalized nonlinear least squares fit
   Model: response ~ a + exp(c * sowndiv)
   Data: DF
   Log-likelihood: 56.7808
Coefficients:
   a.(Intercept)       a.grass         a.leg c.(Intercept)       c.grass
   -0.570247554  -0.087149727  -0.074904836  -0.011533213   0.005258353
   c.leg
   0.006846085

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon -0.00495024
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1312181

$`Microbial respiration `$Ef4011
Generalized nonlinear least squares fit
   Model: response ~ a + exp(sowndiv)
   Data: DF
   Log-likelihood: -1703.572
Coefficients:
\[
\begin{array}{ccc}
\text{a.(Intercept)} & \text{a.grass} & \text{a.leg} \\
-2.50961398 & -0.04947132 & -0.01078709 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
15.18939

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.04179669

$\text{Microbial respiration} \text{ Ef4021}$

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.5948

Coefficients:
\[
\begin{array}{ccc}
\text{a.(Intercept)} & \text{a.grass} & \text{a.leg} \\
-5.8230982 & 0.7227343 & 0.7601809 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.015076

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7034557

$\text{Microbial respiration} \text{ Ef4211}$

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 10.03772

Coefficients:
\[
\begin{array}{ccc}
\text{c.(Intercept)} & \text{c.grass} & \text{c.leg} \\
2.380080 & -1.470691 & -1.198116 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.3573199

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1283256

$\text{Microbial respiration} \text{ Ef4221}$

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 3.631886

Coefficients:
c.(Intercept)   c.grass    c.leg
  2.083739   -1.323845   -1.019870

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
       0.01679461
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.2041741

Microbial respiration

Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)  a.funcgr   a.grass    a.leg
   292091.7   -918391.4   183181.2  -199834.1

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

Microbial respiration

Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1703.572

Coefficients:
a.(Intercept)  a.funcgr   a.grass    a.leg
   2.12295753  -4.63257146  -0.04947134  -0.01078710

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
       15.18939
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.04206374

Microbial respiration

Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.1524
Coefficients:
a. (Intercept)       a.funcgr       a.grass       a.leg
     3.52564380    -6.27866244    -0.05020820    -0.01274880

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
     1.022478
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6141644

$`Microbial respiration `Pa2
Nonlinear regression model
  model:  response ~ a + b * sowndiv
  data:  DF
    a      b
0.199411  0.002836
residual sum-of-squares: 1.392

Number of iterations to convergence: 1
Achieved convergence tolerance: 6.81e-09

$`Microbial respiration `Pa3
Nonlinear regression model
  model:  response ~ a + sowndiv^c
  data:  DF
    a      c
-0.85616  0.05071
residual sum-of-squares: 1.179

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.37e-07

$`Microbial respiration `Pa4
Nonlinear regression model
  model:  response ~ b * sowndiv^c
  data:  DF
    b      c
0.1610    0.2069
residual sum-of-squares: 1.215

Number of iterations to convergence: 10
Achieved convergence tolerance: 2.370e-06

$`Microbial respiration `Pa5
Nonlinear regression model
  model:  response ~ sowndiv^c
  data:  DF
    c
-1.221
residual sum-of-squares: 16.84
Number of iterations to convergence: 23
Achieved convergence tolerance: 7.941e-06

$p^\text{Microbial respiration}^2$ Pb21
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 50.74906

Coefficients:
  a   b
  0.199411228 0.002835612

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1319301

$p^\text{Microbial respiration}^2$ Pb31
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 57.57778

Coefficients:
  a   c
  -0.85616771  0.05071204

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1213884

$p^\text{Microbial respiration}^2$ Pb41
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 56.34837

Coefficients:
  b   c
  0.1609923  0.2068689

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1232220

$p^\text{Microbial respiration}^2$ Pb51
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -51.46014

Coefficients:
  c
  -1.221471

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4560099
Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 51.76933

Coefficients:
  a         b
 0.176122796 0.004449545

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  0.1598409

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1027740

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 50.80191

Coefficients:
  a         b
 0.203419164 0.002401077

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
  -0.003726245

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1361311

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 60.19028

Coefficients:
  a         c
-0.87266367  0.06186367

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.2122137
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.08580579

"Microbial respiration"
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 57.62524

Coefficients:
  a  c
-0.85906395  0.05306823

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.002781907

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1184549

"Microbial respiration"
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 58.48574

Coefficients:
  b  c
0.1441568  0.2667658

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1973600

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.08956147

"Microbial respiration"
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 56.37364

Coefficients:
  b  c
0.1588255  0.2164106

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  0.002226376
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1208518

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -28.00235

Coefficients:
c
-0.4865414

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
power
-0.5138108
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.7345355

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -47.5707

Coefficients:
c
-0.8054995

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
expon
-0.01712165
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.5037489

Microbial respiration
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 56.34964

Coefficients:
a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr
  0.089005374  0.045479721  0.016267702  -0.003937681
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1247899

$`Microbial respiration `$Pd81
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 58.84096
Coefficients:
\[
a.(\text{Intercept}) \quad a.\text{funcgr} \quad c.(\text{Intercept}) \quad c.\text{funcgr}
\]
\[
-0.90890345 \quad 0.03152540 \quad 0.07960637 \quad -0.01397259
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1210555

$`Microbial respiration `$Pd91
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 58.71226
Coefficients:
\[
b.(\text{Intercept}) \quad b.\text{funcgr} \quad c.(\text{Intercept}) \quad c.\text{funcgr}
\]
\[
0.08924556 \quad 0.03800721 \quad 0.41685004 \quad -0.09023305
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1212457

$`Microbial respiration `$Pd101
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -49.73295
Coefficients:
\[
c.(\text{Intercept}) \quad c.\text{funcgr}
\]
\[
-2.1793586 \quad 0.4005665
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4492873

$`Microbial respiration `$Pe721
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 58.03166
Coefficients:
\[
a.(\text{Intercept}) \quad a.\text{funcgr} \quad b.(\text{Intercept}) \quad b.\text{funcgr}
\]
\[
0.074833359 \quad 0.046971009 \quad 0.019509800 \quad -0.004687325
\]

Variance function:
Structure: Power of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
  power  
0.1738378  
Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.09444733

$`Microbial respiration `\$Pe731  
Generalized nonlinear least squares fit  
  Model: response ~ a + b * sowndiv  
  Data: DF  
  Log-likelihood: 56.50564

Coefficients:  
a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr  
0.090101881  0.045817418  0.015758435  -0.003835515

Variance function:  
  Structure: Exponential of variance covariate  
  Formula: ~sowndiv  
  Parameter estimates:  
    expon  
-0.004677084  
Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.1296558

$`Microbial respiration `\$Pe821  
Generalized nonlinear least squares fit  
  Model: response ~ a + sowndiv^c  
  Data: DF  
  Log-likelihood: 61.06714

Coefficients:  
a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr  
-0.90899239    0.02615204    0.08588779   -0.01349399

Variance function:  
  Structure: Power of variance covariate  
  Formula: ~sowndiv  
  Parameter estimates:  
    power  
0.1961218  
Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.08805325

$`Microbial respiration `\$Pe831  
Generalized nonlinear least squares fit  
  Model: response ~ a + sowndiv^c  
  Data: DF  
  Log-likelihood: 58.90381

Coefficients:  
a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
-0.91031811  0.03319336  0.07965289  -0.01456918

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.003042928
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1241645

$`Microbial respiration `\$Pe921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 60.55484

Coefficients:
  b.(Intercept)    b.funcgr  c.(Intercept)    c.funcgr
  0.08992308  0.03373743  0.45053764  -0.09251206

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  0.1785027
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.09095332

$`Microbial respiration `\$Pe931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 58.83183

Coefficients:
  b.(Intercept)    b.funcgr  c.(Intercept)    c.funcgr
  0.08811165  0.03926827  0.41338553  -0.09097455

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.004053705
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1253567

$`Microbial respiration `\$Pe1021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -20.44073
Coefficients:
c.(Intercept)      c.funcgr
-0.8995584     0.1377903

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.6034551
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.769945

Microbial respiration Pe1031
Generalized nonlinear least squares fit
   Model: response ~ sowndiv^c
   Data: DF
   Log-likelihood: -37.72982

Coefficients:
c.(Intercept)      c.funcgr
-1.6624862     0.3372814

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.03728732
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5345408

Microbial respiration Pf121
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 54.67367

Coefficients:
a.(Intercept)       a.grass b.(Intercept)       b.grass
0.342804281  -0.103452619  -0.007875516   0.009399906

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1273666

Microbial respiration Pf131
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 58.96102

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-0.740478691 -0.072705341 0.007560598 0.028473321

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1208784

"Microbial respiration" Pf141
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 58.114

Coefficients:
b.(Intercept)       b.grass c.(Intercept)       c.grass
0.26731297   -0.06938620   -0.04463967    0.17995253

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1221335

"Microbial respiration" Pf151
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -50.45279

Coefficients:
c.(Intercept)       c.grass
0.2013782    -1.0406869

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4532487

"Microbial respiration" Pg171
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 53.90424

Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
0.306530535  -0.081493616  -0.008325645   0.010061339

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1285674

"Microbial respiration" Pg181
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 58.01112

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.80398015   -0.03401755    0.02260682    0.02008364
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1222868

$`Microbial respiration `$Pg191
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 57.21511

Coefficients:
\[
\begin{align*}
b.\text{(Intercept)} & = 0.22104356 \\
b.\text{leg} & = -0.04140109 \\
c.\text{(Intercept)} & = 0.01933167 \\
c.\text{leg} & = 0.14239006
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1234797

$`Microbial respiration `$Pg201
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -50.89915

Coefficients:
\[
\begin{align*}
c.\text{(Intercept)} & = -0.1344110 \\
c.\text{leg} & = -0.7676083
\end{align*}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4557227

$`Microbial respiration `$Ph221
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 56.38684

Coefficients:
\[
\begin{align*}
a.\text{(Intercept)} & = 0.108434913 \\
\text{a.funcgr} & = 0.043079504 \\
a.\text{leg} & = -0.009559122 \\
b.\text{(Intercept)} & = 0.012403081 \\
b.\text{funcgr} & = -0.003432396 \\
b.\text{leg} & = 0.001840765
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1263638

$`Microbial respiration `$Ph231
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 58.84406

Coefficients:
\[
\begin{align*}
a.\text{(Intercept)} & = -0.916077711 \\
a.\text{funcgr} & = 0.032437210 \\
a.\text{leg} & = 0.003546758 \\
c.\text{(Intercept)} & = 0.084514066 \\
c.\text{funcgr} & = -0.014610687 \\
c.\text{leg} & =
\end{align*}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1226334

```
$`Microbial respiration `$Ph241
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 58.71253

Coefficients:
b.(Intercept)      b.funcgr         b.leg c.(Intercept)      c.funcgr
  0.091315785   0.037714760  -0.001011664   0.410692630  -0.089408648
  c.leg
  0.003050268

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1228302

```
$`Microbial respiration `$Ph251
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -49.73263

Coefficients:
c.(Intercept)      c.funcgr         c.leg
  -2.13026461    0.39452657   -0.02489018

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4521201

```
$`Microbial respiration `$Pi271
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 56.83354

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
  0.164114143   0.036121097  -0.037390560   0.014018455  -0.003633151
  b.grass
  0.001028269

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1256773

```
$`Microbial respiration `$Pi281
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 59.42453

 Degrees of freedom: 82 total; 76 residual
 Residual standard error: 0.1256773
Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{c. (Intercept)} & \text{c.funcgr} \\
-0.81355435 & 0.01956769 & -0.04753213 & 0.05700612 & -0.01107188 \\
\text{c.grass} & 0.01104714 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1217683

$\text{Microbial respiration} $Pi291
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 59.43959

Coefficients:
\[
\begin{array}{cccccc}
\text{b. (Intercept)} & \text{b.funcgr} & \text{b.grass} & \text{c. (Intercept)} & \text{c.funcgr} \\
0.17274103 & 0.02981441 & -0.04389485 & 0.26157077 & -0.07483255 \\
\text{c.grass} & 0.08327039 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1217460

$\text{Microbial respiration} $Pi301
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: -49.71011

Coefficients:
\[
\begin{array}{cccc}
\text{c. (Intercept)} & \text{c.funcgr} & \text{c.grass} \\
-1.6783664 & 0.3376907 & -0.2532940 \\
\end{array}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.451996

$\text{Microbial respiration} $Pi321
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 56.83865

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} & \text{b.grass} & \text{b.leg} \\
0.428509595 & -0.09070833 & -0.073733631 & -0.013444124 & 0.006682023 & 0.007494271 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1256695

$\text{Microbial respiration} $Pi331
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 59.39385

Coefficients:
 a. (Intercept)  a.grass  a.leg  c.(Intercept)  c.grass  c.leg
-0.67259535  -0.07423296  -0.04087482  -0.01761855  0.02648239  0.01831340

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1218139

$`Microbial respiration `$Pj341
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 59.74379

Coefficients:
 b. (Intercept)  b.grass  b.leg  c.(Intercept)  c.grass  c.leg
0.38078733  -0.08266533  -0.06200165  -0.29109248  0.19339787  0.16369264

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1212952

$`Microbial respiration `$Pj351
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -49.75755

Coefficients:
 c. (Intercept)  c.grass  c.leg
0.9884388  -0.9726134  -0.6577870

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4522576

$`Microbial respiration `$Pk371
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 57.12197

Coefficients:
 a. (Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)  b.funcgr  b.grass  b.leg
0.290592076  0.020315285  -0.059522146  -0.041085901  0.005558407  -0.002572580  0.002458855  0.002786805

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1269171

$`Microbial respiration `\$Pk381
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 59.65819

Coefficients:
a.(Intercept)      a.funcgr       a.grass         a.leg c.(Intercept)
  -0.739079566   0.010267306  -0.060114104  -0.024745301   0.064888986
  c.funcgr       c.grass         c.leg
  -0.012111040   0.008998353  -0.001699999

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1230517

$`Microbial respiration `\$Pk391
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 59.87273

Coefficients:
b.(Intercept)      b.funcgr       b.grass         b.leg c.(Intercept)
  0.307835649   0.012448046  -0.068152295  -0.043520614  -0.003802831
  c.funcgr       c.grass         c.leg
  -0.042168816   0.133055621   0.087844469

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1227302

$`Microbial respiration `\$Pk401
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -49.67979

Coefficients:
c.(Intercept)      c.funcgr       c.grass         c.leg
  -0.5905758     0.2043269    -0.5122727    -0.3026938

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.454716

$`Microbial respiration `\$Pm1221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 56.41545

Coefficients:
a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.319843333  -0.100962367  -0.008821005   0.011419565
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.1853397
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.09469647

$`Microbial respiration `\$Pm1231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 54.75623

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.347353158  -0.104791454  -0.007946616   0.009227673

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.003772452
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1314269

$`Microbial respiration `\$Pm1321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 61.70902

Coefficients:
  a.(Intercept)       a.grass c.(Intercept)       c.grass
  -0.76962867  -0.06231396    0.01959712    0.02655313

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.2179149
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.08458529

$`Microbial respiration `\$Pm1331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 58.96118
Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & : -0.740138577 \\
\text{a.grass} & : -0.072857030 \\
\text{c. (Intercept)} & : 0.007372384 \\
\text{c.grass} & : 0.028545543
\end{align*}
\]

Variance function:
\[
\text{Structure: Exponential of variance covariate} \\
\text{Formula: } \sim \text{sowndiv} \\
\text{Parameter estimates:} \\
\text{expon} & : -0.0001538966
\]
\begin{itemize}
\item Degrees of freedom: 82 total; 78 residual
\item Residual standard error: 0.121038
\end{itemize}

"Microbial respiration" $Pm1421$

Generalized nonlinear least squares fit
\[
\text{Model: } \text{response} \sim b \times \text{sowndiv}^c
\]
\[
\text{Data: } \text{DF} \\
\text{Log-likelihood: } 60.5516
\]

Coefficients:
\[
\begin{align*}
\text{b. (Intercept)} & : 0.242673999 \\
\text{b.grass} & : -0.062243699 \\
\text{c. (Intercept)} & : -0.009749694 \\
\text{c.grass} & : 0.190977629
\end{align*}
\]

Variance function:
\[
\text{Structure: Power of variance covariate} \\
\text{Formula: } \sim \text{sowndiv} \\
\text{Parameter estimates:} \\
\text{power} & : 0.2075967
\]
\begin{itemize}
\item Degrees of freedom: 82 total; 78 residual
\item Residual standard error: 0.0871119
\end{itemize}

"Microbial respiration" $Pm1431$

Generalized nonlinear least squares fit
\[
\text{Model: } \text{response} \sim b \times \text{sowndiv}^c
\]
\[
\text{Data: } \text{DF} \\
\text{Log-likelihood: } 58.11922
\]

Coefficients:
\[
\begin{align*}
\text{b. (Intercept)} & : 0.26924398 \\
\text{b.grass} & : -0.07021826 \\
\text{c. (Intercept)} & : -0.04939153 \\
\text{c.grass} & : 0.18143481
\end{align*}
\]

Variance function:
\[
\text{Structure: Exponential of variance covariate} \\
\text{Formula: } \sim \text{sowndiv} \\
\text{Parameter estimates:} \\
\text{expon} & : -0.0009405838
\]
\begin{itemize}
\item Degrees of freedom: 82 total; 78 residual
\item Residual standard error: 0.1231159
\end{itemize}

"Microbial respiration" $Pm1521$

Generalized nonlinear least squares fit
\[
\text{Model: } \text{response} \sim \text{sowndiv}^c
\]
Data: DF
Log-likelihood: -24.07944

Coefficients:
c.(Intercept)    c.grass
-0.08600842   -0.31991853

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.5649148
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7601208

$`Microbial respiration `$Pm1531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -42.13794

Coefficients:
c.(Intercept)    c.grass
0.7793182    -1.1156663

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03692335
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.562303

$`Microbial respiration `$Pn1721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 54.63644

Coefficients:
a.(Intercept)  a.leg b.(Intercept)  b.leg
0.280537101  -0.072429139  -0.007868985   0.010407504

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1231054
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1061405
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 54.19172

Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
  0.31588282   -0.08555073   -0.00883490    0.01018897

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.006383408

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1353347

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 60.32068

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.85143636   -0.01308069    0.04531228    0.01137661

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.205258

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.08766138

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 58.01642

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.80081191   -0.03556859    0.02067441    0.02100772

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.0009696893
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1233012

$\text{Microbial respiration}\$ \text{Pn1921}
Generalized nonlinear least squares fit
Model: response \sim b \ast \text{sowndiv}^c
Data: DF
Log-likelihood: 58.99839

Coefficients:
b.(Intercept) b.leg c.(Intercept) c.leg
0.18494488 -0.02620548 0.10868457 0.11169913

Variance function:
Structure: Power of variance covariate
Formula: \sim\text{sowndiv}
Parameter estimates:
  power
0.1821684

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.09219311

$\text{Microbial respiration}\$ \text{Pn1931}
Generalized nonlinear least squares fit
Model: response \sim b \ast \text{sowndiv}^c
Data: DF
Log-likelihood: 57.25404

Coefficients:
b.(Intercept) b.leg c.(Intercept) c.leg
0.2272008733 -0.04437872 -0.0003636652 0.1515924029

Variance function:
Structure: Exponential of variance covariate
Formula: \sim\text{sowndiv}
Parameter estimates:
  expon
-0.002580117

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1261855

$\text{Microbial respiration}\$ \text{Pn2021}
Generalized nonlinear least squares fit
Model: response \sim \text{sowndiv}^c
Data: DF
Log-likelihood: -25.63431

Coefficients:
c.(Intercept) c.leg
-0.1866333 -0.2331165

Variance function:
Structure: Power of variance covariate
Formula: \sim\text{sowndiv}
Parameter estimates:
  power
-0.5465825
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7538726

$`Microbial respiration `$Pn2031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -43.37593
Coefficients:
c.(Intercept) c.leg
  0.4677713 -0.8064268

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.03659326
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5692412

$`Microbial respiration `$Pp2221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 58.03278
Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr b.leg
  0.070815185 0.0474705905 0.0019834618 0.0199335013 -0.0047426105
  -0.0002017624

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.1743157
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.09561281

$`Microbial respiration `$Pp2231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 56.56855
Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr

0.114925412  0.042793434  -0.012161428  0.010734461  -0.003175198
b.leg
0.002371022

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.005045164
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1316654

$`Microbial respiration `$Pp2321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 61.10396

Coefficients:
a.(Intercept)  a.funcgr  a.leg  c.(Intercept)  c.funcgr
-0.928187423  0.028518424  0.009537289  0.101834887  -0.015538869
c.leg
-0.007757288

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.1976249
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08896553

$`Microbial respiration `$Pp2331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 58.90488

Coefficients:
a.(Intercept)  a.funcgr  a.leg  c.(Intercept)  c.funcgr
-0.915255648  0.033801819  0.009537289  0.082228418  -0.015538869
c.leg
-0.001258016

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.003014016
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1257548
Generalized nonlinear least squares fit

Model: response ~ b * sowndiv^c

Data: DF
Log-likelihood: 60.5878

Coefficients:

<table>
<thead>
<tr>
<th>b</th>
<th>b.funcgr</th>
<th>b.leg</th>
<th>c</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.074587969</td>
<td>0.035768211</td>
<td>0.007533121</td>
<td>0.527114993</td>
<td>-0.102692959</td>
<td>-0.036980297</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.1811066

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.0917499

Generalized nonlinear least squares fit

Model: response ~ b * sowndiv^c

Data: DF
Log-likelihood: 58.83594

Coefficients:

<table>
<thead>
<tr>
<th>b</th>
<th>b.funcgr</th>
<th>b.leg</th>
<th>c</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.094088937</td>
<td>0.038539424</td>
<td>-0.003010614</td>
<td>0.387361076</td>
<td>-0.087668822</td>
<td>0.012810419</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.004152684

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.127097

Generalized nonlinear least squares fit

Model: response ~ sowndiv^c

Data: DF
Log-likelihood: -20.30973

Coefficients:

<table>
<thead>
<tr>
<th>c</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1.03978087</td>
<td>0.15557072</td>
<td>0.06967505</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
    power
-0.606964
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7776061

$`Microbial respiration `$Pp2531
Generalized nonlinear least squares fit
    Model: response ~ sowndiv^c
    Data: DF
    Log-likelihood: -37.71677

Coefficients:
c.(Intercept)      c.funcgr         c.leg
-1.81120608    0.35568831    0.07512042

Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        expon
-0.03731561
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.5379584

$`Microbial respiration `$Pq2721
Generalized nonlinear least squares fit
    Model: response ~ a + b * sowndiv
    Data: DF
    Log-likelihood: 58.82828

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
0.166482251   0.035471373  -0.046446667   0.014630398  -0.004110641
    b.grass
0.002599940

Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        power
0.1918163
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.09226127

$`Microbial respiration `$Pq2731
Generalized nonlinear least squares fit
    Model: response ~ a + b * sowndiv
    Data: DF
    Log-likelihood: 56.97049
Coefficients:
\[
\begin{align*}
\text{(Intercept)} & \quad \text{funcgr} & \quad \text{grass} & \quad \text{(Intercept)} & \quad \text{fun}
\end{align*}
\]
\[
\begin{align*}
0.1616475376 & \quad 0.0368918998 & \quad -0.0356052719 & \quad 0.0141863850 & \quad -0.0036133149 \\
0.0006833155
\end{align*}
\]

Variance function:
\begin{align*}
\text{Structure: Exponential of variance covariate} \\
\text{Formula: ~sowndiv} \\
\text{Parameter estimates:} \\
\text{expon} \\
-0.00444112
\end{align*}

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1303439

`Microbial respiration `$Pq2821
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 62.03227

Coefficients:
\[
\begin{align*}
\text{(Intercept)} & \quad \text{funcgr} & \quad \text{grass} & \quad \text{(Intercept)} & \quad \text{fun}
\end{align*}
\]
\[
\begin{align*}
-0.807336163 & \quad 0.012813452 & \quad -0.050642093 & \quad 0.058909235 & \quad -0.009908292 \\
0.013607161
\end{align*}
\]

Variance function:
\begin{align*}
\text{Structure: Power of variance covariate} \\
\text{Formula: ~sowndiv} \\
\text{Parameter estimates:} \\
\text{power} \\
0.2137288
\end{align*}

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08588598

`Microbial respiration `$Pq2831
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 59.46815

Coefficients:
\[
\begin{align*}
\text{(Intercept)} & \quad \text{funcgr} & \quad \text{grass} & \quad \text{(Intercept)} & \quad \text{fun}
\end{align*}
\]
\[
\begin{align*}
-0.81616971 & \quad 0.02117528 & \quad -0.04682785 & \quad 0.05830373 & \quad -0.01173808 \\
0.01040527
\end{align*}
\]

Variance function:
\begin{align*}
\text{Structure: Exponential of variance covariate} \\
\text{Formula: ~sowndiv} \\
\text{Parameter estimates:} \\
\text{expon} \\
-0.002575074
\end{align*}
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1244242

$`Microbial respiration `\$Pq2921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 61.647

Coefficients:
  b.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
  0.17905495    0.02514584   -0.04705315    0.25827849   -0.07483087
  c.grass
  0.10662831

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1963893
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08854057

$`Microbial respiration `\$Pq2931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 59.52951

Coefficients:
  b.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
  0.17081032    0.03078489   -0.04322450    0.26647780   -0.07579589
  c.grass
  0.07844493

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.003563513
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1253907

$`Microbial respiration `\$Pq3021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -20.25239

Coefficients:
  c.(Intercept)      c.funcgr       c.grass
  -0.72432002    0.11605744   -0.08807366
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.6066679
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.776721

$\text{Microbial respiration}$ $Pq3031$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -37.69283

Coefficients:
  c.(Intercept)   c.funcgr   c.grass
  -1.3604017     0.2995533   -0.1512191

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03732085
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.5378255

$\text{Microbial respiration}$ $Pr3221$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 58.5069

Coefficients:
  a.(Intercept)   a.grass   a.leg b.(Intercept)   b.grass
  0.410330435   -0.095560108 -0.065425192  -0.015164510   0.008849700
  b.leg
  0.007609817

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1759106
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.09483677

$\text{Microbial respiration}$ $Pr3231$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
Log-likelihood: 56.99763

Coefficients:
\[
a.(\text{Intercept}) & \quad a.\text{grass} & \quad a.\text{leg} & \quad b.(\text{Intercept}) & \quad b.\text{grass} \\
0.432794042 & -0.090157175 & -0.075861050 & -0.013286944 & 0.006284303 \\
b.\text{leg} & \quad 0.007589753
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.004759752
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1306577

$\text{Microbial respiration}$ Pr3321
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 61.95734

Coefficients:
\[
a.(\text{Intercept}) & \quad a.\text{grass} & \quad a.\text{leg} & \quad c.(\text{Intercept}) & \quad c.\text{grass} \\
-0.718090234 & -0.067180237 & -0.025961373 & -0.001113989 & 0.026871466 \\
c.\text{leg} & \quad 0.012259491
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.2124785
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08612421

$\text{Microbial respiration}$ Pr3331
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 59.42284

Coefficients:
\[
a.(\text{Intercept}) & \quad a.\text{grass} & \quad a.\text{leg} & \quad c.(\text{Intercept}) & \quad c.\text{grass} \\
-0.66568108 & -0.07555059 & -0.04323089 & -0.02111459 & 0.02687587 \\
c.\text{leg} & \quad 0.01966653
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 61.70068

Coefficients:
  b.(Intercept)       b.grass         b.leg c.(Intercept)       c.grass
  0.33678999   -0.07513304   -0.04602501   -0.23474192    0.20305310
  c.leg
  0.13589119

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1876357

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.08964001

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 59.8464

Coefficients:
  b.(Intercept)       b.grass         b.leg c.(Intercept)       c.grass
  0.3877102    -0.0839343    -0.0645233    -0.3017943     0.1920325
  c.leg
  0.1692223

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.003789002

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1251491

Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -21.78842

Coefficients:
### Microbial respiration \( \text{Pr3531} \)
Generalized nonlinear least squares fit
- **Model:** response ~ sowndiv^c
- **Data:** DF
- **Log-likelihood:** -38.99911

**Coefficients:**
- c.(Intercept) = 0.0983735
- c.grass = -0.2799979
- c.leg = -0.1852750

**Variance function:**
- **Structure:** Power of variance covariate
- **Formula:** ~sowndiv

**Parameter estimates:**
- power = -0.5901747

**Degrees of freedom:** 82 total; 79 residual
**Residual standard error:** 0.772265

### Microbial respiration \( \text{Ps3721} \)
Generalized nonlinear least squares fit
- **Model:** response ~ a + b * sowndiv
- **Data:** DF
- **Log-likelihood:** 59.09674

**Coefficients:**
- a.(Intercept) = 0.9702269
- a.funcgr = 0.0252074
- a.grass = -0.0602873
- a.leg = -0.0272289
- b.(Intercept) = 0.0140241
- b.funcgr = -0.0040424
- b.grass = 0.0025727
- b.leg = 0.0003609

**Variance function:**
- **Structure:** Exponential of variance covariate
- **Formula:** ~sowndiv

**Parameter estimates:**
- expon = -0.0371230

**Degrees of freedom:** 82 total; 79 residual
**Residual standard error:** 0.5455346

### Microbial respiration \( \text{Ps3731} \)
Generalized nonlinear least squares fit
- **Model:** response ~ sowndiv
- **Data:** DF
- **Log-likelihood:** -38.99911

**Coefficients:**
- a.(Intercept) = 0.2485291
- a.funcgr = 0.0252074
- a.grass = -0.0602873
- a.leg = -0.0272289
- b.(Intercept) = 0.0140241
- b.funcgr = -0.0040424
- b.grass = 0.0025727
- b.leg = 0.0003609

**Variance function:**
- **Structure:** Power of variance covariate
- **Formula:** ~sowndiv

**Parameter estimates:**
- power = 0.1918945

**Degrees of freedom:** 82 total; 74 residual
**Residual standard error:** 0.0931833

### Microbial respiration \( \text{Ps3731} \)
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 57.26071

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
  0.294408348  0.020307259 -0.058853259 -0.043091603  0.004373144
  b.funcgr  b.grass  b.leg
  -0.002381111  0.002357349  0.003209017

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.004471175
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1316608

Microbial respiration $Ps3821$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 62.34296

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  a.leg  c.(Intercept)
  -0.758568128  0.006731880 -0.058804171 -0.016349344  0.093648241
  c.funcgr  c.grass  c.leg
  -0.014345080  0.006681259 -0.010132262

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.2164253
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.08636329

Microbial respiration $Ps3831$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 59.69163

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  a.leg  c.(Intercept)
  -0.7392124007  0.0113955394 -0.0598669176 -0.0254448894  0.0633574748
  c.funcgr  c.grass  c.leg
  -0.0123546021  0.0089282053 -0.0008692602

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.002270894

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1254232

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 62.01715

Coefficients:
b.(Intercept)    b.funcgr    b.grass    b.leg    c.(Intercept)
  0.25868127     0.01469318  -0.06080888  -0.02590398    0.19920389
c.funcgr    c.grass    c.leg
  -0.06727244    0.11605615    0.02217935

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
  0.1955927

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.08943067

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 59.96754

Coefficients:
b.(Intercept)    b.funcgr    b.grass    b.leg    c.(Intercept)
  0.31237116     0.01264660  -0.06868913  -0.04559151   -0.02516167
c.funcgr    c.grass    c.leg
  -0.03997350    0.13319821    0.09620737

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.003655054

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1264962

Microbial respiration

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -20.2245
Coefficients:
c. (Intercept)  c.funcgr  c.grass  c.leg
-0.83751052  0.13043483 -0.06879915  0.03668404

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.6077387
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.7826615

$`Microbial respiration $Ps4031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -37.69144

Coefficients:
c. (Intercept)  c.funcgr  c.grass  c.leg
-1.43726132  0.30919124 -0.13860272  0.02570969

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.03732847
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.5412884

$`Microbial respiration $AS1
Nonlinear regression model
  model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data:  DF
  Asym        R0       lrc
  0.291486  0.003924 -0.769550
  residual sum-of-squares: 1.111
  Number of iterations to convergence: 2
  Achieved convergence tolerance: 8.271e-06

$`Microbial respiration $AS2
Nonlinear regression model
  model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data:  DF
  Asym      lrc       c0
  0.29149 -0.76955 -0.02926
  residual sum-of-squares: 1.111
  Number of iterations to convergence: 2
  Achieved convergence tolerance: 8.271e-06
Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym    lrc
0.2911 -0.7495
residual sum-of-squares: 1.111
Number of iterations to convergence: 2
Achieved convergence tolerance: 1.962e-06

Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym   xmid   scal
0.2894 1.4920 1.4317
residual sum-of-squares: 1.12
Number of iterations to convergence: 5
Achieved convergence tolerance: 8.227e-06

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)
Coefficients:
(Intercept) blockB2 blockB3 blockB4
sowndiv -0.3072817 -0.0746838 -0.1098295 -0.1301468 -0.0012881
0.0012881
funcgr grass leg sowndiv:funcgr
sowndiv:grass
0.1023091 0.1380578 0.3071122 -0.0008684
0.0082285
sowndiv:leg funcgr:grass funcgr:leg grass:leg
-0.0035285 0.0250139 -0.0582777 -0.1099047

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:
(Intercept) sowndiv funcgr leg
0.1648771 0.0003210 0.0232660 -0.0279574
Nonlinear regression model
  model: response ~ a * sowndiv/(b + sowndiv)
  data: DF
    a   b
  0.2393 1.2810
  residual sum-of-squares: 1.615
Number of iterations to convergence: 6
Achieved convergence tolerance: 2.831e-06

$`Saprophagous macrofauna abundance`$M1a
Nonlinear regression model
  model: response ~ SSmicmen(sowndiv, Vm, k)
  data: DF
    Vm  k
  0.2393 1.2810
  residual sum-of-squares: 1.615
Number of iterations to convergence: 5
Achieved convergence tolerance: 3.082e-06

$`Saprophagous macrofauna abundance`$M2
Nonlinear regression model
  model: response ~ d + a * sowndiv/(b + sowndiv)
  data: DF
    a   b   d
  0.18070 4.70228 0.08737
  residual sum-of-squares: 1.605
Number of iterations to convergence: 14
Achieved convergence tolerance: 5.486e-06

$`Saprophagous macrofauna abundance`$E2
Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data: DF
    a   b
  1.747e-01 1.017e-28
  residual sum-of-squares: 1.744
Number of iterations to convergence: 4
Achieved convergence tolerance: 4.471e-09

$`Saprophagous macrofauna abundance`$E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data: DF
    a
  1
  residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 6.25e-20
Saprophagous macrofauna abundance

Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
b
1.631e-27
residual sum-of-squares: 4.063

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.273e-08

Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
a  b
0.160034 0.001741
residual sum-of-squares: 1.705

Number of iterations to convergence: 1
Achieved convergence tolerance: 2.749e-09

Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
a  c
-0.87704 0.03342
residual sum-of-squares: 1.619

Number of iterations to convergence: 8
Achieved convergence tolerance: 2.842e-07

Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
b  c
0.1316 0.1787
residual sum-of-squares: 1.628

Number of iterations to convergence: 8
Achieved convergence tolerance: 6.81e-06

Nonlinear regression model
model: response ~ sowndiv^c
data: DF
c
-2.084
residual sum-of-squares: 15.08

Number of iterations to convergence: 21
Achieved convergence tolerance: 8.678e-06
$\text{Saprophagous macrofauna abundance}$

Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym xmid scal
0.2545 1.2717 5.2241
residual sum-of-squares: 1.589
Number of iterations to convergence: 11
Achieved convergence tolerance: 4.895e-06

$\text{Saprophagous macrofauna species richness}$

Call:
`lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)`

Coefficients:
```
(Intercept)         blockB2         blockB3         blockB4
sowndiv             0.46563        -0.09351        -0.15181        -0.17229
0.11004
funcgr             -0.15994         0.04545        -0.14398        -0.01321
grass             -0.03125         0.05120         0.11829         0.02618
-0.01792
sowndiv:funcgr     -0.15994         0.04545        -0.14398        -0.01321
sowndiv:grass      -0.15994         0.04545        -0.14398        -0.01321
sowndiv:leg        -0.15994         0.04545        -0.14398        -0.01321
```

$\text{Saprophagous macrofauna species richness}$

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
```
(Intercept)      sowndiv       funcgr          leg
0.681633     0.007353    -0.045287    -0.111485
```

$\text{Saprophagous macrofauna species richness}$

Nonlinear regression model
model: response ~ a * sowndiv/(b + sowndiv)
data: DF
a b
0.5595 0.4718
residual sum-of-squares: 4.651
Number of iterations to convergence: 4
Achieved convergence tolerance: 8.636e-06
**Nonlinear regression model**

- **M1a**
  - Model: $\text{response} \sim \text{SSmicmen}(\text{sowndiv}, \text{Vm}, \text{k})$
  - Data: DF
  - \text{Vm} 0.5595
  - \text{k} 0.4718
  - Residual sum-of-squares: 4.651
  - Number of iterations to convergence: 3
  - Achieved convergence tolerance: 5.575e-06

- **M2**
  - Model: $\text{response} \sim \text{d} + \text{a} \times \frac{\text{sowndiv}}{(\text{b} + \text{sowndiv})}$
  - Data: DF
  - \text{a} 2.9231
  - \text{b} 388.3379
  - \text{d} 0.4228
  - Residual sum-of-squares: 4.349
  - Number of iterations to convergence: 9
  - Achieved convergence tolerance: 2.902e-07

- **E2**
  - Model: $\text{response} \sim \text{a} + \text{b} \times \exp(\text{sowndiv})$
  - Data: DF
  - \text{a} 4.671e-01
  - \text{b} 3.024e-27
  - Residual sum-of-squares: 4.465
  - Number of iterations to convergence: 4
  - Achieved convergence tolerance: 2.2e-08

- **E4**
  - Model: $\text{response} \sim \text{a} + \exp(\text{sowndiv})$
  - Data: DF
  - \text{a} 1
  - Residual sum-of-squares: 5.217e+52
  - Number of iterations to convergence: 0
  - Achieved convergence tolerance: 6.25e-20

- **E5**
  - Model: $\text{response} \sim \text{b} \times \exp(\text{sowndiv})$
  - Data: DF
  - \text{b} 7.115e-27
  - Residual sum-of-squares: 21.05
  - Number of iterations to convergence: 4
  - Achieved convergence tolerance: 2.535e-09
Nonlinear regression model
model:  response ~ a + b * sowndiv^c
data:  DF
  a    b    c
0.418704 0.009942 0.898775
residual sum-of-squares: 4.348

Number of iterations to convergence: 5
Achieved convergence tolerance: 4.798e-06

Nonlinear regression model
model:  response ~ a + b * sowndiv
data:  DF
  a    b
0.427089 0.006556
residual sum-of-squares: 4.35

Number of iterations to convergence: 1
Achieved convergence tolerance: 5.935e-10

Nonlinear regression model
model:  response ~ a + sowndiv^c
data:  DF
  a    c
-0.6138  0.0607
residual sum-of-squares: 4.48

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.294e-06

Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
  b    c
0.3862 0.1415
residual sum-of-squares: 4.459

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.413e-06

Nonlinear regression model
model:  response ~ sowndiv^c
data:  DF
  c
-0.3557
residual sum-of-squares: 13.42

Number of iterations to convergence: 12
Achieved convergence tolerance: 8.16e-06

$`Saprophagous macrofauna species richness`$AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
    Asym  R0   lrc
    1.9580 0.4228 -5.3183
    residual sum-of-squares: 4.349

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.981e-07

$`Saprophagous macrofauna species richness`$AS2
Nonlinear regression model
  model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data: DF
    Asym   lrc  c0
    1.958 -5.318 -49.630
    residual sum-of-squares: 4.349

Number of iterations to convergence: 7
Achieved convergence tolerance: 6.376e-08

$`Saprophagous macrofauna species richness`$AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
  data: DF
    Asym   lrc
    0.5170 0.2968
    residual sum-of-squares: 4.716

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.055e-06

$`Saprophagous macrofauna species richness`$LG2
Nonlinear regression model
  model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data: DF
    Asym  xmid   scal
    1.016 11.673 34.726
    residual sum-of-squares: 4.348

Number of iterations to convergence: 2
Achieved convergence tolerance: 7.056e-06

$`Saprophagous mesofauna abundance`
$`Saprophagous mesofauna abundance`$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
     data = DF)
Coefficients:
\[
\begin{array}{cccc}
(Intercept) & \text{blockB2} & \text{blockB3} & \text{blockB4} \\
\text{sowndiv} & 1.341015 & 0.039409 & -0.004169 & -0.003262 \\
& & & & -0.059874 \\
\text{funcgr} & -0.314140 & -0.597975 & -0.418526 & 0.009234 \\
\text{grass} & & 0.015003 \\
\text{leg} & & & & \\
\text{sowndiv:funcgr} & & & & \\
\text{sowndiv:grass} & & & & \\
& & & & \\
\text{sowndiv:leg} & 0.010432 & 0.154441 & 0.046500 & 0.172970 \\
\text{funcgr:grass} & & & & \\
\text{funcgr:leg} & & & & \\
\text{grass:leg} & & & & \\
\end{array}
\]

\$\text{Saprophagous mesofauna abundance}$\$L2$

Call:
\[\text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}\]

Coefficients:
\[
\begin{array}{ccccc}
(Intercept) & \text{sowndiv} & \text{funcgr} & \text{leg} \\
0.186943 & 0.001177 & -0.011622 & -0.037172 \\
\end{array}
\]

\$\text{Saprophagous mesofauna abundance}$\$M1$

Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{a} \times \text{sowndiv}/(\text{b} + \text{sowndiv})
\]
\[
\text{data: } \text{DF}
\]
\[
\text{a} \quad \text{b} \quad \text{c}
\]
0.09657 -0.39941

residual sum-of-squares: 1.869

Number of iterations to convergence: 6
Achieved convergence tolerance: 7.25e-06

\$\text{Saprophagous mesofauna abundance}$\$M1a$

Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{SSmicmen(sowndiv, Vm, k)}
\]
\[
\text{data: } \text{DF}
\]
\[
\text{Vm} \quad \text{k}
\]
0.09656 -0.39942

residual sum-of-squares: 1.869

Number of iterations to convergence: 6
Achieved convergence tolerance: 2.423e-06

\$\text{Saprophagous mesofauna abundance}$\$M2$

Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{d} + \text{a} \times \text{sowndiv}/(\text{b} + \text{sowndiv})
\]
\[
\text{data: } \text{DF}
\]
\[
\text{a} \quad \text{b} \quad \text{d}
\]
0.03643 -34.55860 0.12232

residual sum-of-squares: 1.857

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.384e-06

$\text{Saprophagous mesofauna abundance}$ E2
Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data: DF
  a  b
  1.127e-01  8.263e-28
  residual sum-of-squares: 1.867

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.483e-08

$\text{Saprophagous mesofauna abundance}$ E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data: DF
  a
  1
  residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.25e-20

$\text{Saprophagous mesofauna abundance}$ E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
  b
  1.813e-27
  residual sum-of-squares: 2.831

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.072e-08

$\text{Saprophagous mesofauna abundance}$ Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
  a  b
  0.107998  0.001074
  residual sum-of-squares: 1.885

Number of iterations to convergence: 1
Achieved convergence tolerance: 4.15e-09

$\text{Saprophagous mesofauna abundance}$ Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
  a  c
  -0.877629 -0.003329
  residual sum-of-squares: 1.899
Number of iterations to convergence: 9
Achieved convergence tolerance: 7.765e-07

\$`Saprophagous mesofauna abundance`\$Pa4
Nonlinear regression model
  model:  response ~ b * sowndiv^c
data:  DF
  b        c
  0.12427  -0.03869
residual sum-of-squares: 1.899

Number of iterations to convergence: 11
Achieved convergence tolerance: 5.355e-06

\$`Saprophagous mesofauna abundance`\$Pa5
Nonlinear regression model
  model:  response ~ sowndiv^c
data:  DF
c
-3.338
residual sum-of-squares: 12.70

Number of iterations to convergence: 16
Achieved convergence tolerance: 5.94e-06

\$`Saprophagous mesofauna species richness`\$L0
\$`Saprophagous mesofauna species richness`\$L2

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
  (Intercept)         blockB2         blockB3         blockB4
sowndiv
  -0.918696         0.084647         -0.089643         -0.111853
  0.018711
    funcgr           grass             leg  sowndiv:funcgr
sowndiv:grass
  0.251719         0.753861         0.636052         0.004837
  0.002650
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
  0.003633       -0.099412       -0.066297       -0.316524

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
  (Intercept)         sowndiv         funcgr         leg
  0.5041918         0.0004479         0.0003795        -0.0311977

SUPPLEMENTARY INFORMATION
RESEARCH
doi:10.1038/nature09492
Nonlinear regression model
  model: response ~ a * sowndiv/(b + sowndiv)
  data: DF
  a      b
  0.4360 -0.1470
residual sum-of-squares: 5.612

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.894e-07

Nonlinear regression model
  model: response ~ SSicmen(sowndiv, Vm, k)
  data: DF
    Vm    k
  0.4360 -0.1470
residual sum-of-squares: 5.612

Number of iterations to convergence: 2
Achieved convergence tolerance: 5.377e-06

Nonlinear regression model
  model: response ~ d + a * sowndiv/(b + sowndiv)
  data: DF
    a      b      d
  -0.8202 0.1030 1.2533
residual sum-of-squares: 5.612

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.66e-07

Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data: DF
    a      b
  4.561e-01 1.114e-27
residual sum-of-squares: 5.604

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.132e-09

Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data: DF
    a
  1
residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 6.25e-20

$`Saprophagous mesofauna species richness`$E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
  b
5.108e-27
  residual sum-of-squares: 21.42

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.146e-08

$`Saprophagous mesofauna species richness`$Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
  a         b
0.4551992 0.0008356
  residual sum-of-squares: 5.656

Number of iterations to convergence: 1
Achieved convergence tolerance: 7.193e-09

$`Saprophagous mesofauna species richness`$Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
  a        c
-0.51338 -0.01634
  residual sum-of-squares: 5.641

Number of iterations to convergence: 9
Achieved convergence tolerance: 8.892e-07

$`Saprophagous mesofauna species richness`$Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
  b        c
0.48795   -0.03618
  residual sum-of-squares: 5.64

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.076e-06

$`Saprophagous mesofauna species richness`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
  c
-0.4514
  residual sum-of-squares: 11.13
Number of iterations to convergence: 12
Achieved convergence tolerance: 4.126e-06

`Herbivorous macrofauna abundance`
$L_0$

Call:
\[
\text{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)}
\]

Coefficients:

(Intercept)         blockB2         blockB3         blockB4
sowndiv           0.61859         0.11238        -0.08339        -0.05245
0.09465
funcgr            grass            leg   sowndiv:funcgr
sowndiv:grass      -0.26974        -0.26221        -0.15178        -0.01104
0.01179
sowndiv:leg       funcgr:grass    funcgr:leg     grass:leg
-0.02717          0.13958          0.10263          0.04449

`Herbivorous macrofauna abundance`
$L_2$

Call:
\[
\text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}
\]

Coefficients:

(Intercept)      sowndiv       funcgr          leg
0.289741     0.004172    -0.005636    -0.042776

`Herbivorous macrofauna abundance`
$M_1$

Nonlinear regression model

model: response ~ a * sowndiv/(b + sowndiv)
data: DF
a    b
0.3109 0.7648
residual sum-of-squares: 3.4

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.112e-06

`Herbivorous macrofauna abundance`
$M_1a$

Nonlinear regression model

model: response ~ SSmicmen(sowndiv, Vm, k)
data: DF
Vm    k
0.3109 0.7648
residual sum-of-squares: 3.4
Number of iterations to convergence: 3
Achieved convergence tolerance: 8.72e-06

$`Herbivorous macrofauna abundance`$M2
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
  a        b        d
  4.3785  934.0906  0.2109
  residual sum-of-squares: 3.311

Number of iterations to convergence: 11
Achieved convergence tolerance: 4.341e-06

$`Herbivorous macrofauna abundance`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
  a         b
  2.389e-01  2.056e-27
  residual sum-of-squares: 3.36

Number of iterations to convergence: 4
Achieved convergence tolerance: 9.195e-10

$`Herbivorous macrofauna abundance`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
  a
  1
  residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.25e-20

$`Herbivorous macrofauna abundance`$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
  b
  4.148e-27
  residual sum-of-squares: 7.698

Number of iterations to convergence: 4
Achieved convergence tolerance: 7.254e-09

$`Herbivorous macrofauna abundance`$Pa1
Nonlinear regression model
  model:  response ~ a + b * sowndiv^c
  data:  DF
  a        b        c
  0.206534  0.006654  0.900217
  residual sum-of-squares: 3.311
<table>
<thead>
<tr>
<th>Model Description</th>
<th>Model Formula</th>
<th>Data</th>
<th>Parameters</th>
<th>Residual Sum-of-Squares</th>
<th>Convergence Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Herbivorous macrofauna abundance}_{\text{Pa2}}$</td>
<td>$\text{response} \sim a + b \times \text{sowndiv}$</td>
<td>DF</td>
<td>$a: 0.212078$, $b: 0.004415$</td>
<td>3.311</td>
<td>Number of iterations to convergence: 7, Achieved convergence tolerance: 6.458e-06</td>
</tr>
<tr>
<td>$\text{Herbivorous macrofauna abundance}_{\text{Pa3}}$</td>
<td>$\text{response} \sim a + \text{sowndiv}^c$</td>
<td>DF</td>
<td>$a: -0.81813$, $c: 0.04344$</td>
<td>3.354</td>
<td>Number of iterations to convergence: 8, Achieved convergence tolerance: 3.969e-10</td>
</tr>
<tr>
<td>$\text{Herbivorous macrofauna abundance}_{\text{Pa4}}$</td>
<td>$\text{response} \sim b \times \text{sowndiv}^c$</td>
<td>DF</td>
<td>$b: 0.1843$, $c: 0.1884$</td>
<td>3.343</td>
<td>Number of iterations to convergence: 7, Achieved convergence tolerance: 9.875e-07</td>
</tr>
<tr>
<td>$\text{Herbivorous macrofauna abundance}_{\text{Pa5}}$</td>
<td>$\text{response} \sim \text{sowndiv}^c$</td>
<td>DF</td>
<td>$c: -1.015$</td>
<td>16.57</td>
<td>Number of iterations to convergence: 17, Achieved convergence tolerance: 9.69e-06</td>
</tr>
<tr>
<td>$\text{Herbivorous macrofauna abundance}_{\text{AS1}}$</td>
<td>$\text{response} \sim \text{SSasymp(sowndiv, Asym, R0, lrc)}$</td>
<td>DF</td>
<td>$\text{Asym: 2.4220}$, $\text{R0: 0.2108}$, $\text{lrc: -6.1558}$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
residual sum-of-squares: 3.311

Number of iterations to convergence: 10
Achieved convergence tolerance: 3.86e-06

```
$`Herbivorous macrofauna abundance`$AS2
Nonlinear regression model
  model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data:  DF
      Asym     lrc      c0
   2.422  -6.156 -42.933
residual sum-of-squares: 3.311
Number of iterations to convergence: 27
Achieved convergence tolerance: 4.669e-07
```

```
$`Herbivorous macrofauna abundance`$AS3
Nonlinear regression model
  model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
  data:  DF
     Asym       lrc
  0.2797793 0.0003725
residual sum-of-squares: 3.397
Number of iterations to convergence: 7
Achieved convergence tolerance: 6.384e-06
```

```
$`Herbivorous macrofauna abundance`$LG2
Nonlinear regression model
  model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data:  DF
    Asym    xmid    scal
  0.6051 19.5021 31.2907
residual sum-of-squares: 3.311
Number of iterations to convergence: 3
Achieved convergence tolerance: 1.205e-06
```

```
$`Herbivorous macrofauna species richness`$L0
$`Herbivorous macrofauna species richness`$L0
Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
     data = DF)
Coefficients:
(Intercept)          blockB2          blockB3          blockB4         sowndiv
          -0.47987          0.10763         -0.11919         -0.11541
            0.07662         -0.01191          0.11541         -0.11541
  funcgr         grass          leg  sowndiv:funcgr
```

SUPPLEMENTARY INFORMATION
RESEARCH
doi:10.1038/nature09492
$\text{Herbivorous macrofauna species richness}$\text{L2}

**Call:**

\[
\text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}
\]

**Coefficients:**

<table>
<thead>
<tr>
<th></th>
<th>(Intercept)</th>
<th>sowndiv</th>
<th>funcgr</th>
<th>leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>0.162776</td>
<td>0.003608</td>
<td>0.045569</td>
<td>0.051962</td>
</tr>
</tbody>
</table>

$\text{Herbivorous macrofauna species richness}$\text{M1}

Nonlinear regression model

- **model:** `response ~ a * sowndiv/(b + sowndiv)`
- **data:** `DF`
- **a:** 0.4841
- **b:** 1.0599
- **residual sum-of-squares:** 3.598

**Number of iterations to convergence:** 3

**Achieved convergence tolerance:** 7.27e-06

$\text{Herbivorous macrofauna species richness}$\text{M1a}

Nonlinear regression model

- **model:** `response ~ SSmicmen(sowndiv, Vm, k)`
- **data:** `DF`
- **Vm:** 0.4841
- **k:** 1.0599
- **residual sum-of-squares:** 3.598

**Number of iterations to convergence:** 3

**Achieved convergence tolerance:** 1.053e-06

$\text{Herbivorous macrofauna species richness}$\text{M2}

Nonlinear regression model

- **model:** `response ~ d + a * sowndiv/(b + sowndiv)`
- **data:** `DF`
- **a:** 0.45459
- **b:** 1.22556
- **d:** 0.03293
- **residual sum-of-squares:** 3.598

**Number of iterations to convergence:** 13

**Achieved convergence tolerance:** 6.964e-06

$\text{Herbivorous macrofauna species richness}$\text{E2}

Nonlinear regression model

- **model:** `response ~ a + b * exp(sowndiv)`
- **data:** `DF`
- **a:** 
- **b:**
- **residual sum-of-squares:**
3.571e-01 1.876e-27
residual sum-of-squares: 3.939
Number of iterations to convergence: 4
Achieved convergence tolerance: 4.219e-08

$`\text{Herbivorous macrofauna species richness}`$
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data:  DF
    a
 1
residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 6.25e-20

$`\text{Herbivorous macrofauna species richness}`$
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data:  DF
    b
5.004e-27
residual sum-of-squares: 13.63
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.260e-08

$`\text{Herbivorous macrofauna species richness}`$
Nonlinear regression model
model: response ~ a + b * sowndiv
data:  DF
    a  b
0.323094 0.005123
residual sum-of-squares: 3.766
Number of iterations to convergence: 1
Achieved convergence tolerance: 3.661e-09

$`\text{Herbivorous macrofauna species richness}`$
Nonlinear regression model
model: response ~ a + sowndiv^c
data:  DF
    a  c
-0.73738 0.06477
residual sum-of-squares: 3.586
Number of iterations to convergence: 7
Achieved convergence tolerance: 8.508e-06

$`\text{Herbivorous macrofauna species richness}`$
Nonlinear regression model
model: response ~ b * sowndiv^c
data:  DF
$\text{Herbivorous macrofauna species richness}^{\text{Pa5}}$
Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{sowndiv}^c \\
data: \text{DF} \\
c \quad -0.5415 \\
\text{residual sum-of-squares: } 16.19
\]
Number of iterations to convergence: 14
Achieved convergence tolerance: 8.433e-06

$\text{Herbivorous macrofauna species richness}^{\text{AS1}}$
Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{SSasymp(sowndiv, Asym, R0, lrc)} \\
data: \text{DF} \\
\begin{align*}
\text{Asym} & \quad 0.5322 \\
\text{R0} & \quad 0.2552 \\
\text{lrc} & \quad -2.3413
\end{align*}
\text{residual sum-of-squares: } 3.643
\]
Number of iterations to convergence: 20
Achieved convergence tolerance: 7.566e-06

$\text{Herbivorous macrofauna species richness}^{\text{AS2}}$
Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{SSasympOff(sowndiv, Asym, lrc, c0)} \\
data: \text{DF} \\
\begin{align*}
\text{Asym} & \quad 0.5322 \\
\text{lrc} & \quad -2.3413 \\
c0 & \quad -6.7866
\end{align*}
\text{residual sum-of-squares: } 3.643
\]
Number of iterations to convergence: 20
Achieved convergence tolerance: 7.581e-06

$\text{Herbivorous macrofauna species richness}^{\text{AS3}}$
Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{SSasympOrig(sowndiv, Asym, lrc)} \\
data: \text{DF} \\
\begin{align*}
\text{Asym} & \quad 0.4316 \\
\text{lrc} & \quad -0.3215
\end{align*}
\text{residual sum-of-squares: } 3.641
\]
Number of iterations to convergence: 5
Achieved convergence tolerance: 9.734e-07

$\text{Herbivorous macrofauna species richness}^{\text{LG2}}$
Nonlinear regression model
\[
\text{model: } \text{response} \sim \text{SSlogis(sowndiv, Asym, xmid, scal)}
\]
data:  DF
Asym xmid scal
0.5406 -0.4005 8.5349
residual sum-of-squares: 3.661

Number of iterations to convergence: 14
Achieved convergence tolerance: 6.172e-06

$`Predatory macrofauna abundance`$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
  data = DF)
Coefficients:
               (Intercept)         blockB2         blockB3         blockB4
sowndiv      -0.202176        0.053584       -0.119942       -0.128746
  0.017235
  funcgr          grass            leg  sowndiv:funcgr
  0.012339        0.111254        0.216122       -0.001862       -0.002489
sowndiv:grass
  0.004593        0.017909       -0.011525       -0.068991

$`Predatory macrofauna abundance`$L2

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:
               (Intercept)      sowndiv       funcgr          leg
  0.105210     0.002395    -0.008339     0.030135

$`Predatory macrofauna abundance`$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
   a   b
  0.1644  0.2051
residual sum-of-squares: 1.940

Number of iterations to convergence: 5
Achieved convergence tolerance: 4.989e-06

$`Predatory macrofauna abundance`$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
$\text{Vm} \quad k$
0.1644 0.2051
residual sum-of-squares: 1.940

Number of iterations to convergence: 3
Achieved convergence tolerance: 5.223e-07

$`\text{Predatory macrofauna abundance}`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
  a    b
1.483e-01 8.909e-28
residual sum-of-squares: 1.907

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.245e-08

$`\text{Predatory macrofauna abundance}`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
  a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.25e-20

$`\text{Predatory macrofauna abundance}`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
  b
2.189e-27
residual sum-of-squares: 3.578

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.364e-08

$`\text{Predatory macrofauna abundance}`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
  a    b
0.138950 0.001647
residual sum-of-squares: 1.911

Number of iterations to convergence: 1
Achieved convergence tolerance: 6.856e-15

$`\text{Predatory macrofauna abundance}`$Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data:  DF
   a    c
-0.86547 0.01232
residual sum-of-squares: 1.931

Number of iterations to convergence: 8
Achieved convergence tolerance: 2.042e-06

$`Predatory macrofauna abundance`$Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data:  DF
     b     c
  0.13359 0.08807
residual sum-of-squares: 1.930

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.052e-06

$`Predatory macrofauna abundance`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data:  DF
     c
  -2.094
residual sum-of-squares: 14.23

Number of iterations to convergence: 18
Achieved convergence tolerance: 3.997e-06

$`Predatory macrofauna abundance`$AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
  data:  DF
     Asym    lrc
  0.1585 0.6448
residual sum-of-squares: 1.939

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.688e-06

$`Predatory macrofauna species richness`$AS0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
      data = DF)
Coefficients:
                (Intercept) blockB2 blockB3 blockB4
sowndiv       1.625178 0.078577 -0.177474 -0.152123
             0.058597

```
funcgr          grass             leg  sowndiv:funcgr
sowndiv:grass          -0.384025       -0.641716       -0.372303       -0.008019       -0.005931
sowndiv:leg           funcgr:grass      funcgr:leg       grass:leg
                      -0.017018        0.167187        0.102339        0.164552
```

$`Predatory macrofauna species richness`$L2

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
```
(Intercept)      sowndiv       funcgr          leg
 0.400356     0.002948    -0.023652     0.027495
```

$`Predatory macrofauna species richness`$M1

Nonlinear regression model
```
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
  a      b
0.4393 0.1497
residual sum-of-squares: 3.881
```
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.244e-07

$`Predatory macrofauna species richness`$M1a

Nonlinear regression model
```
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
  Vm      k
0.4393 0.1497
residual sum-of-squares: 3.881
```
Number of iterations to convergence: 3
Achieved convergence tolerance: 6.163e-06

$`Predatory macrofauna species richness`$E2

Nonlinear regression model
```
model:  response ~ a + b * exp(sowndiv)
data:  DF
  a         b
4.127e-01 7.646e-28
residual sum-of-squares: 3.883
```
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.281e-08

$`Predatory macrofauna species richness`$E4

Nonlinear regression model
```
model:  response ~ a + exp(sowndiv)
```
data: DF
a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.25e-20

$`Predatory macrofauna species richness`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
4.378e-27
residual sum-of-squares: 16.83

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.998e-09

$`Predatory macrofauna species richness`$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
   a         b         c
0.4088279 0.0002075 1.4879992
residual sum-of-squares: 3.881

Number of iterations to convergence: 7
Achieved convergence tolerance: 6.256e-06

$`Predatory macrofauna species richness`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
   a        b
0.403806 0.001515
residual sum-of-squares: 3.882

Number of iterations to convergence: 1
Achieved convergence tolerance: 7.321e-09

$`Predatory macrofauna species richness`$Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
   a        c
-0.60703  0.01571
residual sum-of-squares: 3.886

Number of iterations to convergence: 7
Achieved convergence tolerance: 9.456e-06

$`Predatory macrofauna species richness`$Pa4
Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
   b   c
0.39325 0.03844
residual sum-of-squares: 3.886

Number of iterations to convergence: 6
Achieved convergence tolerance: 8.142e-06

`Predatory macrofauna species richness` Pa5
Nonlinear regression model
   model: response ~ sowndiv^c
data: DF
c
-0.4887
residual sum-of-squares: 12.06

Number of iterations to convergence: 12
Achieved convergence tolerance: 9.496e-06

`Predatory macrofauna species richness` AS3
Nonlinear regression model
   model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
   Asym    lrc
0.4305 0.6601
residual sum-of-squares: 3.868

Number of iterations to convergence: 2
Achieved convergence tolerance: 3.721e-06

`Amobae abundance`
`Amobae abundance` L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
  (Intercept)         blockB2         blockB3         blockB4
sowndiv          -0.54335        -0.01291         0.12950         0.31241        -0.11167
funcgr           0.10524         0.35813        -0.08285         0.01318         0.01856
grass             NA               NA             NA               NA
sowndiv:funcgr    0.05646        -0.07554              NA              NA
sowndiv:grass     0.05646        -0.07554              NA              NA
Call:
   lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
    (Intercept)  sowndiv  funcgr   leg
     -0.45379   0.02164   0.05197  0.25842

$`Amobae abundance`$E1
Nonlinear regression model
  model:  response ~ a + b * exp(c * sowndiv)
  data:  DF
      a   b    c
0.045121 0.004798 0.280140
 residual sum-of-squares: 0.4619
Number of iterations to convergence: 13
Achieved convergence tolerance: 3.528e-07

$`Amobae abundance`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
       a   b
 5.565e-02 4.657e-08
 residual sum-of-squares: 0.4621
Number of iterations to convergence: 2
Achieved convergence tolerance: 1.807e-10

$`Amobae abundance`$E3
Nonlinear regression model
  model:  response ~ a + exp(c * sowndiv)
  data:  DF
    a   c
-1.00409 0.02399
 residual sum-of-squares: 0.4714
Number of iterations to convergence: 20
Achieved convergence tolerance: 2.139e-07

$`Amobae abundance`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
      a
-2962056
 residual sum-of-squares: 2.106e+14
Number of iterations to convergence: 1
Achieved convergence tolerance: 1.027e-16

$`Amobae abundance`$E5
Nonlinear regression model
model:  response ~ b * exp(sowndiv)
  data:  DF
    b
5.283e-08
  residual sum-of-squares: 0.4869

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.657e-10

$`Amobae abundance`$E6
Nonlinear regression model
  model:  response ~ exp(c * sowndiv)
  data:  DF
    c
  -2.966
  residual sum-of-squares: 1.358

Number of iterations to convergence: 27
Achieved convergence tolerance: 6.662e-08

$`Amobae abundance`$Pa2
Nonlinear regression model
  model:  response ~ a + b * sowndiv
  data:  DF
    a    b
  -0.01401 0.02966
  residual sum-of-squares: 0.4754

Number of iterations to convergence: 1
Achieved convergence tolerance: 4.403e-09

$`Amobae abundance`$Pa3
Nonlinear regression model
  model:  response ~ a + sowndiv^c
  data:  DF
    a    c
  -1.0188 0.1310
  residual sum-of-squares: 0.5499

Number of iterations to convergence: 7
Achieved convergence tolerance: 6.142e-06

$`Amobae abundance`$Pa4
Nonlinear regression model
  model:  response ~ b * sowndiv^c
  data:  DF
    b    c
  0.01115 1.34820
  residual sum-of-squares: 0.4691

Number of iterations to convergence: 6
Achieved convergence tolerance: 2.942e-06

$`Amobae abundance`$Pa5
Nonlinear regression model
  model:  response ~ sowndiv^c
data:  DF
  c
-0.924
residual sum-of-squares: 4.866

Number of iterations to convergence: 23
Achieved convergence tolerance: 6.88e-06

$`Flagellate abundance`$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)

Coefficients:
  (Intercept)         blockB2         blockB3         blockB4
sowndiv         -5.15959        -1.31843        -0.80018         0.28485
  0.60133
funcgr           grass             leg  sowndiv:funcgr
sowndiv:grass    0.54256         1.44368         1.45352        -0.06533        -
  0.19331
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
-0.13968         0.32460              NA              NA

$`Flagellate abundance`$L2

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
  (Intercept)      sowndiv       funcgr          leg
-0.02244     -0.01529      0.11788      0.30827

$`Flagellate abundance`$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
  a       b
0.6124 0.1404
residual sum-of-squares: 1.205

Number of iterations to convergence: 5
Achieved convergence tolerance: 9.216e-06

$`Flagellate abundance`$M1a
Nonlinear regression model
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
Vm      k
0.6124  0.1404
residual sum-of-squares: 1.205

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.815e-07

$\text{Flagellate abundance}^E2$
Nonlinear regression model
model:  response ~ a + b * exp(sowndiv)
data:  DF
   a       b
5.972e-01 -6.307e-09
residual sum-of-squares: 1.209

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.860e-08

$\text{Flagellate abundance}^E3$
Nonlinear regression model
model:  response ~ a + exp(c * sowndiv)
data:  DF
   a       c
-0.407344 -0.002050
residual sum-of-squares: 1.215

Number of iterations to convergence: 20
Achieved convergence tolerance: 6.577e-06

$\text{Flagellate abundance}^E4$
Nonlinear regression model
model:  response ~ a + exp(sowndiv)
data:  DF
   a
-2962055
residual sum-of-squares: 2.106e+14

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.504e-16

$\text{Flagellate abundance}^E5$
Nonlinear regression model
model:  response ~ b * exp(sowndiv)
data:  DF
   b
 6.09e-08
residual sum-of-squares: 4.061

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.236e-10

$\text{Flagellate abundance}^E6$
Nonlinear regression model
model: response ~ exp(c * sowndiv)
data: DF
c -0.05427
residual sum-of-squares: 2.023

Number of iterations to convergence: 24
Achieved convergence tolerance: 5.472e-06

$`\text{Flagellate abundance}`$ Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
    a     b
0.592978 -0.002069
residual sum-of-squares: 1.215

Number of iterations to convergence: 1
Achieved convergence tolerance: 2.402e-15

$`\text{Flagellate abundance}`$ Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
    a     c
-0.433482 0.008553
residual sum-of-squares: 1.216

Number of iterations to convergence: 7
Achieved convergence tolerance: 3.397e-06

$`\text{Flagellate abundance}`$ Pa4
Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
    b     c
0.56695  0.01445
residual sum-of-squares: 1.216

Number of iterations to convergence: 7
Achieved convergence tolerance: 7.712e-06

$`\text{Flagellate abundance}`$ Pa5
Nonlinear regression model
model: response ~ sowndiv^c
data: DF
c -0.2399
residual sum-of-squares: 2.102

Number of iterations to convergence: 7
Achieved convergence tolerance: 7.101e-06
$`Bacterivorous nematode species richness`$
$`Bacterivorous nematode species richness`$

Call:
\[ \text{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)} \]

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>(Intercept)</th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>sowndiv</td>
<td>-0.318444</td>
<td>-0.087825</td>
<td>-0.158204</td>
<td>-0.045658</td>
</tr>
<tr>
<td>funcgr</td>
<td>0.034080</td>
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<td></td>
</tr>
<tr>
<td>grass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leg</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>sowndiv:funcgr</td>
<td>-0.310109</td>
<td>0.487349</td>
<td>0.486881</td>
<td>0.004117</td>
</tr>
<tr>
<td>sowndiv:grass</td>
<td>0.024294</td>
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</tr>
<tr>
<td>funcgr:grass</td>
<td></td>
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</tr>
<tr>
<td>funcgr:leg</td>
<td>-0.001638</td>
<td>-0.116599</td>
<td>-0.171749</td>
<td>-0.218221</td>
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<tr>
<td>grass:leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$`Bacterivorous nematode species richness`$

Call:
\[ \text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)} \]

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>(Intercept)</th>
<th>sowndiv</th>
<th>funcgr</th>
<th>leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.875937</td>
<td>0.006438</td>
<td>-0.070078</td>
<td>-0.202421</td>
<td></td>
</tr>
</tbody>
</table>

$`Bacterivorous nematode species richness`$

Nonlinear regression model
\[ \text{model: response ~ a * sowndiv/(b + sowndiv)} \]
\[ \text{data: DF} \]
\[ a = 0.5235 \]
\[ b = 0.2333 \]
Residual sum-of-squares: 4.994
Number of iterations to convergence: 6
Achieved convergence tolerance: 3.274e-06

$`Bacterivorous nematode species richness`$

Nonlinear regression model
\[ \text{model: response ~ SSmicmen(sowndiv, Vm, k)} \]
\[ \text{data: DF} \]
\[ Vm = 0.5235 \]
\[ k = 0.2333 \]
Residual sum-of-squares: 4.994
Number of iterations to convergence: 6
Achieved convergence tolerance: 2.365e-06
Nonlinear regression model
model: response ~ d + a * sowndiv/(b + sowndiv)
data: DF
   a   b   d
0.6767 66.3663 0.4186
residual sum-of-squares: 4.729
Number of iterations to convergence: 11
Achieved convergence tolerance: 9.064e-06

$`Bacterivorous nematode species richness`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
   a   b
4.734e-01 2.179e-27
residual sum-of-squares: 4.886
Number of iterations to convergence: 4
Achieved convergence tolerance: 3.104e-08

$`Bacterivorous nematode species richness`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
   a
1
residual sum-of-squares: 3.913e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 7.034e-20

$`Bacterivorous nematode species richness`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
6.324e-27
residual sum-of-squares: 20.35
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.36e-09

$`Bacterivorous nematode species richness`$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
   a   b   c
0.41674 0.01512 0.75580
residual sum-of-squares: 4.741
Number of iterations to convergence: 10
Achieved convergence tolerance: 4.539e-06
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
  a   b
0.437612 0.005515
residual sum-of-squares: 4.75

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.870e-09

Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
  a   c
-0.59152 0.04781
residual sum-of-squares: 4.838

Number of iterations to convergence: 8
Achieved convergence tolerance: 9.52e-06

Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
  b   c
0.4063 0.1115
residual sum-of-squares: 4.825

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.109e-06

Nonlinear regression model
model: response ~ sowndiv^c
data: DF
  c
-0.3686
residual sum-of-squares: 12.19

Number of iterations to convergence: 12
Achieved convergence tolerance: 6.692e-06

Nonlinear regression model
model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
  Asym   R0     lrc
0.8267 0.4175 -3.6850
residual sum-of-squares: 4.727

Number of iterations to convergence: 5
Achieved convergence tolerance: 4.955e-06
Nonlinear regression model
model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
Asym lrc c0
0.8267 -3.6850 -28.0226
residual sum-of-squares: 4.727
Number of iterations to convergence: 5
Achieved convergence tolerance: 4.802e-06

Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym lrc
0.4901 1.0404
residual sum-of-squares: 5.057
Number of iterations to convergence: 8
Achieved convergence tolerance: 3.186e-06

Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym xmid scal
0.7632 -3.6602 19.6752
residual sum-of-squares: 4.722
Number of iterations to convergence: 4
Achieved convergence tolerance: 8.326e-06

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
  (Intercept) blockB2 blockB3 blockB4
sowndiv
  0.511959 -0.048813 -0.087673 -0.024309  
  0.075731
  0.075731
  0.075731
funcgr
  0.178719 0.172345 0.044442 0.010451
  0.005365
sowndiv:funcgr
  0.178719
  0.172345
  0.044442
  0.010451
  0.005365
 FUNCGR:grass
  0.044442
  0.010451
  0.005365
  0.005365
  0.005365
$\text{Fungivorous nematode species richness}$

Call:
\texttt{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}

Coefficients:
\begin{verbatim}
 (Intercept)      sowndiv       funcgr          leg
  0.747072     0.001506    -0.007748    -0.095203
\end{verbatim}

$\text{Fungivorous nematode species richness}$

Nonlinear regression model
\begin{verbatim}
 model: response ~ a * sowndiv/(b + sowndiv)
 data: DF
 a   b
 0.61926 0.06743
residual sum-of-squares: 5.08
\end{verbatim}

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.448e-06

$\text{Fungivorous nematode species richness}$

Nonlinear regression model
\begin{verbatim}
 model: response ~ SSmicmen(sowndiv, Vm, k)
 data: DF
 Vm   k
 0.61926 0.06744
residual sum-of-squares: 5.08
\end{verbatim}

Number of iterations to convergence: 3
Achieved convergence tolerance: 3.753e-06

$\text{Fungivorous nematode species richness}$

Nonlinear regression model
\begin{verbatim}
 model: response ~ a + b * exp(sowndiv)
 data: DF
 a   b
 5.978e-01 1.333e-27
residual sum-of-squares: 5.027
\end{verbatim}

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.257e-09

$\text{Fungivorous nematode species richness}$

Nonlinear regression model
\begin{verbatim}
 model: response ~ a + exp(sowndiv)
 data: DF
 a
 1
residual sum-of-squares: 3.913e+52
\end{verbatim}

Number of iterations to convergence: 0
Achieved convergence tolerance: 7.034e-20
Nonlinear regression model
model:  response ~ b * exp(sowndiv)
data:  DF
  b
6.567e-27
residual sum-of-squares: 29.69
Number of iterations to convergence: 4
Achieved convergence tolerance: 8.015e-09

Nonlinear regression model
model:  response ~ a + b * sowndiv
data:  DF
  a  b
0.585358 0.002246
residual sum-of-squares: 5.042
Number of iterations to convergence: 1
Achieved convergence tolerance: 9.241e-09

Nonlinear regression model
model:  response ~ a + sowndiv^c
data:  DF
  a  c
-0.41728 0.01417
residual sum-of-squares: 5.076
Number of iterations to convergence: 8
Achieved convergence tolerance: 1.062e-06

Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
  b  c
0.58258 0.02418
residual sum-of-squares: 5.075
Number of iterations to convergence: 7
Achieved convergence tolerance: 2.968e-06

Nonlinear regression model
model:  response ~ sowndiv^c
data:  DF
  c
-0.242
residual sum-of-squares: 8.971
Number of iterations to convergence: 10
Achieved convergence tolerance: 2.664e-06

`Fungivorous nematode species richness`

Nonlinear regression model

model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
data:  DF
Asym    lrc
0.6143 0.9533
residual sum-of-squares: 5.068

Number of iterations to convergence: 3
Achieved convergence tolerance: 7.017e-06

`Omnivorous nematode species richness`

Call:
`lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)`

Coefficients:
(Intercept)         blockB2         blockB3         blockB4
sowndiv 0.418437       -0.141997        0.073453        0.326920       -
0.012106
funcgr       0.088971       -0.024654        0.223959        0.003278       -
0.010343
grass         0.014175        0.032212       -0.194145       -0.070754
leg  sowndiv:funcgr
sowndiv:grass 0.014175        0.032212       -0.194145       -0.070754

`Omnivorous nematode species richness`

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
(Intercept)      sowndiv       funcgr          leg
0.53156      0.00510     -0.05349     -0.05579

`Omnivorous nematode species richness`

Nonlinear regression model

model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
a       b
0.3671 -0.0725
residual sum-of-squares: 5.878

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.529e-06
Nonlinear regression model
model: response ~ SSmicmen(sowndiv, Vm, k)
data: DF
   Vm       k
0.36715  -0.07249
residual sum-of-squares: 5.878

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.275e-06

Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
   a         b
3.681e-01  2.030e-27
residual sum-of-squares: 5.73

Number of iterations to convergence: 4
Achieved convergence tolerance: 9.57e-10

Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
   a
1
residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 7.034e-20

Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
5.254e-27
residual sum-of-squares: 15.08

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.294e-09

Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
   a       b
0.350523  0.003254
residual sum-of-squares: 5.775

Number of iterations to convergence: 1
Achieved convergence tolerance: 5.555e-10

$\text{Omnivorous nematode species richness}$\textsuperscript{Pa3}
Nonlinear regression model

- model: response ~ a + sowndiv$^c$
- data: DF
- a: -0.6393, c: 0.0113
- residual sum-of-squares: 5.873

Number of iterations to convergence: 9
Achieved convergence tolerance: 1.479e-06

$\text{Omnivorous nematode species richness}$\textsuperscript{Pa4}
Nonlinear regression model

- model: response ~ b * sowndiv$^c$
- data: DF
- b: 0.35902, c: 0.03365
- residual sum-of-squares: 5.872

Number of iterations to convergence: 7
Achieved convergence tolerance: 3.928e-06

$\text{Omnivorous nematode species richness}$\textsuperscript{Pa5}
Nonlinear regression model

- model: response ~ sowndiv$^c$
- data: DF
- c: -0.6064
- residual sum-of-squares: 13.4

Number of iterations to convergence: 14
Achieved convergence tolerance: 5.292e-06

$\text{Plant-feeding nematode species richness}$

Call:
```
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)
```

Coefficients:

<table>
<thead>
<tr>
<th>Term</th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.555186</td>
<td>-0.110306</td>
<td>-0.257135</td>
</tr>
<tr>
<td>sowndiv</td>
<td>-0.013882</td>
<td></td>
<td></td>
</tr>
<tr>
<td>funcgr</td>
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<td></td>
</tr>
<tr>
<td>grass</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sowndiv:funcgr</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sowndiv:grass</td>
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<td></td>
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</tr>
<tr>
<td>sowndiv:leg</td>
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</tr>
<tr>
<td>funcgr:grass</td>
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<td></td>
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</tr>
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</tr>
<tr>
<td>grass:leg</td>
<td></td>
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</tr>
</tbody>
</table>

Call:
```
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)
```

Coefficients:

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</tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Call:
```
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)
```

Coefficients:

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<tr>
<td>grass:leg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
\textit{Plant-feeding nematode species richness}\textsuperscript{L2}

Call:
\texttt{lm(formula = response \sim sowndiv + funcgr + leg, data = DF)}

Coefficients:
\begin{tabular}{lcccc}
(Intercept) & sowndiv & funcgr & leg \\
0.375780 & 0.007087 & -0.023934 & 0.066479 \\
\end{tabular}

\textit{Plant-feeding nematode species richness}\textsuperscript{M1}
Nonlinear regression model
\begin{verbatim}
  model: response ~ a * sowndiv/(b + sowndiv)  
data:  DF  
a   b  
0.5536 0.4558  
residual sum-of-squares: 3.665
\end{verbatim}
Number of iterations to convergence: 4
Achieved convergence tolerance: 2.088e-06

\textit{Plant-feeding nematode species richness}\textsuperscript{M1a}
Nonlinear regression model
\begin{verbatim}
  model: response ~ SSmicmen(sowndiv, Vm, k)  
data:  DF  
  Vm   k  
0.5536 0.4558  
residual sum-of-squares: 3.665
\end{verbatim}
Number of iterations to convergence: 4
Achieved convergence tolerance: 4.888e-06

\textit{Plant-feeding nematode species richness}\textsuperscript{M2}
Nonlinear regression model
\begin{verbatim}
  model: response ~ d + a * sowndiv/(b + sowndiv)  
data:  DF  
a   b   d  
0.4185 25.6553 0.3993  
residual sum-of-squares: 3.567
\end{verbatim}
Number of iterations to convergence: 9
Achieved convergence tolerance: 1.66e-06

\textit{Plant-feeding nematode species richness}\textsuperscript{E2}
Nonlinear regression model
\begin{verbatim}
  model: response ~ a + b * exp(sowndiv)  
data:  DF  
a   b  
4.710e-01 2.005e-27  
residual sum-of-squares: 3.742
\end{verbatim}
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.749e-08

$`Plant-feeding nematode species richness`$E4
Nonlinear regression model
   model:  response ~ a + exp(sowndiv)
   data:  DF
   a
   1
   residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 7.034e-20

$`Plant-feeding nematode species richness`$E5
Nonlinear regression model
   model:  response ~ b * exp(sowndiv)
   data:  DF
   b
   6.13e-27
   residual sum-of-squares: 19.05

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.446e-09

$`Plant-feeding nematode species richness`$Pa1
Nonlinear regression model
   model:  response ~ a + b * sowndiv^c
   data:  DF
   a   b   c
   0.3252 0.0825 0.3677
   residual sum-of-squares: 3.562

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.665e-06

$`Plant-feeding nematode species richness`$Pa2
Nonlinear regression model
   model:  response ~ a + b * sowndiv
   data:  DF
   a   b
   0.436977 0.005203
   residual sum-of-squares: 3.613

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.440e-09

$`Plant-feeding nematode species richness`$Pa3
Nonlinear regression model
   model:  response ~ a + sowndiv^c
   data:  DF
   a   c
   -0.6068 0.0550
   residual sum-of-squares: 3.577
Number of iterations to convergence: 8
Achieved convergence tolerance: 4.466e-07

Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
b  c
0.3951 0.1248
residual sum-of-squares: 3.571

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.134e-07

Nonlinear regression model
model: response ~ sowndiv^c
data: DF
c
-0.3523
residual sum-of-squares: 11.69

Number of iterations to convergence: 12
Achieved convergence tolerance: 2.712e-06

Nonlinear regression model
model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
Asym  R0  lrc
0.7185 0.4044 -3.1448
residual sum-of-squares: 3.568

Number of iterations to convergence: 3
Achieved convergence tolerance: 1.844e-06

Nonlinear regression model
model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
Asym  lrc  c0
0.7185 -3.1448 -19.2105
residual sum-of-squares: 3.568

Number of iterations to convergence: 3
Achieved convergence tolerance: 1.850e-06

Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym  lrc
0.5131 0.3125
residual sum-of-squares: 3.749
Number of iterations to convergence: 7
Achieved convergence tolerance: 6.768e-06

$`\text{Plant-feeding nematode species richness}$$LG2$
Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym xmid scal
0.7047 -4.9959 15.3458
residual sum-of-squares: 3.571

Number of iterations to convergence: 3
Achieved convergence tolerance: 2.132e-06

$`\text{Predatory nematode species richness}$$L0$

Call:
\text{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)}

Coefficients:
(Intercept)       blockB2       blockB3       blockB4
-0.940341       -0.008989       -0.092801       -0.062547
0.061245
sowndiv:funcgr
0.415795
sowndiv:grass
0.577016
sowndiv:leg
0.709755
0.009625
0.019112
sowndiv:funcgr:grass
0.009799
sowndiv:funcgr:leg
-0.203875
sowndiv:grass:leg
-0.187749
-0.258812

$`\text{Predatory nematode species richness}$$L2$

Call:
\text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}

Coefficients:
(Intercept)        sowndiv        funcgr        leg
0.040028        0.006618        -0.012927        0.074263

$`\text{Predatory nematode species richness}$$M1$
Nonlinear regression model
model: response ~ a * sowndiv/(b + sowndiv)
data: DF
a b
0.17031 -0.08201
residual sum-of-squares: 4.658
Number of iterations to convergence: 5
Achieved convergence tolerance: 3.430e-06

$`Predatory nematode species richness`$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm     k
0.1703 -0.0820
residual sum-of-squares: 4.658

Number of iterations to convergence: 12
Achieved convergence tolerance: 2.429e-07

$`Predatory nematode species richness`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
    a       b
1.594e-01 3.469e-27
residual sum-of-squares: 4.209

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.713e-09

$`Predatory nematode species richness`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
    a
1
residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 7.034e-20

$`Predatory nematode species richness`$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
    b
4.865e-27
residual sum-of-squares: 5.963

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.700e-09

$`Predatory nematode species richness`$Pa2
Nonlinear regression model
  model:  response ~ a + b * sowndiv
  data:  DF
    a       b
0.132732 0.005157
residual sum-of-squares: 4.386
Number of iterations to convergence: 1
Achieved convergence tolerance: 7.456e-10

$`Predatory nematode species richness`$Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
    a        c
    -0.84871  0.01623
  residual sum-of-squares: 4.638

Number of iterations to convergence: 9
Achieved convergence tolerance: 5.39e-06

$`Predatory nematode species richness`$Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
    b      c
    0.1352 0.1606
  residual sum-of-squares: 4.622

Number of iterations to convergence: 17
Achieved convergence tolerance: 8.792e-06

$`Predatory nematode species richness`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
    c
    -1.678
  residual sum-of-squares: 15.56

Number of iterations to convergence: 16
Achieved convergence tolerance: 3.511e-06

$`Predatory nematode species richness`$AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
  data: DF
    Asym     lrc
    0.5967 -3.5023
  residual sum-of-squares: 5.137

Number of iterations to convergence: 8
Achieved convergence tolerance: 6.351e-06

$`Plant-feeding nematode abundance`$
$`Plant-feeding nematode abundance`$L0

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)

Coefficients:
(Intercept)        blockB2        blockB3        blockB4
sowndiv          5.611e-01       2.077e-02      -1.618e-01       4.669e-04
               7.277e-03
funcgr           5.311e-02      -1.714e-01      -1.139e-03       2.884e-05
grass            1.879e-02
leg              -1.183e-02      -4.756e-02      -2.401e-02       4.268e-02
sowndiv:funcgr
sowndiv:grass    5.611e-01       2.077e-02      -1.618e-01       4.669e-04
               7.277e-03
funcgr:grass
funcgr:leg
grass:leg

`Plant-feeding nematode abundance`L2

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)  sowndiv  funcgr  leg
           0.2294488  0.0009399  0.0107855  0.0227016

`Plant-feeding nematode abundance`M1

Nonlinear regression model
   model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
   a     b
   0.3158 0.2136
residual sum-of-squares: 3.018

Number of iterations to convergence: 5
Achieved convergence tolerance: 2.456e-06

`Plant-feeding nematode abundance`M1a

Nonlinear regression model
   model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
   Vm    k
   0.3158 0.2136
residual sum-of-squares: 3.018

Number of iterations to convergence: 2
Achieved convergence tolerance: 7.715e-07

`Plant-feeding nematode abundance`M2

Nonlinear regression model
   model:  response ~ d + a * sowndiv/(b + sowndiv)
data:  DF
   a     b     d
   0.08968 7.51206 0.25826
residual sum-of-squares: 3.016
Number of iterations to convergence: 5
Achieved convergence tolerance: 6.331e-07

$`Plant-feeding nematode abundance`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
    a       b
  2.925e-01 2.361e-28
residual sum-of-squares: 3.043
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.666e-09

$`Plant-feeding nematode abundance`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
    a
  1
residual sum-of-squares: 3.913e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 6.983e-20

$`Plant-feeding nematode abundance`$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
    b
  2.797e-27
residual sum-of-squares: 9.03
Number of iterations to convergence: 4
Achieved convergence tolerance: 4.1e-09

$`Plant-feeding nematode abundance`$Pa2
Nonlinear regression model
  model:  response ~ a + b * sowndiv
  data:  DF
    a       b
  0.283762 0.001180
residual sum-of-squares: 3.030
Number of iterations to convergence: 1
Achieved convergence tolerance: 1.156e-09

$`Plant-feeding nematode abundance`$Pa3
Nonlinear regression model
  model:  response ~ a + sowndiv^c
  data:  DF
    a       c

Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
   b       c
0.26768 0.06056
residual sum-of-squares: 3.016
Number of iterations to convergence: 7
Achieved convergence tolerance: 3.895e-06

Nonlinear regression model
model: response ~ sowndiv^c
data: DF
c
-0.8012
residual sum-of-squares: 13.22
Number of iterations to convergence: 15
Achieved convergence tolerance: 2.235e-07

Nonlinear regression model
model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
   Asym      R0     lrc
0.3369  0.2630 -2.2987
residual sum-of-squares: 3.015
Number of iterations to convergence: 22
Achieved convergence tolerance: 7.024e-06

Nonlinear regression model
model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
   Asym      lrc       c0
0.3369  -2.2987 -15.1113
residual sum-of-squares: 3.015
Number of iterations to convergence: 15
Achieved convergence tolerance: 8.89e-06

Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym lrc
0.3037 0.6562
residual sum-of-squares: 3.023

Number of iterations to convergence: 2
Achieved convergence tolerance: 3.096e-06

$`Plant-feeding nematode abundance`$
Nonlinear regression model
model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
data:  DF
Asym xmid scal
0.3373 -11.3104  8.8154
residual sum-of-squares: 3.014

Number of iterations to convergence: 32
Achieved convergence tolerance: 8.12e-06

$`Omnivorous nematode abundance`$
$`Omnivorous nematode abundance`$

Call:
`lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)`

Coefficients:
(Intercept) blockB2 blockB3 blockB4
sowndiv 0.580168 -0.023768 0.047648 0.221986 -
0.049526
funcgr -0.030450 -0.153541 -0.129963 0.006406 0.004660
sowndiv:grass -0.030450 -0.153541 -0.129963 0.006406
sowndiv:leg 0.020150 0.027354 -0.045683 0.050059
funcgr:grass 0.020150 0.027354 -0.045683 0.050059
funcgr:leg -0.030450 -0.153541 -0.129963 0.006406
grass:leg -0.030450 -0.153541 -0.129963 0.006406

$`Omnivorous nematode abundance`$
$`Omnivorous nematode abundance`$

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
(Intercept) sowndiv funcgr leg
0.288068 0.001003 -0.016602 -0.026873

$`Omnivorous nematode abundance`$
$`Omnivorous nematode abundance`$
Nonlinear regression model
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
Vm k
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
   a     b
2.198e-01 3.511e-28
residual sum-of-squares: 2.691

Number of iterations to convergence: 4
Achieved convergence tolerance: 8.99e-10

Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
   a
1
residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.983e-20

Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
2.276e-27
residual sum-of-squares: 6.073

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.339e-10

Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
   a     b
0.2169470 0.0005421
residual sum-of-squares: 2.692

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.516e-08

Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
Nonlinear regression model

response ~ b * sowndiv^c

Number of iterations to convergence: 8
Achieved convergence tolerance: 4.483e-08

residual sum-of-squares: 2.694

Nonlinear regression model

response ~ sowndiv^c

Number of iterations to convergence: 7
Achieved convergence tolerance: 7.32e-07

residual sum-of-squares: 2.694

Nonlinear regression model

response ~ sowndiv^c

Number of iterations to convergence: 20
Achieved convergence tolerance: 5.335e-06

residual sum-of-squares: 13.18

$\text{'Omnivorous nematode abundance'}$ Pa4

Nonlinear regression model

response ~ b * sowndiv^c

data: DF

b       c
0.21579 0.01728
residual sum-of-squares: 2.694

Number of iterations to convergence: 7
Achieved convergence tolerance: 7.32e-07

$\text{'Omnivorous nematode abundance'}$ Pa5

Nonlinear regression model

response ~ sowndiv^c

data: DF

c
-1.284
residual sum-of-squares: 13.18

Number of iterations to convergence: 20
Achieved convergence tolerance: 5.335e-06

$\text{'Predatory nematode abundance'}$ L0

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)

Coefficients:

(Intercept)   blockB2   blockB3   blockB4
sowndiv     2.87930   0.05726   0.03274  -0.00908   -
0.08246   funcgr   grass   leg   sowndiv:funcgr
sowndiv:grass  -0.52723  -1.17278  -1.26450  0.01222
0.01961   sowndiv:leg   funcgr:grass   funcgr:leg   grass:leg
0.02061   0.10943   0.17711   0.48587

$\text{'Predatory nematode abundance'}$ L2

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:
(Intercept)      sowndiv       funcgr          leg
  0.079820     0.005578    -0.013658    -0.014687

$`Predatory nematode abundance`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
       a         b
  6.084e-02 3.086e-27
  residual sum-of-squares: 1.217

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.242e-08

$`Predatory nematode abundance`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
 a
  1
  residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.983e-20

$`Predatory nematode abundance`$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
     b
  3.618e-27
  residual sum-of-squares: 1.477

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.905e-08

$`Predatory nematode abundance`$Pa2
Nonlinear regression model
  model:  response ~ a + b * sowndiv
  data:  DF
      a        b
  0.032787 0.005115
  residual sum-of-squares: 1.304

Number of iterations to convergence: 1
Achieved convergence tolerance: 3.545e-09

$`Predatory nematode abundance`$Pa3
Nonlinear regression model
  model:  response ~ a + sowndiv^c
  data:  DF

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$`Predatory nematode abundance`$Pa4
Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
  b        c
0.008507  0.921069
residual sum-of-squares: 1.356
Number of iterations to convergence: 12
Achieved convergence tolerance: 9.82e-06

$`Predatory nematode abundance`$Pa5
Nonlinear regression model
model:  response ~ sowndiv^c
data:  DF
c
-3.902
residual sum-of-squares: 15.13
Number of iterations to convergence: 15
Achieved convergence tolerance: 6.27e-06

$`Bacterivorous nematode abundance`$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)
Coefficients:
          (Intercept)         blockB2         blockB3         blockB4  
sowndiv  -0.721558       -0.102526       -0.095018       -0.120770       -
  0.054064  funcgr           grass             leg  sowndiv:funcgr
sowndiv:grass
0.339564       0.494652       0.464718       0.006983       -
0.018475  sowndiv:leg    funcgr:grass    funcgr:leg    grass:leg
0.010363       -0.124975       -0.167984       -0.150982       -

$`Bacterivorous nematode abundance`$L2

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:
(Intercept)    sowndiv   funcgr   leg
  0.422191   0.003742  -0.053107  -0.087098

$`Bacterivorous nematode abundance`$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
    a       b
  0.21562  0.04743
  residual sum-of-squares: 2.463

  Number of iterations to convergence: 8
  Achieved convergence tolerance: 1.762e-06

$`Bacterivorous nematode abundance`$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm       k
  0.21562  0.04745
  residual sum-of-squares: 2.463

  Number of iterations to convergence: 5
  Achieved convergence tolerance: 3.502e-06

$`Bacterivorous nematode abundance`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
    a       b
  2.069e-01 1.063e-27
  residual sum-of-squares: 2.421

  Number of iterations to convergence: 4
  Achieved convergence tolerance: 2.315e-08

$`Bacterivorous nematode abundance`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
    a
  1
  residual sum-of-squares: 3.913e+52

  Number of iterations to convergence: 0
  Achieved convergence tolerance: 6.983e-20

$`Bacterivorous nematode abundance`$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
$^{\text{Bacterivorous nematode abundance}}$ Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
  a  b
  0.192929 0.002281
  residual sum-of-squares: 2.410

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.425e-11

$^{\text{Bacterivorous nematode abundance}}$ Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
  a  c
  -0.81056 0.01483
  residual sum-of-squares: 2.444

Number of iterations to convergence: 8
Achieved convergence tolerance: 7.34e-06

$^{\text{Bacterivorous nematode abundance}}$ Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
  b  c
  0.18720 0.08027
  residual sum-of-squares: 2.441

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.978e-06

$^{\text{Bacterivorous nematode abundance}}$ Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
  c
  -1.452
  residual sum-of-squares: 13.18

Number of iterations to convergence: 21
Achieved convergence tolerance: 5.128e-06

$^{\text{Bacterivorous nematode abundance}}$ LG2
Nonlinear regression model
  model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF

Asym  xmid  scal
0.5185  28.8115  55.2367
residual sum-of-squares: 2.409

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.208e-06

$`Fungivorous nematode abundance`$

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)

Coefficients:
(Intercept)         blockB2         blockB3         blockB4
sowndiv   0.469115        0.024585       -0.016396        0.077099       -
0.021021
funcgr           grass             leg  sowndiv:funcgr
sowndiv:grass   0.035548       -0.077821       -0.013231        0.002742
0.007002
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
0.001644       -0.023833       -0.055108        0.011134

$`Fungivorous nematode abundance`$L2

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)      sowndiv       funcgr          leg
0.335010    -0.001201    -0.020037    -0.042390

$`Fungivorous nematode abundance`$M1

Nonlinear regression model
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
a         b
0.21498  -0.06063
residual sum-of-squares: 2.761

Number of iterations to convergence: 4
Achieved convergence tolerance: 7.831e-06

$`Fungivorous nematode abundance`$M1a

Nonlinear regression model
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
Vm  k
0.21498 -0.06065
residual sum-of-squares: 2.761

Number of iterations to convergence: 3
Achieved convergence tolerance: 1.173e-06

$`Fungivorous nematode abundance`$M2
Nonlinear regression model
  model: response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
    a         b         d
  -0.002992 -4.310560  0.213767
residual sum-of-squares: 2.742

Number of iterations to convergence: 14
Achieved convergence tolerance: 3.159e-06

$`Fungivorous nematode abundance`$E2
Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data:  DF
    a          b
  2.240e-01 -8.294e-28
residual sum-of-squares: 2.737

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.46e-09

$`Fungivorous nematode abundance`$E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data:  DF
    a
  1
residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.983e-20

$`Fungivorous nematode abundance`$E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data:  DF
    b
  1.132e-27
residual sum-of-squares: 6.249

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.222e-09

$`Fungivorous nematode abundance`$Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
data:  DF
     a         b
0.233777 -0.001645
residual sum-of-squares: 2.735

Number of iterations to convergence: 1
Achieved convergence tolerance: 6.468e-10

$`Fungivorous nematode abundance`$Pa3
Nonlinear regression model
    model:  response ~ a + sowndiv^c
    data:  DF
          a         c
-0.76322 -0.01136
residual sum-of-squares: 2.752

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.819e-07

$`Fungivorous nematode abundance`$Pa4
Nonlinear regression model
    model:  response ~ b * sowndiv^c
    data:  DF
          b         c
0.23608 -0.04795
residual sum-of-squares: 2.752

Number of iterations to convergence: 8
Achieved convergence tolerance: 8.743e-06

$`Fungivorous nematode abundance`$Pa5
Nonlinear regression model
    model:  response ~ sowndiv^c
    data:  DF
          c
-1.187
residual sum-of-squares: 13.08

Number of iterations to convergence: 17
Achieved convergence tolerance: 9.556e-06

$`Fungivorous nematode abundance`$BIEXP
Nonlinear regression model
    model:  response ~ SSbiexp(sowndiv, A1, lrc1, A2, lrc2)
    data:  DF
          A1     lrc1       A2     lrc2
-0.04701 -0.43045  0.24788 -4.51583
residual sum-of-squares: 2.731

Number of iterations to convergence: 23
Achieved convergence tolerance: 8.412e-06

$`Fungivorous nematode abundance`$LG2
Nonlinear regression model
model: \( \text{response} \sim \text{SSlogis}(\text{sowndiv}, \text{Asym}, \text{xmid}, \text{scal}) \)

data: DF

Asym \quad \text{xmid} \quad \text{scal}
0.2619 \quad 59.0430 \quad -29.6045

residual sum-of-squares: 2.734

Number of iterations to convergence: 2
Achieved convergence tolerance: 5.513e-06

```
Collembola abundance
```

```
Collembola abundance$L0
```

Call:
\( \text{lm(formula = response} \sim \text{block} + (\text{sowndiv} + \text{funcgr} + \text{grass} + \text{leg})^2, \text{data} = \text{DF}) \)

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
<th>sowndiv</th>
<th>funcgr</th>
<th>grass</th>
<th>leg</th>
<th>sowndiv:funcgr</th>
<th>sowndiv:grass</th>
<th>sowndiv:leg</th>
<th>funcgr:grass</th>
<th>funcgr:leg</th>
<th>grass:leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td></td>
<td></td>
<td></td>
<td>3.32716</td>
<td>-0.12775</td>
<td>-0.03627</td>
<td>-0.15423</td>
<td></td>
<td></td>
<td>0.08519</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sowndiv</td>
<td>-0.08519</td>
<td></td>
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<tr>
<td>funcgr</td>
<td></td>
<td></td>
<td></td>
<td>-0.68085</td>
<td>-1.29444</td>
<td>-1.32048</td>
<td>0.01055</td>
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<td>grass</td>
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<tr>
<td>sowndiv:funcgr</td>
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<td>-0.01323</td>
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<td>sowndiv:grass</td>
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<td>-1.32048</td>
<td>0.01055</td>
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<td>sowndiv:leg</td>
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<td>funcgr:grass</td>
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<td>funcgr:leg</td>
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<tr>
<td>grass:leg</td>
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</tr>
</tbody>
</table>

```
Collembola abundance$L2
```

Call:
\( \text{lm(formula = response} \sim \text{sowndiv} + \text{funcgr} + \text{leg}, \text{data} = \text{DF}) \)

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>sowndiv</th>
<th>funcgr</th>
<th>leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.133770</td>
<td>0.001950</td>
<td>0.015583</td>
</tr>
<tr>
<td>sowndiv</td>
<td>0.001950</td>
<td>0.015583</td>
<td>0.058705</td>
</tr>
<tr>
<td>funcgr</td>
<td>0.015583</td>
<td>0.058705</td>
<td></td>
</tr>
</tbody>
</table>

```
Collembola abundance$M1
```

Nonlinear regression model

model: \( \text{response} \sim a * \text{sowndiv}/(b + \text{sowndiv}) \)

data: DF

a \quad b
0.3187 \quad 0.5408

residual sum-of-squares: 2.58

Number of iterations to convergence: 5
Achieved convergence tolerance: 2.938e-07

```
Collembola abundance$M1a
```

Nonlinear regression model

\( \text{model: response} \sim \text{SSmicmen(sowndiv, Vm, k)} \)
data: DF
  Vm     k
0.3187 0.5408
residual sum-of-squares: 2.58

Number of iterations to convergence: 2
Achieved convergence tolerance: 3.391e-06

$`Collembola abundance`$M2
Nonlinear regression model
model: response ~ d + a * sowndiv/(b + sowndiv)
data: DF
  a      b      d
0.2046 1.3001 0.1223
residual sum-of-squares: 2.579

Number of iterations to convergence: 9
Achieved convergence tolerance: 4.061e-06

$`Collembola abundance`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
  a      b
2.670e-01 5.672e-28
residual sum-of-squares: 2.674

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.437e-11

$`Collembola abundance`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
  a
1
  residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 5.804e-20

$`Collembola abundance`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
  b
2.905e-27
  residual sum-of-squares: 8.09

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.465e-08

$`Collembola abundance`$Pa2
Nonlinear regression model
model:  response ~ a + b * sowndiv
    data:  DF
    a      b
        0.253377 0.001961
    residual sum-of-squares: 2.639

Number of iterations to convergence: 1
Achieved convergence tolerance: 4.108e-09

`Collembola abundance` Pa3
Nonlinear regression model
    model:  response ~ a + sowndiv^c
    data:  DF
    a      c
        -0.77704 0.03082
    residual sum-of-squares: 2.584

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.657e-07

`Collembola abundance` Pa4
Nonlinear regression model
    model:  response ~ b * sowndiv^c
    data:  DF
    b      c
        0.2267 0.1134
    residual sum-of-squares: 2.587

Number of iterations to convergence: 7
Achieved convergence tolerance: 3.289e-06

`Collembola abundance` Pa5
Nonlinear regression model
    model:  response ~ sowndiv^c
    data:  DF
    c
        -0.933
    residual sum-of-squares: 15.17

Number of iterations to convergence: 18
Achieved convergence tolerance: 5.093e-06

`Collembola abundance` AS1
Nonlinear regression model
    model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
    data:  DF
    Asym   R0    lrc
        0.3176 0.1907 -1.3890
    residual sum-of-squares: 2.584

Number of iterations to convergence: 13
Achieved convergence tolerance: 7.181e-06

`Collembola abundance` AS2
Nonlinear regression model
model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data:  DF
Asym  lrc  c0
0.3176 -1.3890 -3.6780
residual sum-of-squares: 2.584

Number of iterations to convergence: 13
Achieved convergence tolerance: 7.243e-06

$Collembola abundance$AS3
Nonlinear regression model
model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
data:  DF
Asym  lrc
0.2952 0.1290
residual sum-of-squares: 2.595

Number of iterations to convergence: 4
Achieved convergence tolerance: 7.259e-06

$Collembola abundance$LG2
Nonlinear regression model
model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
data:  DF
Asym  xmid  scal
0.3165 -1.7959  3.3273
residual sum-of-squares: 2.586

Number of iterations to convergence: 16
Achieved convergence tolerance: 6.976e-06

$Mite abundance$
$Mite abundance$L0

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
(Intercept)         blockB2         blockB3         blockB4
sowndiv
5.081596       -0.009796        0.019798       -0.101649       -0.110498
0.110498
funcgr           grass             leg  sowndiv:funcgr
sowndiv:grass
-0.924492       -2.230046       -2.139964        0.014004
0.025339
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
0.029644        0.305586        0.251218        0.924884

$Mite abundance$L2
Call:
\texttt{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}

Coefficients:
\begin{tabular}{crrrr}
  (Intercept) & sowndiv & funcgr & leg \\
  2.598e-01 & 4.268e-05 & -1.760e-02 & -5.472e-03 \\
\end{tabular}

$M1$
Nonlinear regression model
  \texttt{model: response ~ a * sowndiv/(b + sowndiv)}
  \texttt{data: DF}
  \begin{tabular}{rr}
    a & b \\
    0.21700 & 0.02833 \\
  \end{tabular}
  residual sum-of-squares: 2.867

Number of iterations to convergence: 6
Achieved convergence tolerance: 1.515e-06

$M1a$
Nonlinear regression model
  \texttt{model: response ~ SSmicmen(sowndiv, Vm, k)}
  \texttt{data: DF}
  \begin{tabular}{rr}
    Vm & k \\
    0.21700 & 0.02834 \\
  \end{tabular}
  residual sum-of-squares: 2.867

Number of iterations to convergence: 3
Achieved convergence tolerance: 7.903e-06

$E2$
Nonlinear regression model
  \texttt{model: response ~ a + b * \exp(sowndiv)}
  \texttt{data: DF}
  \begin{tabular}{rr}
    a & b \\
    2.167e-01 & -3.524e-28 \\
  \end{tabular}
  residual sum-of-squares: 2.862

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.838e-08

$E4$
Nonlinear regression model
  \texttt{model: response ~ a + \exp(sowndiv)}
  \texttt{data: DF}
  \begin{tabular}{r}
    a \\
    1 \\
  \end{tabular}
  residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 5.804e-20

$E5$
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
  b
  1.545e-27
  residual sum-of-squares: 6.431

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.232e-09

\$`Mite abundance`$Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
  a          b
  0.2206881 -0.0006976
  residual sum-of-squares: 2.861

Number of iterations to convergence: 1
Achieved convergence tolerance: 2.618e-09

\$`Mite abundance`$Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
  a         c
  -0.781150 -0.002813
  residual sum-of-squares: 2.867

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.483e-07

\$`Mite abundance`$Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
  b        c
  0.21868 -0.01247
  residual sum-of-squares: 2.867

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.286e-06

\$`Mite abundance`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
  c
  -1.305
  residual sum-of-squares: 14.49

Number of iterations to convergence: 18
Achieved convergence tolerance: 6.399e-06
Nonlinear regression model
model: response ~ SSbiexp(sowndiv, A1, lrc1, A2, lrc2)
data: DF
A1  lrc1  A2  lrc2
-0.03812 -1.33549  0.24011 -5.09350
residual sum-of-squares: 2.856

Number of iterations to convergence: 19
Achieved convergence tolerance: 7.275e-06

Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym  xmid  scal
0.2289  97.1762 -31.5272
residual sum-of-squares: 2.861

Number of iterations to convergence: 40
Achieved convergence tolerance: 9.444e-06

Call:
\texttt{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)}

Coefficients:
\begin{itemize}
  \item \texttt{(Intercept)}
  \item \texttt{blockB2}
  \item \texttt{blockB3}
  \item \texttt{blockB4}
  \item \texttt{sowndiv}
    \begin{itemize}
      \item 0.223179
      \item -0.009512
      \item -0.140608
      \item -0.129438
      \item 0.037086
    \end{itemize}
  \item \texttt{funcgr}
    \begin{itemize}
      \item 0.037086
    \end{itemize}
  \item \texttt{grass}
    \begin{itemize}
      \item -0.022045
    \end{itemize}
  \item \texttt{leg}
    \begin{itemize}
      \item 0.014081
    \end{itemize}
  \item \texttt{sowndiv:funcgr}
    \begin{itemize}
      \item 0.005080
    \end{itemize}
  \item \texttt{sowndiv:grass}
    \begin{itemize}
      \item -0.030971
    \end{itemize}
  \item \texttt{sowndiv:leg}
    \begin{itemize}
      \item 0.010214
    \end{itemize}
  \item \texttt{funcgr:grass}
    \begin{itemize}
      \item 0.010214
    \end{itemize}
  \item \texttt{funcgr:leg}
    \begin{itemize}
      \item 0.025204
    \end{itemize}
  \item \texttt{grass:leg}
    \begin{itemize}
      \item -0.014118
    \end{itemize}
\end{itemize}

Call:
\texttt{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}

Coefficients:
\begin{itemize}
  \item \texttt{(Intercept)}
  \item \texttt{sowndiv}
    \begin{itemize}
      \item 0.230764
    \end{itemize}
  \item \texttt{funcgr}
    \begin{itemize}
      \item 0.005071
    \end{itemize}
  \item \texttt{grass}
    \begin{itemize}
      \item -0.035075
    \end{itemize}
  \item \texttt{leg}
    \begin{itemize}
      \item -0.037496
    \end{itemize}
\end{itemize}
Nonlinear regression model
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
  a   b
0.1914 1.1112
residual sum-of-squares: 2.791

Number of iterations to convergence: 9
Achieved convergence tolerance: 5.854e-06

`Gamasida abundance`M1a
Nonlinear regression model
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
  Vm   k
0.1914 1.1114
residual sum-of-squares: 2.791

Number of iterations to convergence: 12
Achieved convergence tolerance: 6.86e-06

`Gamasida abundance`E2
Nonlinear regression model
model:  response ~ a + b * exp(sowndiv)
data:  DF
  a   b
1.333e-01 1.944e-27
residual sum-of-squares: 2.662

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.078e-08

`Gamasida abundance`E4
Nonlinear regression model
model:  response ~ a + exp(sowndiv)
data:  DF
  a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 5.804e-20

`Gamasida abundance`E5
Nonlinear regression model
model:  response ~ b * exp(sowndiv)
data:  DF
  b
3.111e-27
residual sum-of-squares: 4.012

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.189e-08
Nonlinear regression model

model: response ~ a + b * sowndiv^c
data: DF

\[
\begin{array}{ccc}
a & b & c \\
0.118550 & 0.001507 & 1.234152 \\
\end{array}
\]
residual sum-of-squares: 2.645

Number of iterations to convergence: 6
Achieved convergence tolerance: 1.447e-07

Nonlinear regression model

model: response ~ a + b * sowndiv
data: DF

\[
\begin{array}{cc}
a & b \\
0.110844 & 0.003914 \\
\end{array}
\]
residual sum-of-squares: 2.647

Number of iterations to convergence: 1
Achieved convergence tolerance: 5.87e-11

Nonlinear regression model

model: response ~ a + sowndiv^c
data: DF

\[
\begin{array}{cc}
a & c \\
-0.90674 & 0.03328 \\
\end{array}
\]
residual sum-of-squares: 2.730

Number of iterations to convergence: 8
Achieved convergence tolerance: 8.492e-06

Nonlinear regression model

model: response ~ b * sowndiv^c
data: DF

\[
\begin{array}{cc}
b & c \\
0.08985 & 0.27981 \\
\end{array}
\]
residual sum-of-squares: 2.701

Number of iterations to convergence: 9
Achieved convergence tolerance: 6.145e-06

Nonlinear regression model

model: response ~ sowndiv^c
data: DF

c
-2.452
residual sum-of-squares: 16.47

Number of iterations to convergence: 18
Achieved convergence tolerance: 3.593e-06
Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym lrc
0.15954 0.03061
residual sum-of-squares: 2.824
Number of iterations to convergence: 19
Achieved convergence tolerance: 5.873e-06

Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym xmid scal
0.8968 77.2008 40.7402
residual sum-of-squares: 2.644
Number of iterations to convergence: 4
Achieved convergence tolerance: 2.708e-06

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)

Coefficients:
(Intercept) blockB2 blockB3 blockB4
sowndiv 4.74471 -0.12271 -0.01488 -0.14914
0.17695
funcgr grass leg sowndiv:funcgr
sowndiv:grass -0.89443 -1.72479 -1.84417 0.02206
0.03562
sowndiv:leg funcgr:grass funcgr:leg grass:leg
0.05797 0.27653 0.27812 0.64757

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept) sowndiv funcgr leg
0.537532 0.004415 -0.014021 -0.020130
Nonlinear regression model

\[ \text{model: response} ~ a * \text{sowndiv}/(b + \text{sowndiv}) \]
\[ \text{data: DF} \]
\[ a \quad b \]
\[ 0.5738 \quad 0.3234 \]
residual sum-of-squares: 2.971

Number of iterations to convergence: 5
Achieved convergence tolerance: 1.778e-06

Nonlinear regression model

\[ \text{model: response} ~ \text{SSmicmen(sowndiv, Vm, k)} \]
\[ \text{data: DF} \]
\[ Vm \quad k \]
\[ 0.5738 \quad 0.3234 \]
residual sum-of-squares: 2.971

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.738e-06

Nonlinear regression model

\[ \text{model: response} ~ d + a * \text{sowndiv}/(b + \text{sowndiv}) \]
\[ \text{data: DF} \]
\[ a \quad b \quad d \]
\[ 0.3232 \quad 21.7764 \quad 0.4465 \]
residual sum-of-squares: 2.879

Number of iterations to convergence: 6
Achieved convergence tolerance: 3.110e-07

Nonlinear regression model

\[ \text{model: response} ~ a + b * \exp(\text{sowndiv}) \]
\[ \text{data: DF} \]
\[ a \quad b \]
\[ 5.072e-01 \quad 1.529e-27 \]
residual sum-of-squares: 3.021

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.023e-08

Nonlinear regression model

\[ \text{model: response} ~ a + \exp(\text{sowndiv}) \]
\[ \text{data: DF} \]
\[ a \]
\[ 1 \]
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 5.804e-20
Nonlinear regression model
model:  response ~ b * exp(sowndiv)
data:  DF
b 5.97e-27
residual sum-of-squares: 22.57

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.196e-10

Nonlinear regression model
model:  response ~ a + b * sowndiv^c
data:  DF
a 0.37785  b 0.07782  c 0.33780
residual sum-of-squares: 2.88

Number of iterations to convergence: 9
Achieved convergence tolerance: 8.77e-07

Nonlinear regression model
model:  response ~ a + b * sowndiv
data:  DF
a 0.481486  b 0.004014
residual sum-of-squares: 2.924

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.876e-09

Nonlinear regression model
model:  response ~ a + sowndiv^c
data:  DF
a -0.55624  c 0.04622
residual sum-of-squares: 2.891

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.994e-07

Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
b 0.44496  c 0.09605
residual sum-of-squares: 2.888

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.901e-07

$`Collembola species richness`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
  c
  -0.3213
  residual sum-of-squares: 10.57
Number of iterations to convergence: 12
Achieved convergence tolerance: 2.504e-06

$`Collembola species richness`$AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
  Asym    R0     lrc
  0.6934  0.4500 -2.9736
  residual sum-of-squares: 2.879
Number of iterations to convergence: 1
Achieved convergence tolerance: 8.852e-07

$`Collembola species richness`$AS2
Nonlinear regression model
  model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data: DF
  Asym    lrc       c0
  0.6934  -2.9736 -20.4813
  residual sum-of-squares: 2.879
Number of iterations to convergence: 1
Achieved convergence tolerance: 1.365e-06

$`Collembola species richness`$AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
  data: DF
  Asym    lrc
  0.5385  0.5376
  residual sum-of-squares: 3.043
Number of iterations to convergence: 6
Achieved convergence tolerance: 4.798e-06

$`Collembola species richness`$LG2
Nonlinear regression model
  model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data: DF
  Asym    xmid    scal
  0.6866 -9.4396 14.2829
  residual sum-of-squares: 2.879
Number of iterations to convergence: 1
Achieved convergence tolerance: 5.776e-06

$\text{Aboveground herbivore abundance}$

$L0$

Call:
\( \text{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)} \)

Coefficients:

\[
\begin{array}{cccc}
\text{(Intercept)} & \text{blockB2} & \text{blockB3} & \text{blockB4} \\
3.211833 & -0.022801 & -0.103561 & -0.140502 \\
0.066319 & & & \\
\end{array}
\]

\[
\begin{array}{cccc}
\text{sowndiv:funcgr} & \text{grass} & \text{leg} & \text{sowndiv:funcgr} \\
-0.629014 & -1.264339 & -1.362688 & -0.007438 \\
0.007964 & & & \\
\end{array}
\]

\[
\begin{array}{cccc}
\text{sowndiv:leg} & \text{funcgr:grass} & \text{funcgr:leg} & \text{grass:leg} \\
-0.019563 & 0.159127 & 0.265130 & 0.506788 \\
\end{array}
\]

$L2$

Call:
\( \text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)} \)

Coefficients:

\[
\begin{array}{cccc}
\text{(Intercept)} & \text{sowndiv} & \text{funcgr} & \text{leg} \\
0.304450 & 0.008327 & 0.006768 & -0.061162 \\
\end{array}
\]

$M1$
Nonlinear regression model

model: \( \text{response ~ a * sowndiv/(b + sowndiv)} \)

data: DF

\[
\begin{array}{cc}
a & b \\
0.5849 & 3.8403 \\
\end{array}
\]

residual sum-of-squares: 1.508

Number of iterations to convergence: 14
Achieved convergence tolerance: 7.193e-06

$M1a$
Nonlinear regression model

model: \( \text{response ~ SSmicmen(sowndiv, Vm, k)} \)

data: DF

\[
\begin{array}{cc}
Vm & k \\
0.5849 & 3.8406 \\
\end{array}
\]

residual sum-of-squares: 1.508

Number of iterations to convergence: 12
Achieved convergence tolerance: 9.82e-06

$\text{Aboveground herbivore abundance}$\text{M2}
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
  a  b   d
  1.2291 73.8072 0.1897
residual sum-of-squares: 1.251
Number of iterations to convergence: 8
Achieved convergence tolerance: 8.297e-06

$\text{Aboveground herbivore abundance}$\text{E2}
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
  a  b
  2.835e-01 4.061e-27
residual sum-of-squares: 1.558
Number of iterations to convergence: 4
Achieved convergence tolerance: 3.021e-08

$\text{Aboveground herbivore abundance}$\text{E4}
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
  a
  1
residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$\text{Aboveground herbivore abundance}$\text{E5}
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
  b
  6.543e-27
residual sum-of-squares: 5.256
Number of iterations to convergence: 4
Achieved convergence tolerance: 9.403e-09

$\text{Aboveground herbivore abundance}$\text{Pa1}
Nonlinear regression model
  model:  response ~ a + b * sowndiv^c
  data:  DF
  a  b   c
  0.14125 0.05342 0.58765
residual sum-of-squares: 1.237
Number of iterations to convergence: 7
Achieved convergence tolerance: 9.668e-06

$\text{Aboveground herbivore abundance}\ Pa2$
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
  a     b
  0.219536 0.009292
  residual sum-of-squares: 1.284

Number of iterations to convergence: 1
Achieved convergence tolerance: 9.678e-10

$\text{Aboveground herbivore abundance}\ Pa3$
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
  a     c
  -0.8436 0.0934
  residual sum-of-squares: 1.331

Number of iterations to convergence: 8
Achieved convergence tolerance: 4.092e-06

$\text{Aboveground herbivore abundance}\ Pa4$
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
  b     c
  0.1681 0.3455
  residual sum-of-squares: 1.261

Number of iterations to convergence: 6
Achieved convergence tolerance: 9.92e-06

$\text{Aboveground herbivore abundance}\ Pa5$
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
  c
  -0.4642
  residual sum-of-squares: 14.49

Number of iterations to convergence: 14
Achieved convergence tolerance: 9.666e-06

$\text{Aboveground herbivore abundance}\ AS1$
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
  Asym  R0   lrc
  0.9843 0.1921 -3.9221
  residual sum-of-squares: 1.253
$\text{Aboveground herbivore abundance}$\text{AS2}

Nonlinear regression model

\[
\text{model: \ response} \sim \text{SSasympOff(sowndiv, Asym, lrc, c0)}
\]

\[
data: \oneline{DF}
\]

\[
\begin{array}{ccc}
\text{Asym} & \text{lrc} & \text{c0} \\
0.9843 & -3.9221 & -10.9625 \\
\end{array}
\]

residual sum-of-squares: 1.253

Number of iterations to convergence: 3
Achieved convergence tolerance: 1.304e-06

$\text{Aboveground herbivore abundance}$\text{AS3}

Nonlinear regression model

\[
\text{model: \ response} \sim \text{SSasympOrig(sowndiv, Asym, lrc)}
\]

\[
data: \oneline{DF}
\]

\[
\begin{array}{cc}
\text{Asym} & \text{lrc} \\
0.4746 & -1.2771 \\
\end{array}
\]

residual sum-of-squares: 1.666

Number of iterations to convergence: 18
Achieved convergence tolerance: 5.758e-06

$\text{Aboveground herbivore abundance}$\text{LG2}

Nonlinear regression model

\[
\text{model: \ response} \sim \text{SSlogis(sowndiv, Asym, xmid, scal)}
\]

\[
data: \oneline{DF}
\]

\[
\begin{array}{ccc}
\text{Asym} & \text{xmid} & \text{scal} \\
0.779 & 15.018 & 14.595 \\
\end{array}
\]

residual sum-of-squares: 1.264

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.350e-06

$\text{Aboveground carnivore abundance}$\text{L0}

Call:
\[
\text{lm(formula = response \sim block + (sowndiv + funcgr + grass + leg)^2, data = DF)}
\]

Coefficients:
\[
(\text{Intercept}) \quad \text{blockB2} \quad \text{blockB3} \quad \text{blockB4}
\]

\[
sowndiv \quad 4.7208466 \quad -0.0886979 \quad -0.0550726 \quad -0.0237293
\]

\[
0.0181320
\]

\[
\text{funcgr} \quad \text{grass} \quad \text{leg} \quad \text{sowndiv:funcgr}
\]

\[
sowndiv:grass \quad -0.9023465 \quad -1.7673288 \quad -2.0982837 \quad 0.0001356
\]

\[
0.0150569
\]

Number of iterations to convergence: 3
Achieved convergence tolerance: 1.307e-06

Number of iterations to convergence: 18
Achieved convergence tolerance: 5.758e-06

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.350e-06
sowndiv:leg  funcgr:grass  funcgr:leg  grass:leg
0.0050220  0.2318474  0.3733037  0.7164957

Aboveground carnivore abundance

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)    sowndiv      funcgr       leg
       0.633127     0.002308    -0.003545    -0.189020

Aboveground carnivore abundance
Nonlinear regression model
  model: response ~ a * sowndiv/(b + sowndiv)
  data: DF
    a       b
0.5117  1.1924
residual sum-of-squares: 1.806

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.961e-07

Aboveground carnivore abundance
Nonlinear regression model
  model: response ~ SSmicmen(sowndiv, Vm, k)
  data: DF
    Vm      k
0.5117  1.1924
residual sum-of-squares: 1.806

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.252e-06

Aboveground carnivore abundance
Nonlinear regression model
  model: response ~ d + a * sowndiv/(b + sowndiv)
  data: DF
    a       b       d
0.47154  1.47757  0.04569
residual sum-of-squares: 1.806

Number of iterations to convergence: 3
Achieved convergence tolerance: 9.555e-06

Aboveground carnivore abundance
Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data: DF
    a       b
3.639e-01  1.160e-27
residual sum-of-squares: 2.269
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.832e-08

$`Aboveground carnivore abundance`\textsuperscript{E4}$
Nonlinear regression model
  model: \texttt{response ~ a + exp(sowndiv)}
  data: \texttt{DF}

\begin{verbatim}
a
1
residual sum-of-squares: 5.217e+52
\end{verbatim}

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$`Aboveground carnivore abundance`\textsuperscript{E5}$
Nonlinear regression model
  model: \texttt{response ~ b \times exp(sowndiv)}
  data: \texttt{DF}

\begin{verbatim}
b
4.347e-27
residual sum-of-squares: 8.36
\end{verbatim}

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.062e-08

$`Aboveground carnivore abundance`\textsuperscript{Pa2}$
Nonlinear regression model
  model: \texttt{response ~ a + b \times sowndiv}
  data: \texttt{DF}

\begin{verbatim}
a   b
0.328693 0.004208
residual sum-of-squares: 2.115
\end{verbatim}

Number of iterations to convergence: 1
Achieved convergence tolerance: 8.806e-10

$`Aboveground carnivore abundance`\textsuperscript{Pa3}$
Nonlinear regression model
  model: \texttt{response ~ a + sowndiv\textsuperscript{c}}
  data: \texttt{DF}

\begin{verbatim}
a    c
-0.73615 0.06541
residual sum-of-squares: 1.859
\end{verbatim}

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.877e-06

$`Aboveground carnivore abundance`\textsuperscript{Pa4}$
Nonlinear regression model
  model: \texttt{response ~ b \times sowndiv\textsuperscript{c}}
  data: \texttt{DF}

\begin{verbatim}
b    c
0.2773 0.1782
\end{verbatim}
residual sum-of-squares: 1.885

Number of iterations to convergence: 9
Achieved convergence tolerance: 1.433e-06

$`Aboveground carnivore abundance`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
  c
-0.3737
residual sum-of-squares: 12.36

Number of iterations to convergence: 12
Achieved convergence tolerance: 2.792e-06

$`Aboveground carnivore abundance`$AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
  Asym      R0     lrc
0.4867  0.1448 -1.1667
residual sum-of-squares: 1.806

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.346e-06

$`Aboveground carnivore abundance`$AS2
Nonlinear regression model
  model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data: DF
  Asym     lrc      c0
0.4867 -1.1667 -1.1342
residual sum-of-squares: 1.806

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.393e-06

$`Aboveground carnivore abundance`$AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
  data: DF
  Asym     lrc
0.4647 -0.4869
residual sum-of-squares: 1.843

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.382e-06

$`Aboveground carnivore abundance`$LG2
Nonlinear regression model
  model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data: DF
  Asym   xmid    scal
0.4758 -0.332  1.3785
0.4851 1.1073 2.0759
residual sum-of-squares: 1.806

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.695e-07

$\text{Aboveground omnivore abundance}$
$\text{Aboveground omnivore abundance}$

Call:
\[ \text{lm(formula = response} \sim \text{block} + (\text{sowndiv} + \text{funcgr} + \text{grass} + \text{leg})^2, \text{data} = \text{DF}) \]

Coefficients:
(Intercept)         blockB2         blockB3         blockB4
sowndiv           1.4261864      -0.1177153      -0.1273346      -0.0681818
0.0467792
funcgr           -0.2237831      -0.2175366      -0.7035044      -0.0069720
sowndiv:funcgr      0.0062441
sowndiv:grass      -0.0220844       0.0001476       0.1397496       0.1683369

$\text{Aboveground omnivore abundance}$

Call:
\[ \text{lm(formula = response} \sim \text{sowndiv} + \text{funcgr} + \text{leg, data} = \text{DF}) \]

Coefficients:
(Intercept)      sowndiv          funcgr          leg
1.001860     0.003109    -0.090819    -0.352086

$\text{Aboveground omnivore abundance}$

Nonlinear regression model
\[ \text{model: response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \]
data:  DF
a   b
0.3691 0.4050
residual sum-of-squares: 2.396

Number of iterations to convergence: 5
Achieved convergence tolerance: 8.796e-06

$\text{Aboveground omnivore abundance}$

Nonlinear regression model
\[ \text{model: response} \sim \text{SSmicmen(sowndiv, Vm, k)} \]
data:  DF
Vm    k
0.3691 0.4050
residual sum-of-squares: 2.396
Number of iterations to convergence: 5
Achieved convergence tolerance: 3.686e-06

$`Aboveground omnivore abundance`$M2
Nonlinear regression model
model: response ~ d + a * sowndiv/(b + sowndiv)
data: DF
   a     b     d
 0.2379 17.8646 0.2577
residual sum-of-squares: 2.333
Number of iterations to convergence: 14
Achieved convergence tolerance: 6.94e-06

$`Aboveground omnivore abundance`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
   a     b
 3.127e-01 9.990e-28
residual sum-of-squares: 2.424
Number of iterations to convergence: 4
Achieved convergence tolerance: 6.259e-08

$`Aboveground omnivore abundance`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
   a
 1
residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$`Aboveground omnivore abundance`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
 3.737e-27
residual sum-of-squares: 6.922
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.296e-09

$`Aboveground omnivore abundance`$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
   a     b     c
Nonlinear regression model
model:  response ~ a + b * sowndiv
data:  DF
a      b
0.290158 0.002912
residual sum-of-squares: 2.367

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.224e-09

Nonlinear regression model
model:  response ~ a + sowndiv^c
data:  DF
a      c
-0.7365  0.0359
residual sum-of-squares: 2.348

Number of iterations to convergence: 8
Achieved convergence tolerance: 7.745e-07

Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
b      c
0.2643 0.1190
residual sum-of-squares: 2.345

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.189e-06

Nonlinear regression model
model:  response ~ sowndiv^c
data:  DF
c
-0.5454
residual sum-of-squares: 11.93

Number of iterations to convergence: 14
Achieved convergence tolerance: 3.366e-06

Nonlinear regression model
model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
data:  DF
Asym     R0     lrc
0.4388  0.2585  -2.7408
residual sum-of-squares: 2.33

Number of iterations to convergence: 6
Achieved convergence tolerance: 5.867e-06

$`Aboveground omnivore abundance`$AS2
Nonlinear regression model
  model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data:  DF
  Asym    lrc    c0
0.4388  -2.7408  -13.7847
residual sum-of-squares: 2.33

Number of iterations to convergence: 6
Achieved convergence tolerance: 5.769e-06

$`Aboveground omnivore abundance`$AS3
Nonlinear regression model
  model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
  data:  DF
  Asym    lrc
0.3414  0.5438
residual sum-of-squares: 2.433

Number of iterations to convergence: 4
Achieved convergence tolerance: 8.377e-06

$`Aboveground omnivore abundance`$LG2
Nonlinear regression model
  model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data:  DF
  Asym    xmid    scal
0.4348  -4.3436  10.8311
residual sum-of-squares: 2.328

Number of iterations to convergence: 5
Achieved convergence tolerance: 8.04e-06

$`Parasitoid abundance`$

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
(Intercept)       blockB2       blockB3       blockB4
sowndiv   6.176487       -0.131229       -0.243014       -0.065277
0.024879
\[ \text{Parasitoid abundance}^\text{\$L2} \]

Call:
\[ \text{lm(formula} = \text{response} \sim \text{sowndiv} + \text{funcgr} + \text{leg}, \text{data} = \text{DF}) \]

Coefficients:

\[
\begin{array}{ccccc}
(\text{Intercept}) & \text{sowndiv} & \text{funcgr} & \text{leg} \\
0.831973 & 0.008307 & -0.062920 & -0.325588 \\
\end{array}
\]

\[ \text{Parasitoid abundance}^\text{\$M1} \]

Nonlinear regression model

\[ \text{model: } \text{response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \]

\[ \text{data: } \text{DF} \]

\[ a \quad b \]

0.5475 3.7200

residual sum-of-squares: 3.219

Number of iterations to convergence: 21
Achieved convergence tolerance: 8.92e-06

\[ \text{Parasitoid abundance}^\text{\$M1a} \]

Nonlinear regression model

\[ \text{model: } \text{response} \sim \text{SSmicmen}(\text{sowndiv, Vm, k}) \]

\[ \text{data: } \text{DF} \]

\[ \text{Vm} \quad \text{k} \]

0.5475 3.7207

residual sum-of-squares: 3.219

Number of iterations to convergence: 21
Achieved convergence tolerance: 7.14e-06

\[ \text{Parasitoid abundance}^\text{\$M2} \]

Nonlinear regression model

\[ \text{model: } \text{response} \sim d + a \times \text{sowndiv}/(b + \text{sowndiv}) \]

\[ \text{data: } \text{DF} \]

\[ a \quad b \quad d \]

3.5740 335.9181 0.2029

residual sum-of-squares: 2.772

Number of iterations to convergence: 8
Achieved convergence tolerance: 2.569e-06

\[ \text{Parasitoid abundance}^\text{\$E2} \]

Nonlinear regression model

\[ \text{model: } \text{response} \sim a + b \times \exp(\text{sowndiv}) \]
data: DF
  a  b
2.706e-01 4.156e-27
residual sum-of-squares: 2.958

Number of iterations to convergence: 4
Achieved convergence tolerance: 7.82e-09

$`Parasitoid abundance`$E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data: DF
  a
  1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$`Parasitoid abundance`$E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
  b
  6.526e-27
residual sum-of-squares: 6.326

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.800e-08

$`Parasitoid abundance`$Pa1
Nonlinear regression model
  model: response ~ a + b * sowndiv^c
  data: DF
  a  b  c
  0.19684 0.01455 0.88557
residual sum-of-squares: 2.771

Number of iterations to convergence: 5
Achieved convergence tolerance: 1.343e-06

$`Parasitoid abundance`$Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
  a  b
  0.210010 0.009059
residual sum-of-squares: 2.774

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.407e-10
model: response ~ a + sowndiv^c
data: DF
   a   c
-0.83867 0.08475
residual sum-of-squares: 2.989
Number of iterations to convergence: 9
Achieved convergence tolerance: 4.719e-07

$`Parasitoid abundance`$Pa4
Nonlinear regression model
   model: response ~ b * sowndiv^c
data: DF
   b   c
  0.1606 0.3449
residual sum-of-squares: 2.876
Number of iterations to convergence: 8
Achieved convergence tolerance: 7.317e-06

$`Parasitoid abundance`$Pa5
Nonlinear regression model
   model: response ~ sowndiv^c
data: DF
   c
-0.5338
residual sum-of-squares: 15.50
Number of iterations to convergence: 16
Achieved convergence tolerance: 3.879e-06

$`Parasitoid abundance`$AS1
Nonlinear regression model
   model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
   Asym     R0    lrc
   2.129  0.203 -5.203
residual sum-of-squares: 2.772
Number of iterations to convergence: 2
Achieved convergence tolerance: 3.416e-08

$`Parasitoid abundance`$AS2
Nonlinear regression model
   model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
   Asym     lrc      c0
   2.129  -5.203 -18.210
residual sum-of-squares: 2.772
Number of iterations to convergence: 2
Achieved convergence tolerance: 6.217e-08

$`Parasitoid abundance`$LG2
Nonlinear regression model
model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
data:  DF
Asym  xmid  scal
0.8386 20.9265 18.8546
residual sum-of-squares: 2.773

Number of iterations to convergence: 1
Achieved convergence tolerance: 2.611e-06

$`Hyperparasitoid abundance`$L0
$`Hyperparasitoid abundance`$L2

Call:
\texttt{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)}

Coefficients:
\begin{align*}
(\text{Intercept}) & & \text{blockB2} & & \text{blockB4} & & \text{sowndiv} \\
\text{funcgr} & & 1.8521809 & & -0.0320712 & & 0.3509313 & & 0.0255851 & & - \\
\text{grass} & & 0.5250246 & & & & & & - \\
\text{leg} & & -0.7114799 & & -0.6803634 & & -0.0004056 & & -0.0189907 & & - \\
\text{sowndiv:funcgr} & & & & & & & & - \\
\text{sowndiv:grass} & & & & & & & & - \\
\text{sowndiv:leg} & & & & & & & & - \\
\text{funcgr:grass} & & & & & & & & - \\
\text{funcgr:leg} & & & & & & & & - \\
\text{grass:leg} & & & & & & & & - \\
\end{align*}

$`Hyperparasitoid abundance`$M1

Nonlinear regression model
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
\begin{align*}
a & & b \\
0.28749 & & -0.04046 \\
\text{residual sum-of-squares: 3.158} \\
\end{align*}

Number of iterations to convergence: 7
Achieved convergence tolerance: 7.454e-06

$`Hyperparasitoid abundance`$M1a

Nonlinear regression model
```r
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
     Vm        k
0.28750 -0.04044
residual sum-of-squares: 3.158

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.970e-06

$`Hyperparasitoid abundance``$M2
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
data:  DF
     a        b        d
-0.06718 -5.96317 0.28368
residual sum-of-squares: 2.912

Number of iterations to convergence: 13
Achieved convergence tolerance: 6.082e-06

$`Hyperparasitoid abundance``$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
data:  DF
     a        b
2.88e-01 3.97e-28
residual sum-of-squares: 3.153

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.245e-08

$`Hyperparasitoid abundance``$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
data:  DF
     a
1
residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.29e-20

$`Hyperparasitoid abundance``$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
data:  DF
     b
2.919e-27
residual sum-of-squares: 5.227

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.508e-08
```

$`Hyperparasitoid abundance``$PAl
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
  a       b       c
0.40685 -0.08832  0.15208
residual sum-of-squares: 3.141

Number of iterations to convergence: 15
Achieved convergence tolerance: 8.373e-06

$`Hyperparasitoid abundance`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
  a       b
0.30024 -0.00062
residual sum-of-squares: 3.155

Number of iterations to convergence: 1
Achieved convergence tolerance: 2.213e-08

$`Hyperparasitoid abundance`$Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
  a       c
-0.68051 -0.01787
residual sum-of-squares: 3.142

Number of iterations to convergence: 8
Achieved convergence tolerance: 9.192e-07

$`Hyperparasitoid abundance`$Pa4
Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
  b       c
0.31900 -0.05795
residual sum-of-squares: 3.143

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.611e-06

$`Hyperparasitoid abundance`$Pa5
Nonlinear regression model
model: response ~ sowndiv^c
data: DF
  c
-0.5917
residual sum-of-squares: 8.238

Number of iterations to convergence: 11
Achieved convergence tolerance: 8.552e-07
 Hyperparasitoid abundance

Nonlinear regression model
  model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
  data:  DF
  Asym    lrc
  0.2999  0.9994
  residual sum-of-squares: 3.156
  Number of iterations to convergence: 2
  Achieved convergence tolerance: 2.620e-07

 Pollinator abundance

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, 
    data = DF)
Coefficients:

(Intercept)         blockB2         blockB3         blockB4
sowndiv             1.002187       -0.141355       -0.160610       -0.108764
  0.012896
funcgr              -0.044395       -0.080761       -0.213346       -0.001070
  0.007455
sowndiv:grass       -0.044395       -0.080761       -0.213346       -0.001070
  0.007455
sowndiv:leg         -0.015239       -0.045765        0.020650       -0.015216
  0.007455
funcgr:grass        -0.015239       -0.045765        0.020650       -0.015216
  0.007455
funcgr:leg          -0.015239       -0.045765        0.020650       -0.015216
  0.007455
grass:leg           -0.015239       -0.045765        0.020650       -0.015216
  0.007455

Pollinator abundance

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:

(Intercept)      sowndiv       funcgr          leg
  0.632480     0.000598    -0.027858    -0.210336

 Pollinator abundance

Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
  a        b
  0.2856  0.1398
  residual sum-of-squares: 2.009
  Number of iterations to convergence: 6
  Achieved convergence tolerance: 1.577e-06

Pollinator abundance
Nonlinear regression model
  model: response ~ SSmicmen(sowndiv, Vm, k)
  data: DF
    Vm  k
0.2856 0.1398
  residual sum-of-squares: 2.009

Number of iterations to convergence: 2
Achieved convergence tolerance: 9.826e-06

$`Pollinator abundance`$E2
Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data: DF
    a     b
2.629e-01 8.424e-28
  residual sum-of-squares: 1.984

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.549e-08

$`Pollinator abundance`$E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data: DF
    a
1
  residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$`Pollinator abundance`$E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
    b
3.145e-27
  residual sum-of-squares: 5.164

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.324e-08

$`Pollinator abundance`$Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
    a    b
0.252644 0.001651
  residual sum-of-squares: 1.985

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.878e-09
Nonlinear regression model
   model:  response ~ a + sowndiv^c
   data:  DF
            a       c
         -0.75295  0.01492
   residual sum-of-squares: 1.998

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.534e-06

Nonlinear regression model
   model:  response ~ b * sowndiv^c
   data:  DF
            b       c
         0.24658  0.05811
   residual sum-of-squares: 1.998

Number of iterations to convergence: 7
Achieved convergence tolerance: 6.814e-06

Nonlinear regression model
   model:  response ~ sowndiv^c
   data:  DF
            c
         -0.6934
   residual sum-of-squares: 11.67

Number of iterations to convergence: 13
Achieved convergence tolerance: 9.425e-06

Nonlinear regression model
   model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
   data:  DF
            Asym    lrc
         0.2784  0.8920
   residual sum-of-squares: 2.012

Number of iterations to convergence: 3
Achieved convergence tolerance: 1.674e-06

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
     data = DF)

Coefficients:
             (Intercept) blockB2 blockB3 blockB4
sowndiv

0.0948471 -0.1047890 -0.0822876 -0.0698602
0.0008283
funcgr           grass             leg  sowndiv:funcgr
sowndiv:grass
0.0579528       0.3623876       0.0139182       0.0011248      -
0.0100594
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
0.0013060      -0.0776286      -0.0003597      -0.1033390

$`Invader abundance`$L02
Generalized least squares fit by maximum likelihood
    Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
    Data: DF
    Log-likelihood: 53.2507

Coefficients:
(Intercept)        blockB2        blockB3        blockB4
sowndiv            -0.4229337492  -0.1183189954  -0.1304634129  -0.0910711246
0.0136915868
funcgr          grass            leg  sowndiv:funcgr
sowndiv:grass
0.1684421917   0.6006197821   0.2276533374  -0.0004172888 -
0.0119627573
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
-0.0038335378  -0.1155916413  -0.0182514680  -0.1950475315

Variance function:
    Structure: Exponential of variance covariate
    Formula: ~fitted(.)
    Parameter estimates:
        expon
        5.720827

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.03759467

$`Invader abundance`$L011
Generalized least squares fit by maximum likelihood
    Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
    Data: DF
    Log-likelihood: 53.39595

Coefficients:
(Intercept)        blockB2        blockB3        blockB4
sowndiv          0.214463989   -0.088644602   -0.088227958   -0.073070824   -
0.004116072
funcgr          grass            leg  sowndiv:funcgr
sowndiv:grass
0.027564026    0.343163236  -0.045344435  -0.001604593 -
0.008266401
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
0.002525867  -0.080155696   0.021008184  -0.102308085
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3738835
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2197977

$\text{Invader abundance}^{L021}$
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
  Log-likelihood: 56.94919

Coefficients:
(Intercept)        blockB2        blockB3        blockB4
sowndiv
0.186472665 0.005263845 0.021510854 0.024733810 -
0.028393251
  funcgr          grass            leg sowndiv:funcgr
sowndiv:grass
0.041281594 0.315519961 -0.024930964 0.004424593 -
0.001421379
  sowndiv:leg   funcgr:grass     funcgr:leg     grass:leg
0.008427897 -0.081210990  0.002836866 -0.107116026

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.08592699
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2526560

$\text{Invader abundance}^{L2}$

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)      sowndiv       funcgr          leg
0.567230    -0.004025    -0.051769    -0.144489

$\text{Invader abundance}^{L21}$
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 44.7894

Coefficients:
(Intercept)  sowndiv   funcgr   leg
0.484491856 -0.003471566 -0.037187508 -0.114501179

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  power
0.942972
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6937715

$`Invader abundance$L22
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 39.72063

Coefficients:
(Intercept)  sowndiv   funcgr   leg
0.441504105 -0.003573788 -0.029447487 -0.099416362

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  expon
6.289382
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.04194056

$`Invader abundance$L211
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 42.1319

Coefficients:
(Intercept)  sowndiv   funcgr   leg
0.447412914 -0.003567621 -0.030316035 -0.108397163

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3388165
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2393709

$`Invader abundance$L222
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
Log-likelihood: 46.25071

Coefficients:
(Intercept)      sowndiv       funcgr          leg
 0.455606549 -0.003420561 -0.032132902 -0.109051649

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.04910265

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2098406

$`Invader abundance`\textsuperscript{M1}$
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
    a      b
  0.1641 -0.4761
 residual sum-of-squares: 2.435

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.998e-06

$`Invader abundance`\textsuperscript{M1a}$
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm      k
  0.1641 -0.4761
 residual sum-of-squares: 2.435

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.607e-06

$`Invader abundance`\textsuperscript{M2}$
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
    a      b      d
-0.3348 12.3555  0.3110
 residual sum-of-squares: 2.305

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.069e-06

$`Invader abundance`\textsuperscript{M211}$
Generalized nonlinear least squares fit
  Model:  response ~ d + a * sowndiv/(b + sowndiv)
  Data:  DF
  Log-likelihood: 40.14578
Coefficients:
\[
\begin{array}{ccc}
 a & b & d \\
-0.3690034 & 22.1355213 & 0.2850952 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

\[
\begin{array}{c}
\text{power} \\
-0.3712425 \\
\end{array}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2621744

$`Invader abundance`$M222
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 44.88807

Coefficients:
\[
\begin{array}{ccc}
 a & b & d \\
-0.3787998 & 21.3212682 & 0.2927103 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:

\[
\begin{array}{c}
\text{expon} \\
-0.05099692 \\
\end{array}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2209340

$`Invader abundance`$M3
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 30.97222

Coefficients:
\[
\begin{array}{cccc}
 a.(\text{Intercept}) & a.\text{leg} & b.(\text{Intercept}) & b.\text{leg} \\
0.24914479 & -0.06172622 & -0.61869389 & 0.04318655 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1700533

$`Invader abundance`$M311
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 34.41162

Coefficients:
\[
\begin{array}{cccc}
 a.(\text{Intercept}) & a.\text{leg} & b.(\text{Intercept}) & b.\text{leg} \\
0.19583611 & -0.03598630 & -0.75896319 & 0.10937049 \\
\end{array}
\]
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power -0.1827186

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2138829

$`Invader abundance`$M321
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 31.41477

Coefficients:
  a.(Intercept)       a.leg b.(Intercept)       b.leg
  0.22005059   -0.04743426   -0.68820082    0.07689891

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon -0.005816461

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1777986

$`Invader abundance`$M4
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 29.73078

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.07260709    0.06756012   -0.45254503    0.03465354

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1726474

$`Invader abundance`$M411
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 34.38195

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.05861905    0.06422998   -0.59408588    0.06845999

Variance function:
  Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.2175738
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2253233

$`Invader abundance`$M422
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 31.71743
Coefficients:
  a.(Intercept)    a.grass b.(Intercept)    b.grass
  0.01305763   0.09259118   -0.76114135    0.17346143

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
-0.01481194
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1913664

$`Invader abundance`$M511
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 35.62032
Coefficients:
  a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
  0.19010293   -0.02595969    0.19713078   -0.64645796

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
-0.2698072
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2398416

$`Invader abundance`$M522
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 34.94891
Coefficients:
  a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
  0.2238262   -0.0497326     0.5401651    -0.9112279
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
  -0.0419854

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2323107

Invader abundance
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 13.07694

Coefficients:
  a.(Intercept)    a.funcgr    a.leg    b.(Intercept)    b.funcgr
  -0.23798558    0.04922908    0.14909558   -8.43494986    0.63234113
  b.leg
  3.60372733

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.214291

Invader abundance
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 39.48383

Coefficients:
  a.(Intercept)    a.funcgr    a.leg    b.(Intercept)    b.funcgr
  0.35486102   -0.04600789   -0.08004049    0.07769520   -0.58759789
  b.leg
  0.04365296

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
  -0.2406816

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2219853

Invader abundance
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 24.10479

Coefficients:
  a.(Intercept)    a.funcgr    a.leg    b.(Intercept)    b.funcgr

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.05140486
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2912490

$`Invader abundance`$M7
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 30.88462

Coefficients:
  a.(Intercept)   a.funcgr   a.grass   b.(Intercept)   b.funcgr   b.grass
  0.11149679   -0.01188506   0.04362230   0.35698982   -0.54330152   -0.12480209

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1724605

$`Invader abundance`$M711
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 36.90214

Coefficients:
  a.(Intercept)   a.funcgr   a.grass   b.(Intercept)   b.funcgr   b.grass
  0.16392725   -0.02314251   0.01543774   0.86396713   -0.73015934   -0.30525716

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.2575043
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2348789

$`Invader abundance`$M722
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 36.12136
Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{b. (Intercept)} & \text{b.funcgr} \\
0.19177306 & -0.04536400 & 0.01705130 & 0.98483053 & -0.93873615 \\
\text{b.grass} & -0.22912603 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} = -0.03959124
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2272863

$`Invader abundance`$M81
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.2338

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} & \text{b.grass} \\
0.14438475 & 0.06545733 & -0.05180781 & -0.99526402 & 0.19436730 \\
\text{b.leg} & 0.11400671 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1696461

$`Invader abundance`$M821
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 36.09408

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} & \text{b.grass} \\
0.09134739 & 0.06759404 & -0.02697942 & -1.28479553 & 0.25070728 \\
\text{b.leg} & 0.21784472 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} = -0.1972918
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2169212

$`Invader abundance`$M832
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.41921

Coefficients:
a.(Intercept)     a.grass     a.leg     b.(Intercept)     b.grass
  0.04804095     0.08994424  -0.01898503  -1.42632619     0.32362842
  b.leg
  0.24646832

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01189590

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1851912

$``Invader abundance``$M91
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 34.29109

Coefficients:
a.(Intercept)     a.funcgr     a.grass     a.leg     b.(Intercept)
  0.53857176   -0.06361510  -0.04335824  -0.12531460    0.93021793
  b.funcgr     b.grass     b.leg
  -0.53314224   -0.32274917  -0.13194821

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1676636

$``Invader abundance``$M921
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 27.03216

Coefficients:
a.(Intercept)     a.funcgr     a.grass     a.leg     b.(Intercept)
  -0.22851219    0.05024008    0.08061437   0.06446704  -14.86289205
  b.funcgr     b.grass     b.leg
  2.25089738    2.84219721    3.16774921

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3299815

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2989774
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 38.20703

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} & \\
0.46677146 & -0.07765869 & -0.03216412 & -0.08813560 & 0.86002467 \\
\text{b.funcgr} & \text{b.grass} & \text{b.leg} & \\
-0.83772691 & -0.20409047 & -0.02626041 & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03360188
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2132977

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 51.8033

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.leg} & \text{b. (Intercept)} & \text{b.funcgr} & \\
-3.06324133 & 0.32394216 & 1.18141394 & 82.28886459 & 21.85153865 \\
\text{b.grass} & \text{d. (Intercept)} & \text{d.funcgr} & \text{d.leg} & \\
-47.44499433 & 0.72391757 & -0.08353662 & -0.18371000 & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.0494803
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2085139

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 43.54543

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{b. (Intercept)} & \text{b.funcgr} & \\
-7.00327421 & 0.13867722 & 3.14584406 & 1750.08547192 & -7.77040726 \\
\text{b.grass} & \text{d. (Intercept)} & \text{d.funcgr} & \text{d.grass} & \\
-863.09808881 & -0.05787106 & 0.02003169 & 0.20781047 & \\
\end{array}
\]
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3687438
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2606909

$`Invader abundance`$M151
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 36.03919
  Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  -0.71311972   -0.04280351    0.21235215  154.16358571  -65.73402975
  b.leg d.(Intercept)       d.grass         d.leg
  -10.04856066    0.11409034    0.20155085   -0.06552941

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1652475

$`Invader abundance`$M1521
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 45.93036
  Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  -2.689393e+01  1.304132e+01  2.113955e-01  7.604110e+03 -3.789799e+03
  b.leg d.(Intercept)       d.grass         d.leg
  -1.105012e+01  4.960164e-02  2.231372e-01  -4.754850e-02

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3595345
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2497796

$`Invader abundance`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
  a          b
  2.197e-01  -1.809e-27
  residual sum-of-squares: 2.536
Number of iterations to convergence: 4
Achieved convergence tolerance: 5.939e-08

$`Invader abundance`$E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data: DF

a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

$`Invader abundance`$E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
  b
1.151e-28
residual sum-of-squares: 6.3

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.372e-09

$`Invader abundance`$E22
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(sowndiv)
  Data: DF
  Log-likelihood: 40.11754

Coefficients:
  a             b
    1.882089e-01 -1.532909e-27

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.05172093

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2341514

$`Invader abundance`$E31
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 38.79981

Coefficients:
  a            c
     -0.775235528 -0.004168319
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3790989
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2679494

$`Invader abundance`$E32
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 43.20836
Coefficients:
  a            c
  -0.770078973 -0.004080025

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.05130422
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2246845

$`Invader abundance`$E41
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1768.036
Coefficients:
  a
  -2.415134

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.88816
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1416940

$`Invader abundance`$E42
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.5105
Coefficients:
-3.069749

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014182
  Degrees of freedom: 82 total; 81 residual
  Residual standard error: 0.7079285

$`Invader abundance$E51$
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -1.920097

Coefficients:
  b
  1.151439e-28

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3560951
  Degrees of freedom: 82 total; 81 residual
  Residual standard error: 0.4228511

$`Invader abundance$E52$
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: 4.865807

Coefficients:
  b
  1.151439e-28

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.05786626
  Degrees of freedom: 82 total; 81 residual
  Residual standard error: 0.3770643

$`Invader abundance$E61$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
Log-likelihood: 11.00391

Coefficients:
  c
-0.7305366

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.2148205

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2928547

$``Invader abundance``E62
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 16.51183

Coefficients:
  c
-0.811601

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.04292147

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2877479

$``Invader abundance``Ea10
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)    a.leg
-2963126         911706

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$``Invader abundance``Ea12
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 16.695

Coefficients:
$\text{Invader abundance}\$

Generalized nonlinear least squares fit

Model: response ~ a + exp(c * sowndiv)

Data: DF

Log-likelihood: 41.26493

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. leg</th>
<th>c. (Intercept)</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>-0.687672739</td>
<td>-0.052484133</td>
<td>-0.002881459</td>
<td>-0.002035232</td>
</tr>
</tbody>
</table>

Variance function:

Structure: Power of variance covariate

Formula: ~sowndiv

Parameter estimates:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>power</td>
<td>-0.3742735</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2614469

$\text{Invader abundance}\$

Generalized nonlinear least squares fit

Model: response ~ a + exp(c * sowndiv)

Data: DF

Log-likelihood: 45.52539

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. leg</th>
<th>c. (Intercept)</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>-0.688344745</td>
<td>-0.045309377</td>
<td>-0.001729266</td>
<td>-0.003143998</td>
</tr>
</tbody>
</table>

Variance function:

Structure: Exponential of variance covariate

Formula: ~sowndiv

Parameter estimates:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>expon</td>
<td>-0.05068551</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2200353

$\text{Invader abundance}\$

Generalized nonlinear least squares fit

Model: response ~ a + exp(sowndiv)

Data: DF

Log-likelihood: -1766.566

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>-2.1745485</td>
<td>-0.1374774</td>
</tr>
</tbody>
</table>

Variance function:

Parameters estimated by minimum chi-square
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power 14.89503
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1386226

$`Invader abundance`$Ea1021
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.4501

Coefficients:
  a.(Intercept)   a.leg
    -3.6915954    0.3584942

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon 1.014214
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.7116208

$`Invader abundance`$Ea121
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 20.20608

Coefficients:
  c.(Intercept)   c.leg
    0.4395948   -0.7699244

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power -0.2217967
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2661401

$`Invader abundance`$Ea1221
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 24.20597

Coefficients:
c.(Intercept)        c.leg
       0.4431009    -0.7919247

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04040003
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2579633

$`Invader abundance`Eb16
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
  Coefficients:
    a.(Intercept)       a.grass
    -3508714       1286426
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 2.553606e+25

$`Invader abundance`Eb18
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 8.491606
  Coefficients:
    c.(Intercept)       c.grass
    -1.3351941     0.2671049
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2208772

$`Invader abundance`Eb1511
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 42.25407
  Coefficients:
    a.(Intercept)       a.grass c.(Intercept)       c.grass
    -0.928306486   0.129727349   0.009783139   -0.013238877
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.013238877

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3580496
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2521647

$`Invader abundance`$Eb1521
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 47.01877

Coefficients:
  a.(Intercept) a.grass c.(Intercept) c.grass
  -0.929791968  0.131945974  0.009743024  -0.013233999

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
      -0.05031111

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2153709

$`Invader abundance`$Eb1611
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1767.522

Coefficients:
  a.(Intercept) a.grass
  -2.55864026  0.08200363

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
      14.89056

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1411824

$`Invader abundance`$Eb1621
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.3425

Coefficients:
  a.(Intercept) a.grass
  -4.1052831   0.5970601

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
expon
1.014318
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7100529

$`Invader abundance`$Eb1811
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 11.13965
Coefficients:
c. (Intercept) c.grass
-1.0395104 0.1703889
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.2050308
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2899472

$`Invader abundance`$Eb1821
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 16.71487
Coefficients:
c. (Intercept) c.grass
-1.2203830 0.2292794
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.04265491
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2881644

$`Invader abundance`$Ec22
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516
Coefficients:
a. (Intercept) a.funcgr
  252095.8 -912137.6
Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`\text{Invader abundance}`$Ec24
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 13.66704

Coefficients:
c.(Intercept)      c.funcgr
-1.1822421     0.2267671

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2073673

$`\text{Invader abundance}`$Ec2121
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 45.81655

Coefficients:
a.(Intercept)      a.funcgr c.(Intercept)      c.funcgr
-0.677003919  -0.024301135  -0.018282488   0.003574789

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.05139769

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2206001

$`\text{Invader abundance}`$Ec2211
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1768.036

Coefficients:
a.(Intercept)      a.funcgr
2.293596     -4.708730

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
14.88816

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1425766
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -794.7024

Coefficients:
a.(Intercept)    a.funcgr
     3.673552     -6.349790

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      expon
    1.021545

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6154255

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 16.33890

Coefficients:
c.(Intercept)    c.funcgr
     -1.0879521     0.2061365

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      power
   -0.1929917

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.267313

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 21.53604

Coefficients:
c.(Intercept)    c.funcgr
     -1.1494337     0.2263834

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      expon
    -0.04149374
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2690151

$`Invader abundance`$Ed28
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)      a.funcgr         a.leg
     872779.4     -990730.6     -307654.9

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Invader abundance`$Ed2811
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1766.566

Coefficients:
  a.(Intercept)      a.funcgr         a.leg
      2.5685513    -4.7430997    -0.1374774

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.89503

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1394972

$`Invader abundance`$Ed2821
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.6891

Coefficients:
  a.(Intercept)      a.funcgr         a.leg
     3.9686351    -6.3865345    -0.1476168

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.021569

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6190824
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 25.09075

Coefficients:
c.(Intercept) c.funcgr c.leg
 0.08860051 0.07610679 -0.65174044

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.0398211
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2555317

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept) a.funcgr a.grass
-335850.6 -839615.5 296563.3

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1767.522

Coefficients:
a.(Intercept) a.funcgr a.grass
2.12958922 -4.68822946 0.08200362

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
14.89056
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1420732
Data: DF
Log-likelihood: -794.6968

Coefficients:
a.(Intercept) a.funcgr a.grass
3.48229916 -6.32582543 0.09559537

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  1.021555
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6192145

$`Invader abundance`$Ef40
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept) a.grass a.leg
-5251826 1394676 1054750

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Invader abundance`$Ef3721
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2739.352

Coefficients:
a.(Intercept) a.grass a.leg b.(Intercept) b.grass
4.550016e-01 3.824826e-02 -1.244299e-01 -1.671282e-04 6.483160e-05
  b.leg c.(Intercept) c.grass c.leg
  1.766882e-05 1.000011e+00 9.999959e-01 9.999988e-01

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  4.462693
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.001896154

$`Invader abundance`$Ef3921
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
Log-likelihood: 49.45979

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>c.(Intercept)</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.801347675</td>
<td>0.135550858</td>
<td>-0.088151532</td>
<td>0.008757770</td>
<td>-0.015175787</td>
</tr>
<tr>
<td>c.leg</td>
<td>0.001997876</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.04984311

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2109377

$`Invader abundance`$Ef4011

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1766.448

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2.26951526</td>
<td>0.04070006</td>
<td>-0.12391071</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
14.89558

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1391824

$`Invader abundance`$Ef4021

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -801.165

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-5.6465543</td>
<td>0.8307653</td>
<td>0.6548644</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.014429

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7123082
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 20.86188

Coefficients:
c.(Intercept)      c.grass       c.leg
0.6029478    -0.1165741    -0.7653157

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.2064317

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.259694

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 25.19821

Coefficients:
c.(Intercept)      c.grass       c.leg
0.6912315    -0.1620634    -0.7931793

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.04032088

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2562944

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)      a.funcgr       a.grass      a.leg
292092.0   -918391.5    183181.3   -199834.3

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1766.448

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg
2.46001782  -4.72953304  0.04070005  -0.12391072

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
14.89558
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1400717

$`Invader abundance`$Eg4621
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.688

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg
3.84221323  -6.37072032  0.04567755  -0.13008952

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
1.021571
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6230196

$`Invader abundance`$Pa1
Nonlinear regression model
  model:  response ~ a + b * sowndiv^c
  data:  DF
    a    b    c
    0.6022 -0.3072  0.1550
residual sum-of-squares: 2.295

Number of iterations to convergence: 11
Achieved convergence tolerance: 2.866e-06

$`Invader abundance`$Pa2
Nonlinear regression model
  model:  response ~ a + b * sowndiv
  data:  DF
    a    b
    0.250758 -0.004793
residual sum-of-squares: 2.393
Number of iterations to convergence: 1
Achieved convergence tolerance: 1.430e-10

$`Invader abundance`$Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
data: DF
    a       c
  -0.6949 -0.0696
residual sum-of-squares: 2.302

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.388e-06

$`Invader abundance`$Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
data: DF
    b       c
  0.3097 -0.2947
residual sum-of-squares: 2.322

Number of iterations to convergence: 9
Achieved convergence tolerance: 1.03e-06

$`Invader abundance`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
data: DF
    c
  -1.388
residual sum-of-squares: 10.87

Number of iterations to convergence: 16
Achieved convergence tolerance: 4.725e-06

$`Invader abundance`$Pb11
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 30.27011

Coefficients:
  a          b          c
-0.6021535 -0.3071771  0.1549520

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1704266

$`Invader abundance`$Pb21
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
Log-likelihood: 28.55619

Coefficients:

\[
\begin{array}{cc}
a & b \\
0.250758061 & -0.004792753 \\
\end{array}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1729352

$`Invader abundance`$Pb31
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 30.13368

Coefficients:

\[
\begin{array}{cc}
a & c \\
-0.69489839 & -0.06960382 \\
\end{array}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1696401

$`Invader abundance`$Pb41
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 29.78818

Coefficients:

\[
\begin{array}{cc}
b & c \\
0.3097057 & -0.2947488 \\
\end{array}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1703564

$`Invader abundance`$Pb51
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -33.51072

Coefficients:

\[
\begin{array}{c}
c \\
-1.387611 \\
\end{array}
\]

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.366361

$`Invader abundance`$Pc121
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 40.35215
Coefficients:
\[
\begin{array}{ccc}
a & b & c \\
0.4463549 & -0.1595320 & 0.2430347 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: \(~\text{sowndiv}\)
Parameter estimates:
power
-0.3705384
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2612421

$`\text{Invader abundance}$~\text{Pc131}$
Generalized nonlinear least squares fit
Model: response \sim a + b \times \text{sowndiv}^c
Data: DF
Log-likelihood: 45.11403

Coefficients:
\[
\begin{array}{ccc}
a & b & c \\
0.4565660 & -0.1664563 & 0.2392683 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: \(~\text{sowndiv}\)
Parameter estimates:
expon
-0.05095225
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2202416

$`\text{Invader abundance}$~\text{Pc221}$
Generalized nonlinear least squares fit
Model: response \sim a + b \times \text{sowndiv}
Data: DF
Log-likelihood: 38.58775

Coefficients:
\[
\begin{array}{cc}
a & b \\
0.219798405 & -0.003585873 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: \(~\text{sowndiv}\)
Parameter estimates:
power
-0.3806004
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2692427

$`\text{Invader abundance}$~\text{Pc231}$
Generalized nonlinear least squares fit
Model: response \sim a + b \times \text{sowndiv}
Data: DF
Log-likelihood: 42.97463

Coefficients:
\[
\begin{array}{cc}
  a & b \\
  0.225341330 & -0.003541865
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{expon} \\
  -0.05134829
\end{array}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2254111

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 39.60107

Coefficients:
\[
\begin{array}{cc}
  a & c \\
  -0.67341011 & -0.08345803
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{power} \\
  -0.3556401
\end{array}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.256262

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.82733

Coefficients:
\[
\begin{array}{cc}
  a & c \\
  -0.66409766 & -0.09471116
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{expon} \\
  -0.05052622
\end{array}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2215104
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 37.77617

Coefficients:
\[ b \quad c \]
\[ 0.3350423 \quad -0.3643016 \]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[ \text{power} \]
\[ -0.3072863 \]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2438784

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 36.14356

Coefficients:
\[ b \quad c \]
\[ 0.3489759 \quad -0.5070250 \]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[ \text{expon} \]
\[ -0.03289137 \]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2090916

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 8.496593

Coefficients:
\[ c \]
\[ -0.872734 \]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[ \text{power} \]
\[ -0.7349819 \]
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6535871

$\text{``Invader abundance''}$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -4.439147

Coefficients:
c
-1.046137

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.06754658

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4589769

$\text{``Invader abundance''}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 30.47216

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr c.(Intercept)
0.334886306 -0.024877669 -0.022998214 0.002586177 0.950513525
c.funcgr
-0.065539989

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1733301

$\text{``Invader abundance''}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 30.40951

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
0.329927604 -0.029343753 -0.017308412 0.003515594

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1712243

$\text{``Invader abundance''}$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 30.16052

Coefficients:
a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
-0.707741015  0.009028536  -0.062774310  -0.004499274

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.171745

$`\text{Invader abundance}\$Pd91$ Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 29.91367

Coefficients:
b.(Intercept)  b.funcgr  c.(Intercept)  c.funcgr
0.27563864    0.02688852   -0.22760621   -0.04409281

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1722628

$`\text{Invader abundance}\$Pd101$ Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -32.67393

Coefficients:
c.(Intercept)  c.funcgr
-2.0533833 0.2959445

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3649008

$`\text{Invader abundance}\$Pe621$ Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 41.38124

Coefficients:
a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr  c.(Intercept)
0.3029607303 -0.0236047650 -0.0059872898 0.0007383095 1.4547741331
  c.funcgr
-0.1099692391

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3914348

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2713142

$\text{Invader abundance}$Pe631
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 45.96573

Coefficients:
  a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr  c.(Intercept)  c.funcgr
  0.311832748 -0.023913670 -0.008152650  0.001042906  1.338836124
  -0.094651265

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.05146487

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2232064

$\text{Invader abundance}$Pe721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 41.20443

Coefficients:
  a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr
  0.317563066 -0.025127691 -0.016136583  0.003191292

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3877693

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2669348

$\text{Invader abundance}$Pe731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 45.8575

Coefficients:
  a.(Intercept)  a.funcgr  b.(Intercept)  b.funcgr
  0.321984677 -0.025366830 -0.016541130  0.003271439

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.05141859
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2205295

$`Invader abundance`$Pe821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 39.85312
Coefficients:
  a.(Intercept)    a.funcgr    c.(Intercept)    c.funcgr
  -0.71712737   0.02334206   -0.06350915   -0.01016126

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
  -0.3624853
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2613728

$`Invader abundance`$Pe831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 44.56813
Coefficients:
  a.(Intercept)    a.funcgr    c.(Intercept)    c.funcgr
  -0.73405610   0.03616619   -0.05556796   -0.01698256

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
  -0.05085261
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2229386

$`Invader abundance`$Pe921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 38.53071
Coefficients:
  b.(Intercept)    b.funcgr    c.(Intercept)    c.funcgr
  0.23886600   0.06471418   -0.21923353   -0.07966958
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3289522
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2527224

$`Invader abundance`$Pe931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 40.77589

Coefficients:
b.(Intercept)      b.funcgr c.(Intercept)      c.funcgr
  0.13600578    0.15785010   -0.08859434   -0.20082956

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.04712211
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2261312

$`Invader abundance`$Pe1021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 8.958299

Coefficients:
c.(Intercept)      c.funcgr
  -1.01814997    0.04865806

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.7216424
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6411433

$`Invader abundance`$Pe1031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -4.182259
Coefficients:
c.(Intercept) c.funcgr
-1.3155657 0.0710146

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.06700493
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.458256

$`Invader abundance`$ Pf111
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 32.65248
Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass c.(Intercept) c.grass
  0.01246323 0.18392084 0.04580310 -0.04841561 1.46016543 -0.42282426

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1687821

$`Invader abundance`$ Pf121
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 32.56315
Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass
  0.060921396 0.136957262 0.009385455 -0.012442343

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1667858

$`Invader abundance`$ Pf131
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 31.75053
Coefficients:
a.(Intercept) a.grass c.(Intercept) c.grass
  -0.8780006764 0.1103969138 0.0006062357 -0.0406280171

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1684469
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 31.3878

Coefficients:
\[ \begin{align*}
\text{b.(Intercept)} & : 0.12053981 \\
\text{b.grass} & : 0.11105461 \\
\text{c.(Intercept)} & : -0.13533294 \\
\text{c.grass} & : -0.06973454 \\
\end{align*} \]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1691937

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -33.45612

Coefficients:
\[ \begin{align*}
\text{c.(Intercept)} & : -1.7512639 \\
\text{c.grass} & : 0.2226676 \\
\end{align*} \]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3683982

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 31.24589

Coefficients:
\[ \begin{align*}
\text{a.(Intercept)} & : 0.367348662 \\
\text{a.leg} & : -0.069728795 \\
\text{b.(Intercept)} & : -0.002226355 \\
\text{b.leg} & : -0.003299537 \\
\end{align*} \]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1694867

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 34.98048

Coefficients:
\[ \begin{align*}
\text{a.(Intercept)} & : -0.38687935 \\
\text{a.leg} & : -0.18352827 \\
\text{c.(Intercept)} & : -0.18833358 \\
\text{c.leg} & : 0.06448595 \\
\end{align*} \]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1619408

Generalized nonlinear least squares fit
Model: \( \text{response} \sim b \times \text{sowndiv}^c \)
Data: DF
Log-likelihood: 34.617

Coefficients:
<table>
<thead>
<tr>
<th>b. (Intercept)</th>
<th>b. leg</th>
<th>c. (Intercept)</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.64453474</td>
<td>-0.19511823</td>
<td>-0.46081723</td>
<td>0.05862756</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1626602

$`\text{Invader abundance`}$Pg201
Generalized nonlinear least squares fit
Model: \( \text{response} \sim \text{sowndiv}^c \)
Data: DF
Log-likelihood: -31.33639

Coefficients:
<table>
<thead>
<tr>
<th>c. (Intercept)</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3461394</td>
<td>-1.2994556</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3589970

$`\text{Invader abundance`}$Ph221
Generalized nonlinear least squares fit
Model: \( \text{response} \sim a + b \times \text{sowndiv} \)
Data: DF
Log-likelihood: 36.48591

Coefficients:
<table>
<thead>
<tr>
<th>a. (Intercept)</th>
<th>a. funcgr</th>
<th>a. leg</th>
<th>b. (Intercept)</th>
<th>b. funcgr</th>
<th>b. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.74196716</td>
<td>-0.08085495</td>
<td>-0.20605396</td>
<td>-0.04247883</td>
<td>0.00665702</td>
<td>0.01260532</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1610733

$`\text{Invader abundance`}$Ph231
Generalized nonlinear least squares fit
Model: \( \text{response} \sim a + \text{sowndiv}^c \)
Data: DF
Log-likelihood: 35.82151

Coefficients:
<table>
<thead>
<tr>
<th>a. (Intercept)</th>
<th>a. funcgr</th>
<th>a. leg</th>
<th>c. (Intercept)</th>
<th>c. funcgr</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.29330126</td>
<td>-0.04519313</td>
<td>-0.20575353</td>
<td>-0.18272442</td>
<td>0.01151563</td>
<td>0.05964037</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1623837
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 36.03314

Coefficients:
\[
\begin{aligned}
b_{(\text{Intercept})} &\quad b_{\text{funcgr}} &\quad b_{\text{leg}} &\quad c_{(\text{Intercept})} &\quad c_{\text{funcgr}} \\
0.606486707 &\quad -0.002070936 &\quad -0.174474923 &\quad 0.139433226 &\quad -0.118852294 \\
\quad c_{\text{leg}} &\quad -0.162655265
\end{aligned}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1619651

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -31.33605

Coefficients:
\[
\begin{aligned}
c_{(\text{Intercept})} &\quad c_{\text{funcgr}} &\quad c_{\text{leg}} \\
0.371502130 &\quad -0.005913315 &\quad -1.308434410
\end{aligned}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3612605

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 32.91713

Coefficients:
\[
\begin{aligned}
a_{(\text{Intercept})} &\quad a_{\text{funcgr}} &\quad a_{\text{grass}} &\quad b_{(\text{Intercept})} &\quad b_{\text{funcgr}} \\
-0.810997336 &\quad 0.020617861 &\quad 0.993457000 &\quad 0.817768129 &\quad 0.001028162 \\
\quad b_{\text{grass}} &\quad c_{(\text{Intercept})} &\quad c_{\text{funcgr}} &\quad c_{\text{grass}} \\
-0.839826789 &\quad 1.061651547 &\quad 0.021512249 &\quad -0.508249447
\end{aligned}
\]

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1716604

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 32.72635

Coefficients:
\[
\begin{aligned}
a_{(\text{Intercept})} &\quad a_{\text{funcgr}} &\quad a_{\text{grass}} \\
0.0568018865 &\quad 0.0048470791 &\quad 0.1368367932
\quad b_{(\text{Intercept})} &\quad b_{\text{funcgr}} &\quad b_{\text{grass}} \\
0.0038503489 &\quad 0.0009098336 &\quad -0.0107404964
\end{aligned}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1686302

$`Invader abundance`$Pi281
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 32.28086
Coefficients:
  a.(Intercept)  a.funcgr  a.grass  c.(Intercept)  c.funcgr  c.grass
  -0.98693651  0.04177543  0.14131378  0.04795075  -0.01709286
  -0.05690232

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1695488

$`Invader abundance`$Pi291
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 32.28284
Coefficients:
  b.(Intercept)  b.funcgr  b.grass  c.(Intercept)  c.funcgr  c.grass
  -0.08027685  0.07968513  0.16941868  0.18680723  -0.11349684
  -0.17106800

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1695447

$`Invader abundance`$Pi301
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -32.36455
Coefficients:
  c.(Intercept)  c.funcgr  c.grass
  -2.9840753  0.4046579  0.4628305

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3658202

$`Invader abundance`$Pj311
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 35.96113
Coefficients:
a. (Intercept)  a.grass  a.leg  b. (Intercept)  b.grass
  0.62644521  0.36488683  -0.36160357  -0.25609047  -0.26999765
  b.leg
  0.22230622  0.15029902  -0.02564616  0.04504088

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1654049

$`Invader abundance`$Pj321
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 35.06818

Coefficients:
a. (Intercept)  a.grass  a.leg  b. (Intercept)  b.grass
  0.211907505  0.131319410  -0.090396796  -0.013768391
  b.leg
  0.001266285

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1638824

$`Invader abundance`$Pj331
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 35.63367

Coefficients:
a. (Intercept)  a.grass  a.leg  c. (Intercept)  c.grass
  -0.54051894  0.07542841  -0.16684317  -0.11468758  -0.03678350
  c.leg
  0.05770076

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1627561

$`Invader abundance`$Pj341
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 35.06263

Coefficients:
b. (Intercept)  b.grass  b.leg  c. (Intercept)  c.grass
  0.52666596  0.04666181  -0.17349889  -0.45241915  0.02444973
  c.leg
  0.04997824

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1638935

$`Invader abundance`$Pj351
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -31.29572

Coefficients:
c.(Intercept)  c.grass  c.leg
0.5413296  -0.1156257  -1.3220242

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3610829

$`Invader abundance`$Pk371
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 36.71996

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
0.624691484  -0.066163108  0.037170612  -0.184409728  -0.020357008
b.funcgr  b.grass  b.leg
0.003917047  -0.006774679  0.008214975

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1627702

$`Invader abundance`$Pk381
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 36.23872

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  c.(Intercept)
-0.459401161  -0.025255999  0.056790821  -0.178382472  -0.021458703
c.funcgr  c.grass  c.leg
-0.007875366  -0.053316744  0.030532974

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1637283

$`Invader abundance`$Pk391
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 36.9996

Coefficients:
b.(Intercept)  b.funcgr  b.grass  b.leg  c.(Intercept)
0.33098399  0.04054253  0.09658130  -0.13986018  1.18043035
c.funcgr  c.grass  c.leg
-0.26125736  -0.33538575  -0.33347420
### Invader abundance \textregistered Pk401

Generalized nonlinear least squares fit
- Model: `response ~ sowndiv^c`
- Data: DF
- Log-likelihood: -31.17508

<table>
<thead>
<tr>
<th>Coefficients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>c.(Intercept)</td>
<td>1.9325895</td>
</tr>
<tr>
<td>c.funcgr</td>
<td>-0.1990075</td>
</tr>
<tr>
<td>c.grass</td>
<td>-0.4236287</td>
</tr>
<tr>
<td>c.leg</td>
<td>-1.7021928</td>
</tr>
</tbody>
</table>

### Invader abundance \textregistered Pm1121

Generalized nonlinear least squares fit
- Model: `response ~ a + b * sowndiv^c`
- Data: DF
- Log-likelihood: 42.42333

<table>
<thead>
<tr>
<th>Coefficients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>-0.05037650</td>
</tr>
<tr>
<td>a.grass</td>
<td>0.24254113</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>0.09448375</td>
</tr>
<tr>
<td>b.grass</td>
<td>-0.09626433</td>
</tr>
<tr>
<td>c.(Intercept)</td>
<td>1.81522301</td>
</tr>
<tr>
<td>c.grass</td>
<td>-0.68911776</td>
</tr>
</tbody>
</table>

Variance function:
- Structure: Power of variance covariate
- Formula: `~sowndiv`
- Parameter estimates:
  - power: -0.3604728

### Invader abundance \textregistered Pm1221

Generalized nonlinear least squares fit
- Model: `response ~ a + b * sowndiv`
- Data: DF
- Log-likelihood: 42.18275

<table>
<thead>
<tr>
<th>Coefficients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.073515985</td>
</tr>
<tr>
<td>a.grass</td>
<td>0.125042409</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>0.008016638</td>
</tr>
<tr>
<td>b.grass</td>
<td>-0.011098131</td>
</tr>
</tbody>
</table>

Variance function:
- Structure: Power of variance covariate
- Formula: `~sowndiv`
- Parameter estimates:
  - power: -0.3579639
Residual standard error: 0.2523521

$``\text{Invader abundance}`$ Pm1231
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 46.96174

Coefficients:
   a.(Intercept)     a.grass     b.(Intercept)     b.grass
   0.070209116    0.128894368    0.008104369   -0.011203394

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
      -0.05032007

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2155373

$``\text{Invader abundance}`$ Pm1321
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 40.15715

Coefficients:
   a.(Intercept)     a.grass     c.(Intercept)     c.grass
   -0.78883988     0.07384008   -0.03833572   -0.02887602

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power
      -0.3358681

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2503161

$``\text{Invader abundance}`$ Pm1331
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 44.25284

Coefficients:
   a.(Intercept)     a.grass     c.(Intercept)     c.grass
   -0.738973564     0.044413990  -0.076195327   -0.007767322

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
$\text{Invader abundance}\$ Pm1421
Generalized nonlinear least squares fit
   Model: response ~ b * sowndiv^c
   Data: DF
   Log-likelihood: 38.55335
Coefficients:
   b.(Intercept)       b.grass c.(Intercept)       c.grass
   0.20007863    0.07929307   -0.30412670   -0.01490977
Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
     power
     -0.2918026
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2390957

$\text{Invader abundance}\$ Pm1431
Generalized nonlinear least squares fit
   Model: response ~ b * sowndiv^c
   Data: DF
   Log-likelihood: 38.29122
Coefficients:
   b.(Intercept)       b.grass c.(Intercept)       c.grass
   0.29353730    0.02802755   -0.84750757    0.26258246
Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
     expon
     -0.03967438
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2186506

$\text{Invader abundance}\$ Pm1521
Generalized nonlinear least squares fit
   Model: response ~ sowndiv^c
   Data: DF
   Log-likelihood: 8.557915
Coefficients:
   c.(Intercept)       c.grass
   -0.8147400   -0.0457785
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.7336138
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6558344

$`Invader abundance`$Pm1531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -4.433769
Coefficients:
c.(Intercept)       c.grass
-1.01642869   -0.02797205
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.06750813
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4616539

$`Invader abundance`$Pn1721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 40.99492
Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
0.298743334  -0.046613021  -0.001761901  -0.002341891
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.3768088
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2632983

$`Invader abundance`$Pn1731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 45.23193
Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.05077733
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2209983

$`Invader abundance`$Pn1821
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 44.15542
Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.34990756   -0.20756525   -0.21488556    0.08246755

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.3448227
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2415940

$`Invader abundance`$Pn1831
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 48.69719
Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.33708150   -0.21043306   -0.22848745    0.08741645

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.0494622
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2094751

$`Invader abundance`$Pn1921
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 42.29265
Coefficients:

<table>
<thead>
<tr>
<th>b.(Intercept)</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7492946</td>
<td>-0.2515664</td>
<td>-0.6667354</td>
<td>0.1829145</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

<table>
<thead>
<tr>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.2990622</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2309129

Invader abundance$Pn1931$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.14902

Coefficients:

<table>
<thead>
<tr>
<th>b.(Intercept)</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8091815</td>
<td>-0.2787171</td>
<td>-0.9716606</td>
<td>0.3260912</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:

<table>
<thead>
<tr>
<th>expon</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.03473652</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2023969

Invader abundance$Pn2021$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 10.34763

Coefficients:

<table>
<thead>
<tr>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.4946436</td>
<td>-0.3184766</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

<table>
<thead>
<tr>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.7059934</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6158959

Invader abundance$Pn2031$
Generalized nonlinear least squares fit
Model: response ~ sowndiv\(^c\)  
Data: DF  
Log-likelihood: -2.959177

Coefficients:  
c.(Intercept)  c.leg  
-0.1215847  -0.8989223

Variance function:  
Structure: Exponential of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
  expon  
-0.06618317

Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.4482976

$`Invader abundance`$Pp2121  
Generalized nonlinear least squares fit  
Model: response ~ a + b * sowndiv\(^c\)  
Data: DF  
Log-likelihood: 47.06444

Coefficients:  
a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr  
0.731900609  -0.075370031  -0.217215733  -0.024957840  0.002177117  
b.leg  c.(Intercept)  c.funcgr  c.leg  
0.010331652  1.116923794  -0.143047205  0.313475037

Variance function:  
Structure: Power of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
  power  
-0.3696229

Degrees of freedom: 82 total; 73 residual  
Residual standard error: 0.2500662

$`Invader abundance`$Pp2221  
Generalized nonlinear least squares fit  
Model: response ~ a + b * sowndiv  
Data: DF  
Log-likelihood: 46.6413

Coefficients:  
a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr  
0.754060781  -0.079920835  -0.217718144  -0.043749592  0.006657424  
b.leg  
0.013757482

Variance function:  
Structure: Power of variance covariate  
Formula: ~sowndiv  
Parameter estimates:
power
-0.3602385
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2429406

$`Invader abundance`$Pp231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 50.80888
Coefficients:
  a.(Intercept)      a.funcgr         a.leg b.(Intercept)      b.funcgr
  0.740612710   -0.077819900  -0.209156810  -0.042672968   0.006541472
  b.leg
  0.013057536

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04959603
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.207056

$`Invader abundance`$Pp231
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 44.9155
Coefficients:
  a.(Intercept)      a.funcgr         a.leg c.(Intercept)      c.funcgr
  -0.18916469   -0.04644753   -0.26095110   -0.27502109    0.01819533
  c.leg
  0.10311909

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3405568
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2409632

$`Invader abundance`$Pp231
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 48.98426
Coefficients:
a. (Intercept)  a. funcgr  a. leg  c. (Intercept)  c. funcgr
-0.266122291 -0.025560877 -0.231704014 -0.239340627 0.007489603
  c. leg
  0.090219468

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.04906694

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2107554

$``Invader abundance``$Pp2421
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 43.81555

Coefficients:
  b. (Intercept)  b. funcgr  b. leg  c. (Intercept)  c. funcgr
  0.64446407  0.02388094 -0.21455454 -0.10939863 -0.11341270
  c. leg
  -0.01819977

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.303572

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2311695

$``Invader abundance``$Pp2431
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 45.80999

Coefficients:
  b. (Intercept)  b. funcgr  b. leg  c. (Intercept)  c. funcgr
  0.56237821  0.09185412 -0.20903260  0.11062056 -0.22723805
  c. leg
  -0.07450236

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.04446559

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2105882

$\text{``Invader abundance''}$

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 10.51697

Coefficients:
\[
\begin{align*}
\text{c.(Intercept)} & \quad -0.28614192 \\
\text{c.funcgr} & \quad -0.03840577 \\
\text{c.leg} & \quad -0.39871699
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} & \quad -0.7098015
\end{align*}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6220096

$\text{``Invader abundance''}$

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -2.462987

Coefficients:
\[
\begin{align*}
\text{c.(Intercept)} & \quad 0.6423419 \\
\text{c.funcgr} & \quad -0.1113610 \\
\text{c.leg} & \quad -1.2335512
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} & \quad -0.06657737
\end{align*}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4499246

$\text{``Invader abundance''}$

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 42.66089

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & \quad 0.076943882 \\
\text{a.funcgr} & \quad 0.004811255 \\
\text{a.grass} & \quad 0.121049346 \\
\text{b.(Intercept)} & \quad 0.001683290 \\
\text{b.funcgr} & \quad 0.001004948 \\
\text{b.grass} & \quad -0.009075095
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3669896
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2575931

$`Invader abundance`$Pq2731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 47.46071

Coefficients:
  a.(Intercept)     a.funcgr       a.grass      b.(Intercept)      b.funcgr
  0.071523283   0.005966201   0.125508102   0.001488101   0.001046019
  b.grass
  -0.009133785

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.0506212
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2175921

$`Invader abundance`$Pq2821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 41.2799

Coefficients:
  a.(Intercept)     a.funcgr       a.grass   c.(Intercept)      c.funcgr
  -1.00835861    0.05601574    0.14973096    0.06816375   -0.02453366
  c.grass
  -0.06928831

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.3438254
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2531123

$`Invader abundance`$Pq2831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 45.97365
Coefficients:
a.(Intercept)     a.funcgr       a.grass c.(Intercept)       c.funcgr
    -1.00525405   0.06742965   0.13836045   0.06473201   -0.03062228   c.grass
          -0.06256849
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
    expon
-0.05004287
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2204766

$`Invader abundance`$Pq2921
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.11316
Coefficients:
b.(Intercept)     b.funcgr       b.grass c.(Intercept)      c.funcgr
    -0.3448916     0.1536346     0.2688783     0.7131279    -0.2275026   c.grass
          -0.3869549
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
    power
-0.3399824
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2521847

$`Invader abundance`$Pq2931
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 43.01545
Coefficients:
b.(Intercept)     b.funcgr       b.grass c.(Intercept)      c.funcgr
    -0.3339144     0.2182006     0.2252733     0.5564066    -0.2952986   c.grass
          -0.2688959
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
    expon
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2224389

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 8.990034

Coefficients:
-1.10297731  0.05878646  0.04319733

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.7205282

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6438729

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -3.964087

Coefficients:
-1.9753290  0.1581112  0.3096115

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.06687784

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4594204

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 44.78195

Coefficients:
0.196492807  0.126535135 -0.085288302  0.006717771 -0.012186934
b.leg
0.001707759
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3582216
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2477692

$`Invader abundance`$Pr3231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 49.30091
  Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  0.193026617   0.130338893 -0.082782212   0.007252526  -0.012392393
  b.leg
  0.001348527

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.04988375
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2114206

$`Invader abundance`$Pr3321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 44.68341
  Coefficients:
  a.(Intercept)       a.grass         a.leg c.(Intercept)       c.grass
  -0.46334874    0.07627850   -0.20942265   -0.15508330   -0.04404392
  c.leg
  0.08509773

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3415551
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2420046

$`Invader abundance`$Pr3331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 48.97447

Coefficients:
\[
\begin{array}{cccccc}
  a. & (Intercept) & a. & grass & a. & leg & c. & (Intercept) & c. & grass \\
  \text{value} & -0.41702788 & 0.05235117 & -0.21163406 & -0.19016920 & -0.02883295 \\
  c. & leg & 0.09023691 & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.04925354

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2111185

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 42.4812

Coefficients:
\[
\begin{array}{cccccc}
  b. & (Intercept) & b. & grass & b. & leg & c. & (Intercept) & c. & grass \\
  \text{value} & 0.708111731 & 0.009703086 & -0.238226255 & -0.703096917 & 0.049586930 \\
  c. & leg & 0.167742551 & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.2963200

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2324460

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 42.48675

Coefficients:
\[
\begin{array}{cccccc}
  b. & (Intercept) & b. & grass & b. & leg & c. & (Intercept) & c. & grass \\
  \text{value} & 0.85619892 & -0.04350173 & -0.26717430 & -1.25121982 & 0.25687070 \\
  c. & leg & 0.27014410 & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.03985363
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2107846

$`Invader abundance`$Pr3521
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 10.35181

Coefficients:
c.(Intercept)   c.grass   c.leg
-0.48284607   -0.01162401   -0.31575693

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.7056322
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6194177

$`Invader abundance`$Pr3531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -2.778649

Coefficients:
c.(Intercept)   c.grass   c.leg
-0.2063479     0.1515175    -0.9744229

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.06642155
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4510561

$`Invader abundance`$Ps3721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 46.84857

Coefficients:
a.(Intercept)   a.funcgr   a.grass   a.leg b.(Intercept)
0.776174517   -0.082647454   -0.007852252   -0.220787127   -0.036558090
b.funcgr       b.grass       b.leg
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3625649
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2464298

$`\text{Invader abundance}`$ Ps3731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 50.94663
Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg b.(Intercept)
  0.693154335  -0.071849069   0.014540558  -0.199851089  -0.031594904
  b.funcgr       b.grass         b.leg
  0.005171200  -0.003313974   0.010770025

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04953642
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2093760

$`\text{Invader abundance}`$ Ps3821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 45.28678
Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg c.(Intercept)
  -0.283895851  -0.035825698   0.033826188  -0.244978060  -0.159881072
  c.funcgr       c.grass         c.leg
  0.004723799  -0.038601205   0.081705168

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3400161
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2428995

$`\text{Invader abundance}`$ Ps3831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 49.27361

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    a.leg   c.(Intercept)
  -0.38812892   -0.01120230   0.04260621   -0.21164686   -0.12185627
  c.funcgr    c.grass    c.leg
  -0.00651053    -0.03936069    0.06887257

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04892602

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2125748

$`Invader abundance`$Ps3921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 45.54622

Coefficients:
  b.(Intercept)    b.funcgr    b.grass    b.leg   c.(Intercept)
  -0.003213657    0.136682055   0.22721974   -0.157069295    1.603625748
  c.funcgr    c.grass    c.leg
  -0.386059476    -0.591665215   -0.160257241

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3418101

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2427780

$`Invader abundance`$Ps3931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 47.28533

Coefficients:
  b.(Intercept)    b.funcgr    b.grass    b.leg   c.(Intercept)
  -0.01290679    0.18135957    0.21354815   -0.16338695    1.77183934
  c.funcgr    c.grass    c.leg
  -0.47068837    -0.58851221    -0.21576149

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.04665023
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2135781

Invader abundance $Ps4021$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 10.95581
Coefficients:
  c.(Intercept)  c.funcgr  c.grass  c.leg
  0.3715612 -0.1197887 -0.1884820 -0.5465698

Variance function:
  Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.7104753
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6232662

Invader abundance $Ps4031$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -2.209384
Coefficients:
  c.(Intercept)  c.funcgr  c.grass  c.leg
  1.9667590 -0.2649226 -0.3764372 -1.5687500

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.06654936
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4512928

Invader abundance $AS1$
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
  Asym      R0      lrc
  0.02133  0.29604 -2.75052
  residual sum-of-squares: 2.312
Number of iterations to convergence: 5
Achieved convergence tolerance: 8.803e-06

$`\text{Invader abundance}$\text{BIEXP}$
Nonlinear regression model
  model: response ~ SSbiexp(sowndiv, A1, lrc1, A2, lrc2)
  data: DF
  A1   lrc1   A2   lrc2
  0.3584  0.6365  0.2597  -3.1622
residual sum-of-squares: 2.292

Number of iterations to convergence: 5
Achieved convergence tolerance: 3.807e-06

$`\text{Mycorrhiza species richness}$\text{L0}$

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
      data = DF)

Coefficients:
            (Intercept)         blockB2         blockB3         blockB4
sowndiv    1.801373        0.083645       -0.026957        0.021404
  0.008348
funcgr     -0.412400       -0.840267       -0.405923       -0.001045
  0.004643
grass      -0.003388        0.247349        0.074420        0.217500
sowndiv:funcgr   -0.405923       -0.405923       -0.405923        0.001045
  0.004643
sowndiv:grass   -0.840267       -0.840267       -0.840267        0.001045
  0.004643
sowndiv:leg    -0.003388        0.247349        0.074420        0.217500
  0.004643
funcgr:grass   -0.412400       -0.840267       -0.405923        0.001045
  0.004643
funcgr:leg     -0.003388        0.247349        0.074420        0.217500
  0.004643
grass:leg      -0.003388        0.247349        0.074420        0.217500
  0.004643

$`\text{Mycorrhiza species richness}$\text{L2}$

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
            (Intercept)      sowndiv       funcgr          leg
  0.218492     0.002933     0.047786     0.098950

$`\text{Mycorrhiza species richness}$\text{M1}$
Nonlinear regression model
  model: response ~ a * sowndiv/(b + sowndiv)
  data: DF
  a   b
  0.5110 0.1226
residual sum-of-squares: 2.822

Number of iterations to convergence: 6
Achieved convergence tolerance: 1.955e-06

$`\text{Mycorrhiza species richness}`$M1a
Nonlinear regression model
  model: response ~ SSmicmen(sowndiv, Vm, k)
  data: DF
  Vm  k
  0.5110 0.1226
  residual sum-of-squares: 2.822

Number of iterations to convergence: 5
Achieved convergence tolerance: 6.473e-06

$`\text{Mycorrhiza species richness}`$M2
Nonlinear regression model
  model: response ~ d + a * sowndiv/(b + sowndiv)
  data: DF
  a  b  d
  0.3852 37.6075 0.4336
  residual sum-of-squares: 2.643

Number of iterations to convergence: 10
Achieved convergence tolerance: 5.1e-07

$`\text{Mycorrhiza species richness}`$E2
Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data: DF
  a  b
  4.835e-01 1.280e-27
  residual sum-of-squares: 2.784

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.687e-08

$`\text{Mycorrhiza species richness}`$E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
  data: DF
  a
  1
  residual sum-of-squares: 3.913e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.792e-20

$`\text{Mycorrhiza species richness}`$E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
  b
  5.513e-27
  residual sum-of-squares: 20.08
Number of iterations to convergence: 4
Achieved convergence tolerance: 3.044e-09

"Mycorrhiza species richness" Pa1
Nonlinear regression model
  model: response ~ a + b * sowndiv^c
  data: DF
    a     b     c
  0.43059 0.01744 0.64943
  residual sum-of-squares: 2.664

Number of iterations to convergence: 46
Achieved convergence tolerance: 9.603e-06

"Mycorrhiza species richness" Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
    a     b
  0.456963 0.003994
  residual sum-of-squares: 2.679

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.551e-10

"Mycorrhiza species richness" Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
    a     c
  -0.56583  0.03604
  residual sum-of-squares: 2.719

Number of iterations to convergence: 9
Achieved convergence tolerance: 3.814e-07

"Mycorrhiza species richness" Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
    b     c
  0.4327 0.0809
  residual sum-of-squares: 2.712

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.267e-06

"Mycorrhiza species richness" Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
    c
  -0.3848
  residual sum-of-squares: 9.692
Number of iterations to convergence: 12
Achieved convergence tolerance: 8.646e-06

$`\text{Mycorrhiza species richness}\$AS1$
Nonlinear regression model
model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
Asym  R0    lrc
0.6817 0.4309 -3.1654
residual sum-of-squares: 2.637

Number of iterations to convergence: 18
Achieved convergence tolerance: 8.598e-06

$`\text{Mycorrhiza species richness}\$AS2$
Nonlinear regression model
model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
Asym    lrc    c0
0.6818  -3.1655 -23.6945
residual sum-of-squares: 2.637

Number of iterations to convergence: 14
Achieved convergence tolerance: 8.431e-06

$`\text{Mycorrhiza species richness}\$AS3$
Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym    lrc
0.4893  1.9651
residual sum-of-squares: 2.846

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.289e-06

$`\text{Mycorrhiza species richness}\$LG2$
Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym    xmid    scal
0.6688  -8.9144  15.2449
residual sum-of-squares: 2.63

Number of iterations to convergence: 18
Achieved convergence tolerance: 9.797e-06

$`\text{Aboveground herbivore species richness}\$
$`\text{Aboveground herbivore species richness}\$L0$

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)

Coefficients:
(Intercept)         blockB2         blockB3         blockB4
sowndiv  3.542690       -0.049192       -0.145620       -0.013189
0.025763
funcgr           grass             leg  sowndiv:funcgr
sowndiv:grass   -0.565416       -1.373447       -1.547001       -0.003388
0.007026
sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
-0.010016        0.146057        0.217942        0.570139

$`Aboveground herbivore species richness`$L2

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)      sowndiv       funcgr          leg
0.541702     0.009016     0.010269    -0.205594

$`Aboveground herbivore species richness`$M1
Nonlinear regression model
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
a     b
0.811 6.987
residual sum-of-squares: 1.354

Number of iterations to convergence: 15
Achieved convergence tolerance: 6.603e-06

$`Aboveground herbivore species richness`$M1a
Nonlinear regression model
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
Vm     k
0.811 6.988
residual sum-of-squares: 1.354

Number of iterations to convergence: 12
Achieved convergence tolerance: 5.025e-06

$`Aboveground herbivore species richness`$M2
Nonlinear regression model
model:  response ~ d + a * sowndiv/(b + sowndiv)
data:  DF
a       b       d
1.1572 40.0162  0.1715
residual sum-of-squares: 1.098

Number of iterations to convergence: 6
Achieved convergence tolerance: 8.631e-06

$`Aboveground herbivore species richness`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
   a       b
3.178e-01 4.857e-27
residual sum-of-squares: 1.793

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.452e-08

$`Aboveground herbivore species richness`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
   a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$`Aboveground herbivore species richness`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
7.64e-27
residual sum-of-squares: 6.44

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.903e-08

$`Aboveground herbivore species richness`$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
   a       b       c
0.07643 0.11129 0.47917
residual sum-of-squares: 1.085

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.311e-07

$`Aboveground herbivore species richness`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
   a       b
Nonlinear regression model
model:  response ~ a + sowndiv^c
data:  DF
  a     c
-0.8503  0.1169
residual sum-of-squares: 1.184

Number of iterations to convergence: 8
Achieved convergence tolerance: 3.12e-06

Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
  b     c
0.1734  0.3880
residual sum-of-squares: 1.092

Number of iterations to convergence: 6
Achieved convergence tolerance: 1.723e-06

Nonlinear regression model
model:  response ~ sowndiv^c
data:  DF
c
-0.3583
residual sum-of-squares: 15.11

Number of iterations to convergence: 14
Achieved convergence tolerance: 5.685e-06

Nonlinear regression model
model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
data:  DF
  Asym      R0     lrc
0.9883  0.1772 -3.4479
residual sum-of-squares: 1.101

Number of iterations to convergence: 3
Achieved convergence tolerance: 5.077e-07

Nonlinear regression model
model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data:  DF
Asym  lrc  c0  
0.9883 -3.4479 -6.2111  
residual sum-of-squares: 1.101

Number of iterations to convergence: 3
Achieved convergence tolerance: 5.08e-07

$`Aboveground herbivore species richness`$AS3
Nonlinear regression model
  model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
  data:  DF  
  Asym  lrc  
0.7294 -2.2898  
residual sum-of-squares: 1.551

Number of iterations to convergence: 33
Achieved convergence tolerance: 9.188e-06

$`Aboveground herbivore species richness`$LG2
Nonlinear regression model
  model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data:  DF  
  Asym  xmid  scal  
0.8811 13.1636 10.8363  
residual sum-of-squares: 1.122

Number of iterations to convergence: 2
Achieved convergence tolerance: 2.494e-06

$`Aboveground carnivore species richness`$L0
$`Aboveground carnivore species richness`$L2

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
      data = DF)

Coefficients:
  (Intercept)         blockB2         blockB3         blockB4
sowndiv 5.429105       -0.156202       -0.104682        0.009385         -0.077174
funcgr -0.873498       -2.091119       -2.278339        0.008375        0.024366
sowndiv:grass -0.873498       -2.091119       -2.278339        0.008375
sowndiv:leg 0.026581        0.269358        0.264119        0.870962
funcgr:grass    0.026581        0.269358        0.264119        0.870962
funcgr:leg    0.026581        0.269358        0.264119        0.870962
grass:leg

$`Aboveground carnivore species richness`$L2

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:
(Intercept)     sowndiv     funcgr          leg
  0.81312      0.00748     -0.01456     -0.20032

Aboveground carnivore species richness\$\text{M1}\$
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
    a    b
  0.7875 1.2819
  residual sum-of-squares: 2.042

Number of iterations to convergence: 6
Achieved convergence tolerance: 6.784e-06

Aboveground carnivore species richness\$\text{M1a}\$
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm    k
  0.7875 1.2819
  residual sum-of-squares: 2.042

Number of iterations to convergence: 6
Achieved convergence tolerance: 2.215e-06

Aboveground carnivore species richness\$\text{M2}\$
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
    a    b    d
  0.6395 9.6391 0.3349
  residual sum-of-squares: 1.911

Number of iterations to convergence: 10
Achieved convergence tolerance: 4.073e-06

Aboveground carnivore species richness\$\text{E2}\$
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
    a    b
  5.393e-01 3.364e-27
  residual sum-of-squares: 2.670

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.622e-09

Aboveground carnivore species richness\$\text{E4}\$
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
a
l
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$`Aboveground carnivore species richness`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
  b
8.086e-27
residual sum-of-squares: 16.05

Number of iterations to convergence: 4
Achieved convergence tolerance: 8.72e-09

$`Aboveground carnivore species richness`$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
  a   b   c
-0.5644 0.9508 0.1076
residual sum-of-squares: 1.885

Number of iterations to convergence: 16
Achieved convergence tolerance: 1.334e-06

$`Aboveground carnivore species richness`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
  a   b
0.471926 0.009014
residual sum-of-squares: 2.21

Number of iterations to convergence: 1
Achieved convergence tolerance: 4.713e-09

$`Aboveground carnivore species richness`$Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
  a   c
-0.6141 0.1032
residual sum-of-squares: 1.885

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.247e-06

$`Aboveground carnivore species richness`$Pa4
Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
b        c
0.3977  0.2085
residual sum-of-squares: 1.891

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.128e-06

$`Aboveground carnivore species richness`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
data: DF
c
-0.1519
residual sum-of-squares: 9.702

Number of iterations to convergence: 10
Achieved convergence tolerance: 8.666e-06

$`Aboveground carnivore species richness`$AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
    Asym      R0     lrc
  0.9103  0.3763 -2.6824
residual sum-of-squares: 1.937

Number of iterations to convergence: 6
Achieved convergence tolerance: 5.383e-06

$`Aboveground carnivore species richness`$AS2
Nonlinear regression model
  model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
    Asym     lrc      c0
  0.9103 -2.6824 -7.7979
residual sum-of-squares: 1.937

Number of iterations to convergence: 6
Achieved convergence tolerance: 5.399e-06

$`Aboveground carnivore species richness`$AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
    Asym     lrc
  0.7027 -0.4829
residual sum-of-squares: 2.278

Number of iterations to convergence: 15
Achieved convergence tolerance: 6.976e-06

$`Aboveground carnivore species richness`$LG2
Nonlinear regression model
model:  \( \text{response} \sim \text{SSlogis}(\text{sowndiv}, \text{Asym}, \text{xmid}, \text{scal}) \)

data:  \( \text{DF} \)

\( \text{Asym} \quad \text{xmid} \quad \text{scal} \)

0.9086  2.2419  9.9254

residual sum-of-squares: 1.965

Number of iterations to convergence: 5
Achieved convergence tolerance: 6.799e-06

\( \$\text{Aboveground omnivore species richness}\$\)

\( \$\text{Aboveground omnivore species richness}\$\mathcal{L}_0\)

Call:
\( \text{lm(formula = response} \sim \text{block} + (\text{sowndiv} + \text{funcgr} + \text{grass} + \text{leg})^2, \text{data = DF}) \)

Coefficients:

<table>
<thead>
<tr>
<th>(Intercept)</th>
<th>\text{blockB2}</th>
<th>\text{blockB3}</th>
<th>\text{blockB4}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2588258</td>
<td>-0.0373488</td>
<td>-0.1012202</td>
<td>0.0191073</td>
</tr>
<tr>
<td>0.0114090</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( \text{funcgr} \quad \text{grass} \quad \text{leg} \quad \text{sowndiv:funcgr} \quad \text{sowndiv:grass} \quad \text{sowndiv:leg} \quad \text{funcgr:grass} \quad \text{funcgr:leg} \quad \text{grass:leg} \)

\( \mathcal{L}_2\)

Call:
\( \text{lm(formula = response} \sim \text{sowndiv} + \text{funcgr} + \text{leg}, \text{data = DF}) \)

Coefficients:

<table>
<thead>
<tr>
<th>(Intercept)</th>
<th>\text{sowndiv}</th>
<th>\text{funcgr}</th>
<th>\text{leg}</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.975284</td>
<td>0.003096</td>
<td>-0.077447</td>
<td>-0.255278</td>
</tr>
</tbody>
</table>

\( \$\text{Aboveground omnivore species richness}\$\mathcal{M}_1\)

Nonlinear regression model

model:  \( \text{response} \sim \text{a} \times \text{sowndiv}/(\text{b} + \text{sowndiv}) \)

data:  \( \text{DF} \)

\( \text{a} \quad \text{b} \)

0.4929  0.1468

residual sum-of-squares: 2.261

Number of iterations to convergence: 6
Achieved convergence tolerance: 1.888e-06

\( \$\text{Aboveground omnivore species richness}\$\mathcal{M}_1a\)

Nonlinear regression model

model:  \( \text{response} \sim \text{SSmicmen}(\text{sowndiv}, \text{Vm}, \text{k}) \)
<table>
<thead>
<tr>
<th>Model</th>
<th>Nonlinear regression model</th>
<th>response ~</th>
<th>a</th>
<th>b</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2</td>
<td>$d + a \times \frac{sowndiv}{b + sowndiv}$</td>
<td>DF</td>
<td>0.2128</td>
<td>20.1657</td>
<td>0.4123</td>
</tr>
<tr>
<td>E2</td>
<td>$a + b \times \exp(sowndiv)$</td>
<td>DF</td>
<td>4.591e-01</td>
<td>7.446e-28</td>
<td></td>
</tr>
<tr>
<td>E4</td>
<td>$a + \exp(sowndiv)$</td>
<td>DF</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E5</td>
<td>$b \times \exp(sowndiv)$</td>
<td>DF</td>
<td>4.765e-27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.083e-06

Number of iterations to convergence: 9
Achieved convergence tolerance: 2.921e-06

Number of iterations to convergence: 4
Achieved convergence tolerance: 7.282e-08

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.452e-08

Aboveground omnivore species richness M2
Nonlinear regression model
model: response ~ d + a \times \frac{sowndiv}{b + sowndiv}
data: DF
a       b       d
0.2128  20.1657  0.4123
residual sum-of-squares: 2.186

Aboveground omnivore species richness E2
Nonlinear regression model
model: response ~ a + b \times \exp(sowndiv)
data: DF
a         b
4.591e-01  7.446e-28
residual sum-of-squares: 2.263

Aboveground omnivore species richness E4
Nonlinear regression model
model: response ~ a + \exp(sowndiv)
data: DF
a
1
residual sum-of-squares: 5.217e+52

Aboveground omnivore species richness E5
Nonlinear regression model
model: response ~ b \times \exp(sowndiv)
data: DF
b
4.765e-27
residual sum-of-squares: 11.96
<table>
<thead>
<tr>
<th>Model</th>
<th>Response formula</th>
<th>Data</th>
<th>Parameters</th>
<th>Residual sum-of-squares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>response ~ a + b * sowndiv^c</td>
<td>DF</td>
<td>a=0.39352, b=0.03213, c=0.42307</td>
<td>2.199</td>
</tr>
<tr>
<td>Model 2</td>
<td>response ~ a + b * sowndiv</td>
<td>DF</td>
<td>a=0.439347, b=0.002439</td>
<td>2.216</td>
</tr>
<tr>
<td>Model 3</td>
<td>response ~ a + sowndiv^c</td>
<td>DF</td>
<td>a=-0.58117, c=0.02924</td>
<td>2.21</td>
</tr>
<tr>
<td>Model 4</td>
<td>response ~ b * sowndiv^c</td>
<td>DF</td>
<td>b=0.41847, c=0.06676</td>
<td>2.208</td>
</tr>
<tr>
<td>Model 5</td>
<td>response ~ sowndiv^c</td>
<td>DF</td>
<td>c=-0.3272</td>
<td>8.423</td>
</tr>
</tbody>
</table>

Number of iterations to convergence: 47
Achieved convergence tolerance: 9.933e-06

Number of iterations to convergence: 1
Achieved convergence tolerance: 6.904e-09

Number of iterations to convergence: 8
Achieved convergence tolerance: 2.413e-06

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.796e-06

Number of iterations to convergence: 12
Achieved convergence tolerance: 2.322e-06

$\text{Aboveground omnivore species richness}\text{AS1}$

SUPPLEMENTARY INFORMATION

RESEARCH

doi:10.1038/nature09492
Nonlinear regression model
    model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
    data:  DF
      Asym    R0      lrc
     0.5673  0.4100  -2.7219
    residual sum-of-squares: 2.181

Number of iterations to convergence: 40
Achieved convergence tolerance: 9.847e-06

$`Aboveground omnivore species richness`$AS2
Nonlinear regression model
    model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
    data:  DF
      Asym      lrc      c0
     0.5674  -2.7221  -19.5121
    residual sum-of-squares: 2.181

Number of iterations to convergence: 25
Achieved convergence tolerance: 8.746e-06

$`Aboveground omnivore species richness`$AS3
Nonlinear regression model
    model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
    data:  DF
      Asym      lrc
     0.4741  1.0713
    residual sum-of-squares: 2.282

Number of iterations to convergence: 3
Achieved convergence tolerance: 2.584e-06

$`Aboveground omnivore species richness`$LG2
Nonlinear regression model
    model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
    data:  DF
      Asym     xmid      scal
     0.5653 -11.3956  11.7725
    residual sum-of-squares: 2.178

Number of iterations to convergence: 44
Achieved convergence tolerance: 8.336e-06

$`Parasitoid species richness`$L0
Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, 
     data = DF)

Coefficients:
  (Intercept)        blockB2        blockB3        blockB4
sowndiv
1.3918128  -0.0959923  -0.1500167  -0.0030301
0.0416670
funcgr  grass  leg  sowndiv:funcgr
sowndiv:grass
-0.1637666  -0.3441796  -0.2710549  -0.0047511  -0.0006327
sowndiv:leg  funcgr:grass  funcgr:leg  grass:leg
-0.0143749  0.0786142  0.0076970  0.0426012

$`Parasitoid species richness`$L2

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)  sowndiv  funcgr  leg
  0.733584  0.007586  -0.019561  -0.187555

$`Parasitoid species richness`$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
    a  b
  0.6457  0.9254
  residual sum-of-squares: 1.835

Number of iterations to convergence: 6
Achieved convergence tolerance: 7.932e-06

$`Parasitoid species richness`$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm  k
  0.6457  0.9253
  residual sum-of-squares: 1.835

Number of iterations to convergence: 7
Achieved convergence tolerance: 6.306e-06

$`Parasitoid species richness`$M2
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
    a  b  d
  1.4177 103.3241  0.3831
  residual sum-of-squares: 1.44

Number of iterations to convergence: 8
Achieved convergence tolerance: 6.492e-06

$`Parasitoid species richness`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
   a   b
4.638e-01 3.885e-27
residual sum-of-squares: 1.680

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.057e-09

$`Parasitoid species richness`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
   a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20

$`Parasitoid species richness`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
7.946e-27
residual sum-of-squares: 11.57

Number of iterations to convergence: 4
Achieved convergence tolerance: 8.214e-09

$`Parasitoid species richness`$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
   a   b   c
0.35598 0.03326 0.68231
residual sum-of-squares: 1.433

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.989e-06

$`Parasitoid species richness`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
   a   b
0.40395 0.00876
residual sum-of-squares: 1.457

Number of iterations to convergence: 1
Achieved convergence tolerance: 5.614e-10
Nonlinear regression model
model:  response ~ a + sowndiv^c
data:  DF
a        c
-0.65174  0.08668
residual sum-of-squares: 1.553

Number of iterations to convergence: 8
Achieved convergence tolerance: 6.311e-06

Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
  b      c
  0.3494  0.2052
residual sum-of-squares: 1.512

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.041e-06

Nonlinear regression model
model:  response ~ sowndiv^c
data:  DF
c
-0.2351
residual sum-of-squares: 9.827

Number of iterations to convergence: 12
Achieved convergence tolerance: 2.209e-06

Nonlinear regression model
model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
data:  DF
  Asym      R0     lrc
  1.2497  0.3842 -4.1777
residual sum-of-squares: 1.440

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.802e-06

Nonlinear regression model
model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data:  DF
  Asym     lrc      c0
  1.250    -4.178 -23.958
residual sum-of-squares: 1.440

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.821e-06
Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
   Asym       lrc
0.568112 -0.004174
residual sum-of-squares: 2.031

Number of iterations to convergence: 12
Achieved convergence tolerance: 5.773e-06

Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
   Asym    xmid    scal
0.9936  9.5018 21.6578
residual sum-of-squares: 1.444

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.368e-07

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
     (Intercept)         blockB2         blockB3         blockB4         sowndiv
3.774504       -0.146067       -0.252304       -0.065976       0.048946
     funcgr           grass          leg    sowndiv:funcgr
-0.604833       -1.387454       -1.700949       -0.008840
     sowndiv:grass
-1.387454      -1.700949      -0.008840
     sowndiv:leg    funcgr:grass    funcgr:leg    grass:leg
-0.012843       0.174636       0.232653       0.633571

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
     (Intercept)      sowndiv       funcgr          leg
0.875319     0.005249    -0.032371    -0.288501
Nonlinear regression model
model: response ~ a * sowndiv/(b + sowndiv)
data: DF
  a    b
0.6529 1.7491
residual sum-of-squares: 2.138

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.771e-06

Nonlinear regression model
model: response ~ SSmicmen(sowndiv, Vm, k)
data: DF
  Vm    k
0.6529 1.7491
residual sum-of-squares: 2.138

Number of iterations to convergence: 5
Achieved convergence tolerance: 2.336e-06

Nonlinear regression model
model: response ~ d + a * sowndiv/(b + sowndiv)
data: DF
  a    b    d
0.5437 5.1878 0.1811
residual sum-of-squares: 2.088

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.133e-06

Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
  a    b
4.203e-01 2.157e-27
residual sum-of-squares: 2.897

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.189e-08

Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
  a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 8.031e-20
Pollinator species richness
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
  b
5.838e-27
residual sum-of-squares: 11.02
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.382e-08

Pollinator species richness
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
  a   b
0.364358 0.006952
residual sum-of-squares: 2.524
Number of iterations to convergence: 1
Achieved convergence tolerance: 2.732e-09

Pollinator species richness
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
  a   c
-0.71962 0.09106
residual sum-of-squares: 2.120
Number of iterations to convergence: 7
Achieved convergence tolerance: 5.532e-06

Pollinator species richness
Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
  b   c
0.2985 0.2243
residual sum-of-squares: 2.152
Number of iterations to convergence: 8
Achieved convergence tolerance: 3.038e-06

Pollinator species richness
Nonlinear regression model
model: response ~ sowndiv^c
data: DF
  c
-0.2713
residual sum-of-squares: 12.48
Number of iterations to convergence: 11
Achieved convergence tolerance: 9.727e-06

\$`Pollinator species richness`$AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
  Asym    R0    lrc
  0.6510  0.2154 -1.9354
  residual sum-of-squares: 2.089

Number of iterations to convergence: 5
Achieved convergence tolerance: 2.955e-06

\$`Pollinator species richness`$AS2
Nonlinear regression model
  model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data: DF
  Asym    lrc    c0
  0.651 -1.935 -2.783
  residual sum-of-squares: 2.089

Number of iterations to convergence: 5
Achieved convergence tolerance: 2.969e-06

\$`Pollinator species richness`$AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
  data: DF
  Asym    lrc
  0.5931 -0.9086
  residual sum-of-squares: 2.259

Number of iterations to convergence: 9
Achieved convergence tolerance: 5.317e-06

\$`Pollinator species richness`$LG2
Nonlinear regression model
  model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data: DF
  Asym   xmid   scal
  0.6234 1.8274 3.3834
  residual sum-of-squares: 2.097

Number of iterations to convergence: 7
Achieved convergence tolerance: 3.943e-06

\$`Invader species richness`$LG2

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
      data = DF)

Coefficients:
(Intercept)    blockB2    blockB3    blockB4
sowndiv       -0.8696588  -0.0741752  -0.0763104  -0.0870208
                0.0287076
funcgr           grass             leg    sowndiv:funcgr
sowndiv:grass   0.1641398       0.8386769       0.4239302      -0.0005527      -
                0.0206278
sowndiv:leg    funcgr:grass     funcgr:leg      grass:leg
              -0.0100043       -0.0929594       -0.0273729      -0.2326095

$\text{`Invader species richness'}L02$
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
  Log-likelihood: 49.34961
Coefficients:
(Intercept)    blockB2    blockB3    blockB4
sowndiv       -0.8755590223  -0.0364875483  -0.0259437467  -0.0313083836
                0.0174771973
funcgr           grass             leg    sowndiv:funcgr
sowndiv:grass   0.1679137338   0.8850495455   0.3960277132   -0.0005156306  -
                0.0171791223
sowndiv:leg    funcgr:grass     funcgr:leg      grass:leg
              -0.0062638686   -0.1182599297   -0.0151106133   -0.2504513006

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~fitted(.)
  Parameter estimates:
    expon
                2.677272
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.05314511

$\text{`Invader species richness'}L011$
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
  Log-likelihood: 47.23053
Coefficients:
(Intercept)    blockB2    blockB3    blockB4
sowndiv       -1.059376314   -0.021027002    0.001390864   -0.009293654
                0.028430914
funcgr           grass             leg    sowndiv:funcgr
sowndiv:grass   0.189198945       0.965782179       0.421379116   -0.001073868      -
                0.019028230
sowndiv:leg  funcgr:grass  funcgr:leg  grass:leg
-0.008825354  -0.134342737  -0.003999912  -0.265886656

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3902477
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2427882

$`Invader species richness`$L021

Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)\(^2\)
Data: DF
Log-likelihood: 52.31982

Coefficients:
(Intercept)        blockB2        blockB3        blockB4
sowndiv
-0.957393444    0.013686513    0.100197677    0.031931240
0.009492330
funcgr          grass            leg sowndiv:funcgr
sowndiv:grass
0.164051251    0.913646299    0.342664292    0.001263172   -
0.015253015
sowndiv:leg   funcgr:grass     funcgr:leg      grass:leg
-0.002851171   -0.131801439    0.005157409   -0.234921059

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.08868277
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2737306

$`Invader species richness`$L2

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)      sowndiv       funcgr          leg
 0.856929    -0.005806    -0.101818    -0.168073

$`Invader species richness`$L21

Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 30.44476
Coefficients:
(Intercept)    sowndiv    funcgr    leg
 0.772691168   -0.003966816  -0.090492733  -0.140033771

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  power
  0.740228
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4013454

$`Invader species richness`$L22
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 31.62189

Coefficients:
(Intercept)    sowndiv    funcgr    leg
  0.678468103   -0.004035291  -0.074440144  -0.110156946

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  expon
  4.647493
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.03661918

$`Invader species richness`$L211
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 29.75327

Coefficients:
(Intercept)    sowndiv    funcgr    leg
  0.729383569   -0.004077178  -0.078861611  -0.154818799

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.3722554
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2925442

$`Invader species richness`$L222
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 27.85592

Coefficients:
(Intercept)      sowndiv       funcgr          leg
 0.801428372 -0.003787894 -0.095387170 -0.161872261

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03068574

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2242045

$`Invader species richness`$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
    a       b
  0.2614 -0.5167
  residual sum-of-squares: 3.486

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.604e-06

$`Invader species richness`$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm       k
  0.2614 -0.5167
  residual sum-of-squares: 3.486

Number of iterations to convergence: 6
Achieved convergence tolerance: 4.148e-06

$`Invader species richness`$M2
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
    a       b       d
  -0.6166  5.3995  0.6237
  residual sum-of-squares: 2.838

Number of iterations to convergence: 9
Achieved convergence tolerance: 8.74e-07

$`Invader species richness`$M211
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
Log-likelihood: 32.39396

Coefficients:
\[
\begin{array}{ccc}
a & b & d \\
-0.6148211 & 6.4549092 & 0.6007534 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: \( \sim \text{sowndiv} \)
Parameter estimates:
\[
\text{power} \\
-0.3712023 \\
\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.288151

$`\text{Invader species richness}`$ M222
Generalized nonlinear least squares fit
Model: response \( \sim d + a \times \text{sowndiv}/(b + \text{sowndiv}) \)
Data: DF
Log-likelihood: 30.84111

Coefficients:
\[
\begin{array}{ccc}
a & b & d \\
-0.6273309 & 6.7207306 & 0.6022064 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: \( \sim \text{sowndiv} \)
Parameter estimates:
\[
\text{expon} \\
-0.03227654 \\
\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2232846

$`\text{Invader species richness}`$ M3
Generalized nonlinear least squares fit
Model: response \( \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)
Data: DF
Log-likelihood: 14.23710

Coefficients:
\[
\begin{array}{cccc}
\text{a.(Intercept)} & \text{a.leg} & \text{b.(Intercept)} & \text{b.leg} \\
0.31338494 & -0.03713824 & -0.60983174 & 0.04202515 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2085542

$`\text{Invader species richness}`$ M311
Generalized nonlinear least squares fit
Model: response \( \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)
Data: DF
Log-likelihood: 17.32547

Coefficients:
$`Invader species richness`$M321
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 14.33456

Coefficients:
\[
\begin{array}{cccc}
  \text{a.(Intercept)} & \text{a.leg} & \text{b.(Intercept)} & \text{b.leg} \\
  0.29736029 & -0.02995577 & -0.63499497 & 0.05284561 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{expon} \\
  -0.002618793 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2130429

$`Invader species richness`$M4
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 25.14466

Coefficients:
\[
\begin{array}{cccc}
  \text{a.(Intercept)} & \text{a.grass} & \text{b.(Intercept)} & \text{b.grass} \\
  -0.02753018 & 0.21050859 & -0.70480736 & 0.18272411 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1825784

$`Invader species richness`$M422
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 26.25377

Coefficients:
\[
\begin{array}{cccc}
  \text{a.(Intercept)} & \text{a.grass} & \text{b.(Intercept)} & \text{b.grass} \\
  -0.06552824 & 0.22344803 & -0.82735139 & 0.23278602 \\
\end{array}
\]
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01025615
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1967053

$`Invader species richness`$M5
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: -38.46439
  Coefficients:
    a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
    -1.1594272     0.3807862   -78.8806130    23.4563579
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.3965887

$`Invader species richness`$M511
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 27.24935
  Coefficients:
    a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
    0.33888495   -0.05975709    0.23481253   -0.70373143

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3034175
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2792091

$`Invader species richness`$M522
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 24.79522
  Coefficients:
    a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
    0.37237642   -0.07647321    0.35142898   -0.77577462

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
expon
-0.02749054
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2321671

$`\text{Invader species richness}`$M6
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.8594

Coefficients:
a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr  b.leg
0.66146237  -0.09926636  -0.14154427  0.43150520  -0.63514914  -0.11597899

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1856097

$`\text{Invader species richness}`$M611
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.77305

Coefficients:
a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr  b.leg
0.58033470  -0.09035480  -0.11763480  0.35898070  -0.70724310  -0.06738660

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.2949823

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2611419

$`\text{Invader species richness}`$M622
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 29.62458

Coefficients:
a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr  b.leg
0.62153896  -0.10701614  -0.12245165  0.50662297  -0.77955051  -0.08640912

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.2949823

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2611419
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.02533785
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2176894

$`Invader species richness`$M7
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 29.21946

Coefficients:
a.(Intercept)       a.funcgr       a.grass b.(Intercept)      b.funcgr
  0.06034288   -0.02424396    0.15957061    0.07991952   -0.58888938
  b.grass
  0.06032706

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1759984

$`Invader species richness`$M711
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 36.07311

Coefficients:
a.(Intercept)       a.funcgr       a.grass b.(Intercept)      b.funcgr
  0.08075086   -0.02780305    0.13343584    0.17854639   -0.67847707
  b.grass
  0.02333110

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.2709792
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2420598

$`Invader species richness`$M722
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.10838

Coefficients:
a.(Intercept)       a.funcgr       a.grass b.(Intercept)      b.funcgr
  0.09730423   -0.04009736    0.13982871    0.24214926   -0.72896584
b.grass
0.03768198

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02274148
 Degrees of freedom: 82 total; 76 residual
 Residual standard error: 0.2040353

$Invader species richness$M81
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 25.50035

Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  -0.01308350    0.20979853   -0.01034301   -0.89517590    0.22254734
  b.leg
  0.06583228

Degrees of freedom: 82 total; 76 residual
 Residual standard error: 0.1841646

$Invader species richness$M82
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 30.05757

Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  -0.052966270   0.198753104   0.006670851  -1.076495311   0.239135801
  b.leg
  0.115837171

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.2230148
 Degrees of freedom: 82 total; 76 residual
 Residual standard error: 0.2425815

$Invader species richness$M83
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 26.65086
Coefficients:
a.(Intercept)  a.grass  a.leg b.(Intercept)  b.grass
-0.10033544  0.22814802  0.01843387 -1.10353748  0.27707688
  b.leg
   0.12433801

Variance function:
 Structure: Exponential of variance covariate
 Formula: ~sowndiv
 Parameter estimates:
  expon
   -0.01165125
 Degrees of freedom: 82 total; 76 residual
 Residual standard error: 0.2007036

$`Invader species richness`$M91
Generalized nonlinear least squares fit
 Model: response ~ a * sowndiv/(b + sowndiv)
 Data: DF
 Log-likelihood: 29.6004

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
 0.23036160  -0.04519295  0.12553337  -0.05048323  0.30972303
  b.funcgr  b.grass  b.leg
   -0.60868637  0.00468225  -0.06242763

Degrees of freedom: 82 total; 74 residual
 Residual standard error: 0.1775342

$`Invader species richness`$M92
Generalized nonlinear least squares fit
 Model: response ~ a * sowndiv/(b + sowndiv)
 Data: DF
 Log-likelihood: 36.55591

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
 0.23581701  -0.04714367  0.10381128  -0.04741346  0.36776081
  b.funcgr  b.grass  b.leg
   -0.69645559  -0.01493465  -0.05908719

Variance function:
 Structure: Power of variance covariate
 Formula: ~sowndiv
 Parameter estimates:
  power
   -0.27264
 Degrees of freedom: 82 total; 74 residual
 Residual standard error: 0.2444710

$`Invader species richness`$M93
Generalized nonlinear least squares fit
 Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: -20.1709

Coefficients:
\[
\begin{align*}
a.&(\text{Intercept}) & a.\text{funcgr} & a.\text{grass} & a.\text{leg} & b.&(\text{Intercept}) \\
0.154742277 & -0.012688615 & -0.068472733 & 0.009060244 & 3.091674011 \\
b.&(\text{funcgr}) & b.\text{grass} & b.\text{leg} \\
-0.875700261 & -3.081295756 & 0.068947882
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.04443995

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.4770702

\$`Invader species richness`$M111
Generalized nonlinear least squares fit
Model: response \sim d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.75786

Coefficients:
\[
\begin{align*}
a.&(\text{Intercept}) & a.\text{grass} & b.&(\text{Intercept}) & b.\text{grass} & d.&(\text{Intercept}) \\
0.2105159 & -0.5871141 & 0.7620374 & 9.5745325 & 0.1071789 \\
d.\text{grass} & 0.2656661
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1685654

\$`Invader species richness`$M132
Generalized nonlinear least squares fit
Model: response \sim d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 41.0249

Coefficients:
\[
\begin{align*}
a.&(\text{Intercept}) & a.\text{grass} & b.&(\text{Intercept}) & b.\text{grass} & d.&(\text{Intercept}) \\
0.17213565 & -0.56687186 & 9.97150692 & 4.93267526 & 0.06837465 \\
d.\text{grass} & 0.28511332
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.02970084

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1966644
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 22.14295

Coefficients:
\begin{align*}
  a.\text{(Intercept)} & \quad a.\text{funcgr} & \quad b.\text{(Intercept)} & \quad b.\text{funcgr} & \quad d.\text{(Intercept)} \\
  -0.68750113 & \quad 0.04952297 & \quad 10.54774181 & \quad -1.11372183 & \quad 0.61790043 \\
  d.\text{funcgr} & \quad -0.02922212 \\
\end{align*}

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1918615

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.3862

Coefficients:
\begin{align*}
  a.\text{(Intercept)} & \quad a.\text{funcgr} & \quad b.\text{(Intercept)} & \quad b.\text{funcgr} & \quad d.\text{(Intercept)} \\
  -0.78583177 & \quad 0.09067713 & \quad 9.63876241 & \quad 1.28935836 & \quad 0.65653564 \\
  d.\text{funcgr} & \quad -0.06926793 \\
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
  \text{power} \quad & -0.3772727 \\
\end{align*}

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2928772

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 31.48695

Coefficients:
\begin{align*}
  a.\text{(Intercept)} & \quad a.\text{funcgr} & \quad b.\text{(Intercept)} & \quad b.\text{funcgr} & \quad d.\text{(Intercept)} \\
  -0.76996288 & \quad 0.08060100 & \quad 10.59586748 & \quad 0.58532421 & \quad 0.64321828 \\
  d.\text{funcgr} & \quad -0.05947297 \\
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
  \text{expon} \quad & -0.03223497 \\
\end{align*}
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2257823

"Invader species richness"$M131
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 28.67949

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2.6141507</td>
<td>0.3664406</td>
<td>0.7370165</td>
<td>81.3561071</td>
<td>-7.1368400</td>
</tr>
<tr>
<td>b.leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.(Intercept)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.funcgr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.leg</td>
<td>-30.6265476</td>
<td>0.9753803</td>
<td>-0.1203790</td>
<td>-0.1568531</td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1807648

"Invader species richness"$M132
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 39.9969

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.61517821</td>
<td>-0.1417247</td>
<td>-0.4942727</td>
<td>-15.68682841</td>
<td>5.87811699</td>
</tr>
<tr>
<td>b.leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.(Intercept)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.funcgr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.leg</td>
<td>7.67227313</td>
<td>0.50431680</td>
<td>-0.03986849</td>
<td>0.03842124</td>
<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
<table>
<thead>
<tr>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.3755647</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2749904

"Invader species richness"$M133
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 38.25412

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2.4565512</td>
<td>0.3408683</td>
<td>0.6925005</td>
<td>77.5155909</td>
<td>-6.3746884</td>
</tr>
<tr>
<td>b.leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.(Intercept)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.funcgr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.leg</td>
<td>-29.6652322</td>
<td>0.9838190</td>
<td>-0.1241351</td>
<td>-0.1587125</td>
<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.03131458
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2104567

$`Invader species richness`$M141
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 33.08728

Coefficients:
  a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
  -0.042606968  -0.020707395  -0.346630180  12.216629190  -1.532412675
  b.grass d.(Intercept)      d.funcgr       d.grass
  0.443001572  -0.002119850 0.044553531  0.306208239

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1713046

$`Invader species richness`$M1432
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 41.58411

Coefficients:
  a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
  0.346249988  -0.028277111  -0.700274393 -23.087422778  2.758196149
  b.grass d.(Intercept)      d.funcgr       d.grass
  22.08331706   0.305506157  -0.009116099  0.168999831

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
-0.02958036
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1990949

$`Invader species richness`$M151
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 33.97925

Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  -0.074534284  -0.477019360   0.115727765  22.376641570  2.726468809
  b.leg d.(Intercept)       d.grass         d.leg
  -9.756980404   0.094377905  0.288504761  -0.001676065
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1694513

$\text{Invader species richness}$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 45.848

Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.grass} & \text{a.leg} & \text{b.(Intercept)} & \text{b.grass} \\
0.03156529 & -0.55700289 & 0.11398264 & 26.52481431 & 3.80375048 \\
\text{b.leg} & \text{d.(Intercept)} & \text{d.grass} & \text{d.leg} & \\
-12.85946621 & 0.02898520 & 0.30385442 & 0.02362958 & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{power} \\
-0.3671795 \\
\end{array}
\]

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2528845

$\text{Invader species richness}$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 42.51194

Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.grass} & \text{a.leg} & \text{b.(Intercept)} & \text{b.grass} \\
-0.027212016 & -0.520447833 & 0.121713545 & 24.535028423 & 3.243172328 \\
\text{b.leg} & \text{d.(Intercept)} & \text{d.grass} & \text{d.leg} & \\
-11.259857028 & 0.069752128 & 0.294602237 & 0.006246683 & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{expon} \\
-0.02970589 \\
\end{array}
\]

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1970671

$\text{Invader species richness}$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 34.50523

Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b.(Intercept)} \\
-2.309110462 & 0.350051853 & -0.139943157 & 0.637271452 & 154.449334110 \\
\end{array}
\]
b.funcgr  b.grass  b.leg  d.(Intercept)  d.funcgr
-17.370532774  -24.792560766  -36.930582097  0.101832000  -0.009206486
d.grass  d.leg
0.295591080  -0.023308855

Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1719379

$`Invader species richness`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
  a       b
  3.587e-01 -2.821e-27
residual sum-of-squares: 4.103

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.286e-08

$`Invader species richness`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
  a
  1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

$`Invader species richness`$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
  b
  3.199e-28
residual sum-of-squares: 14.14

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.304e-08

$`Invader species richness`$E21
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(sowndiv)
  Data: DF
  Log-likelihood: 16.35315

Coefficients:
  a       b
  2.618194e-01 -1.972752e-27

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
   power  -0.450275
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3915858

`Invader species richness`$\text{E22}$
Generalized nonlinear least squares fit
   Model: response ~ a + b * exp(sowndiv)
   Data: DF
   Log-likelihood: 13.98649

Coefficients:
   a             b
   3.124052e-01 -2.415707e-27

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon  -0.03410473
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2768284

`Invader species richness`$\text{E31}$
Generalized nonlinear least squares fit
   Model: response ~ a + exp(c * sowndiv)
   Data: DF
   Log-likelihood: 23.21724

Coefficients:
   a          c
   -0.6550308 -0.0068674

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power  -0.3996771
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3340797

`Invader species richness`$\text{E32}$
Generalized nonlinear least squares fit
   Model: response ~ a + exp(c * sowndiv)
   Data: DF
   Log-likelihood: 21.20065

Coefficients:
   a            c
   -0.615932071 -0.007323298
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03278747
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2506634

$`\text{Invader species richness}`$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1768.39

Coefficients:
  a
  -2.208674

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.88650
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1426569

$`\text{Invader species richness}`$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.4686

Coefficients:
  a
  -2.857788

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014251
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.7071498

$`\text{Invader species richness}`$
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -1715.803

Coefficients:
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.39585
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1556430

$`\text{Invader species richness}$\text{E52}$
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -29.16024
  Coefficients:
    b
    3.198725e-28

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04616619
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.5164188

$`\text{Invader species richness}$\text{E61}$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 8.6749
  Coefficients:
    c
    -0.2294122

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3137089
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.3489355

$`\text{Invader species richness}$\text{E62}$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
Log-likelihood: 7.984434

Coefficients:
   c
-0.2886913

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
     expon
     -0.02739641

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2794404

$`Invader species richness`$Ea10
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
   a.(Intercept)         a.leg
-2963126        911706

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Invader species richness`$Ea12
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 9.940523

Coefficients:
   c.(Intercept)         c.leg
0.07027172   -0.27978125

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2170086

$`Invader species richness`$Ea921
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 25.08048

Coefficients:
   a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.65560671    0.05808522    0.01117756   -0.01890015

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
-0.03262556
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2417888

$\text{Invader species richness}\$Ea1011
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1768.089

Coefficients:
a.(Intercept)  a.leg
-2.09791148 -0.06329274

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
14.88791
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1427223

$\text{Invader species richness}\$Ea1021
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.392

Coefficients:
a.(Intercept)  a.leg
-3.557476  0.403380

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
1.014299
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7105965

$\text{Invader species richness}\$Ea121
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 14.62785

Coefficients:
c.(Intercept)  c.leg
0.04724133 -0.22411372
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      power
      -0.2598078
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3014128

$`Invader species richness`$Ea1221
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 15.01052
Coefficients:
      c.(Intercept)       c.leg
      0.09369032   -0.28107660

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      expon
      -0.0261203
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2552798

$`Invader species richness`$Eb16
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:
      a.(Intercept)       a.grass
      -3508714       1286426

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Invader species richness`$Eb18
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 5.873459
Coefficients:
      c.(Intercept)       c.grass
      -0.7107069     0.2352284

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2280433
```markdown
$\text{Invader species richness}$

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 42.18982

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>c.(Intercept)</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1.11257729</td>
<td>0.36126322</td>
<td>0.02479703</td>
<td>-0.02891492</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
<table>
<thead>
<tr>
<th></th>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.3590787</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2527482

$\text{Invader species richness}$

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 39.69403

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>c.(Intercept)</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1.09315945</td>
<td>0.35459464</td>
<td>0.02532085</td>
<td>-0.02961015</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
<table>
<thead>
<tr>
<th></th>
<th>expon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.02997079</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1977609

$\text{Invader species richness}$

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1765.168

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2.5613818</td>
<td>0.2015474</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
<table>
<thead>
<tr>
<th></th>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14.90156</td>
</tr>
</tbody>
</table>
```
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1349648

$`Invader species richness`$Eb1621
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.2233

Coefficients:
  a.(Intercept)       a.grass
        -4.1066329     0.7200957

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
       1.014469

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7081031

$`Invader species richness`$Eb1811
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 12.40135

Coefficients:
  c.(Intercept)       c.grass
        -0.4722994     0.1557393

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
       -0.3227594

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3400491

$`Invader species richness`$Eb1821
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 10.93501

Coefficients:
  c.(Intercept)       c.grass
        -0.6457749     0.2191184

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
-0.02658537
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2693615

\$`Invader species richness`$Ec22
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:
  a.(Intercept)      a.funcgr
  252096.1     -912137.6
Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

\$`Invader species richness`$Ec24
Generalized nonlinear least squares fit
  Model: response ~ \exp(c \times sowndiv)
  Data: DF
  Log-likelihood: 4.719322
Coefficients:
  c.(Intercept)      c.funcgr
-0.4535248     0.0614036
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2312757

\$`Invader species richness`$Ec2121
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(c \times sowndiv)
  Data: DF
  Log-likelihood: 30.93506
Coefficients:
  a.(Intercept)      a.funcgr c.(Intercept)      c.funcgr
-0.361463110  -0.091661133  -0.039336297   0.008713791

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
-0.03234552
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2245870

\$`Invader species richness`$Ec2211
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(sowndiv)
Data: DF
Log-likelihood: -1768.39

Coefficients:
\[
a.(\text{Intercept}) \quad a.\text{funcgr} \\
2.478558 \quad -4.687232
\]

Variance function:
Structure: Power of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
\[
\text{power} \\
14.88650
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1435456

$`\text{Invader species richness}`$Ec2221
Generalized nonlinear least squares fit
Model: response ~ a + \exp(\text{sowndiv})
Data: DF
Log-likelihood: -794.6692

Coefficients:
\[
a.(\text{Intercept}) \quad a.\text{funcgr} \\
3.874402 \quad -6.339405
\]

Variance function:
Structure: Exponential of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
\[
\text{expon} \\
1.021634
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6147121

$`\text{Invader species richness}`$Ec2411
Generalized nonlinear least squares fit
Model: response ~ \exp(c * \text{sowndiv})
Data: DF
Log-likelihood: 9.415064

Coefficients:
\[
c.(\text{Intercept}) \quad c.\text{funcgr} \\
-0.31494618 \quad 0.03079770
\]

Variance function:
Structure: Power of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
\[
\text{power} \\
-0.2776935
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3298388
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 9.885686

Coefficients:
c.(Intercept)      c.funcgr
     -0.4188951     0.0572270

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
     -0.0268367
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2734199

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)      a.funcgr         a.leg
     872779.7     -990730.7     -307654.9

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1768.089

Coefficients:
a.(Intercept)      a.funcgr         a.leg
     2.60514365   -4.70305511   -0.06329275

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
     14.88791
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1436228
Data: DF
Log-likelihood: -794.6631

Coefficients:
a.(Intercept)    a.funcgr    a.leg
4.0755148   -6.3644827   -0.1005894

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.021644
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6184893

$`Invader species richness`$Ed3021
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 15.31406

Coefficients:
c.(Intercept)    c.funcgr    c.leg
0.18948785   -0.02097112   -0.31658809

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.02635913
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2564666

$`Invader species richness`$Ee40
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)    a.funcgr    a.grass
-335850.7    -839615.5     296563.5

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Invader species richness`$Ee341
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1765.168
Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a.funcgr} & \quad \text{a.grass} \\
2.0754633 & \quad -4.6368451 & \quad 0.2015474
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
- power : 14.90156
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1358163

$`Invader species richness`$Ee342
Generalized nonlinear least squares fit
Model: response ~ a + \exp(sowndiv)
Data: DF
Log-likelihood: -794.6393

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a.funcgr} & \quad \text{a.grass} \\
3.4300182 & \quad -6.2835356 & \quad 0.2220201
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
- expon : 1.021687
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6180783

$`Invader species richness`$Ef40
Generalized nonlinear least squares fit
Model: response ~ a + \exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a.grass} & \quad \text{a.leg} \\
-5251826 & \quad 1394677 & \quad 1054750
\end{align*}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Invader species richness`$Ef3721
Generalized nonlinear least squares fit
Model: response ~ a + b * \exp(c * sowndiv)
Data: DF
Log-likelihood: -2712.751

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a.grass} & \quad \text{a.leg} & \quad \text{b. (Intercept)} & \quad \text{b.grass} \\
1.419691e-01 & \quad 2.012095e-01 & \quad 8.611878e-03 & \quad 1.071776e-04 & \quad 4.652869e-05
\end{align*}
\]
```
  b.leg  c.(Intercept)  c.grass  c.leg
-1.006911e-04  9.999935e-01  9.999970e-01  1.000006e+00

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    4.423157

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.001924846

```

```
Invader species richness`$Ef3911
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 43.4042

Coefficients:
  a.(Intercept)  a.grass  a.leg  c.(Intercept)  c.grass  c.leg
-1.057936251  0.342852252 -0.011580879  0.027034455 -0.027627968

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3622474

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2534778

```

```
Invader species richness`$Ef3921
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 40.65308

Coefficients:
  a.(Intercept)  a.grass  a.leg  c.(Intercept)  c.grass
-1.045465471  0.333136267 -0.002225989  0.028542689 -0.027713348

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    4.423157

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1977937
```
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1765.167

Coefficients:
a.(Intercept)  a.grass  a.leg
-2.571592378  0.203006099  0.004375961

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power 14.90156

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1358126

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.985

Coefficients:
a.(Intercept)  a.grass  a.leg
-5.8867231     0.9899655     0.7564188

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon 1.014643

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7094427

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 17.78622

Coefficients:
c.(Intercept)  c.grass  c.leg
-0.1508073     0.1095076    -0.1949573

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power -0.2899755
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3052221

$\text{Invader species richness}$
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 16.9982

Coefficients:
c.(Intercept) c.grass c.leg
-0.1003633 0.1106902 -0.2632032

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon -0.02590937
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2502846

$\text{Invader species richness}$
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept) a.funcgr a.grass a.leg
  292091.9 -918391.5 183181.4 -199834.2

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

$\text{Invader species richness}$
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1765.167

Coefficients:
a.(Intercept) a.funcgr a.grass a.leg
  2.063794081 -4.635386417 0.203006089 0.004375951

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power 14.90156
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1366804
$\text{Invader species richness}\$\text{Eg4621}

**Generalized nonlinear least squares fit**

- Model: response $\sim a + \exp(sowndiv)$
- Data: DF
- Log-likelihood: -794.6391

**Coefficients:**

<table>
<thead>
<tr>
<th></th>
<th>a (Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>a.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>3.47998058</td>
<td>-6.28977955</td>
<td>0.21509253</td>
<td>-0.01805433</td>
</tr>
</tbody>
</table>

**Variance function:**
- Structure: Exponential of variance covariate
- Formula: $\sim$ sowndiv
- Parameter estimates: expon
  - 1.021688

**Degrees of freedom:** 82 total; 78 residual

**Residual standard error:** 0.6220253

$\text{Invader species richness}\$\text{Pa2}

**Nonlinear regression model**

- model: response $\sim a + b \times sowndiv$
- data: DF
- a  
  - 0.417129
- b  
  - -0.008632
- residual sum-of-squares: 3.507

**Number of iterations to convergence:** 1
**Achieved convergence tolerance:** 2.236e-09

$\text{Invader species richness}\$\text{Pa3}

**Nonlinear regression model**

- model: response $\sim a + sowndiv^c$
- data: DF
- a  
  - -0.4553
- c  
  - -0.1624
- residual sum-of-squares: 2.866

**Number of iterations to convergence:** 9
**Achieved convergence tolerance:** 3.763e-07

$\text{Invader species richness}\$\text{Pa4}

**Nonlinear regression model**

- model: response $\sim b \times sowndiv^c$
- data: DF
- b  
  - 0.5529
- c  
  - -0.3708
- residual sum-of-squares: 2.926

**Number of iterations to convergence:** 9
**Achieved convergence tolerance:** 4.003e-06

$\text{Invader species richness}\$\text{Pa5}

**Nonlinear regression model**
model:  response ~ sowndiv^c  
data:  DF  
c
-0.7758
residual sum-of-squares: 6.844

Number of iterations to convergence: 11
Achieved convergence tolerance: 1.481e-06

$`Invader species richness`$Pb21
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 12.88056

Coefficients:
  a            b
0.417129359 -0.008631752

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2093658

$`Invader species richness`$Pb31
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 21.15601

Coefficients:
  a          c
-0.4553454 -0.1624136

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1892678

$`Invader species richness`$Pb41
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 20.30381

Coefficients:
  b          c
0.5529273 -0.3707754

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1912450

$`Invader species richness`$Pb51
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -14.53352
Coefficients:

\[ c = -0.7758186 \]

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2906704

$`Invader species richness`$Pc221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 22.21624
Coefficients:

\[
\begin{array}{ll}
  a & 0.326729178 \\
  b & -0.005179762 \\
\end{array}
\]

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    $-0.4159826$

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3464691

$`Invader species richness`$Pc231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 20.10696
Coefficients:

\[
\begin{array}{ll}
  a & 0.369223372 \\
  b & -0.005640003 \\
\end{array}
\]

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    $-0.03318851$

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2549052

$`Invader species richness`$Pc321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 32.50991
Coefficients:

\[
\begin{array}{ll}
  a & -0.4387390 \\
  c & -0.1772267 \\
\end{array}
\]
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3794411

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2894586

$`Invader species richness`$Pc331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 30.55208

Coefficients:
  a          c
  -0.4448249 -0.1766571

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.03242523

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2229526

$`Invader species richness`$Pc421
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 30.11980

Coefficients:
  b          c
  0.5960487 -0.4465598

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3417814

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2818151

$`Invader species richness`$Pc431
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 26.00437
Coefficients:

\[
\begin{array}{cc}
  b & c \\
  0.5839645 & -0.4759169 \\
\end{array}
\]

Variance function:

Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  \begin{align*}
  \text{expon} &= -0.02546366 \\
  \end{align*}
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2219942

$`\text{Invader species richness}`$Pc52
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 15.82466

Coefficients:

\[
\begin{array}{cc}
  c \\
  -0.695587 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  \begin{align*}
  \text{power} &= -0.5683133 \\
  \end{align*}
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4666951

$`\text{Invader species richness}`$Pc53
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 1.713970

Coefficients:

\[
\begin{array}{cc}
  c \\
  -0.762298 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  \begin{align*}
  \text{expon} &= -0.04135571 \\
  \end{align*}
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.3400537

$`\text{Invader species richness}`$Pd6
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 22.04046

Coefficients:

a. (Intercept)     a.funcgr b. (Intercept)     b.funcgr c. (Intercept)  
0.69693583      -0.01204201      -0.11754105      -0.03675916      0.50035632  
c.funcgr 
-0.07337373

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1921015

$`Invader species richness``Pd71$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 21.33612

Coefficients:
a. (Intercept)     a.funcgr b. (Intercept)     b.funcgr  
0.630167330       -0.089314529       -0.033176218       0.007268427

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1912584

$`Invader species richness``Pd81$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 21.68425

Coefficients:
a. (Intercept)     a.funcgr c. (Intercept)     c.funcgr  
-0.458342103       -0.003366539       -0.118504949       -0.013242964

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1904481

$`Invader species richness``Pd91$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 21.63043

Coefficients:
b. (Intercept)     b.funcgr c. (Intercept)     c.funcgr  
0.47145739       0.06381308       -0.15277006       -0.11400496

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1905732

$`Invader species richness``Pd101$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 21.60224

Coefficients:
b. (Intercept)     b.funcgr c. (Intercept)     c.funcgr  
0.58345739       0.12381308       -0.15277006       -0.11400496

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1905732

$`Invader species richness``Pd111$
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv^c
Data: DF
Log-likelihood: 22.04046

Coefficients:
a. (Intercept)     a.funcgr c. (Intercept)     c.funcgr  
0.69693583      -0.12042010      -0.11754105      -0.03675916  
c.funcgr 
-0.07337373

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1921015

$`Invader species richness``Pd121$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 22.04046

Coefficients:
b. (Intercept)     b.funcgr c. (Intercept)     c.funcgr  
0.47145739       0.06381308       -0.15277006       -0.11400496

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1905732
Data: DF
Log-likelihood: -14.52953

Coefficients:
c.(Intercept)  c.funcgr
-0.79368895  0.00765095

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2924672

$`Invader species richness`$Pe621
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 33.50194

Coefficients:
a.(Intercept)  a.funcgr b.(Intercept)  b.funcgr c.(Intercept) c.funcgr
0.84230527 -0.04263488 -0.24458503 -0.01422285 0.36393765

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.3803518

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2938040

$`Invader species richness`$Pe631
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 31.4902

Coefficients:
a.(Intercept)  a.funcgr b.(Intercept)  b.funcgr c.(Intercept) c.funcgr
0.73732804 -0.03098583 -0.15141668 -0.02259400 0.46596031

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03229696

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2258936

$`Invader species richness`$Pe721
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 32.44078

Coefficients:
\[
\begin{align*}
a & \text{(Intercept)} & b & \text{funcgr} & a & \text{funcgr} \\
0.611738355 & -0.089326220 & -0.029794959 & 0.006534511
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} & \\
-0.3795758
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2934520

Invader species richness
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 30.7238

Coefficients:
\[
\begin{align*}
a & \text{(Intercept)} & b & \text{funcgr} & a & \text{funcgr} \\
0.62704760 & -0.09164936 & -0.03132883 & 0.00689777
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} & \\
-0.03239339
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2252589

Invader species richness
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 33.06976

Coefficients:
\[
\begin{align*}
a & \text{(Intercept)} & b & \text{funcgr} & c & \text{funcgr} \\
-0.417567066 & -0.021645713 & -0.161038712 & 0.003049373
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} & \\
-0.3794307
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.291147
$\text{Invader species richness}$

Generalized nonlinear least squares fit
- Model: response ~ a + sowndiv^c
- Data: DF
- Log-likelihood: 30.05476

Coefficients:
- a.(Intercept): -0.58354769
- a.funcgr: 0.11546947
- c.(Intercept): -0.02176777
- c.funcgr: -0.10861881

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- expon: -0.03220079

Degrees of freedom: 82 total; 78 residual
- Residual standard error: 0.2267291

$\text{Invader species richness}$

Generalized nonlinear least squares fit
- Model: response ~ b * sowndiv^c
- Data: DF
- Log-likelihood: 32.27755

Coefficients:
- b.(Intercept): 0.48810276
- b.funcgr: 0.06741560
- c.(Intercept): -0.22497351
- c.funcgr: -0.09829296

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- power: -0.3619244

Degrees of freedom: 82 total; 78 residual
- Residual standard error: 0.2864316

$\text{Invader species richness}$

Generalized nonlinear least squares fit
- Model: response ~ b * sowndiv^c
- Data: DF
- Log-likelihood: 30.40131

Coefficients:
- b.(Intercept): 0.4266011
- b.funcgr: 0.1103235
- c.(Intercept): -0.1481938
- c.funcgr: -0.1438805

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- expon
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2246534

$`Invader species richness`$Pe1021
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 16.10336

Coefficients:
c.(Intercept)      c.funcgr
-0.62441777   -0.02542857

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.5766707

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4738524

$`Invader species richness`$Pe1031
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 1.832112

Coefficients:
c.(Intercept)      c.funcgr
-0.68495826   -0.02409634

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.04166035

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3425747

$`Invader species richness`$Pf111
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 32.75374

Coefficients:
a.(Intercept)       a.grass b.(Intercept)       b.grass c.(Intercept)       c.grass
1.5069269    -0.4201459    -1.3917740     0.6582016    -0.4827015

0.5693927
Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.1685738

$`Invader species richness`$Pf121  
Generalized nonlinear least squares fit  
Model: response ~ a + b * sowndiv  
Data: DF  
Log-likelihood: 31.16652

Coefficients:
 a.(Intercept)       a.grass b.(Intercept)       b.grass  
-0.05405562    0.32841511    0.01721410   -0.02175244

Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.1696508

$`Invader species richness`$Pf131  
Generalized nonlinear least squares fit  
Model: response ~ a + sowndiv^c  
Data: DF  
Log-likelihood: 31.35253

Coefficients:
 a.(Intercept)       a.grass c.(Intercept)       c.grass  
-0.87486993    0.24422907   -0.03644039   -0.05248520

Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.1692664

$`Invader species richness`$Pf141  
Generalized nonlinear least squares fit  
Model: response ~ b * sowndiv^c  
Data: DF  
Log-likelihood: 30.66643

Coefficients:
 b.(Intercept)       b.grass c.(Intercept)       c.grass  
0.14854720    0.23238258   -0.39446566    0.07229237

Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.1706886

$`Invader species richness`$Pf151  
Generalized nonlinear least squares fit  
Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: -12.32948

Coefficients:
 c.(Intercept)       c.grass  
-1.4005608     0.4061233

Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.2847246
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 15.86537

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. leg</th>
<th>b. (Intercept)</th>
<th>b. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.412542457</td>
<td>0.022516667</td>
<td>0.006604696</td>
<td>-0.014723930</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2044538

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.38817

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. leg</th>
<th>c. (Intercept)</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.15811003</td>
<td>-0.17428692</td>
<td>-0.30971908</td>
<td>0.07706301</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1842706

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 23.54685

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>b. (Intercept)</th>
<th>b. leg</th>
<th>c. (Intercept)</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.87570692</td>
<td>-0.18786335</td>
<td>-0.47217817</td>
<td>0.03754091</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1861709

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -12.82061

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>c. (Intercept)</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.2798797</td>
<td>-0.3739393</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2864351
### Generalized nonlinear least squares fit

Model: response ~ a + b * sowndiv  
Data: DF  
Log-likelihood: 26.75476

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. funcgr</th>
<th>a. leg</th>
<th>b. (Intercept)</th>
<th>b. funcgr</th>
<th>b. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.015514463</td>
<td>-0.13761086</td>
<td>-0.193372861</td>
<td>-0.045353257</td>
<td>0.008690782</td>
<td>0.006499813</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.1813687

Invader species richness Ph231

### Generalized nonlinear least squares fit

Model: response ~ a + sowndiv^c  
Data: DF  
Log-likelihood: 27.19862

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. funcgr</th>
<th>a. leg</th>
<th>c. (Intercept)</th>
<th>c. funcgr</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.136405780</td>
<td>-0.043468172</td>
<td>-0.162036429</td>
<td>-0.108570009</td>
<td>-0.015545757</td>
<td>-0.001374916</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.1803896

Invader species richness Ph241

### Generalized nonlinear least squares fit

Model: response ~ b * sowndiv^c  
Data: DF  
Log-likelihood: 28.54119

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b. (Intercept)</th>
<th>b. funcgr</th>
<th>b. leg</th>
<th>c. (Intercept)</th>
<th>c. funcgr</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.73575274</td>
<td>0.04165656</td>
<td>-0.13995582</td>
<td>0.35646033</td>
<td>-0.19782181</td>
<td>-0.24241006</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.1774602

Invader species richness Ph251

### Generalized nonlinear least squares fit

Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: -11.81655

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c. (Intercept)</th>
<th>c. funcgr</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2735073</td>
<td>-0.1332462</td>
<td>-0.5562679</td>
</tr>
</tbody>
</table>
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2847344

$\text{Invader species richness}$$\text{Pi271}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 32.08462

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. funcgr} & \text{a. grass} & \text{b. (Intercept)} & \text{b. funcgr} \\
0.063678443 & -0.018592589 & 0.282757047 & -0.005044938 & 0.003682476 \\
& & b. grass & & -0.013778975 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1699550

$\text{Invader species richness}$$\text{Pi281}$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 32.13330

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. funcgr} & \text{a. grass} & \text{c. (Intercept)} & \text{c. funcgr} \\
-1.00108667 & 0.05983559 & 0.27361119 & 0.01532652 & -0.02767011 \\
& & c. grass & & -0.06655799 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1698542

$\text{Invader species richness}$$\text{Pi291}$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 32.43288

Coefficients:
\[
\begin{array}{cccccc}
\text{b. (Intercept)} & \text{b. funcgr} & \text{b. grass} & \text{c. (Intercept)} & \text{c. funcgr} \\
-0.09063530 & 0.13572666 & 0.27853058 & -0.27181359 & -0.10501154 \\
& & c. grass & & 0.06788672 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1692347

$\text{Invader species richness}$$\text{Pi301}$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -11.61194
Coefficients:
c.(Intercept) c.funcgr c.grass
-1.8166817 0.1212961 0.5041612

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2840248

$`Invader species richness`$PJ321
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 32.13525

Coefficients:
a.(Intercept) a.grass a.leg b.(Intercept) b.grass
-0.020635335 0.311193310 0.002453275 0.021968754 -0.020077170
b.leg
-0.006507661

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1698501

$`Invader species richness`$PJ331
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 32.59551

Coefficients:
a.(Intercept) a.grass a.leg c.(Intercept) c.grass
c.leg
-0.67654278 0.21960945 -0.09267028 -0.10761020 -0.04680049
0.03035498

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1688994

$`Invader species richness`$PJ341
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 31.93707

Coefficients:
b.(Intercept) b.grass b.leg c.(Intercept) c.grass
c.leg
0.3808502517 0.1930088170 -0.0958376885 -0.5051045589 0.1167130758
-0.0004397458

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1702611

$`Invader species richness`$PJ351
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: -11.07876

Coefficients:  
c.(Intercept)  c.grass  c.leg  
-0.8507797  0.3308007  -0.3173230

Degrees of freedom: 82 total; 79 residual  
Residual standard error: 0.282184

$\text{Invader species richness}$\$PkJ1$
Generalized nonlinear least squares fit  
Model: response ~ a + b * sowndiv  
Data: DF  
Log-likelihood: 32.69562

Coefficients:  
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)  
0.2463421302 -0.0414611831  0.2505014302 -0.0592709971 -0.0035913038  
b.funcgr  b.grass  b.leg  
0.0034729818 -0.0141514205 -0.0002398164

Degrees of freedom: 82 total; 74 residual  
Residual standard error: 0.1709578

$\text{Invader species richness}$\$PkJ31$
Generalized nonlinear least squares fit  
Model: response ~ a + sowndiv^c  
Data: DF  
Log-likelihood: 32.85072

Coefficients:  
a.(Intercept)  a.funcgr  a.grass  a.leg  c.(Intercept)  
-0.84184688  0.04090840  0.24590219 -0.05280485  0.06788732  
c.funcgr  c.grass  c.leg  
-0.03505635 -0.07750161 -0.01423810

Degrees of freedom: 82 total; 74 residual  
Residual standard error: 0.1706348

$\text{Invader species richness}$\$PkJ31$
Generalized nonlinear least squares fit  
Model: response ~ b * sowndiv^c  
Data: DF  
Log-likelihood: 33.93438

Coefficients:  
b.(Intercept)  b.funcgr  b.grass  b.leg  c.(Intercept)  
0.02826615  0.12008834  0.25839679 -0.03975164  0.34677209  
c.funcgr  c.grass  c.leg  
-0.18977842 -0.04771701 -0.18335220

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1683946

Invader species richness $P_k 401$

Generalized nonlinear least squares fit
   Model: response ~ sowndiv$^c$
   Data: DF
   Log-likelihood: -11.07875

Coefficients:
   c.(Intercept)      c.funcgr       c.grass         c.leg
   -0.855308355   0.000730808   0.331740345  -0.316246224

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2839871

Invader species richness $P_m 1131$

Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv$^c$
   Data: DF
   Log-likelihood: 41.11341

Coefficients:
   a.(Intercept)       a.grass b.(Intercept)       b.grass c.(Intercept)
   0.9651428    -0.1447366    -0.8585680     0.3875217    -0.3746046
   c.grass
   0.4988814

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
     expon
     -0.02975738

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1965476

Invader species richness $P_m 1221$

Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 41.79731

Coefficients:
   a.(Intercept)       a.grass b.(Intercept)       b.grass
   -0.09996902    0.34329718    0.01731705   -0.02086094

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
     power
     -0.3609832

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.25468
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 39.35593

Coefficients:
\[
\begin{align*}
&a.\text{(Intercept)} & a.\text{grass} & b.\text{(Intercept)} & b.\text{grass} \\
&-0.08537011 & 0.34165769 & 0.01796586 & -0.02165696
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
\[\text{expon} = -0.03003527\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1986879

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.10798

Coefficients:
\[
\begin{align*}
&a.\text{(Intercept)} & a.\text{grass} & c.\text{(Intercept)} & c.\text{grass} \\
&-0.86106131 & 0.25360980 & -0.02570178 & -0.07694270
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
\[\text{power} = -0.3526547\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2505992

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 39.37394

Coefficients:
\[
\begin{align*}
&a.\text{(Intercept)} & a.\text{grass} & c.\text{(Intercept)} & c.\text{grass} \\
&-0.84042252 & 0.23107728 & -0.05223669 & -0.05297478
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
\[\text{expon} = \ldots\]
$\text{Invader species richness}$

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 40.15399

Coefficients:
\begin{align*}
&b.(\text{Intercept}) & b.\text{grass} & c.(\text{Intercept}) & c.\text{grass} \\
&0.21660160 & 0.21522733 & -0.50179903 & 0.09355505
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
&\text{power} \\
&-0.3258341
\end{align*}

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2466244

$\text{Invader species richness}$

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 36.62846

Coefficients:
\begin{align*}
&b.(\text{Intercept}) & b.\text{grass} & c.(\text{Intercept}) & c.\text{grass} \\
&0.2439211 & 0.1887773 & -0.6599966 & 0.1895947
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
&\text{expon} \\
&-0.02665412
\end{align*}

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1995308

$\text{Invader species richness}$

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 20.26987

Coefficients:
\begin{align*}
&c.(\text{Intercept}) & c.\text{grass} \\
&-1.0048581 & 0.2288813
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.5877286
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4578314

$`Invader species richness`$Pm1531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 3.926738

Coefficients:
c.(Intercept) c.grass
  -1.0886432 0.2597931

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04147372
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3334000

$`Invader species richness`$Pn1721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 26.04545

Coefficients:
a.(Intercept) a.leg b.(Intercept) b.leg
  0.286090424 0.059738925 0.006601245 -0.011968258

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4077572
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.3308098

$`Invader species richness`$Pn1731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 24.01991

Coefficients:
a.(Intercept) a.leg b.(Intercept) b.leg
  0.324673516 0.059356680 0.008611559 -0.014459520
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03297544
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2456733

$\text{Invader species richness}^\text{Pn1821}$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 35.50666
Coefficients:
a.(Intercept)        a.leg  c.(Intercept)        c.leg
-0.11753302   -0.19465764   -0.34878051    0.09663866

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3694779
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2784767

$\text{Invader species richness}^\text{Pn1831}$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 33.49728
Coefficients:
a.(Intercept)        a.leg  c.(Intercept)        c.leg
-0.13300881   -0.18714082   -0.34491949    0.09516301

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03168886
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2164542

$\text{Invader species richness}^\text{Pn1921}$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 33.48263
Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>1.0260803</td>
<td>-0.2583930</td>
<td>-0.6270084</td>
<td>0.1014506</td>
</tr>
</tbody>
</table>

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power
  - parameter estimates: -0.3398739
- Degrees of freedom: 82 total; 78 residual
- Residual standard error: 0.2731628

\$`Invader species richness` Pn1931

Generalized nonlinear least squares fit
- Model: response ~ b * sowndiv^c
- Data: DF
- Log-likelihood: 29.51901

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>1.0035289</td>
<td>-0.2507705</td>
<td>-0.7209066</td>
<td>0.1560956</td>
</tr>
</tbody>
</table>

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon
  - parameter estimates: -0.02652077
- Degrees of freedom: 82 total; 78 residual
- Residual standard error: 0.2173534

\$`Invader species richness` Pn2021

Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: 17.17423

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>-0.5051655</td>
<td>-0.1516705</td>
</tr>
</tbody>
</table>

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power
  - parameter estimates: -0.5555069
- Degrees of freedom: 82 total; 80 residual
- Residual standard error: 0.4532378

\$`Invader species richness` Pn2031

Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 2.42626

Coefficients:
c.(Intercept)       c.leg
-0.5379375       -0.1932928

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.04034197
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3362736

$`Invader species richness`$Pp2121
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 45.01433

Coefficients:
a.(Intercept)      a.funcgr       a.leg b.(Intercept)      b.funcgr
-1.95173396       1.11905981       1.76976177       2.85281801       -1.19574945
  b.leg c.(Intercept)      c.funcgr c.leg
-1.93423489       0.14782170     -0.02204228     -0.03605776

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.4191833
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2759731

$`Invader species richness`$Pp2221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 38.79377

Coefficients:
a.(Intercept)      a.funcgr       a.leg b.(Intercept)      b.funcgr
  1.047892157     -0.143963401     -0.219425587     -0.046799270   0.008552152
  b.leg
  0.008962449

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2768204

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 35.89476

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
  1.028413569 -0.141983328 -0.201329427 -0.045879104   0.008625761
  b.leg
  0.007658880

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03134643

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2123401

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 39.06248

Coefficients:
a.(Intercept) a.funcgr a.leg c.(Intercept) c.funcgr
  -0.76983833    0.15946999    0.08906809    0.51380812   -0.21841989
  c.leg
  -0.24089121

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.4059511

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2851758

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 35.75659

Coefficients:
a.(Intercept) a.funcgr a.leg c.(Intercept) c.funcgr
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03082321
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2117449

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 40.80514

Coefficients:
b.(Intercept) b.funcgr b.leg c.(Intercept) c.funcgr
c.leg
0.80200830 0.03207266 -0.16386580 0.22911335 -0.16930646

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.3747754
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2665524

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 37.35203

Coefficients:
b.(Intercept) b.funcgr b.leg c.(Intercept) c.funcgr
c.leg
0.72666925 0.06202786 -0.14544917 0.34145225 -0.20801137

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03058375
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2072384
Generalized nonlinear least squares fit

Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 21.66257

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.1232385</td>
<td>-0.1275926</td>
<td>-0.3697904</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

<table>
<thead>
<tr>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.5943065</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4574061

Generalized nonlinear least squares fit

Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 4.724891

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.2237150</td>
<td>-0.1351649</td>
<td>-0.4787033</td>
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</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:

<table>
<thead>
<tr>
<th>expon</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.0413064</td>
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</tbody>
</table>

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3317768

Generalized nonlinear least squares fit

Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 42.86236

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.0216840901</td>
<td>-0.0156838964</td>
<td>0.2950118254</td>
<td>0.0002271900</td>
<td>0.0027256163</td>
<td>-0.0147833010</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3577454
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2534586

$`Invader species richness`$Pq2731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 40.4102

Coefficients:
  a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
               0.052867267  -0.019880909   0.286728538  -0.002336005   0.003215359
  b.grass
             -0.014258973

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
-0.02989376
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1984726

$`Invader species richness`$Pq2821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 42.91245

Coefficients:
  a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr
  -1.02251732    0.04848752    0.30477802    0.04695039   -0.02056472
  c.grass
          -0.10413558

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
-0.3516781
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2510325

$`Invader species richness`$Pq2831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 40.27449
Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1.00611097</td>
<td>0.05489282</td>
<td>0.28236358</td>
<td>0.03219615</td>
<td>-0.02436188</td>
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<td></td>
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<td></td>
<td></td>
<td>-0.08479484</td>
</tr>
</tbody>
</table>

Variance function:

- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon: -0.02969641

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1984648

Generalized nonlinear least squares fit

Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 42.60673

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.15357013</td>
<td>0.14499167</td>
<td>0.31840022</td>
<td>-0.23256545</td>
<td>-0.10073780</td>
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</tr>
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<td></td>
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<td></td>
<td></td>
<td>0.01854377</td>
</tr>
</tbody>
</table>

Variance function:

- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power: -0.3365072

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2463586

Generalized nonlinear least squares fit

Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 40.02634

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.13642706</td>
<td>0.17217708</td>
<td>0.28489160</td>
<td>-0.26222868</td>
<td>-0.12813774</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>0.06373016</td>
</tr>
</tbody>
</table>

Variance function:

- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon: -0.02888577
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1976857

$`Invader species richness`$Pq3021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 20.80111
Coefficients:
c.(Intercept)      c.funcgr       c.grass
-1.19832277    0.04239401    0.28550308
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.5807103
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4530002

$`Invader species richness`$Pq3031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 4.610106
Coefficients:
c.(Intercept)      c.funcgr       c.grass
-1.5120005     0.0805158     0.3962009
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04112049
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3317117

$`Invader species richness`$Pr3221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 43.17197
Coefficients:
a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
-0.060275717  0.3241895920  0.0004919155  0.0201846284 -0.0195088148
  b.leg
-0.0045281774
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3639944
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2548568

$`Invader species richness`$Pr3231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 40.43608
Coefficients:
  a.(Intercept)     a.grass     a.leg     b.(Intercept)     b.grass
-0.051643557  0.320972804  0.006663600  0.021493251 -0.019924581
  b.leg
-0.0055575996

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.02990988
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1984375

$`Invader species richness`$Pr3321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 44.00296
Coefficients:
  a.(Intercept)     a.grass     a.leg     c.(Intercept)     c.grass
-0.64673095    0.25161842   -0.13056007   -0.10328940   -0.08858918
  c.leg
  0.05405993

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.3619205
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2515116

$`Invader species richness`$Pr3331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
Log-likelihood: 40.83264

Coefficients:
\[
\begin{align*}
  a.(\text{Intercept}) & \quad a.\text{grass} & \quad a.\text{leg} & \quad c.(\text{Intercept}) & \quad c.\text{grass} \\
  -0.63772965 & \quad 0.21995538 & \quad -0.11218681 & \quad -0.12471634 & \quad -0.05889420 \\
  c.\text{leg} & \quad 0.04572847 & \quad & \quad & \quad
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
  - Formula: ~sowndiv
- Parameter estimates:
  - expon: -0.0297223

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1971624

$`$Invader species richness`$Pr3421$
Generalized nonlinear least squares fit
  - Model: response ~ b * sowndiv^c
  - Data: DF
  - Log-likelihood: 42.00789

Coefficients:
\[
\begin{align*}
  b.(\text{Intercept}) & \quad b.\text{grass} & \quad b.\text{leg} & \quad c.(\text{Intercept}) & \quad c.\text{grass} \\
  0.56710471 & \quad 0.15769048 & \quad -0.15088913 & \quad -0.67074397 & \quad 0.14296676 \\
  c.\text{leg} & \quad 0.03451621 & \quad & \quad & \quad
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
  - Formula: ~sowndiv
- Parameter estimates:
  - power: -0.3331444

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2469285

$`$Invader species richness`$Pr3431$
Generalized nonlinear least squares fit
  - Model: response ~ b * sowndiv^c
  - Data: DF
  - Log-likelihood: 38.21659

Coefficients:
\[
\begin{align*}
  b.(\text{Intercept}) & \quad b.\text{grass} & \quad b.\text{leg} & \quad c.(\text{Intercept}) & \quad c.\text{grass} \\
  0.57166068 & \quad 0.14032134 & \quad -0.14546260 & \quad -0.83014736 & \quad 0.21995668 \\
  c.\text{leg} & \quad 0.06170711 & \quad & \quad & \quad
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
  - Formula: ~sowndiv
  - Parameter estimates:
expon
-0.02706913
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1989696

```
Invader species richness
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 22.13663

Coefficients:
  c.(Intercept)  c.grass  c.leg
  -0.8066883  0.2339641  -0.1631919

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.5823131

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4467438

```

```
Invader species richness
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 5.287322

Coefficients:
  c.(Intercept)  c.grass  c.leg
  -0.8314496  0.2877868  -0.2493132

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04104642

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3287743

```

```
Invader species richness
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 50.29523

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
  -1.93245484  0.46808645  0.66797466  0.71820200  1.89919696
  b.funcgr  b.grass  b.leg  c.(Intercept)  c.funcgr
  -0.43400756  -0.37339881  -0.71112282  0.36881258  -0.05554374
```

c.grass    c.leg
0.02980064 -0.09457733

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3973175
Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.2558069

Invader species richness
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 43.72664

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    a.leg    b.(Intercept)
  0.247874044    -0.043994698   0.252801742  -0.071385823  -0.002507854
  b.funcgr   b.grass   b.leg
  0.003031539    -0.014188951   0.000927611

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3613453
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2555298

Invader species richness
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 41.0468

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    a.leg    b.(Intercept)
  0.2509668132    -0.0447050217   0.2512739250  -0.0637999771  -0.0032650952
  b.funcgr   b.grass   b.leg
  0.0033036923    -0.0141289557   0.0004530692

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.02982247
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1994592
$`Invader species richness`$\text{Ps3821}
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.52694

Coefficients:
a.(Intercept)   a.funcgr   a.grass   a.leg  c.(Intercept)
  -1.4206838  0.2359320  0.2350012  0.1785560  0.7868325
  c.funcgr    c.grass   c.leg
  -0.2416403 -0.1205433 -0.2613907

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
  -0.3713957

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2631937

$`Invader species richness`$\text{Ps3831}
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 41.02693

Coefficients:
a.(Intercept)   a.funcgr   a.grass   a.leg  c.(Intercept)
  -0.7971828  0.0282029  0.2475791  -0.0693277  0.0314232
  c.funcgr    c.grass   c.leg
  -0.0240837 -0.0871499  0.0029074

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
  -0.0296251

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1991698

$`Invader species richness`$\text{Ps3921}
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 44.98124

Coefficients:
b.(Intercept)   b.funcgr   b.grass   b.leg  c.(Intercept)
  -0.0423425  0.1264511  0.2986871  -0.0349621  0.4248764
  c.funcgr    c.grass   c.leg
  -0.1881937 -0.0995109 -0.1995909
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3494143
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2472318

$\text{Invader species richness}$
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 41.81318
Coefficients:
  b.(Intercept)      b.funcgr       b.grass         b.leg c.(Intercept)
  -0.003032876   0.146549743   0.264252712  -0.041997471   0.406415523
c.funcgr       c.grass         c.leg
  -0.214042602  -0.063073641  -0.197580226

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02895602
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1961393

$\text{Invader species richness}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 22.55772
Coefficients:
  c.(Intercept)      c.funcgr       c.grass         c.leg
  -0.40630104   -0.06072173    0.15047459   -0.25805065

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.5910483
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4531339

$\text{Invader species richness}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 5.328999
Coefficients:
c.(Intercept)      c.funcgr       c.grass         c.leg
  -0.59909992   -0.03260645    0.23542643   -0.30395859

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
  -0.04111847
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.3309116

$`Invader species richness`$AS1
Nonlinear regression model
  model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data:  DF
    Asym       R0      lrc
  0.09845  0.58229 -1.94556
  residual sum-of-squares: 2.865

Number of iterations to convergence: 10
Achieved convergence tolerance: 5.436e-06

$`Invader species richness`$BIEXP
Nonlinear regression model
  model:  response ~ SSbiexp(sowndiv, A1, lrc1, A2, lrc2)
  data:  DF
    A1    lrc1      A2    lrc2
  0.3523 -1.2446  0.2747 -3.5169
  residual sum-of-squares: 2.829

Number of iterations to convergence: 14
Achieved convergence tolerance: 7.195e-06

$`Pathogen species richness`$L0
Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
     data = DF)
Coefficients:
       (Intercept)          blockB2          blockB3          blockB4
sowndiv          0.224259           0.114006           0.025244           0.027118
  0.055516
funcgr          -0.101548           0.177569           0.053095           -0.010251
  0.001817
sowndiv:grass   -0.010251           0.001817           0.001817           0.001817
  0.001817

Pathogen species richness
Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 25.79086

Coefficients:
(Intercept) blockB2 blockB3 blockB4
sowndiv 0.195712422 0.110276383 0.017650003 0.025469852
0.054185791
funcgr grass leg sowndiv:funcgr
sowndiv:grass 0.109607530 0.193109544 -0.027974670 -0.009994719
0.001547305
sowndiv:leg funcgr:grass funcgr:leg grass:leg
-0.013094391 -0.084367639 0.052372703 -0.080035890

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  power
-0.2091725
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.1533704

Pathogen species richness
Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 25.78197

Coefficients:
(Intercept) blockB2 blockB3 blockB4
sowndiv 0.183702193 0.109027386 0.016928353 0.023977400
0.053623966
funcgr grass leg sowndiv:funcgr
sowndiv:grass 0.112771926 0.199238813 -0.022587638 -0.009925503
0.001536858
sowndiv:leg funcgr:grass funcgr:leg grass:leg
-0.012821702 -0.085125766 0.051023361 -0.082313634

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  expon
-0.4080875
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2192983

$\text{Pathogen species richness}$$L011$
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
  Log-likelihood: 26.26706

Coefficients:
  (Intercept)        blockB2        blockB3        blockB4
sowndiv
  0.1507478581   0.0928332638   0.0058362452   0.0116110166
  0.0544964140
funcgr          grass            leg sowndiv:funcgr
sowndiv:grass
  0.1200501041   0.2153571331   0.0050773122 -0.0098785536
  0.0006030371
sowndiv:leg   funcgr:grass     funcgr:leg      grass:leg
  -0.0128101203  -0.0824406715   0.0422156139  -0.0904535104

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  -0.09880364

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2033989

$\text{Pathogen species richness}$$L021$
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
  Log-likelihood: 25.96710

Coefficients:
  (Intercept)        blockB2        blockB3        blockB4
sowndiv
  0.234501006    0.094153237    0.012429609    0.005426761
  0.054255056
funcgr          grass            leg sowndiv:funcgr
sowndiv:grass
  0.100839744    0.173745379  -0.047992274  -0.009938857
  0.001101670
sowndiv:leg   funcgr:grass     funcgr:leg      grass:leg
  -0.012799493  -0.078541763   0.054459014  -0.068391197

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
  -0.006230011
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.1859786

$`Pathogen species richness`$L2

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
```
(Intercept)      sowndiv       funcgr          leg
 0.530198     0.004257     0.046881    -0.092814
```

$`Pathogen species richness`$L21
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 18.34620

Coefficients:
```
(Intercept)      sowndiv       funcgr          leg
 0.536849843  0.003927728  0.045721903 -0.093260869
```

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
```
power
-0.255895
```

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1634570

$`Pathogen species richness`$L22
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 18.32808

Coefficients:
```
(Intercept)      sowndiv       funcgr          leg
 0.536678756  0.003881564  0.045954940 -0.093528411
```

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
```
expon
-0.4537556
```

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2460587

$`Pathogen species richness`$L211
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 19.13973

Coefficients:
(Intercept) sowndiv funcgr leg
0.569649550 0.003767531 0.037279288 -0.095455025

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1200674
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2289847

$`Pathogen species richness`$L222
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 18.72840

Coefficients:
(Intercept) sowndiv funcgr leg
0.541165282 0.003540669 0.045253681 -0.093020815

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.007423418
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2052347

$`Pathogen species richness`$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
  a  b
  0.7295 1.2863
  residual sum-of-squares: 2.919

Number of iterations to convergence: 4
Achieved convergence tolerance: 7.176e-08

$`Pathogen species richness`$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
  Vm  k
  0.7295 1.2863
  residual sum-of-squares: 2.919
Number of iterations to convergence: 3
Achieved convergence tolerance: 8e-08

$`\text{Pathogen species richness} \cdot M2$
Nonlinear regression model
  model: response ~ d + a * sowndiv/(b + sowndiv)
  data: DF
  a       b       d
  0.7583  1.1735 -0.0324
  residual sum-of-squares: 2.918

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.997e-06

$`\text{Pathogen species richness} \cdot M211$
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 21.01517
  Coefficients:
    a          b          d
    0.69046934 1.54479976 0.05044647
  Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
      power
      -0.08482043
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.2163923

$`\text{Pathogen species richness} \cdot M222$
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 20.87344
  Coefficients:
    a          b          d
    0.67766109 1.74522509 0.07557819
  Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
      expon
      -0.006247317
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.2016500

$`\text{Pathogen species richness} \cdot M3$
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.45475

Coefficients:
a.(Intercept) a.leg b.(Intercept) b.leg
0.88239609 -0.12900952 0.91679567 0.08326084

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1863801

`Pathogen species richness`M311
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.29779

Coefficients:
a.(Intercept) a.leg b.(Intercept) b.leg
0.89597525 -0.13590317 1.02211041 0.02907177

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.09821594

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2134317

`Pathogen species richness`M321
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.04015

Coefficients:
a.(Intercept) a.leg b.(Intercept) b.leg
0.908120436 -0.141493054 1.075816216 0.005721646

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.006630205

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1958937

`Pathogen species richness`M4
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 20.46183
Coefficients:
\[
\begin{array}{cccc}
a. (\text{Intercept}) & a. \text{grass} & b. (\text{Intercept}) & b. \text{grass} \\
0.75004538 & -0.01800059 & 1.22508376 & 0.01495586 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1933085

Pathogen species richness\textsuperscript{M411}
Generalized nonlinear least squares fit
Model: response \sim a \times \text{sowndiv}/(b + \text{sowndiv})
Data: DF
Log-likelihood: 21.07146

Coefficients:
\[
\begin{array}{cccc}
a. (\text{Intercept}) & a. \text{grass} & b. (\text{Intercept}) & b. \text{grass} \\
0.76638844 & -0.02643300 & 1.36367286 & -0.05583744 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~\text{sowndiv}
Parameter estimates:
\[
\begin{array}{c}
power \\
-0.08403693 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2173725

Pathogen species richness\textsuperscript{M422}
Generalized nonlinear least squares fit
Model: response \sim a \times \text{sowndiv}/(b + \text{sowndiv})
Data: DF
Log-likelihood: 20.94024

Coefficients:
\[
\begin{array}{cccc}
a. (\text{Intercept}) & a. \text{grass} & b. (\text{Intercept}) & b. \text{grass} \\
0.78756795 & -0.03704391 & 1.49567459 & -0.12173999 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~\text{sowndiv}
Parameter estimates:
\[
\begin{array}{c}
\text{expon} \\
-0.006189834 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2026733

Pathogen species richness\textsuperscript{M5}
Generalized nonlinear least squares fit
Model: response \sim a \times \text{sowndiv}/(b + \text{sowndiv})
Data: DF
Log-likelihood: 21.60615

Coefficients:
\[
\begin{array}{cccc}
a. (\text{Intercept}) & a. \text{funcgr} & b. (\text{Intercept}) & b. \text{funcgr} \\
\end{array}
\]
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<thead>
<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.60365617</td>
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<tr>
<td>a.funcgr</td>
<td>0.03849863</td>
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<tr>
<td>b.(Intercept)</td>
<td>1.05304035</td>
</tr>
<tr>
<td>b.funcgr</td>
<td>-0.03068223</td>
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Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1906296

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 22.32114

Coefficients:
<table>
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<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
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</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.596166074</td>
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<td>a.funcgr</td>
<td>0.043341204</td>
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<tr>
<td>b.(Intercept)</td>
<td>1.008864699</td>
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<tr>
<td>b.funcgr</td>
<td>0.001562636</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2163981

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 22.18767

Coefficients:
<table>
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<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
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<tbody>
<tr>
<td>a.(Intercept)</td>
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<td>a.funcgr</td>
<td>0.003707222</td>
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<tr>
<td>a.leg</td>
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<tr>
<td>b.(Intercept)</td>
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<tr>
<td>b.funcgr</td>
<td>-0.042244691</td>
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<td>b.leg</td>
<td>0.070577857</td>
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Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2007463

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.49014

Coefficients:
<table>
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<th>Coefficients</th>
<th>Log-likelihood</th>
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<tbody>
<tr>
<td>a.(Intercept)</td>
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<tr>
<td>a.funcgr</td>
<td>0.03419589</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>1.10892203</td>
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<td>b.funcgr</td>
<td>-0.07956287</td>
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Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1906296

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 22.18767

Coefficients:
<table>
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<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.596166074</td>
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<tr>
<td>a.funcgr</td>
<td>0.043341204</td>
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<tr>
<td>b.(Intercept)</td>
<td>1.008864699</td>
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<tr>
<td>b.funcgr</td>
<td>0.001562636</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2163981

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.49014

Coefficients:
<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.855541643</td>
</tr>
<tr>
<td>a.funcgr</td>
<td>0.003707222</td>
</tr>
<tr>
<td>a.leg</td>
<td>-0.120743168</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>0.964522202</td>
</tr>
<tr>
<td>b.funcgr</td>
<td>-0.042244691</td>
</tr>
<tr>
<td>b.leg</td>
<td>0.070577857</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2007463

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.49014

Coefficients:
<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.608358543</td>
</tr>
<tr>
<td>a.funcgr</td>
<td>0.03419589</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>1.10892203</td>
</tr>
<tr>
<td>b.funcgr</td>
<td>-0.07956287</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1906296

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 22.18767

Coefficients:
<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.596166074</td>
</tr>
<tr>
<td>a.funcgr</td>
<td>0.043341204</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>1.008864699</td>
</tr>
<tr>
<td>b.funcgr</td>
<td>0.001562636</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2163981

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.49014

Coefficients:
<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Log-likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(Intercept)</td>
<td>0.855541643</td>
</tr>
<tr>
<td>a.funcgr</td>
<td>0.003707222</td>
</tr>
<tr>
<td>a.leg</td>
<td>-0.120743168</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>0.964522202</td>
</tr>
<tr>
<td>b.funcgr</td>
<td>-0.042244691</td>
</tr>
<tr>
<td>b.leg</td>
<td>0.070577857</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2007463
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1887351

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.31743

Coefficients:
\[
\begin{align*}
&\text{a.(Intercept)} & 0.862485187 \\
&\text{a.funcgr} & 0.005912456 \\
&\text{a.leg} & -0.125068509 \\
&\text{b.(Intercept)} & 0.959152055 \\
&\text{b.funcgr} & -0.002954550 \\
&\text{b.leg} & 0.052232132
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} & -0.09770039
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2160046

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.07894

Coefficients:
\[
\begin{align*}
&\text{a.(Intercept)} & 0.84469792 \\
&\text{a.funcgr} & 0.01197955 \\
&\text{a.leg} & -0.12034963 \\
&\text{b.(Intercept)} & 0.84290563 \\
&\text{b.funcgr} & 0.03750713 \\
&\text{b.leg} & 0.08709348
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} & -0.00676429
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1985891

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 21.78471

Coefficients:
\[
\begin{align*}
&\text{a.(Intercept)} & 0.84469792 \\
&\text{a.funcgr} & 0.01197955 \\
&\text{a.grass} & -0.12034963 \\
&\text{b.(Intercept)} & 0.84290563 \\
&\text{b.funcgr} & 0.03750713 \\
&\text{b.leg} & 0.08709348
\end{align*}
\]
0.48550314 0.04852315 0.06425281 0.65431728 -0.02983060
b.grass
0.24163392

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1927015

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 22.50904

Coefficients:
a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr
0.48991730 0.05181520 0.05957531 0.65509828 0.01362889
b.grass
0.21182957

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.09163546
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2188419

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 22.35262

Coefficients:
a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr
0.48314400 0.05655999 0.05914080 0.61611042 0.04489032
b.grass
0.20895339

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.006774529
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2028321

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.84253
Coefficients:
a.(Intercept)  a.grass  a.leg  b.(Intercept)  b.grass
0.88047550  -0.01380403  -0.12358318  0.22706274  0.26690270
b.leg
0.19935848

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1879258

$`Pathogen species richness`$M821
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.61323

Coefficients:
a.(Intercept)  a.grass  a.leg  b.(Intercept)  b.grass
0.90934636  -0.02143111  -0.13268221  0.51115374  0.18673598
b.leg
0.11388326

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.09438728

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2141708

$`Pathogen species richness`$M832
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.38021

Coefficients:
a.(Intercept)  a.grass  a.leg  b.(Intercept)  b.grass
0.93081363  -0.02926342  -0.13811841  0.61481982  0.14632621
b.leg
0.09093443

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.006473901

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1973682

$`Pathogen species richness`$M91
Generalized nonlinear least squares fit
Model: \( \text{response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)
Data: DF
Log-likelihood: 23.91061

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} \\
0.98132531 & -0.01338071 & -0.03529884 & -0.14669233 & 0.23333440 \\
\text{b.funcgr} & \text{b.grass} & \text{b.leg} \\
0.02960461 & 0.25945375 & 0.19976449
\end{array}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1902904

\$`Pathogen species richness`$M921
Generalized nonlinear least squares fit
Model: \( \text{response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)
Data: DF
Log-likelihood: 24.71568

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} \\
1.01336346 & -0.01362123 & -0.04335969 & -0.15665873 & 0.38789203 \\
\text{b.funcgr} & \text{b.grass} & \text{b.leg} \\
0.05556948 & 0.20694381 & 0.14449543
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: \(~\text{sowndiv}\)
Parameter estimates:
\[
\text{power} -0.09665698
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2175064

\$`Pathogen species richness`$M932
Generalized nonlinear least squares fit
Model: \( \text{response} \sim a \times \text{sowndiv}/(b + \text{sowndiv}) \)
Data: DF
Log-likelihood: 24.47693

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} \\
0.997733637 & -0.008018508 & -0.043294519 & -0.152740026 & 0.292929816 \\
\text{b.funcgr} & \text{b.grass} & \text{b.leg} \\
0.090844005 & 0.207175242 & 0.171292854
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: \(~\text{sowndiv}\)
Parameter estimates:
\[
\text{expon} -0.006653257
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2000896
Generalized nonlinear least squares fit

Model: response ~ d + a * sowndiv/(b + sowndiv)

Data: DF

Log-likelihood: 19.87921

Coefficients:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>1.094338819</td>
</tr>
<tr>
<td>a.leg</td>
<td>-0.534239919</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>10.415251287</td>
</tr>
<tr>
<td>b.leg</td>
<td>-8.348091799</td>
</tr>
<tr>
<td>d.(Intercept)</td>
<td>0.003771448</td>
</tr>
<tr>
<td>d.leg</td>
<td>0.216517625</td>
</tr>
</tbody>
</table>

Variance function:

Structure: Power of variance covariate

Formula: ~sowndiv

Parameter estimates:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>power</td>
<td>-0.1246653</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2373311

Generalized nonlinear least squares fit

Model: response ~ d + a * sowndiv/(b + sowndiv)

Data: DF

Log-likelihood: 20.47412

Coefficients:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>1.0203204</td>
</tr>
<tr>
<td>a.grass</td>
<td>-0.1530536</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>0.5301123</td>
</tr>
<tr>
<td>b.grass</td>
<td>0.3620318</td>
</tr>
<tr>
<td>d.(Intercept)</td>
<td>-0.2888120</td>
</tr>
<tr>
<td>d.grass</td>
<td>0.1443049</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1958062

Generalized nonlinear least squares fit

Model: response ~ d + a * sowndiv/(b + sowndiv)

Data: DF

Log-likelihood: 21.63869

Coefficients:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.626448150</td>
</tr>
<tr>
<td>a.funcgr</td>
<td>-0.053486837</td>
</tr>
<tr>
<td>b.(Intercept)</td>
<td>1.408719896</td>
</tr>
<tr>
<td>b.funcgr</td>
<td>0.076505336</td>
</tr>
<tr>
<td>d.(Intercept)</td>
<td>0.005106643</td>
</tr>
<tr>
<td>d.funcgr</td>
<td>0.082652882</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1930450

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.31191

Coefficients:
\begin{align*}
\text{a.(Intercept)} & : 2.3363524 \\
\text{a.funcgr} & : -0.2685684 \\
\text{a.leg} & : -0.7611738 \\
\text{b.(Intercept)} & : -1.0023039 \\
\text{b.funcgr} & : 0.3948092 \\
\text{b.leg} & : 1.0163507 \\
\text{d.(Intercept)} & : -1.3982048 \\
\text{d.funcgr} & : 0.2629219 \\
\text{d.leg} & : 0.5991636 \\
\end{align*}

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1906539

$\text{Pathogen species richness}$$\text{M1421}$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 20.4803

Coefficients:
\begin{align*}
\text{a.(Intercept)} & : -1.38103407 \\
\text{a.funcgr} & : 0.12034958 \\
\text{a.grass} & : 1.15460746 \\
\text{b.(Intercept)} & : -100.68603647 \\
\text{b.funcgr} & : 21.55792892 \\
\text{b.grass} & : 54.57477040 \\
\text{d.(Intercept)} & : 0.41674560 \\
\text{d.funcgr} & : 0.07354225 \\
\text{d.grass} & : -0.07493489 \\
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
\text{power} & : -0.1045497 \\
\end{align*}

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2333173

$\text{Pathogen species richness}$$\text{M151}$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.92760

Coefficients:
\begin{align*}
\text{a.(Intercept)} & : 0.24095993 \\
\text{a.grass} & : 0.03275615 \\
\text{a.leg} & : 0.25526709 \\
\text{b.(Intercept)} & : 2.49866161 \\
\text{b.grass} & : 0.08271573 \\
\text{b.leg} & : -1.01288219 \\
\text{d.(Intercept)} & : 0.70111101 \\
\text{d.funcgr} & : -0.05246082 \\
\text{d.leg} & : -0.41280498 \\
\end{align*}

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1915496

$\text{Pathogen species richness}$$\text{M1521}$
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.74933
Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. grass} & \text{a. leg} & \text{b. (Intercept)} & \text{b. grass} \\
0.33283959 & 0.01398456 & 0.16317931 & 3.00339090 & 0.19059826 \\
\text{b. leg} & \text{d. (Intercept)} & \text{d. grass} & \text{d. leg} \\
-1.23425023 & 0.62109081 & -0.02955820 & -0.32520518
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} = -0.09809096
\]
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2193678

Pathogen species richness M1532
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.55367

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. grass} & \text{a. leg} & \text{b. (Intercept)} & \text{b. grass} \\
0.19317628 & 0.01569938 & 0.29268537 & 3.77581777 & 0.08263089 \\
\text{b. leg} & \text{d. (Intercept)} & \text{d. grass} & \text{d. leg} \\
-1.64999426 & 0.79489516 & -0.03942170 & -0.46985645
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} = -0.006944733
\]
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2017713

Pathogen species richness E2
Nonlinear regression model
model:  response ~ a + b * exp(sowndiv)
data:  DF
\[
\begin{array}{cc}
a & b \\
5.154e-01 & 2.492e-27
\end{array}
\]
residual sum-of-squares: 4.042
Number of iterations to convergence: 4
Achieved convergence tolerance: 2.424e-08

Pathogen species richness E4
Nonlinear regression model
model:  response ~ a + exp(sowndiv)
data:  DF
\[
a
\]
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

$`Pathogen species richness`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
    b
7.005e-27
residual sum-of-squares: 24.76

Number of iterations to convergence: 4
Achieved convergence tolerance: 1.608e-08

$`Pathogen species richness`$E21
Generalized nonlinear least squares fit
Model: response ~ a + b * exp(sowndiv)
Data: DF
Log-likelihood: 9.633678

Coefficients:
    a         b
5.573077e-01 2.125137e-27

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
    power
-0.1958362
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2913176

$`Pathogen species richness`$E22
Generalized nonlinear least squares fit
Model: response ~ a + b * exp(sowndiv)
Data: DF
Log-likelihood: 8.328561

Coefficients:
    a         b
5.268271e-01 2.392041e-27

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
    expon
-0.01058015
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2423613
Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 13.18944

Coefficients:
  a            c
-0.490281292  0.004784538

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.1722209

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2693448

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 12.13004

Coefficients:
  a            c
-0.513583117  0.005033258

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.009660512

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2295624

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1755.331

Coefficients:
  a
-2.405782

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
14.94752
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1111193

$Pathogen species richness$E42
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.847

Coefficients:
  a
-3.036074

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014895

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6979394

$Pathogen species richness$E51
Generalized nonlinear least squares fit
Model: response ~ b * exp(sowndiv)
Data: DF
Log-likelihood: -66.11416

Coefficients:
  b
7.005209e-27

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1312471

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4487092

$Pathogen species richness$E52
Generalized nonlinear least squares fit
Model: response ~ b * exp(sowndiv)
Data: DF
Log-likelihood: -66.86429

Coefficients:
  b
7.005209e-27

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
expon
-0.009902272
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.5990737

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -53.489

Coefficients:
c
-0.5083214

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.2842085
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.3065331

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -49.20415

Coefficients:
c
-0.08780405

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
0.007136297
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4172705

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)   a.leg
-2963125.8   911705.8
Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$\text{Pathogen species richness} \ Ea12$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -40.97958

Coefficients:
c.(Intercept)         c.leg
  0.5243027    -0.5449271

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4037977

$\text{Pathogen species richness} \ Ea911$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 20.31377

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
  -0.189825083  -0.222785548  -0.007606337   0.011075620

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1505718

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2421674

$\text{Pathogen species richness} \ Ea921$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 19.51059

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
  -0.20376717   -0.22220757   -0.00828691    0.01191123

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00892863

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2111447
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1753.602

Coefficients:
a.(Intercept)         a.leg
  -2.2016152    -0.1166667

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
     14.95561
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1081715

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.7748

Coefficients:
a.(Intercept)         a.leg
  -3.7064321     0.3864636

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
      1.014938
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7014101

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -39.14428

Coefficients:
c.(Intercept)         c.leg
   0.04918354   -0.05577394

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3321321
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6465237

$`Pathogen species richness`\$Ea1221
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -39.15422

Coefficients:
c.(Intercept)         c.leg
  0.4953196    -0.5472460

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.01249611

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3547346

$`Pathogen species richness`\$Eb16
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)       a.grass
  -3508713       1286426

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Pathogen species richness`\$Eb18
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -46.15873

Coefficients:
c.(Intercept)       c.grass
  0.3543401    -0.3886778

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4301244

$`Pathogen species richness`\$Eb1511
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 16.56897
Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & \quad 0.314801191 \\
\text{a.grass} & \quad -0.143565186 \\
\text{c.(Intercept)} & \quad -0.008628612 \\
\text{c.grass} & \quad 0.012724463 \\
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2520143

$\text{Pathogen species richness}$ Eb1521

Generalized nonlinear least squares fit
- Model: response ~ a + exp(c * sowndiv)
- Data: DF
- Log-likelihood: 15.95644

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & \quad -0.32409668 \\
\text{a.grass} & \quad -0.14695480 \\
\text{c.(Intercept)} & \quad -0.00961705 \\
\text{c.grass} & \quad 0.01383765 \\
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2212876

$\text{Pathogen species richness}$ Eb1611

Generalized nonlinear least squares fit
- Model: response ~ a + exp(sowndiv)
- Data: DF
- Log-likelihood: -1755.297

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & \quad -2.43494852 \\
\text{a.grass} & \quad 0.01666667 \\
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1117385

$\text{Pathogen species richness}$ Eb1621

Generalized nonlinear least squares fit
- Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.7262

Coefficients:
\begin{align*}
a. & \text{(Intercept)} & a. \text{grass} \\
& -3.9029772 & 0.4998053
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.014988
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7006931

\$`Pathogen species richness`\$Eb1811
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -43.07596

Coefficients:
\begin{align*}
c. & \text{(Intercept)} & c. \text{grass} \\
& 0.03895951 & -0.04672897
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.3021551
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6487541

\$`Pathogen species richness`\$Eb1821
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -46.3727

Coefficients:
\begin{align*}
c. & \text{(Intercept)} & c. \text{grass} \\
& 0.07661238 & -0.08151570
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.02278001
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.524402
Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)      a.funcgr
252095.9        -912137.5

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -38.38607

Coefficients:
c.(Intercept)      c.funcgr
-0.3524317        0.0863926

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3912262

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + b * exp(c * sowndiv)
Data: DF
Log-likelihood: -2913.733

Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr c.(Intercept)      c.funcgr
0.792377200      -0.505595531       0.005303375      -0.001325841       0.999668707
1.000082823

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
4.808426

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.0008009555

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1755.331

Coefficients:
a.(Intercept)      a.funcgr
  2.127493     -4.533275

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.94752
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1118116

$`Pathogen species richness`$Ec2221
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2422

Coefficients:
  a.(Intercept)      a.funcgr
  3.527754     -6.181283

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.022297
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6080454

$`Pathogen species richness`$Ec2411
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -33.39247

Coefficients:
  c.(Intercept)      c.funcgr
  -0.09825549    0.02333046

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3459823
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6152492

$`Pathogen species richness`$Ec2421
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
Log-likelihood: -36.9849

Coefficients:
c.(Intercept) c.funcgr  -0.17948952 0.04382155

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon -0.01953315
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.4548182

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept) a.funcgr a.leg 872779.4 -990730.5 -307654.8

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1753.601

Coefficients:
a.(Intercept) a.funcgr a.leg 2.3608261 -4.5624412 -0.1166667

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power 14.95561
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.1088539

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2353

Coefficients:
a. (Intercept)        a.funcgr        a.leg
  3.7379349    -6.2074764    -0.1051328

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.022310

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6117605

$`Pathogen species richness`$Ed3021
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -35.57012

Coefficients:
c. (Intercept)        c.funcgr        c.leg
  0.23922085    0.03518679   -0.38509444

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00935685

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4122238

$`Pathogen species richness`$Ee40
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a. (Intercept)        a.funcgr        a.grass
  -335850.5     -839615.4      296563.3

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Pathogen species richness`$Ee341
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1755.297

Coefficients:
a. (Intercept)        a.funcgr        a.grass
  2.09415938   -4.52910788    0.01666667
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.94768
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.1124435

$`Pathogen species richness`$Ee342
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2421

Coefficients:
a.(Intercept)      a.funcgr       a.grass
    3.50619785   -6.17858764    0.01077768

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.022297
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.6118804

$`Pathogen species richness`$Ef40
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)       a.grass         a.leg
    -5251825       1394676       1054749

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Pathogen species richness`$Ef3721
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2748.242

Coefficients:
a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
    0.5632294806  -0.0207623679 -0.1235830839  0.0003110381 -0.0001113385
    b.leg c.(Intercept)       c.grass         c.leg
    0.0000425028  0.9999801140  1.0000071064  1.0000028133

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  4.509548
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.001413366

$`Pathogen species richness`$Ef3921
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 22.44404
Coefficients:
  a.(Intercept)       a.grass         a.leg c.(Intercept)       c.grass
  -0.03852644   -0.13689759   -0.20227265   -0.01533502    0.01002089
  c.leg
  0.00810498
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.008068937
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.2048702

$`Pathogen species richness`$Ef4011
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1753.528
Coefficients:
  a.(Intercept)       a.grass         a.leg
  -2.14328188   -0.02499999   -0.12499999
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.95595
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.1087018

$`Pathogen species richness`$Ef4021
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -800.5485
Coefficients:
\[ a.(\text{Intercept}) \quad a.\text{grass} \quad a.\text{leg} \]
\[ -5.4261349 \quad 0.7307499 \quad 0.6471738 \]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.015104
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7028916

$\text{Pathogen species richness}$$\text{Ef4211}$
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -37.20266

Coefficients:
\[ c.(\text{Intercept}) \quad c.\text{grass} \quad c.\text{leg} \]
\[ 0.8058854 \quad -0.3024206 \quad -0.5318166 \]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[ \text{power} \]
0.2285446
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2764003

$\text{Pathogen species richness}$$\text{Ef4221}$
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -37.58315

Coefficients:
\[ c.(\text{Intercept}) \quad c.\text{grass} \quad c.\text{leg} \]
\[ 0.54148502 \quad -0.07913541 \quad -0.49187409 \]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
0.01153550
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3530985

$\text{Pathogen species richness}$$\text{Eg46}$
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
\[
\begin{array}{cccc}
\text{a.}(\text{Intercept}) & \text{a.} \text{funcgr} & \text{a.} \text{grass} & \text{a.} \text{leg} \\
292092.1 & -918391.4 & 183181.2 & -199834.3 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

$`\text{Pathogen species richness}`$Eg4611
Generalized nonlinear least squares fit
Model: response ~ a + \exp(sowndiv)
Data: DF
Log-likelihood: -1753.528

Coefficients:
\[
\begin{array}{cccc}
\text{a.}(\text{Intercept}) & \text{a.} \text{funcgr} & \text{a.} \text{grass} & \text{a.} \text{leg} \\
2.427493 & -4.570775 & -0.025000 & -0.125000 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{power} \\
14.95595 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1093964

$`\text{Pathogen species richness}`$Eg4621
Generalized nonlinear least squares fit
Model: response ~ a + \exp(sowndiv)
Data: DF
Log-likelihood: -794.2347

Coefficients:
\[
\begin{array}{cccc}
\text{a.}(\text{Intercept}) & \text{a.} \text{funcgr} & \text{a.} \text{grass} & \text{a.} \text{leg} \\
3.83383575 & -6.21945730 & -0.03465759 & -0.11842922 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{expon} \\
1.022311 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6156587

$`\text{Pathogen species richness}`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
\[
\begin{array}{c}
a \\
b \\
0.464978 & 0.007488 \\
\end{array}
\]
residual sum-of-squares: 3.604

Number of iterations to convergence: 1
Achieved convergence tolerance: 9.597e-10

$`Pathogen species richness`$Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
data: DF
  a        c
-0.63085  0.09613
residual sum-of-squares: 2.996

Number of iterations to convergence: 8
Achieved convergence tolerance: 2.634e-07

$`Pathogen species richness`$Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
data: DF
  b      c
0.3867 0.1964
residual sum-of-squares: 3.046

Number of iterations to convergence: 8
Achieved convergence tolerance: 3.015e-06

$`Pathogen species richness`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
data: DF
c
-0.2495
residual sum-of-squares: 14.27

Number of iterations to convergence: 11
Achieved convergence tolerance: 6.026e-06

$`Pathogen species richness`$Pb21
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 11.75931

Coefficients:
  a          b
0.46497755 0.00748841

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2122483

$`Pathogen species richness`$Pb31
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 19.33647

Coefficients:
  a          c
-0.6308510  0.0961363

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1935145

$``Pathogen species richness``$\text{Pb41}
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 18.65379

Coefficients:
  b       c
0.3866424 0.1963963

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1951323

$``Pathogen species richness``$\text{Pb51}
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -44.66585

Coefficients:
  c
-0.2495131

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4197491

$``Pathogen species richness``$\text{Pc221}
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 13.63299

Coefficients:
  a           b
0.500708927 0.005850212

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1655913

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2652681
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 12.62874

Coefficients:
a  b
0.478541496 0.006170491

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.00925748

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2273823

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 20.37152

Coefficients:
a  c
-0.61908527 0.09082243

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1143123

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.22643

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 20.15986

Coefficients:
a  c
-0.6244992 0.0917245

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2053588

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 19.80060

Coefficients:
  b  c
0.4000319 0.1805042

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.1208100

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2302221

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 19.48105

Coefficients:
  b  c
0.3937832 0.1840941

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.008199287

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2072619

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -32.73787

Coefficients:
  c
-0.1432924

Variance function:
  Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.3391029
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6004145

$`Pathogen species richness`$Pc531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -43.4501
Coefficients:
  c
  -0.1749613

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01130970
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4557429

$`Pathogen species richness`$Pd71
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 20.60097
Coefficients:
  a.(Intercept)      a.funcgr  b.(Intercept)      b.funcgr
  0.243512311   0.098292577   0.028200002  -0.006403276

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1929808

$`Pathogen species richness`$Pd81
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 21.78697
Coefficients:
  a.(Intercept)      a.funcgr  c.(Intercept)      c.funcgr
  -0.74744301    0.07702308  0.11940968   -0.01830123

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1902097

$`Pathogen species richness`$Pd91
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 21.62022

Coefficients:
\[ b \text{.(Intercept)} \quad b \text{.funcgr} \quad c \text{.(Intercept)} \quad c \text{.funcgr} \]
\[ 0.26682915 \quad 0.07180866 \quad 0.28220673 \quad -0.05059161 \]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1905969

$`\text{Pathogen species richness}`$Pd101
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -41.20251

Coefficients:
\[ c \text{.(Intercept)} \quad c \text{.funcgr} \]
\[ -0.5818001 \quad 0.1149157 \]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.404897

$`\text{Pathogen species richness}`$Pe721
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 21.64085

Coefficients:
\[ a \text{.(Intercept)} \quad a \text{.funcgr} \quad b \text{.(Intercept)} \quad b \text{.funcgr} \]
\[ 0.258945643 \quad 0.093657643 \quad 0.026236255 \quad -0.005884313 \]

Variances:
- Power of variance covariate
  - Formula: ~sowndiv
  - Parameter estimates:
    - power
      -0.1114984

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2248509

$`\text{Pathogen species richness}`$Pe731
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 21.44076

Coefficients:
\[ a \text{.(Intercept)} \quad a \text{.funcgr} \quad b \text{.(Intercept)} \quad b \text{.funcgr} \]
\[ 0.24781149 \quad 0.09682293 \quad 0.02732203 \quad -0.00615804 \]

Variances:

Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.007994556
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2045854

`Pathogen species richness`$Pr21
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 22.68746
Coefficients:
a.(Intercept) a.funcgr c.(Intercept) c.funcgr
  -0.73866524  0.07201327  0.11475309 -0.01613350

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1028757
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2191756

`Pathogen species richness`$Pr31
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 22.53589
Coefficients:
a.(Intercept) a.funcgr c.(Intercept) c.funcgr
  -0.74103892  0.07220831  0.11565137 -0.01600030

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007579509
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2011532

`Pathogen species richness`$Pr21
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 22.53932
Coefficients:
b.(Intercept) b.funcgr c.(Intercept) c.funcgr
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1042404
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2200172

Pathogen species richness~Pe931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 22.37990
  Coefficients:
    b.(Intercept)   b.funcgr     c.(Intercept)   c.funcgr
    0.27285381    0.06757339    0.27429822   -0.04619372

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.007642383
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2016450

Pathogen species richness~Pe1021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -24.24738
  Coefficients:
    c.(Intercept)  c.funcgr
    -0.38500563    0.07633384

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.4136888
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6085128

Pathogen species richness~Pe1031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -35.01724
Coefficients:
c.(Intercept)  c.funcgr
-0.5167479    0.1127950

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.02403517
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4615329

$`Pathogen species richness`$Pf121
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv$c
Data: DF
Log-likelihood: 15.30452

Coefficients:
a.(Intercept)  a.grass  b.(Intercept)   b.grass
0.66068590   -0.14697510   -0.01181845    0.01740935

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2058569

$`Pathogen species richness`$Pf131
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 19.81005

Coefficients:
a.(Intercept)  a.grass  c.(Intercept)   c.grass
-0.53389419   -0.06277416    0.05738116    0.02745136

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1948512

$`Pathogen species richness`$Pf141
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 19.37311

Coefficients:
b.(Intercept)   b.grass  c.(Intercept)   c.grass
0.48860400   -0.06840381    0.07542139    0.08904610

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1958922

$`Pathogen species richness`$Pf151
Generalized nonlinear least squares fit
   Model: response ~ sowndiv^c
   Data: DF
   Log-likelihood: -43.66343

Coefficients:
c.(Intercept)  c.grass
  -0.0405096   -0.1637491

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4172326

$`Pathogen species richness`$Pg171
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 18.73599

Coefficients:
a.(Intercept)  a.leg  b.(Intercept)  b.leg
  0.779965167  -0.218929666  -0.009271733   0.014032259

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1974202

$`Pathogen species richness`$Pg181
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 22.67043

Coefficients:
a.(Intercept)  a.leg  c.(Intercept)  c.leg
  -0.39936553   -0.14068020    0.05899806    0.01805985

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1881714

$`Pathogen species richness`$Pg191
Generalized nonlinear least squares fit
   Model: response ~ b * sowndiv^c
   Data: DF
   Log-likelihood: 22.33023

Coefficients:
b.(Intercept)  b.leg  c.(Intercept)  c.leg
  0.61637328   -0.14398644    0.04580425    0.09291403

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1889537

$`Pathogen species richness`$Pg201
Generalized nonlinear least squares fit
   Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -42.25859

Coefficients:
c.(Intercept) c.leg
0.07689255  -0.25621767

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4101454

$`Pathogen species richness`$Ph211
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv^c
   Data: DF
   Log-likelihood: 23.94078

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
1.923713702 0.175860151 -2.225569784 -1.517163430 -0.114263591
   b.leg c.(Intercept) c.funcgr c.leg
2.144840116 0.390376490 -0.007518942 -0.171668267

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1915188

$`Pathogen species richness`$Ph221
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 22.66458

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
0.395556589 0.079071850 -0.077198357 0.038725144 -0.007886741
   b.leg
-0.004570772

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1906449

$`Pathogen species richness`$Ph231
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 23.83331

Coefficients:
a.(Intercept) a.funcgr a.leg c.(Intercept) c.funcgr
-0.60038951 0.05859186 -0.07448230 0.15861140 -0.02374895
   c.leg
-0.01752368

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1879469
Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 23.681

Coefficients:
  b.(Intercept)    b.funcgr    b.leg    c.(Intercept)    c.funcgr    c.leg
  0.421686027     0.051749617  -0.077922974   0.297138718  -0.053539599  -0.002087413

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1882963

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -40.93934

Coefficients:
  c.(Intercept)    c.funcgr    c.leg
  -0.35842406    0.08722085   -0.11319435

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.406146

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 20.76347

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    b.(Intercept)    b.funcgr    b.grass
  0.223370509     0.100733672  0.009652048   0.023207573  -0.005838984  0.002742565

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1951165

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 21.96824

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    c.(Intercept)    c.funcgr    c.grass
  -0.7502517233   0.0774127372  0.0009903833   0.0909939879  -0.0149844042

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1951165
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1922707

$\text{Pathogen species richness}^{\text{Pi291}}$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 21.78175

Coefficients:
<table>
<thead>
<tr>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.24835575</td>
<td>0.07382829</td>
<td>0.00920391</td>
<td>0.25053121</td>
<td>-0.04688314</td>
<td>0.01725350</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1927085

$\text{Pathogen species richness}^{\text{Pi301}}$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -41.19395

Coefficients:
<table>
<thead>
<tr>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.62061763</td>
<td>0.11972168</td>
<td>0.01954748</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4074091

$\text{Pathogen species richness}^{\text{Pj321}}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 21.80094

Coefficients:
<table>
<thead>
<tr>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.grass</th>
<th>b.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.95821336</td>
<td>-0.14149523</td>
<td>-0.20146063</td>
<td>-0.01905200</td>
<td>0.01275162</td>
<td>0.00954489</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1926634

$\text{Pathogen species richness}^{\text{Pj331}}$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 23.73427
Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.grass} & \text{a.leg} & \text{c.(Intercept)} & \text{c.grass} \\
-0.225213867 & -0.098260087 & -0.150811503 & 0.009063626 & 0.032842230 \\
\text{c.leg} & \\
0.016617211 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1881741

`Pathogen species richness`$Pj341$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 23.60564

Coefficients:
\[
\begin{array}{cccccc}
\text{b.(Intercept)} & \text{b.grass} & \text{b.leg} & \text{c.(Intercept)} & \text{c.grass} \\
0.76671183 & -0.09301816 & -0.14686510 & -0.06543814 & 0.08868413 \\
\text{c.leg} & \\
0.07700663 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1884695

`Pathogen species richness`$Pj351$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -41.13042

Coefficients:
\[
\begin{array}{cccc}
\text{c.(Intercept)} & \text{c.grass} & \text{c.leg} \\
0.2729075 & -0.1597437 & -0.2509907 \\
\end{array}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4070935

`Pathogen species richness`$Pj371$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 23.02157

Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b.(Intercept)} \\
0.531986397 & 0.062042380 & -0.045227797 & -0.100052881 & 0.043569249 \\
\text{b.funcgr} & \text{b.grass} & \text{b.leg} & \\
-0.008473337 & -0.001080386 & -0.005990417 \\
\end{array}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1923647

`Pathogen species richness`$Pj381$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.21713

Coefficients:
\begin{align*}
a.&(\text{Intercept}) & a.\text{funcgr} & a.\text{grass} & a.\text{leg} & c.&(\text{Intercept}) \\
&-0.4478245570 & 0.0395853429 & -0.0517423744 & -0.0989938814 & 0.1680800497 \\
c.&(\text{funcgr} & c.\text{grass} & c.\text{leg} \\
&-0.0249049008 & -0.0004575856 & -0.0219810793
\end{align*}

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1895804

$\text{Pathogen species richness}^{PK391}$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.04800

Coefficients:
\begin{align*}
b.&(\text{Intercept}) & b.\text{funcgr} & b.\text{grass} & b.\text{leg} & c.&(\text{Intercept}) \\
&0.556366210 & 0.034812552 & -0.045192385 & -0.099758396 & 0.285047263 \\
c.&(\text{funcgr} & c.\text{grass} & c.\text{leg} \\
&-0.051674891 & 0.009029686 & -0.006294483
\end{align*}

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1899718

$\text{Pathogen species richness}^{PK401}$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -40.87884

Coefficients:
\begin{align*}
c.&(\text{Intercept}) & c.\text{funcgr} & c.\text{grass} & c.\text{leg} \\
&-0.16025817 & 0.06235398 & -0.06222112 & -0.15004957
\end{align*}

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4084398

$\text{Pathogen species richness}^{PM1221}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 16.91892

Coefficients:
\begin{align*}
a.&(\text{Intercept}) & a.\text{grass} & b.&(\text{Intercept}) & b.\text{grass} \\
&0.68378394 & -0.14835424 & -0.01071535 & 0.01551977
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: \sim sowndiv
Parameter estimates:
  power
-0.1431583

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.249641

Pathogen species richness: $Pm1231$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 16.34223

Coefficients:
  a.(Intercept)  a.grass  b.(Intercept)  b.grass
  0.67475105  -0.15161983  -0.01206148  0.01701441

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.009182033

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2199406

Pathogen species richness: $Pm1321$
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 20.85456

Coefficients:
  a.(Intercept)  a.grass  c.(Intercept)  c.grass
  -0.51990201  -0.06674961  0.05379627  0.02726427

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1126906

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2274195

Pathogen species richness: $Pm1331$
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 20.69289

Coefficients:
  a.(Intercept)  a.grass  c.(Intercept)  c.grass
  -0.52697969  -0.06537211  0.05443562  0.02801695
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.008221298

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2068621

$`Pathogen species richness`$ Pm1421
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 20.49511

Coefficients:
b.(Intercept)       b.grass c.(Intercept)       c.grass
0.50128975   -0.07095973    0.06904435    0.08556216

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1168382

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2298294

$`Pathogen species richness`$ Pm1431
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 20.27960

Coefficients:
b.(Intercept)       b.grass c.(Intercept)       c.grass
0.49615980   -0.07118850    0.06784997    0.09022740

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.008345465

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2081291

$`Pathogen species richness`$ Pm1521
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -30.15572

Coefficients:
c.(Intercept)  c.grass
0.009537851  -0.125350101

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.3678333

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6109374

$`Pathogen species richness`$Pm1531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -40.49644

Coefficients:
c.(Intercept)  c.grass
0.1207450    -0.2127570

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.021524

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4829019

$`Pathogen species richness`$Pn1721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 20.51815

Coefficients:
a.(Intercept)  a.leg  b.(Intercept)  b.leg
0.80822694   -0.22530631   -0.00896895    0.01294805

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.1482535

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2407346

$`Pathogen species richness`$Pn1731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
Log-likelihood: 19.7451

Coefficients:
a. (Intercept)       a. leg       b. (Intercept)       b. leg
0.794428635   -0.224724612   -0.009875853   0.014043234

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.008819365

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2103443

$\text{"Pathogen species richness}\$ Pn1821

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 23.84013

Coefficients:
a. (Intercept)       a. leg       c. (Intercept)       c. leg
-0.37944063   -0.14806114    0.05259461    0.01958317

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1183815

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2211488

$\text{"Pathogen species richness}\$ Pn1831

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 23.49372

Coefficients:
a. (Intercept)       a. leg       c. (Intercept)       c. leg
-0.38699008   -0.14640751    0.05263465    0.02072561

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007827403

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1992408

$\text{"Pathogen species richness}\$ Pn1921
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 23.57285

Coefficients:
  b.(Intercept)  b.leg  c.(Intercept)  c.leg
  0.63558683  -0.15064039  0.03437547  0.09315904

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1219306

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2230429

$`Pathogen species richness`$Pn1931
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 23.17555

Coefficients:
  b.(Intercept)  b.leg  c.(Intercept)  c.leg
  0.62844890  -0.14950216  0.03275276  0.09792241

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0079389

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2002070

$`Pathogen species richness`$Pn2021
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -26.60531

Coefficients:
  c.(Intercept)  c.leg
  0.08151517  -0.18166086

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3976587

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6115368

```
$\text{Pathogen species richness}\$\$Pn2031$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -38.00165

Coefficients:
  c.(Intercept) c.leg
  0.1914038 -0.2731625

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02290016

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4739984

```

```
$\text{Pathogen species richness}\$\$Pp2131$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 24.69409

Coefficients:
  a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
  2.91115337  0.134978707 -2.994464126 -2.489667113 -0.076142721
  b.leg c.(Intercept) c.funcgr c.leg
  2.907905425  0.531982913 -0.006271179 -0.246666810

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007469758

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2023360

```

```
$\text{Pathogen species richness}\$\$Pp2221$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 23.84471

Coefficients:
  a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
  0.415424534  0.073700247 -0.079164053  0.035916145 -0.007252045
  b.leg
  -0.004173682

```

SUPPLEMENTARY INFORMATION

RESEARCH
doi:10.1038/nature09492
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1181768

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2239592

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 23.49819

Coefficients:
  a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr  b.leg
  0.402011296  0.077294214  0.078334722  0.037360396  -0.007582780

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007837042

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2018511

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 24.8643

Coefficients:
  a.(Intercept)  a.funcgr  a.leg  c.(Intercept)  c.funcgr  c.leg
  -0.59565695   0.05378397  0.07249625   0.15607929  -0.02178120

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1095003

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2183608

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.57357

Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.funcgr} & \text{a.leg} & \text{c.(Intercept)} & \text{c.funcgr} \\
-0.59328763 & 0.05356422 & -0.07484361 & 0.15425560 & -0.02134551 \\
\text{c.leg} & & -0.01713421 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} \quad -0.007418785
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1985071

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.72657

Coefficients:
\[
\begin{array}{cccccc}
\text{b.(Intercept)} & \text{b.funcgr} & \text{b.leg} & \text{c.(Intercept)} & \text{c.funcgr} \\
0.431718284 & 0.046365696 & -0.077747861 & 0.286008445 & -0.048398378 \\
\text{c.leg} & & -0.003028066 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} \quad -0.1106363
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2190971

Generalized nonlinear least squares fit
Model: response ~ c * sowndiv^b
Data: DF
Log-likelihood: 24.42907

Coefficients:
\[
\begin{array}{cccccc}
\text{b.(Intercept)} & \text{b.funcgr} & \text{b.leg} & \text{c.(Intercept)} & \text{c.funcgr} \\
0.428487256 & 0.047321053 & -0.078310195 & 0.287884537 & -0.048945480 \\
\text{c.leg} & & -0.001199277 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.007469359
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1989436

$\text{Pathogen species richness}^{\text{Pp2521}}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -23.67079

Coefficients:
  c. (Intercept)   c. funcgr    c. leg
  -0.23434472    0.05717198   -0.07402966

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.4168835
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.610952

$\text{Pathogen species richness}^{\text{Pp2531}}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -34.7495

Coefficients:
  c. (Intercept)   c. funcgr    c. leg
  -0.34435451    0.09134704   -0.08669321

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.02401639
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4628562

$\text{Pathogen species richness}^{\text{Pq2721}}$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 21.82353

Coefficients:
  a. (Intercept)   a. funcgr    a. grass   b. (Intercept)   b. funcgr
  0.225311930    0.097764069   0.016452094   0.022995958   -0.005531206
  b. grass
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
    power
-0.1125134
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2276261

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 21.59771

Coefficients:
   a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
0.222742378   0.099870736   0.012133610   0.023251806 -0.005704842
   b.grass
0.002267485

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
    expon
-0.007963175
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2068078

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 22.88712

Coefficients:
   a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr
-0.747904478   0.073172332   0.004142437   0.090388221 -0.013307892
   c.grass
0.013029990

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
    power
-0.1036532
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2217566

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 22.70966

Coefficients:
a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr
-0.747180672   0.072949871   0.002683592   0.090239337  -0.013026387
  c.grass
  0.013508718

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007536848

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2032769

$`Pathogen species richness`$Pq2921
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 22.72223

Coefficients:
b.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
  0.24814219    0.07006605    0.01430295    0.25090567   -0.04337737
  c.grass
  0.01057901

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1053221

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2227542

$`Pathogen species richness`$Pq2931
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 22.5366

Coefficients:
b.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
  0.24974534    0.07015689    0.01150877    0.25069549   -0.04348149
  c.grass
  0.01325797

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.007613373
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2038403

Pathogen species richness $Pq3021$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -24.23716
Coefficients:
c.(Intercept)  c.funcgr  c.grass
-0.403228137  0.078536436  0.009379263

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.4136301
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6122223

Pathogen species richness $Pq3031$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -35.01414
Coefficients:
c.(Intercept)  c.funcgr  c.grass
-0.534321939  0.114955176  0.008922596

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.02403034
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.464408

Pathogen species richness $Pr3221$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 23.07893
Coefficients:
a.(Intercept)  a.grass  a.leg  b.(Intercept)  b.grass
Generalized nonlinear least squares fit

Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 22.66166

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.grass</th>
<th>b.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.961432419</td>
<td>-0.140484471</td>
<td>-0.202755566</td>
<td>-0.018515614</td>
<td>0.012194775</td>
<td>0.009427421</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1223437

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2274632

Pathogen species richness

Generalized nonlinear least squares fit

Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.78332

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>c.(Intercept)</th>
<th>c.grass</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>-0.221823765</td>
<td>-0.097703056</td>
<td>-0.151333716</td>
<td>0.009744305</td>
<td>0.031594924</td>
<td>0.016057809</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1101088

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2187741
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.50963

Coefficients:
a (Intercept) a.grass a.leg c (Intercept) c.grass
-0.22749739 -0.09674731 -0.15057322 0.01092501 0.03152455
c.leg
0.01631359

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.007531185
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1988538

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.67462

Coefficients:
b (Intercept) b.grass b.leg c (Intercept) c.grass
0.76605400 -0.09032890 -0.14646842 -0.05672544 0.08232533
c.leg
0.07322950

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1111540
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2194045

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.38091

Coefficients:
b (Intercept) b.grass b.leg c (Intercept) c.grass
0.76285639 -0.09082022 -0.14620159 -0.05843747 0.08443434
c.leg
0.07535850
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00754006
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1991813

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -23.95861

Coefficients:
  c.(Intercept)   c.grass    c.leg
  0.1933754    -0.1075205    -0.1696864

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4170285
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6132322

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -35.27774

Coefficients:
  c.(Intercept)   c.grass    c.leg
  0.3441158    -0.1710008    -0.2421337

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02395940
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4656196

Pathogen species richness
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 24.20909
Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & & 0.536115692 \\
\text{a.funcgr} & & 0.058627451 \\
\text{a.grass} & & -0.039836277 \\
\text{a.leg} & & -0.099438706 \\
\text{b.(Intercept)} & & 0.042896663 \\
\text{b.funcgr} & & -0.008100150 \\
\text{b.grass} & & -0.001787386 \\
\text{b.leg} & & -0.005977685
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} & & -0.1188682
\end{align*}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2261912

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 23.85676

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & & 0.532045935 \\
\text{a.funcgr} & & 0.061074636 \\
\text{a.grass} & & -0.043171837 \\
\text{a.leg} & & -0.100033823 \\
\text{b.(Intercept)} & & 0.043444694 \\
\text{b.funcgr} & & -0.008322576 \\
\text{b.grass} & & -0.001466992 \\
\text{b.leg} & & -0.005971621
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} & & -0.007828433
\end{align*}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.203653

Pathogen species richness
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 25.24807

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & & -0.448810840 \\
\text{a.funcgr} & & 0.035484430 \\
\text{a.grass} & & -0.049579537 \\
\text{a.leg} & & -0.096262238 \\
\text{c.(Intercept)} & & 0.169794815 \\
\text{c.funcgr} & & -0.023450119 \\
\text{c.grass} & & -0.002002733 \\
\text{c.leg} & & -0.023539529
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} & & -0.1096477
\end{align*}
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2203069

$\text{Pathogen species richness}$^\text{3831}
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 24.95524

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg c.(Intercept)
  -0.444584920   0.035053834  -0.050461845  -0.098698032   0.167544274
  c.funcgr       c.grass         c.leg
  -0.022974222  -0.001696072  -0.022292383

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007393924
  Degrees of freedom: 82 total; 74 residual
  Residual standard error: 0.2001948

$\text{Pathogen species richness}$^\text{3921}
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 25.09594

Coefficients:
  b.(Intercept)      b.funcgr       b.grass         b.leg c.(Intercept)
  0.554962758   0.030914077  -0.041204109  -0.097852295   0.291005259
  c.funcgr       c.grass         c.leg
  -0.048687945   0.003190964  -0.010032247

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1109782
  Degrees of freedom: 82 total; 74 residual
  Residual standard error: 0.2211524

$\text{Pathogen species richness}$^\text{3931}
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 24.79494

Coefficients:
  b.(Intercept)      b.funcgr       b.grass         b.leg c.(Intercept)
  0.557165920   0.031201158  -0.043223567  -0.099150193   0.286985772
c.funcgr  c.grass  c.leg
-0.048517180  0.005478609  -0.007495777

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.007449337
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2006820

Nonlinear regression model
  model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data:   DF

$’Pathogen species richness’$Ps4021
Generalized nonlinear least squares fit
  Model:  response ~ sowndiv^c
  Data: DF
  Log-likelihood:  -23.48429

Coefficients:
  c.(Intercept)  c.funcgr  c.grass  c.leg
  -0.07816457  0.03772632  -0.04820031  -0.10414684

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.4187356
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6151482

Nonlinear regression model
  model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data:   DF

$’Pathogen species richness’$Ps4031
Generalized nonlinear least squares fit
  Model:  response ~ sowndiv^c
  Data: DF
  Log-likelihood:  -34.66539

Coefficients:
  c.(Intercept)  c.funcgr  c.grass  c.leg
  -0.16867769  0.06943602  -0.05535610  -0.11938329

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.02404346
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4654444

Nonlinear regression model
  model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data:   DF

$’Pathogen species richness’$AS1
Nonlinear regression model
  model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data:   DF
Asym  R0     lrc
0.6624  0.1440 -0.8723
residual sum-of-squares: 2.974

Number of iterations to convergence: 12
Achieved convergence tolerance: 9.016e-06

$`Pathogen species richness`$AS2
Nonlinear regression model
  model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data:  DF
  Asym     lrc     c0
0.6624 -0.8722 -0.5862
residual sum-of-squares: 2.974

Number of iterations to convergence: 13
Achieved convergence tolerance: 4.293e-06

$`Pathogen species richness`$AS3
Nonlinear regression model
  model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
  data:  DF
  Asym     lrc
0.6461 -0.4989
residual sum-of-squares: 2.994

Number of iterations to convergence: 5
Achieved convergence tolerance: 2.483e-06

$`Community herbivory`$
$`Community herbivory`$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)

Coefficients:
  (Intercept)          blockB2          blockB3          blockB4
  1.707295           0.053400           0.026608           0.012223
  sowndiv            0.026316
  funcgr            -0.371195           0.073032
  grass             -0.592373           0.540013
  leg               -0.735237           0.735237
  sowndiv:funcgr     -0.002452           0.004844
  funcgr:grass      -0.008053           0.008053
  funcgr:leg        -0.005442           0.128445
  grass:leg         0.125588           0.239208

$`Community herbivory`$L02
Generalized least squares fit by maximum likelihood
  Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  Data: DF
Log-likelihood: 44.42416

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>(Intercept)</th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>sowndiv</td>
<td>1.529022935</td>
<td>0.095631017</td>
<td>0.014249563</td>
<td>0.000878727</td>
</tr>
<tr>
<td>sownedi</td>
<td>0.032917390</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>funcgr</td>
<td>-0.337828514</td>
<td>-0.460683973</td>
<td>-0.671494719</td>
<td>-0.004159035</td>
</tr>
<tr>
<td>grass</td>
<td>-0.003213781</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leg</td>
<td>-0.010344917</td>
<td>0.089148643</td>
<td>0.140937198</td>
<td>0.181844044</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
expon 3.142826

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.06717656

Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 43.69942

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>(Intercept)</th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>sowndiv</td>
<td>2.1406243693</td>
<td>0.055713465</td>
<td>0.0103356521</td>
<td>-0.0233052588</td>
</tr>
<tr>
<td>sownedi</td>
<td>0.0127451549</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>funcgr</td>
<td>-0.4228726020</td>
<td>-0.7935588869</td>
<td>-0.9288876785</td>
<td>-0.0008375057</td>
</tr>
<tr>
<td>grass</td>
<td>-0.0055791680</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leg</td>
<td>-0.0009714835</td>
<td>0.1456591476</td>
<td>0.1316819773</td>
<td>0.3346879577</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power -0.2567483

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2079008

Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 45.89971

Coefficients:
(Intercept) blockB2 blockB3 blockB4
sowndiv 2.0802339105 0.2034015011 -0.0080696883 -0.0698676252
0.0064468166
funcgr grass leg sowndiv:funcgr
sowndiv:grass
-0.3349905540 -0.7626311671 -0.8816057350 0.0005511879
0.0055541897
sowndiv:leg funcgr:grass funcgr:leg grass:leg
0.0010967992 0.0804440708 0.1093007491 0.3192579320

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.0878895
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.2940141

Community herbivory$L2

Call:
lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept) sowndiv funcgr leg
0.492976 0.002186 -0.030361 -0.147185

Community herbivory$L21
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 41.04868

Coefficients:
(Intercept) sowndiv funcgr leg
0.467340153 0.002000944 -0.025138209 -0.136499788

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
power
0.799472
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4905231

Community herbivory$L22
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 41.19621

Coefficients:
\[
\begin{array}{cccc}
(Intercept) & sowndiv & funcgr & leg \\
0.47253638 & 0.00211395 & -0.02691415 & -0.13839871 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
expon
3.564324
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.06464674

Community herbivory
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 39.52574

Coefficients:
\[
\begin{array}{cccc}
(Intercept) & sowndiv & funcgr & leg \\
0.503320858 & 0.002167146 & -0.032472874 & -0.150127834 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1788520
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1948668

Community herbivory
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 38.64863

Coefficients:
\[
\begin{array}{cccc}
(Intercept) & sowndiv & funcgr & leg \\
0.493901574 & 0.002125242 & -0.030377156 & -0.147341866 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01133809
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1664731
Nonlinear regression model
model: response ~ a * sowndiv/(b + sowndiv)
data: DF
a      b
0.2660 0.4597
residual sum-of-squares: 2.252
Number of iterations to convergence: 6
Achieved convergence tolerance: 5.332e-06

Nonlinear regression model
model: response ~ SSmicmen(sowndiv, Vm, k)
data: DF
Vm      k
0.2660 0.4597
residual sum-of-squares: 2.252
Number of iterations to convergence: 5
Achieved convergence tolerance: 3.847e-06

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 35.67832

Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
  0.40798389   -0.11235936   -0.01576761    0.11552540

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1605685

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 37.48318

Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
  0.423812157  -0.123163222   0.128556619   0.009921196

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.1507633
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1964741
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 36.96639

Coefficients:
\[
\begin{array}{cccc}
  a. (\text{Intercept}) & a. \text{leg} & b. (\text{Intercept}) & b. \text{leg} \\
  0.43534852 & -0.12645275 & 0.17891703 & 0.01479444 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{expon} \\
  -0.009994028 \\
\end{array}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1722272

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.08760

Coefficients:
\[
\begin{array}{cccc}
  a. (\text{Intercept}) & a. \text{grass} & b. (\text{Intercept}) & b. \text{grass} \\
  0.26847873 & 0.01119497 & 2.26448453 & -0.92060431 \\
\end{array}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1677559

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.54138

Coefficients:
\[
\begin{array}{cccc}
  a. (\text{Intercept}) & a. \text{grass} & b. (\text{Intercept}) & b. \text{grass} \\
  0.35831562 & -0.04086852 & 4.85298952 & -2.27449711 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{power} \\
  -0.1480779 \\
\end{array}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2053292
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.29031

Coefficients:
\[
\begin{array}{cccc}
& a \text{(Intercept)} & a:\text{grass} & b \text{(Intercept)} & b:\text{grass} \\
& 0.36980972 & -0.04227543 & 4.85269703 & -2.23244057 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
expon \\
-0.01074023 \\
\end{array}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1812816

$`Community herbivory`$M5
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 31.17932

Coefficients:
\[
\begin{array}{cccc}
& a \text{(Intercept)} & a:\text{funcgr} & b \text{(Intercept)} & b:\text{funcgr} \\
& 0.23420545 & 0.01494393 & 0.13610164 & 0.21163230 \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1696244

$`Community herbivory`$M511
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.00655

Coefficients:
\[
\begin{array}{cccc}
& a \text{(Intercept)} & a:\text{funcgr} & b \text{(Intercept)} & b:\text{funcgr} \\
& 0.20152956 & 0.03104567 & -0.31278764 & 0.52840937 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
power \\
-0.1609547 \\
\end{array}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2106617

$`Community herbivory`$M522
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.71080
Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad 0.21029343 \\
\text{a. funcgr} & \quad 0.03097349 \\
\text{b. (Intercept)} & \quad -0.21790606 \\
\text{b. funcgr} & \quad 0.51989671
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- \text{expon} = -0.01154836

Degrees of freedom: 82 total; 78 residual

Residual standard error: 0.1838383

Generalized nonlinear least squares fit
- Model: response \sim a \ast \text{sowndiv}/(b + \text{sowndiv})
- Data: DF
- Log-likelihood: 21.04815

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad -0.3215992 \\
\text{a. funcgr} & \quad 0.1455476 \\
\text{a. leg} & \quad 0.1669361 \\
\text{b. (Intercept)} & \quad -11.3711356 \\
\text{b. funcgr} & \quad 2.9577010 \\
\text{b. leg} & \quad 4.2543625
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual

Residual standard error: 0.1944403

Generalized nonlinear least squares fit
- Model: response \sim a \ast \text{sowndiv}/(b + \text{sowndiv})
- Data: DF
- Log-likelihood: 38.90167

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad 0.55486753 \\
\text{a. funcgr} & \quad -0.01602631 \\
\text{a. leg} & \quad -0.16931819 \\
\text{b. (Intercept)} & \quad -0.28340425 \\
\text{b. funcgr} & \quad 0.48349130 \\
\text{b. leg} & \quad 0.05247415
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv

Parameter estimates:
- \text{power} = -0.1594142

Degrees of freedom: 82 total; 76 residual

Residual standard error: 0.1981576

Generalized nonlinear least squares fit
- Model: response \sim a \ast \text{sowndiv}/(b + \text{sowndiv})
- Data: DF
Log-likelihood: 23.29787

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. funcgr} & \text{a. leg} & \text{b. (Intercept)} & \text{b. funcgr} \\
-0.2783098 & 0.1300841 & 0.1519496 & -10.6673201 & 2.7112912 \\
b. leg & 4.0170880 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.0140334

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2134005

Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.57422

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. funcgr} & \text{a. grass} & \text{b. (Intercept)} & \text{b. funcgr} \\
0.18691510 & 0.01735268 & 0.03119138 & 2.65521104 & -0.18575155 \\
b. grass & -1.08001275 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1689433

Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 34.52731

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. funcgr} & \text{a. grass} & \text{b. (Intercept)} & \text{b. funcgr} \\
0.35535464 & 0.01208676 & -0.06238859 & 9.52120555 & -0.59562385 \\
b. grass & -4.36463941 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1695360

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.21218

Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.57422
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 34.05936

Coefficients:
a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr
0.35902448 0.01045258 -0.05843968 8.74370009 -0.57019786
b.grass
-3.95042405

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.01148532

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1831046

$`Community herbivory`$M81

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 36.16760

Coefficients:
a.(Intercept) a.grass a.leg b.(Intercept) b.grass
0.419077580 0.002328941 -0.111821634 1.369836292 -0.676001701
b.leg
0.104942205

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1616998

$`Community herbivory`$M821

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 38.31961

Coefficients:
a.(Intercept) a.grass a.leg b.(Intercept) b.grass
0.497926680 -0.03674970 -0.12215103 3.40789809 -1.73119598
b.leg
0.07873039

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1724931

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.203482

Community herbivory
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 37.66966

Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  0.48705962   -0.02700000   -0.12224847    2.73300853   -1.34238099
  b.leg
  0.05922125

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01097729

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1744551

Community herbivory
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 18.94589

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg b.(Intercept)
  -0.7329514     0.2179924     0.1820374     0.1594840   -30.5215377
  b.funcgr       b.grass         b.leg
  6.6137105     4.4908260     7.5530635

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2021675

Community herbivory
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 39.55760

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg b.(Intercept)
  0.90984885   -0.06010962   -0.12080646   -0.22367502    4.35693008
  b.funcgr       b.grass         b.leg
  -0.08533397   -1.82326352   -0.31889144

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
power
-0.1688381
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2020243

$Community herbivory$M932
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 33.09238
Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg b.(Intercept)
  1.29145147   -0.07477941   -0.23529392   -0.36938880  24.56424665
  b.funcgr       b.grass         b.leg
  -0.85564540   -7.73156922   -7.75222146

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01245610
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1893351

$Community herbivory$M121
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 36.37840
Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass d.(Intercept)
  0.60338263   -0.28817616   75.66175963  -38.56635785    0.09834601
    d.grass
    0.05955957

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1451536
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2000692

$Community herbivory$M121
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 36.21738
Coefficients:
a. (Intercept)       a.funcgr b. (Intercept)       b.funcgr d. (Intercept)
-0.1792284           0.1912136       -3.2516883       1.4059593       0.2849784
  d.funcgr
-0.1271348

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1616017

$`Community herbivory`$M1232
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 37.58779

Coefficients:
  a. (Intercept)       a.funcgr b. (Intercept)       b.funcgr d. (Intercept)
-0.1825913           0.1948220       -3.2687431       1.4267513       0.2876855
  d.funcgr
-0.1292708

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
     expon
-0.01042976

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1738105

$`Community herbivory`$M1321
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 42.08544

Coefficients:
  a. (Intercept)       a.funcgr a. leg b. (Intercept)       b.funcgr
-0.13681713          0.09856717       0.02481958       -20.66729274      7.09022532
  b. leg d. (Intercept)       d.funcgr       d. leg
6.18916962          0.52212461       -0.06657456      -0.13749447

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
     power
-0.1736904

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1986545

$`Community herbivory`$M1632
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
Log-likelihood: 42.96161

Coefficients:
\[
\begin{align*}
  a.\text{(Intercept)} & = 1.203738639 \\
  a.\text{funcgr} & = -0.025481101 \\
  a.\text{grass} & = -0.381167208 \\
  a.\text{leg} & = -0.379593572 \\
  b.\text{(Intercept)} & = -29.563822008 \\
  b.\text{funcgr} & = 6.455939641 \\
  b.\text{grass} & = 1.529633806 \\
  b.\text{leg} & = 10.059164330 \\
  d.\text{(Intercept)} & = -0.452597746 \\
  d.\text{funcgr} & = 0.006328389 \\
  d.\text{grass} & = 0.302534020 \\
  d.\text{leg} & = 0.157421705
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
  \text{expon} & = -0.01027852
\end{align*}
\]

Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1693981

\$`Community herbivory`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
\[
\begin{align*}
  a & = 2.240e-01 \\
  b & = 1.105e-27
\end{align*}
\]
residual sum-of-squares: 2.265
Number of iterations to convergence: 4
Achieved convergence tolerance: 7.094e-08

\$`Community herbivory`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
\[
\begin{align*}
  a & = 1
\end{align*}
\]
residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

\$`Community herbivory`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
\[
\begin{align*}
  b & = 3.066e-27
\end{align*}
\]
residual sum-of-squares: 6.178
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.119e-08

\$`Community herbivory`$E21
Generalized nonlinear least squares fit
Model: response ~ a + b * exp(sowndiv)
Data: DF
Log-likelihood: 33.04149

Coefficients:
  a            b
2.296581e-01 1.055292e-27

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.1689875
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2104175

Community herbivory E22
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(sowndiv)
  Data: DF
  Log-likelihood: 32.62928
  Coefficients:
    a            b
2.261522e-01 1.085991e-27
  Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
      expon
-0.01206485
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1825139

Community herbivory E31
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 33.41654
  Coefficients:
    a            c
-0.787576396  0.002191456
  Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
      power
-0.1708962
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2100517
Community herbivory

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 33.01485

Coefficients:
  a     c
-0.789189108  0.002208505

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01214825

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1817878

Community herbivory

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1729.905

Coefficients:
  a
-2.575062

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.06634

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.06831513

Community herbivory

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.8545

Coefficients:
  a
-3.203410

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
1.014933
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.697776

$`Community herbivory$E51
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -10.13008

Coefficients:
  b
3.066295e-27

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.0541683

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2985408

$`Community herbivory$E52
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -8.65095

Coefficients:
  b
3.066296e-27

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.01510904

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.3080209

$`Community herbivory$E61
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -7.970382

Coefficients:
  c
-1.339667

Variance function:
  Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.09166336
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2341752

$`Community herbivory`$E62
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -8.1251

Coefficients:
  c
-1.253483

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
  0.006287412
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2546929

$`Community herbivory`$Ea10
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)     a.leg
-2963126.3       911705.9

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Community herbivory`$Ea12
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -3.938943

Coefficients:
  c.(Intercept)     c.leg
  0.7674007        -1.2209265

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2570316

$`Community herbivory`$Ea911
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)  
Data: DF  
Log-likelihood: 38.15056  

Coefficients:
- a.(Intercept)  -0.6179784308  
- a.leg  -0.1113739359  
- c.(Intercept)  0.0011357340  
- c.leg  0.0001120074  

Variance function:
- Structure: Power of variance covariate  
- Formula: ~sowndiv  
- Parameter estimates:  
  - power -0.1729848  

Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.2014178  

Community herbivory
Generalized nonlinear least squares fit
- Model: response ~ a + exp(c * sowndiv)  
- Data: DF  
- Log-likelihood: 37.55482  

Coefficients:
- a.(Intercept)  -0.6138353463  
- a.leg  -0.1133283722  
- c.(Intercept)  0.0010625205  
- c.leg  0.0001541776  

Variance function:
- Structure: Exponential of variance covariate  
- Formula: ~sowndiv  
- Parameter estimates:  
  - expon -0.01143209  

Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.17312  

Community herbivory
Generalized nonlinear least squares fit
- Model: response ~ a + exp(sowndiv)  
- Data: DF  
- Log-likelihood: -1727.462  

Coefficients:
- a.(Intercept)  -2.42689506  
- a.leg  -0.08466704  

Variance function:
- Structure: Power of variance covariate  
- Formula: ~sowndiv  
- Parameter estimates:  
  - power 15.07776  

Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.06560148
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.7796

Coefficients:
\begin{align*}
a. & \quad (\text{Intercept}) \quad \quad a.\text{leg} \\
& \quad -3.8862204 \quad \quad 0.3936446
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
expon & \quad 1.014980
\end{align*}

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7011978

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -3.435027

Coefficients:
\begin{align*}
c. & \quad (\text{Intercept}) \quad \quad c.\text{leg} \\
& \quad 0.6906132 \quad \quad -1.2050090
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
power & \quad 0.07122608
\end{align*}

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2298237

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -3.010201

Coefficients:
\begin{align*}
c. & \quad (\text{Intercept}) \quad \quad c.\text{leg} \\
& \quad 0.7393013 \quad \quad -1.2106198
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
expon
\end{align*}
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2380645

Generalized nonlinear least squares fit
Model: response ~ a + \exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a. (Intercept)       a.grass
-3508713       1286426

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

Generalized nonlinear least squares fit
Model: response ~ \exp(c \cdot sowndiv)
Data: DF
Log-likelihood: -8.737071

Coefficients:
c. (Intercept)       c.grass
-1.19745985   -0.02462364

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2725202

Generalized nonlinear least squares fit
Model: response ~ a + \exp(c \cdot sowndiv)
Data: DF
Log-likelihood: 34.10187

Coefficients:
a. (Intercept)       a.grass c. (Intercept)       c.grass
-0.864011520   0.054345671  0.004685732  -0.002089984

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1687454

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2102846

Generalized nonlinear least squares fit
Model: response ~ a + \exp(c \cdot sowndiv)
Data: DF
Log-likelihood: 33.62145
Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. grass} & \quad \text{c. (Intercept)} & \quad \text{c. grass} \\
-0.859927402 & \quad 0.047863805 & \quad 0.003728919 & \quad -0.001144567
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} & \\
-0.01185265
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1822836

$`\text{Community herbivory}\text{`Eb1611}$
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1728.199

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. grass} \\
-2.69973776 & \quad 0.07124307
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{power} & \\
15.07431
\end{align*}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.06653335

$`\text{Community herbivory}\text{`Eb1621}$
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -800.7048

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. grass} \\
-4.1678143 & \quad 0.5560354
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} & \\
1.015057
\end{align*}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7000986

$`\text{Community herbivory}\text{`Eb1811}$
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -7.963783

Coefficients:
c.(Intercept)     c.grass
-1.48362335    0.07911665

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.09269988
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2352531

$`
Community herbivory`$Eb1821
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -8.124949

Coefficients:
c.(Intercept)     c.grass
-1.23208548   -0.01182290

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
0.006285309
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.256284

$`
Community herbivory`$Ec22
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)     a.funcgr
  252095.7     -912137.5

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`
Community herbivory`$Ec24
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -5.092373
Coefficients:
\[
\begin{array}{lrr}
  & c. & c. \\
c.(Intercept) & -1.5334221 & 0.3106515 \\
\end{array}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2606726

\$`Community herbivory`$Ec1921
Generalized nonlinear least squares fit
Model: response ~ a + b * exp(c * sowndiv)
Data: DF
Log-likelihood: -2878.481

Coefficients:
\[
\begin{array}{llll}
  & a. & a. & b. & b. & c. \\
(Intercept) & 0.761574112 & -0.650123714 & 0.006551118 & -0.001637776 & 0.999590753 \\
funcgr & 1.000102312 & & & & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{l}
expon & 4.815731 \\
\end{array}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.000489398

\$`Community herbivory`$Ec2121
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 33.11837

Coefficients:
\[
\begin{array}{llll}
  & a. & c. & c. \\
a.(Intercept) & -8.045578e-01 & 1.981765e-03 & -1.404252e-05 \\
funcgr & 8.316245e-03 & & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{l}
expon & -0.01216325 \\
\end{array}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1838951

\$`Community herbivory`$Ec2211
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1729.905
Coefficients:
  a.(Intercept)      a.funcgr
        1.951450   -4.526512

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
        15.06634
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.06874075

$`Community herbivory`$Ec2221
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2275

Coefficients:
  a.(Intercept)      a.funcgr
        3.368203   -6.188628

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
        1.022389
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6074585

$`Community herbivory`$Ec2411
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -4.148691

Coefficients:
  c.(Intercept)      c.funcgr
        -1.6452381   0.3357799

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
        0.09893362
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2224899

$`Community herbivory`$Ec2421
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -4.202869

Coefficients:
c.(Intercept)  c.funcgr
  -1.5493827   0.3131131

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.007533377
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2417105

Community herbivory
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
a.(Intercept)  a.funcgr   a.leg
  872779.3     -990730.6   -307654.9

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

Community herbivory1
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1727.462

Coefficients:
a.(Intercept)  a.funcgr   a.leg
  2.12078408   -4.54767912   -0.08466705

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.07776
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.06601536

Community herbivory2
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2215
Coefficients:
a. (Intercept)  a.funcgr  a.leg  
3.56430330 -6.21307473 -0.09808544

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.022400
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6111886

`Community herbivory` Ed3021
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -1.164351

Coefficients:
c. (Intercept)  c.funcgr  c.leg 
0.2087367  0.1225190 -0.9842630

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
0.008427115
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2325958

`Community herbivory` Ee40
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a. (Intercept)  a.funcgr  a.grass
-335850.8 -839615.5  296563.3

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

`Community herbivory` Ee341
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1728.199

Coefficients:
a. (Intercept)  a.funcgr  a.grass
1.80896385 -4.50870159  0.07124306
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
15.07431
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.0669531

$\text{Community herbivory}^\text{342}\$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2247

Coefficients:
  a.(Intercept)      a.funcgr       a.grass
  3.23308310   -6.17170553    0.06754253

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
1.022394
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6112412

$\text{Community herbivory}^\text{40}\$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)       a.grass         a.leg
  -5251826       1394676       1054750

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$\text{Community herbivory}^\text{3721}\$
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2688.523

Coefficients:
  a.(Intercept)       a.grass         a.leg      b.(Intercept)       b.grass
  0.1575874825  0.0533438816 -0.0631350170  0.0005186644 -0.0001238038
  b.leg c.(Intercept)       c.grass         c.leg
  -0.0001348722  0.9999674578   1.0000077862  1.0000084759
### Variance function:
- **Structure**: Exponential of variance covariate
- **Formula**: ~sowndiv
- **Parameter estimates**:
  - *expon*: 4.481151
- **Degrees of freedom**: 82 total; 73 residual
- **Residual standard error**: 0.0008706527

### Community herbivory
- **Generalized nonlinear least squares fit**
  - **Model**: response ~ a + exp(c * sowndiv)
  - **Data**: DF
  - **Log-likelihood**: 38.702
  - **Coefficients**:
    - `a.(Intercept)`: -0.678692570
    - `a.grass`: 0.051864523
    - `a.leg`: -0.119082988
    - `c.(Intercept)`: 0.003884775
    - `c.grass`: -0.003747483
    - `c.leg`: 0.001446025

### Variance function:
- **Structure**: Power of variance covariate
- **Formula**: ~sowndiv
- **Parameter estimates**:
  - *power*: -0.1755138
- **Degrees of freedom**: 82 total; 76 residual
- **Residual standard error**: 0.2034456

### Community herbivory
- **Generalized nonlinear least squares fit**
  - **Model**: response ~ a + exp(c * sowndiv)
  - **Data**: DF
  - **Log-likelihood**: 37.96413
  - **Coefficients**:
    - `a.(Intercept)`: -0.669205726
    - `a.grass`: 0.043351635
    - `a.leg`: -0.118207283
    - `c.(Intercept)`: 0.003130986
    - `c.grass`: -0.002947766
    - `c.leg`: 0.001342380

### Variance function:
- **Structure**: Exponential of variance covariate
- **Formula**: ~sowndiv
- **Parameter estimates**:
  - *expon*: -0.01136017
- **Degrees of freedom**: 82 total; 76 residual
- **Residual standard error**: 0.1744021

### Community herbivory
- **Generalized nonlinear least squares fit**
  - **Model**: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1726.707

Coefficients:
a.(Intercept)    a.grass    a.leg
-2.53982446    0.04839831   -0.06853427

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    15.08128
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.06506907

Community herbivory$Ef4021
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -800.5092

Coefficients:
a.(Intercept)    a.grass    a.leg
-5.7642379     0.7980731    0.6783306

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.015192
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.702019

Community herbivory$Ef4211
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2.224896

Coefficients:
c.(Intercept)    c.grass    c.leg
1.1827902   -0.3213236    -1.1738978

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.08164156
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.2243891
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: -1.908851
Coefficients:
c.(Intercept) c.grass c.leg
1.1311043 -0.2779977 -1.1577644

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
0.007861737
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2358592

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516
Coefficients:
a.(Intercept) a.funcgr a.grass a.leg
292091.9 -918391.5 183181.3 -199834.3

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1726.707
Coefficients:
a.(Intercept) a.funcgr a.grass a.leg
1.99172194 -4.53154635 0.04839830 -0.06853428

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
15.08128
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.06548483

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -794.2209

Coefficients:
\[
\begin{align*}
  \text{a. (Intercept)} & \quad \text{a.funcgr} & \quad \text{a.grass} & \quad \text{a.leg} \\
  3.46723113 & \quad -6.20093251 & \quad 0.03507529 & \quad -0.08462904
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} \quad 1.022401
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6150818

\$`\text{Community herbivory}`$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
\[
\begin{align*}
  a & \quad b & \quad c \\
  0.194975 & \quad 0.009702 & \quad 0.668423
\end{align*}
\]
residual sum-of-squares: 2.244
Number of iterations to convergence: 12
Achieved convergence tolerance: 6.157e-06

\$`\text{Community herbivory}`$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
\[
\begin{align*}
  a & \quad b \\
  0.209147 & \quad 0.002444
\end{align*}
\]
residual sum-of-squares: 2.246
Number of iterations to convergence: 1
Achieved convergence tolerance: 2.393e-09

\$`\text{Community herbivory}`$Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
\[
\begin{align*}
  a & \quad c \\
  -0.81001 & \quad 0.02622
\end{align*}
\]
residual sum-of-squares: 2.249
Number of iterations to convergence: 8
Achieved convergence tolerance: 6.616e-08

\$`\text{Community herbivory}`$Pa4
Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
\[
\begin{align*}
  b & \quad c
\end{align*}
\]
0.1916 0.1175
residual sum-of-squares: 2.248

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.555e-07

$`Community herbivory`$Pa5
Nonlinear regression model
  model:  response ~ sowndiv^c
  data:  DF
c
-1.128
residual sum-of-squares: 15.50

Number of iterations to convergence: 17
Achieved convergence tolerance: 5.237e-06

$`Community herbivory`$Pb11
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 31.18064
Coefficients:
a           b           c
0.195026079 0.009669404 0.669212743

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1685447

$`Community herbivory`$Pb21
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 31.14897
Coefficients:
a           b
0.209147242 0.002444324

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1675526

$`Community herbivory`$Pb31
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 31.08971
Coefficients:
a           c
-0.81001263  0.02622533

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1676738

$\text{Community herbivory}^{\text{Pb41}}$
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 31.10556

Coefficients:
  b         c
0.1916094  0.1174617

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1676414

$\text{Community herbivory}^{\text{Pb51}}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -48.0445

Coefficients:
  c
-1.127994

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4374054

$\text{Community herbivory}^{\text{Pc121}}$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 33.42531

Coefficients:
  a       b         c
0.208134229  0.003462153  0.909074345

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.1707239

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2113003

$\text{Community herbivory}^{\text{Pc221}}$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 33.42154

Coefficients:
\[
\begin{align*}
\text{a} & \quad \text{b} \\
0.211460390 & \quad 0.002352177
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
\text{power} & \\
-0.1709220
\end{align*}

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2100469

\$`Community herbivory`\$Pc231
Generalized nonlinear least squares fit
\begin{align*}
\text{Model: response} & \sim a + b \times \text{sowndiv} \\
\text{Data: DF} \\
\text{Log-likelihood: 33.02255}
\end{align*}

Coefficients:
\begin{align*}
\text{a} & \quad \text{b} \\
0.209920888 & \quad 0.002373976
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
\text{expon} \\
-0.01215167
\end{align*}

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1817761

\$`Community herbivory`\$Pc321
Generalized nonlinear least squares fit
\begin{align*}
\text{Model: response} & \sim a + s \text{owndiv}^c \\
\text{Data: DF} \\
\text{Log-likelihood: 32.88777}
\end{align*}

Coefficients:
\begin{align*}
\text{a} & \quad \text{c} \\
-0.81523050 & \quad 0.02899385
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
\text{power} \\
-0.1536319
\end{align*}

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2060609

\$`Community herbivory`\$Pc331
Generalized nonlinear least squares fit
\begin{align*}
\text{Model: response} & \sim a + \text{sowndiv}^c \\
\text{Data: DF}
\end{align*}
Log-likelihood: 32.67162

Coefficients:
\[
\begin{array}{ccc}
\text{a} & \text{c} \\
-0.81788104 & 0.03214639
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} = -0.01143901
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1814421

`Community herbivory`$Pc421$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 32.99557

Coefficients:
\[
\begin{array}{ccc}
\text{b} & \text{c} \\
0.1857586 & 0.1325125
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} = -0.1583759
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2072447

`Community herbivory`$Pc431$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 32.77999

Coefficients:
\[
\begin{array}{ccc}
\text{b} & \text{c} \\
0.1844735 & 0.1422440
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} = -0.01173997
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1816713

`Community herbivory`$Pc521$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -31.12288

Coefficients:
c
-0.652685

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.3578569

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.605326

Community herbivory
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -45.61966

Coefficients:
c
-0.9733747

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.01149586

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4687105

Community herbivory
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 32.01368

Coefficients:
  a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr c.(Intercept)
  0.16325703    0.01130353    0.04486658   -0.01108138   -0.64537515
  c.funcgr
  0.50199477

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1701021

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 31.23818

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a (Intercept)</th>
<th>a.funcgr</th>
<th>b (Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.967712e-01</td>
<td>7.498399e-03</td>
<td>1.832365e-03</td>
<td>6.673067e-05</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1695026

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 31.22049

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a (Intercept)</th>
<th>a.funcgr</th>
<th>c (Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.794881064</td>
<td>-0.007584368</td>
<td>0.009992519</td>
<td>0.006230645</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1695392

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 31.26438

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b (Intercept)</th>
<th>b.funcgr</th>
<th>c (Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.210049578</td>
<td>-0.009087971</td>
<td>0.033360542</td>
<td>0.032806066</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1694485

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -47.17952

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c (Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1.6883061</td>
<td>0.2551688</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4355123

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 33.51607

Coefficients:
a. (Intercept) a.funcgr b. (Intercept) b.funcgr
0.2029382649 0.0057849916 0.0011988858 0.0002282628

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1715717

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2126828

$``Community herbivory``$Pe731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 33.12032

Coefficients:
a. (Intercept) a.funcgr b. (Intercept) b.funcgr
1.959196e-01 7.932772e-03 1.943102e-03 2.901683e-05

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01216433

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1838924

$``Community herbivory``$Pe821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 33.43232

Coefficients:
a. (Intercept) a.funcgr c. (Intercept) c.funcgr
-0.776180259 -0.016349455 -0.003103451 0.011093498

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.17187

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2129944

$``Community herbivory``$Pe831
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv^c
Data: DF
Log-likelihood: 33.0607

Coefficients:
- a.(Intercept) a.funcgr c.(Intercept) c.funcgr
-0.788494125 -0.012314946  0.005159086  0.008875600

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon
    -0.01211806
- Degrees of freedom: 82 total; 78 residual
- Residual standard error: 0.1839531

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 33.54211

Coefficients:
- b.(Intercept) b.funcgr c.(Intercept) c.funcgr
  0.23020126 -0.01751314 -0.02950140  0.05526225

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power
    -0.1735878
- Degrees of freedom: 82 total; 78 residual
- Residual standard error: 0.2132526

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 33.13544

Coefficients:
- b.(Intercept) b.funcgr c.(Intercept) c.funcgr
  0.21407016 -0.01155920  0.01765159  0.04014175

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon
    -0.01215335
- Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1838412  

Community herbivory Pe1021  
Generalized nonlinear least squares fit  
Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: -23.80446  

Coefficients:  
c.(Intercept) c.funcgr  
-1.2473381 0.2248952  

Variance function:  
Structure: Power of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
power  
-0.4731535  
Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.6610944  

Community herbivory Pe1031  
Generalized nonlinear least squares fit  
Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: -39.04267  

Coefficients:  
c.(Intercept) c.funcgr  
-1.7364361 0.3634469  

Variance function:  
Structure: Exponential of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
expon  
-0.03123122  
Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.5156482  

Community herbivory Pf121  
Generalized nonlinear least squares fit  
Model: response ~ a + b * sowndiv  
Data: DF  
Log-likelihood: 31.87912  

Coefficients:  
a.(Intercept) a.grass b.(Intercept) b.grass  
0.130358174 0.051972912 0.004378836 -0.001304980  

Degrees of freedom: 82 total; 78 residual  
Residual standard error: 0.1681829  

Community herbivory Pf131
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 32.20555

Coefficients:
a.(Intercept)  a.grass  c.(Intercept)  c.grass
  -0.9454639  0.08218282  0.06129685  -0.01951820

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1675147

Community herbivory

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 32.25798

Coefficients:
b.(Intercept)  b.grass  c.(Intercept)  c.grass
  0.06720449  0.07727986  0.33257429  -0.12457324

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1674077

Community herbivory

Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -48.03464

Coefficients:
c.(Intercept)  c.grass
  -1.0077770  -0.07902687

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4400777

Community herbivory

Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 35.81823

Coefficients:
a.(Intercept)  a.leg  b.(Intercept)  b.leg
  0.3874848e-01  -1.133089e-01  1.210668e-03  -5.045723e-05

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1602947

Community herbivory

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 35.63302

Coefficients:
\[
a.\text{(Intercept)} \quad a.\text{leg} \quad c.\text{(Intercept)} \quad c.\text{leg}
\]
\[
-0.619834848 \quad -0.110833641 \quad 0.012916792 \quad -0.002917135
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1606572

$`\text{Community herbivory}`$Pg191
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 35.63579

Coefficients:
\[
b.\text{(Intercept)} \quad b.\text{leg} \quad c.\text{(Intercept)} \quad c.\text{leg}
\]
\[
0.378809678 \quad -0.109921238 \quad 0.033013541 \quad 0.003742843
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1606518

$`\text{Community herbivory}`$Pg201
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -46.20505

Coefficients:
\[
c.\text{(Intercept)} \quad c.\text{leg}
\]
\[
0.3009427 \quad -1.0524024
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4303674

$`\text{Community herbivory}`$Ph211
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 37.91941

Coefficients:
\[
a.\text{(Intercept)} \quad a.\text{funcgr} \quad a.\text{leg} \quad b.\text{(Intercept)} \quad b.\text{funcgr}
\]
\[
0.40965848 \quad -0.01994444 \quad -0.12072185 \quad 0.06232529 \quad -0.01271718
\]
\[
b.\text{leg} \quad c.\text{(Intercept)} \quad c.\text{funcgr} \quad c.\text{leg}
\]
\[
-0.01097843 \quad -0.64063754 \quad 0.50276663 \quad 0.02134754
\]

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1615016

$`\text{Community herbivory}`$Ph221
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv

SUPPLEMENTARY INFORMATION
RESEARCH
doi:10.1038/nature09492
Data: DF
Log-likelihood: 36.92233

Coefficients:
a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
 0.4831846445 -0.0285236815 -0.1444113981 0.0044437229 -0.0004315691
b.leg
-0.0005971516

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1602183

Community herbivory Ph231
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 36.96259

Coefficients:
a.(Intercept) a.funcgr a.leg c.(Intercept) c.funcgr
-0.531404698  -0.041131861  -0.132195407  0.038966881  0.002129778
c.leg
-0.012093799

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1601397

Community herbivory Ph241
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 37.07779

Coefficients:
b.(Intercept) b.funcgr b.leg c.(Intercept) c.funcgr
  0.48080810   -0.04490106   -0.13389504   -0.00252009    0.03901684
c.leg
  0.02359415

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1599149

Community herbivory Ph251
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -46.1194

Coefficients:
c.(Intercept) c.funcgr c.leg
  0.002772294   0.070065300  -0.951714511

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4326306
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 33.73037

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  b.(Intercept)  b.funcgr
  0.031667064   0.027355120  0.081243859  0.022630306  -0.004514414
  b.grass  c.(Intercept)  c.funcgr  c.grass
  -0.004569579  -3.588619529  1.325748196  0.884974509

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1699664

Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 32.70084

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  b.(Intercept)  b.funcgr
  0.003591316   0.031609123  0.096389018  0.010907605 -0.001096340
  b.grass
  -0.004419455

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1686826

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 32.57852

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  c.(Intercept)  c.funcgr  c.grass
  -0.964981440   0.013462141  0.084858051  0.031107186  0.003422497
  c.grass
  -0.009704097

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1689344

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 32.60171

Coefficients:
  b.(Intercept)  b.funcgr  b.grass  c.(Intercept)  c.funcgr

Generalized nonlinear least squares fit

**Community herbivory**

- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: -46.95529
- Coefficients:
  - c.(Intercept): -2.4979057
  - c.funcgr: 0.3559130
  - c.grass: 0.3930719
- Degrees of freedom: 82 total; 79 residual
- Residual standard error: 0.4370633

Generalized nonlinear least squares fit

- Model: response ~ a + b * sowndiv
- Data: DF
- Log-likelihood: 36.24167
- Coefficients:
  - a.(Intercept): 0.3276064
  - a.grass: 0.0433292
  - a.leg: -0.1162967
  - b.(Intercept): 0.0034149
  - b.grass: -0.0028798
  - b.leg: 0.0011110
- Degrees of freedom: 82 total; 76 residual
- Residual standard error: 0.1615538

Generalized nonlinear least squares fit

- Model: response ~ a + sowndiv^c
- Data: DF
- Log-likelihood: 36.00159
- Coefficients:
  - a.(Intercept): -0.7146867
  - a.grass: 0.0466393
  - a.leg: -0.1002832
  - c.(Intercept): 0.0375846
  - c.grass: -0.0114850
  - c.leg: -0.0046850
- Degrees of freedom: 82 total; 76 residual
- Residual standard error: 0.1620275

Generalized nonlinear least squares fit

- Model: response ~ b * sowndiv^c
- Data: DF
Log-likelihood: 35.99771

Coefficients:
b.(Intercept) b.grass b.leg c.(Intercept) c.grass
c.leg
0.2872415907 0.0425930666 -0.0968085726 0.1291530062 -0.0461180037
0.0006948042

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1620351

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -46.0492

Coefficients:
c.(Intercept) c.grass c.leg
0.6076117 -0.2068888 -1.0582865

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4322604

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 39.59341

Coefficients:
a.(Intercept) a.funcgr a.grass a.leg b.(Intercept)
5.176573e-01 -3.193907e-02 1.074526e-03 -1.578515e-01 7.314251e-05
b.funcgr b.grass b.leg c.(Intercept) c.funcgr
c.grass c.leg
2.920057e-07 -3.805649e-05 2.357451e-06 7.755240e+00 -1.116355e+00
1.067631e+00 -2.404173e+00

Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1615932

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 37.36964

Coefficients:
a.(Intercept) a.funcgr a.grass a.leg b.(Intercept)
0.396974676 -0.017698369 0.026514121 -0.127552343 0.033178661
b.funcgr b.grass b.leg
-0.003985171 -0.008635486 -0.006486873

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1614857

```
Community herbivory
```
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 37.3273

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg c.(Intercept)
  -0.60899400   -0.03174576    0.02532620   -0.11819087    0.15798428
  c.funcgr       c.grass         c.leg
  -0.01244693   -0.03682973   -0.03561520

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1615691

```
Community herbivory
```
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 37.53798

Coefficients:
  b.(Intercept)      b.funcgr       b.grass         b.leg c.(Intercept)
  0.41244893   -0.03764404    0.02143111   -0.11970821    0.58293172
  c.funcgr       c.grass         c.leg
  -0.03030396   -0.17515424   -0.10206602

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1611545

```
Community herbivory
```
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -46.03722

Coefficients:
  c.(Intercept)      c.funcgr       c.grass         c.leg
  0.99402698   -0.05368502   -0.31236416   -1.14149131

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4349589

```
Community herbivory
```
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 34.1336

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.131938894  0.056370832   0.005196032  -0.002343910
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1689157
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2102564

$`\text{Community herbivory}`$Pm1231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 33.64984

Coefficients:
  a.(Intercept)       a.grass b.(Intercept)       b.grass
  0.136555251   0.049567808   0.004191784  -0.001359770

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0118539
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1822224

$`\text{Community herbivory}`$Pm1321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.21271

Coefficients:
  a.(Intercept)       a.grass c.(Intercept)       c.grass
  -0.97942124    0.10534271    0.08034195   -0.03409685

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1643353
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2086301

$`\text{Community herbivory}`$Pm1331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 33.89796
Coefficients:
\[
\begin{array}{cccc}
\text{(Intercept)} & \text{grass} & \text{(Intercept)} & \text{grass} \\
-0.96498743 & 0.09300394 & 0.07407273 & -0.02742314 \\
\end{array}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: \(~\text{sowndiv}\)
- Parameter estimates:
  - \(\text{expon}\) = -0.01169514

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1814244

$\text{Community herbivory}^{Pm1421}$
Generalized nonlinear least squares fit
- Model: \(\text{response} \sim \text{b} \times \text{sowndiv}^\text{c}\)
- Data: DF
- Log-likelihood: 34.36048

Coefficients:
\[
\begin{array}{cccc}
\text{(Intercept)} & \text{grass} & \text{(Intercept)} & \text{grass} \\
0.04572846 & 0.09359140 & 0.39837588 & -0.17648440 \\
\end{array}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: \(~\text{sowndiv}\)
- Parameter estimates:
  - \(\text{power}\) = -0.1667527

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2090032

$\text{Community herbivory}^{Pm1431}$
Generalized nonlinear least squares fit
- Model: \(\text{response} \sim \text{b} \times \text{sowndiv}^\text{c}\)
- Data: DF
- Log-likelihood: 34.01334

Coefficients:
\[
\begin{array}{cccc}
\text{(Intercept)} & \text{grass} & \text{(Intercept)} & \text{grass} \\
0.05899808 & 0.08221970 & 0.36564553 & -0.14640942 \\
\end{array}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: \(~\text{sowndiv}\)
- Parameter estimates:
  - \(\text{expon}\) = -0.01180601

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1813419

$\text{Community herbivory}^{Pm1521}$
Generalized nonlinear least squares fit
- Model: \(\text{response} \sim \text{sowndiv}^\text{c}\)
Data: DF
Log-likelihood: -30.06568

Coefficients:
c.(Intercept) c.grass
-0.2551586 -0.2817844

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.3871548
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6280255

$`Community herbivory`$Pm1531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -45.41921

Coefficients:
c.(Intercept) c.grass
-0.4611317 -0.3220803

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.01279797
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4757684

$`Community herbivory`$Pn1721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 38.14756

Coefficients:
a.(Intercept) a.leg b.(Intercept) b.leg
3.813549e-01 -1.109906e-01 1.237919e-03 5.840574e-05

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1729774
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.201423
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 37.55201

Coefficients:
a.(Intercept)         a.leg b.(Intercept)         b.leg
 0.3856544683 -0.1130511261  0.0011534745  0.0001093700

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01143179
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1731255

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 37.75088

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.65081195   -0.09403555    0.02812687   -0.01160515

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1664630
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2004517

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 37.21407

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.64377487   -0.09905300    0.02760291   -0.01011214

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01113719
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1734013

$`Community herbivory`$Pn1921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 37.77519

Coefficients:
  b.(Intercept)     b.leg c.(Intercept)     c.leg
  0.34752800   -0.09314748    0.09458514   -0.03268483

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1675627

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2007197

$`Community herbivory`$Pn1931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 37.23646

Coefficients:
  b.(Intercept)     b.leg c.(Intercept)     c.leg
  0.35534578   -0.09840721    0.08450787   -0.02085787

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01119835

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1734450

$`Community herbivory`$Pn2021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -24.53753

Coefficients:
  c.(Intercept)     c.leg
  0.4054071    -0.8442322

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
-0.4234126
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6195492

$`\text{Community herbivory}`$Pp2221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 39.53212

Coefficients:
  a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr
  5.070306e-01  -3.247299e-02  -1.535703e-01  1.766967e-03  -2.118745e-05
     b.leg
  4.631735e-04

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
-0.1791154
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2024762

$`\text{Community herbivory}`$Pp2231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 38.66769

Coefficients:
  a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr
  0.4854158865  -0.0285819681  -0.1459587046  0.0040462121  -0.0004058639
     b.leg
-0.0003253645

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
-0.01135543
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1729051

$`\text{Community herbivory}`$Pp2321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 39.41778
Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.funcgr} & \text{a.leg} & \text{c.(Intercept)} & \text{c.funcgr} & \text{c.leg} \\
-0.493951975 & -0.052495638 & -0.141780336 & 0.012594018 & 0.008635340 & -0.005059316 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1769790

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2021166

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 38.63558

Coefficients:
\[
\begin{array}{cccccc}
\text{b.(Intercept)} & \text{b.funcgr} & \text{b.leg} & \text{c.(Intercept)} & \text{c.funcgr} & \text{c.leg} \\
0.521745984 & -0.046276812 & -0.133991350 & 0.030439144 & 0.005145438 & -0.009905252 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01123359

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.172792

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 39.79904

Coefficients:
\[
\begin{array}{cccccc}
\text{c.(Intercept)} & \text{c.funcgr} & \text{c.leg} & \text{d.(Intercept)} & \text{d.funcgr} & \text{d.leg} \\
0.52596285 & -0.05669338 & -0.14531992 & -0.13089563 & 0.06916151 & 0.05797702 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1862746
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2039746

Community herbivory

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 38.83692

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>0.49161276</td>
<td>-0.04776077</td>
<td>-0.13766226</td>
<td>-0.04856581</td>
<td>0.04807140</td>
<td>0.04300763</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01140479

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1726218

Community herbivory

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -21.66270

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>-0.3435000</td>
<td>0.1347464</td>
<td>-0.5422597</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.4757632

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6506302

Community herbivory

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -37.8878

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>-0.3476097</td>
<td>0.2224018</td>
<td>-0.8252297</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.03118281
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.511432

Community herbivory Pq2721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 35.01325

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    b.(Intercept)    b.funcgr
  -0.017486588    0.033313939   0.110052522   0.013247791   -0.001296043
  b.grass
  -0.005948199

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1716561
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2115913

Community herbivory Pq2731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 34.50069

Coefficients:
  a.(Intercept)    a.funcgr    a.grass    b.(Intercept)    b.funcgr
  -0.004039675    0.032876458   0.099831079   0.012122522   -0.001265548
  b.grass
  -0.004995392

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01183749
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1826732

Community herbivory Pq2821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
Log-likelihood: 34.72888

Coefficients:
\[
\begin{array}{cccccc}
(\text{Intercept}) & a.\text{funcgr} & a.\text{grass} & (\text{Intercept}) & c.\text{funcgr} \\
\text{a.}\text{funcgr} & 0.008704722 & 0.100735687 & 0.039735068 & 0.005594306 \\
\text{c.}\text{grass} & -0.20630994 & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
\[
power = -0.1689960
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2114895

Community herbivory$Pq2831
Generalized nonlinear least squares fit
Model: response \sim a + sowndiv^c
Data: DF
Log-likelihood: 34.30393

Coefficients:
\[
\begin{array}{cccccc}
(\text{Intercept}) & a.\text{funcgr} & a.\text{grass} & (\text{Intercept}) & c.\text{funcgr} \\
\text{a.}\text{funcgr} & 0.009872894 & 0.089368869 & 0.035362037 & 0.004931140 \\
\text{c.}\text{grass} & -0.014269277 & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
\[
expon = -0.01172940
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1829422

Community herbivory$Pq2921
Generalized nonlinear least squares fit
Model: response \sim b \times sowndiv^c
Data: DF
Log-likelihood: 34.78510

Coefficients:
\[
\begin{array}{cccccc}
(\text{Intercept}) & b.\text{funcgr} & b.\text{grass} & (\text{Intercept}) & c.\text{funcgr} \\
\text{b.}\text{funcgr} & 0.00691451 & 0.090038715 & 0.211661287 & 0.019974039 \\
\text{c.}\text{grass} & -0.106305713 & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.35377

Coefficients:
b.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
d.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
c.(Intercept)      c.funcgr       c.grass

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1828782

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -23.67203

Coefficients:
c.(Intercept)      c.funcgr       c.grass

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1828782

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -38.94309

Coefficients:
c.(Intercept)      c.funcgr       c.grass
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03115831
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.5179474

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 38.71288

Coefficients:
a.(Intercept) a.grass a.leg b.(Intercept) b.grass
0.320033109 0.053028687 -0.119632590 0.004012594 -0.003898086
b.leg
0.001557830

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.175876
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2035281

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 37.96947

Coefficients:
a.(Intercept) a.grass a.leg b.(Intercept) b.grass
0.329647408 0.044195553 -0.118439591 0.003278737 -0.003085959
b.leg
0.001413392

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01136700
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.174401

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c  
Data: DF  
Log-likelihood: 38.37933

Coefficients:
\[
\begin{array}{cccc}
a & a.\text{grass} & a.\text{leg} & c.\text{(Intercept)} \\
-0.771952837 & 0.072909247 & -0.089525576 & 0.066337850 \\
c & c.\text{grass} & c.\text{leg} & -0.009511568 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1772813

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2047844

Community herbivory
Generalized nonlinear least squares fit  
Model: response ~ a + sowndiv^c  
Data: DF  
Log-likelihood: 37.67438

Coefficients:
\[
\begin{array}{cccc}
a & a.\text{grass} & a.\text{leg} & c.\text{(Intercept)} \\
-0.743848039 & 0.057041817 & -0.093734079 & 0.054950826 \\
c & c.\text{grass} & c.\text{leg} & -0.008137404 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01134172

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1749918

Community herbivory
Generalized nonlinear least squares fit  
Model: response ~ b * sowndiv^c  
Data: DF  
Log-likelihood: 38.44825

Coefficients:
\[
\begin{array}{cccc}
b & b.\text{grass} & b.\text{leg} & c.\text{(Intercept)} \\
0.239603131 & 0.065742239 & -0.088495743 & 0.233288621 \\
c & c.\text{grass} & c.\text{leg} & -0.009883932 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1802022
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2055016

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 37.71363

Coefficients:
b.(Intercept) b.grass b.leg c.(Intercept) c.grass c.leg
0.264703178 0.051495789 -0.092475027 0.183846791 -0.076385853 -0.002290281

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01144533
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1750637

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -21.59119

Coefficients:
c.(Intercept) c.grass c.leg
0.6825006 -0.2904494 -0.7495879

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.4750247
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6493507

Community herbivory
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -38.35568

Coefficients:
c.(Intercept)  c.grass  c.leg
1.3926140   -0.4662971   -1.2169714

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.03086126
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.5129405

Community herbivory Ps3721
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 40.3574

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
0.388427729   -0.017592664   0.036271000  -0.130110799   0.034287756
b.funcgr  b.grass  b.leg
-0.004042476  -0.009746458  -0.006235750

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1928125
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2073123

Community herbivory Ps3731
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 39.25093

Coefficients:
a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
0.389429111   -0.016505939   0.029416388  -0.127103909   0.034525942
b.funcgr  b.grass  b.leg
-0.004175936  -0.009138107  -0.006595659

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.01164804
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1744218
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 40.1031

Coefficients:
\[
\begin{array}{cccccc}
 & a. & a.funcgr & a.grass & a.leg & c.(Intercept) \\
-0.625535707 & -0.036972473 & 0.042035385 & -0.116331586 & 0.165507745 \\
c.funcgr & c.grass & c.leg & \\
-0.009874154 & -0.047253490 & -0.035949996 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
power \\
-0.1903130 \\
\end{array}
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.207186

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 39.12697

Coefficients:
\[
\begin{array}{cccccc}
 & a. & a.funcgr & a.grass & a.leg & c.(Intercept) \\
-0.61511869 & -0.03493537 & 0.03014212 & -0.11677424 & 0.16389265 \\
c.funcgr & c.grass & c.leg & \\
-0.01120816 & -0.04113454 & -0.03653152 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
expon \\
-0.01152889 \\
\end{array}
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1745071

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 40.76203

Coefficients:
\[
\begin{array}{cccccc}
 & b. & b.funcgr & b.grass & b.leg & c.(Intercept) \\
0.41309378 & -0.04433125 & 0.03703875 & -0.12348835 & 0.63637756 \\
c.funcgr & c.grass & c.leg & \\
-0.02181063 & -0.23195476 & -0.10517477 \\
\end{array}
\]
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
  -0.2047530
  Degrees of freedom: 82 total; 74 residual
  Residual standard error: 0.2099813

$'Community herbivory'$Ps3931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 39.47652
  Coefficients:
  b. (Intercept)      b.funcgr       b.grass         b.leg c.(Intercept)
  0.40647891   -0.03817920    0.02646162   -0.12027324    0.62661112
  c.funcgr       c.grass         c.leg
  -0.03289239   -0.20030682   -0.10297327

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
  -0.01179900
  Degrees of freedom: 82 total; 74 residual
  Residual standard error: 0.1741682

$'Community herbivory'$Ps4021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -21.34536
  Coefficients:
  c.(Intercept)      c.funcgr       c.grass         c.leg
  0.19303542    0.06686784   -0.17126203   -0.63549883

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
  -0.480029
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.6564023

$'Community herbivory'$Ps4031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -37.79615
Coefficients:
c.(Intercept)     c.funcgr       c.grass         c.leg
 0.1634056     0.1592159    -0.1617899    -0.9217684

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.03121767
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.5142789

Community herbivory AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
  Asym     R0     lrc
  0.5364  0.2060 -4.6435
  residual sum-of-squares: 2.245
Number of iterations to convergence: 2
Achieved convergence tolerance: 9.686e-06

Community herbivory AS2
Nonlinear regression model
  model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
  data: DF
  Asym     lrc       c0
  0.5364  -4.6434 -50.3356
  residual sum-of-squares: 2.245
Number of iterations to convergence: 3
Achieved convergence tolerance: 1.048e-06

Community herbivory AS3
Nonlinear regression model
  model: response ~ SSasympOrig(sowndiv, Asym, lrc)
  data: DF
  Asym    lrc
  0.2485 0.2501
  residual sum-of-squares: 2.233
Number of iterations to convergence: 12
Achieved convergence tolerance: 5.642e-06

Community herbivory LG2
Nonlinear regression model
  model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data: DF
  Asym    xmid    scal
  0.4115 -0.1689 34.2745
  residual sum-of-squares: 2.245
Number of iterations to convergence: 2
Achieved convergence tolerance: 3.114e-06

$\text{Parasitism}$

$\text{Parasitism\\ L0}$

Call:
\[
\text{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)}
\]

Coefficients:
\[
\begin{array}{cccc}
\text{(Intercept)} & \text{blockB2} & \text{blockB3} & \text{blockB4} \\
0.295994 & -0.018157 & 0.002647 & -0.131154 \\
0.030594 & & & \\
sowndiv:funcgr & grass & leg & sowndiv:funcgr \\
0.175185 & 0.013751 & -0.215317 & -0.004322 \\
0.012852 & & & \\
sowndiv:grass & & & \\
0.002185 & -0.092400 & -0.059584 & 0.161299
\end{array}
\]

$\text{Parasitism\\ L2}$

Call:
\[
\text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}
\]

Coefficients:
\[
\begin{array}{cccc}
\text{(Intercept)} & \text{sowndiv} & \text{funcgr} & \text{leg} \\
0.426109 & 0.004086 & -0.031926 & -0.066197
\end{array}
\]

$\text{Parasitism\\ M1}$
Nonlinear regression model
model: response ~ a * sowndiv/(b + sowndiv)
data: DF
\[
\begin{array}{cc}
a & b \\
0.3362 & 0.3985
\end{array}
\]
residual sum-of-squares: 4.091
Number of iterations to convergence: 5
Achieved convergence tolerance: 4.469e-06

$\text{Parasitism\\ M1a}$
Nonlinear regression model
model: response ~ SSmicmen(sowndiv, Vm, k)
data: DF
\[
\begin{array}{cc}
Vm & k \\
0.3362 & 0.3985
\end{array}
\]
residual sum-of-squares: 4.091
Number of iterations to convergence: 6  
Achieved convergence tolerance: 2.293e-06

Nonlinear regression model

response ~ d + a * sowndiv/(b + sowndiv)
data: DF

a   b   d
0.4540 78.7102 0.2573
residual sum-of-squares: 4.005

Number of iterations to convergence: 8  
Achieved convergence tolerance: 4.62e-06

Nonlinear regression model

response ~ a + b * exp(sowndiv)
data: DF

a   b
2.878e-01 1.502e-27
residual sum-of-squares: 4.046

Number of iterations to convergence: 4  
Achieved convergence tolerance: 7.914e-09

Nonlinear regression model

response ~ a + exp(sowndiv)
data: DF

a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0  
Achieved convergence tolerance: 6.334e-20

Nonlinear regression model

response ~ b * exp(sowndiv)
data: DF

b
4.022e-27
residual sum-of-squares: 10.17

Number of iterations to convergence: 4  
Achieved convergence tolerance: 7.55e-09

Nonlinear regression model

response ~ a + b * sowndiv^c
data: DF

a   b   c
0.24676 0.01368 0.66379
residual sum-of-squares: 4.004
Number of iterations to convergence: 5
Achieved convergence tolerance: 1.21e-06

$\text{Parasitism}$ Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
    a   b
   0.26705  0.00335
residual sum-of-squares: 4.009

Number of iterations to convergence: 1
Achieved convergence tolerance: 2.424e-09

$\text{Parasitism}$ Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
    a   c
  -0.75660  0.03406
residual sum-of-squares: 4.031

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.985e-06

$\text{Parasitism}$ Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
    b   c
   0.2435  0.1243
residual sum-of-squares: 4.024

Number of iterations to convergence: 7
Achieved convergence tolerance: 3.161e-06

$\text{Parasitism}$ Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
    c
  -0.9072
residual sum-of-squares: 15.19

Number of iterations to convergence: 20
Achieved convergence tolerance: 6.788e-06

$\text{Parasitism}$ AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
    Asym  R0   lrc
  0.5548  0.2584 -4.0091
residual sum-of-squares: 4.006

Number of iterations to convergence: 3
Achieved convergence tolerance: 4.406e-06

$Parasitism$AS2
Nonlinear regression model
model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
Asym      lrc       c0
0.5548    -4.0091  -34.5433
residual sum-of-squares: 4.006

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.554e-06

$Parasitism$AS3
Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym    lrc
0.3079 0.5821
residual sum-of-squares: 4.142

Number of iterations to convergence: 13
Achieved convergence tolerance: 5.682e-06

$Parasitism$LG2
Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym    xmid    scal
0.5008  -2.1699  26.8442
residual sum-of-squares: 4.007

Number of iterations to convergence: 2
Achieved convergence tolerance: 9.962e-06

$Pollination
$Pollination$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
(Intercept)       blockB2       blockB3       blockB4
sowndiv      1.9021830    -0.0529588     0.0408958     0.0005415
0.0106349
funcgr       grass       leg    sowndiv:funcgr
sowndiv:grass

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$\text{Pollination}$ $L2$

Call:
\[
\text{lm(formula = response ~ sowndiv + funcgr + leg, data = DF)}
\]

Coefficients:
(Intercept) sowndiv funcgr leg
0.259298 0.003546 0.003957 -0.126254

$\text{Pollination}$ $M1$
Nonlinear regression model
model: response ~ a * sowndiv/(b + sowndiv)
data: DF
a b
0.3627 11.3639
residual sum-of-squares: 1.594

Number of iterations to convergence: 9
Achieved convergence tolerance: 3.705e-06

$\text{Pollination}$ $M1a$
Nonlinear regression model
model: response ~ SSmicmen(sowndiv, Vm, k)
data: DF
Vm k
0.3628 11.3643
residual sum-of-squares: 1.594

Number of iterations to convergence: 5
Achieved convergence tolerance: 1.959e-06

$\text{Pollination}$ $M2$
Nonlinear regression model
model: response ~ d + a * sowndiv/(b + sowndiv)
data: DF
a b d
0.38230 17.50585 0.02366
residual sum-of-squares: 1.589

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.34e-06

$\text{Pollination}$ $E2$
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
a b
1.105e-01 1.924e-27
residual sum-of-squares: 1.794

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.059e-09

$Pollination$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.091e-20

$Pollination$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
b
2.892e-27
residual sum-of-squares: 2.637

Number of iterations to convergence: 4
Achieved convergence tolerance: 5.16e-08

$Pollination$Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
a  b  c
-0.1078 0.1441 0.2707
residual sum-of-squares: 1.586

Number of iterations to convergence: 9
Achieved convergence tolerance: 1.950e-06

$Pollination$Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
a  b
0.077167 0.004959
residual sum-of-squares: 1.660

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.034e-09

$Pollination$Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
Nonlinear regression model
model:  response ~ b * sowndiv^c
data:  DF
   b   c
0.05315 0.45675
residual sum-of-squares: 1.593

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.007e-06

Nonlinear regression model
model:  response ~ sowndiv^c
data:  DF
c-3.509
residual sum-of-squares: 14.09

Number of iterations to convergence: 17
Achieved convergence tolerance: 5.126e-06

Nonlinear regression model
model:  response ~ SSasymp(sowndiv, Asym, R0, lrc)
data:  DF
   Asym   R0   lrc
0.33277 0.03301 -2.90449
residual sum-of-squares: 1.592

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.286e-06

Nonlinear regression model
model:  response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data:  DF
   Asym   lrc   c0
0.3328 -2.9045 -1.9071
residual sum-of-squares: 1.592

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.286e-06

Nonlinear regression model
model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
Asym     lrc
0.3002 -2.4785
residual sum-of-squares: 1.608

Number of iterations to convergence: 7
Achieved convergence tolerance: 7.618e-06

$Pollination$LG2
Nonlinear regression model
model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
data:  DF
Asym    xmid    scal
0.3196 11.1852  7.5379
residual sum-of-squares: 1.612

Number of iterations to convergence: 5
Achieved convergence tolerance: 7.504e-06

$Decomposition$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)
Coefficients:
             (Intercept)         blockB2         blockB3         blockB4
sowndiv 0.698513        0.077314        0.262365        0.048947
  0.035103
funcgr     grass          leg  sowndiv:funcgr
  -0.170241       -0.065910       -0.451922       -0.001485       -0.019453
sowndiv:grass
  0.001682        0.027121        0.150350        0.168624

$Decomposition$L2

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:
             (Intercept)      sowndiv       funcgr          leg
  0.5297420    0.0070731    0.0001013    0.0003643

$Decomposition$M1
Nonlinear regression model
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
a      b
0.6300 0.2212
residual sum-of-squares: 1.577

Number of iterations to convergence: 3
Achieved convergence tolerance: 3.250e-06

$Decomposition$M1a
Nonlinear regression model
  model: response ~ SSmicmen(sowndiv, Vm, k)
  data: DF
  Vm      k
0.6300 0.2212
residual sum-of-squares: 1.577

Number of iterations to convergence: 2
Achieved convergence tolerance: 3.275e-06

$Decomposition$M2
Nonlinear regression model
  model: response ~ d + a * sowndiv/(b + sowndiv)
  data: DF
    a      b      d
0.1966 4.6211 0.4864
residual sum-of-squares: 1.567

Number of iterations to convergence: 4
Achieved convergence tolerance: 6.865e-10

$Decomposition$E2
Nonlinear regression model
  model: response ~ a + b * exp(sowndiv)
  data: DF
    a         b
5.505e-01 9.965e-09
residual sum-of-squares: 1.591

Number of iterations to convergence: 2
Achieved convergence tolerance: 8.29e-09

$Decomposition$E3
Nonlinear regression model
  model: response ~ a + exp(c * sowndiv)
  data: DF
    a         c
-0.468458 0.006627
residual sum-of-squares: 1.577

Number of iterations to convergence: 20
Achieved convergence tolerance: 1.289e-07

$Decomposition$E4
Nonlinear regression model
  model: response ~ a + exp(sowndiv)
data: DF
a
-2625462
residual sum-of-squares: 7.232e+14

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.086e-08

$Decomposition$E5
Nonlinear regression model
  model: response ~ b * exp(sowndiv)
  data: DF
    b
  7.191e-08
residual sum-of-squares: 10.98

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.518e-10

$Decomposition$E6
Nonlinear regression model
  model: response ~ exp(c * sowndiv)
  data: DF
    c
-0.05171
residual sum-of-squares: 5.734

Number of iterations to convergence: 26
Achieved convergence tolerance: 5.82e-06

$Decomposition$Pa1
Nonlinear regression model
  model: response ~ a + b * sowndiv^c
  data: DF
    a       b       c
-0.1011  0.6225  0.0624
residual sum-of-squares: 1.567

Number of iterations to convergence: 18
Achieved convergence tolerance: 1.923e-07

$Decomposition$Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
    a       b
0.530483 0.007074
residual sum-of-squares: 1.577

Number of iterations to convergence: 1
Achieved convergence tolerance: 3.662e-09

$Decomposition$Pa3
Nonlinear regression model
model:  response ~ a + sowndiv^c
data:  DF
  a     c
-0.47890  0.04009
residual sum-of-squares:  1.567

Number of iterations to convergence:  6
Achieved convergence tolerance:  4.718e-06

$Decomposition$Pa4
Nonlinear regression model
  model:  response ~ b * sowndiv^c
data:  DF
  b    c
0.52160  0.07332
residual sum-of-squares:  1.567

Number of iterations to convergence:  6
Achieved convergence tolerance:  3.496e-08

$Decomposition$Pa5
Nonlinear regression model
  model:  response ~ sowndiv^c
data:  DF
  c
-0.2375
residual sum-of-squares:  5.516

Number of iterations to convergence:  9
Achieved convergence tolerance:  1.044e-06

$Decomposition$AS3
Nonlinear regression model
  model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
data:  DF
  Asym  lrc
0.6054  0.6786
residual sum-of-squares:  1.594

Number of iterations to convergence:  2
Achieved convergence tolerance:  3.265e-06

`Seed predation`

Call:
lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2,
data = DF)

Coefficients:
  (Intercept) blockB2 blockB3 blockB4 sowndiv
Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)

Coefficients:
             Estimate Std. Error t value
(Intercept)    0.8508      0.0081     105
sowndiv:funcgr  0.0103      0.0082      1.28
sowndiv:grass  -0.0919      0.0082     -11.2

$`Seed predation`$L2

$`Seed predation`$M1
Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF

     a     b
 0.6436 -0.1135
residual sum-of-squares: 1.668

Number of iterations to convergence: 4
Achieved convergence tolerance: 7.026e-06

$`Seed predation`$M1a
Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF

   Vm     k
 0.6436 -0.1135
residual sum-of-squares: 1.668

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.475e-07

$`Seed predation`$M2
Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF

     a     b     d
-0.1510  4.1923  0.7523
residual sum-of-squares: 1.661

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.011e-08

$`Seed predation`$E2
Nonlinear regression model
model: response ~ a + b * exp(sowndiv)
data: DF
    a      b
7.009e-01 -7.679e-09
residual sum-of-squares: 1.676

Number of iterations to convergence: 2
Achieved convergence tolerance: 6.374e-09

$`Seed predation`$E3
Nonlinear regression model
model: response ~ a + exp(c * sowndiv)
data: DF
    a      c
-0.283208 -0.005752
residual sum-of-squares: 1.667

Number of iterations to convergence: 20
Achieved convergence tolerance: 2.764e-06

$`Seed predation`$E4
Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF
    a
-2704488
residual sum-of-squares: 7.69e+14

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.063e-08

$`Seed predation`$E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
    b
7.12e-08
residual sum-of-squares: 17.40

Number of iterations to convergence: 2
Achieved convergence tolerance: 4.464e-13

$`Seed predation`$E6
Nonlinear regression model
model: response ~ exp(c * sowndiv)
data: DF
    c
-0.04066
residual sum-of-squares: 3.201

Number of iterations to convergence: 23
Achieved convergence tolerance: 6.528e-06
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
   a        b        c
2.28571 -1.56250  0.02032
residual sum-of-squares: 1.661

Number of iterations to convergence: 45
Achieved convergence tolerance: 7.753e-09

Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
   a         b
0.716061 -0.005438
residual sum-of-squares: 1.667

Number of iterations to convergence: 1
Achieved convergence tolerance: 9.875e-15

Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
   a        c
-0.27626 -0.03418
residual sum-of-squares: 1.661

Number of iterations to convergence: 7
Achieved convergence tolerance: 7.223e-09

Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
   b        c
0.72387 -0.04809
residual sum-of-squares: 1.661

Number of iterations to convergence: 6
Achieved convergence tolerance: 4.912e-07

Nonlinear regression model
model: response ~ sowndiv^c
data: DF
c
-0.2006
residual sum-of-squares: 3.034

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.217e-06
Call:
\texttt{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)}

Coefficients:
\begin{verbatim}
 (Intercept)         blockB2        blockB3        blockB4
sowndiv
 1.102971        0.033740       -0.037188       -0.062730       -0.068664
funcgr          grass            leg sowndiv:funcgr
-0.153352        0.278805       -0.334250        0.012060
0.006800
sowndiv:leg    funcgr:grass     funcgr:leg      grass:leg
 0.009389       -0.127558        0.124327       -0.108286
\end{verbatim}

Generalized least squares fit by maximum likelihood
Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
Data: DF
Log-likelihood: 75.28316

Coefficients:
\begin{verbatim}
 (Intercept)        blockB2        blockB3        blockB4
sowndiv
 0.896730536    0.021292658    0.012025342   -0.022596434   -0.069415459
funcgr          grass            leg sowndiv:funcgr
-0.096897633    0.244997307   -0.203951715    0.011998217
0.003549326
sowndiv:leg    funcgr:grass     funcgr:leg      grass:leg
 0.015083434   -0.086614758    0.031646421   -0.094323519
\end{verbatim}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.7437424

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.4238586
Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.009856514</td>
<td>0.038419681</td>
<td>-0.011553805</td>
</tr>
<tr>
<td>sowndiv</td>
<td>1.545749102</td>
<td>0.009856514</td>
<td>0.038419681</td>
</tr>
<tr>
<td>funcgr</td>
<td>-0.236771617</td>
<td>-0.093730840</td>
<td>-0.477253990</td>
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<tr>
<td>grass</td>
<td>-0.1857012</td>
<td></td>
<td></td>
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<tr>
<td>leg</td>
<td>0.020399792</td>
<td>-0.015648728</td>
<td>0.042045714</td>
</tr>
<tr>
<td>sowndiv:funcgr</td>
<td>-0.236771617</td>
<td>-0.093730840</td>
<td>-0.477253990</td>
</tr>
<tr>
<td>sowndiv:grass</td>
<td>-0.003729401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>funcgr:grass</td>
<td>-0.003729401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>funcgr:leg</td>
<td>0.003729401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>grass:leg</td>
<td>0.003729401</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Variance function: Structure: Exponential of variance covariate
| Formula: ~sowndiv
| Parameter estimates: expon
| expon
| -0.1857012
| Degrees of freedom: 82 total; 68 residual
| Residual standard error: 0.4758213

Pathogen infection

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.889072</td>
<td>-0.006513</td>
<td>-0.086534</td>
</tr>
<tr>
<td>sowndiv</td>
<td>-0.006513</td>
<td>-0.055308674</td>
<td>-0.130281660</td>
</tr>
<tr>
<td>funcgr</td>
<td>-0.086534</td>
<td>-0.086534</td>
<td>-0.215888</td>
</tr>
<tr>
<td>leg</td>
<td>-0.215888</td>
<td>-0.215888</td>
<td>-0.215888</td>
</tr>
</tbody>
</table>

Pathogen infection

Generalized least squares fit by maximum likelihood

Model: response ~ sowndiv + funcgr + leg

Data: DF

Log-likelihood: 16.89656

Coefficients:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.656639822</td>
<td>-0.003907434</td>
<td>-0.055308674</td>
</tr>
<tr>
<td>sowndiv</td>
<td>-0.003907434</td>
<td>-0.055308674</td>
<td>-0.130281660</td>
</tr>
<tr>
<td>funcgr</td>
<td>-0.055308674</td>
<td>-0.130281660</td>
<td></td>
</tr>
<tr>
<td>leg</td>
<td>-0.130281660</td>
<td>-0.130281660</td>
<td></td>
</tr>
</tbody>
</table>

Variance function:

Structure: Power of variance covariate

Formula: ~fitted(.)

Parameter estimates:

power

1.542182

Degrees of freedom: 82 total; 78 residual

Residual standard error: 1.284036

Pathogen infection

Generalized least squares fit by maximum likelihood

Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 15.92461

Coefficients:
(Intercept)  sowndiv  funcgr  leg
0.556582294 -0.003828855 -0.041020824 -0.095882640

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
expon
7.817952
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.01982425

$`Pathogen infection`$L211
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 23.01397

Coefficients:
(Intercept)  sowndiv  funcgr  leg
0.488385141 -0.003137442 -0.032178552 -0.108575324

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.6429561
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4746985

$`Pathogen infection`$L222
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 19.64292

Coefficients:
(Intercept)  sowndiv  funcgr  leg
0.716208400 -0.003237871 -0.070818202 -0.167350761

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.0479371
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2873861
Pathogen infection

Nonlinear regression model
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
    a     b
0.2554 -0.5006
residual sum-of-squares: 4.771

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.111e-06

Pathogen infection

Nonlinear regression model
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
    Vm     k
0.2554 -0.5006
residual sum-of-squares: 4.771

Number of iterations to convergence: 6
Achieved convergence tolerance: 3.658e-06

Pathogen infection

Nonlinear regression model
model:  response ~ d + a * sowndiv/(b + sowndiv)
data:  DF
    a     b     d
-0.6051 7.0685 0.5750
residual sum-of-squares: 4.079

Number of iterations to convergence: 12
Achieved convergence tolerance: 6.525e-06

Pathogen infection

Generalized nonlinear least squares fit
Model:  response ~ a * sowndiv/(b + sowndiv)
Data:  DF
Log-likelihood: 8.072823

Coefficients:
a.(Intercept)     a.leg b.(Intercept)     b.leg
0.28711065  -0.02348914  -1.01977773  0.32042976

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2248364

Pathogen infection

Generalized nonlinear least squares fit
Model:  response ~ a * sowndiv/(b + sowndiv)
Data:  DF
Log-likelihood: 16.05026

Coefficients:
a.(Intercept)     a.leg b.(Intercept)     b.leg
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.3622465
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.3492793

$`Pathogen infection`$M321
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 9.853601
  Coefficients:
    a.(Intercept)       a.leg b.(Intercept)       b.leg
    0.19932325    0.01373029   -1.10100184    0.34267870

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01402654
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2481613

$`Pathogen infection`$M4
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 1.344883
  Coefficients:
    a.(Intercept)       a.grass b.(Intercept)       b.grass
    0.14028600    0.08392556   -0.62936226    0.10841971

Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2440617

$`Pathogen infection`$M411
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 15.83237
  Coefficients:
    a.(Intercept)       a.grass b.(Intercept)       b.grass
    0.04682286    0.09378464   -0.88542047    0.15321032

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.4905169
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4236709

$`Pathogen infection`$M422
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 10.73674
Coefficients:
a.(Intercept)      a.grass b.(Intercept)      b.grass
-0.0900203     0.1695955    -1.1126953     0.2902504

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.05069827
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.336349

$`Pathogen infection`$M5
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 4.745254
Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
  0.32312360   -0.04867924    0.25063361   -0.68990069

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2341479

$`Pathogen infection`$M511
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 25.25129
Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
  0.25144508   -0.03938687    0.21272838   -0.79106694

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
power
-0.5794491
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4310048

$`Pathogen infection`$M522
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 21.67777
Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
  0.29034034   -0.05462995    0.33685002   -0.84642996
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
expon
  -0.0498852
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2922886

$`Pathogen infection`$M6
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 12.41141
Coefficients:
a.(Intercept)      a.funcgr         a.leg b.(Intercept)      b.funcgr
  0.42876938   -0.05623745   -0.05362281   -0.41847915   -0.49649051
  b.leg
  0.29557715
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2160373

$`Pathogen infection`$M611
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 28.75609
Coefficients:
a.(Intercept)      a.funcgr         a.leg b.(Intercept)      b.funcgr
  0.38395383   -0.05529414   -0.06331711   -0.06607989   -0.70909197
  b.leg
  0.11898052
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
  -0.5429979
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.3963314

Pathogen infection M622
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 26.47167
Coefficients:
  a. (Intercept)  a.funcgr  a.leg  b. (Intercept)  b.funcgr
  0.3840137   -0.0667193  -0.0435958  -0.1785743  -0.7134030
  b.leg
    0.2318944

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Coefficients:
  expon
  -0.04797379
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2747487

Pathogen infection M7
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 5.081408
Coefficients:
  a. (Intercept)  a.funcgr  a.grass  b. (Intercept)  b.funcgr
  0.24910811   -0.03885417   0.03730490  0.19731222  -0.67220445
  b.grass
    0.02073095

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2362384

Pathogen infection M711
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 25.70577
Coefficients:
  a. (Intercept)  a.funcgr  a.grass  b. (Intercept)  b.funcgr
  0.18761396   -0.03169204   0.03309608  0.09743451  -0.77610007
  b.grass
    0.05962879
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.5798649
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.4344939

$`Pathogen infection`$M722
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 21.93480
  Coefficients:
    a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
    0.23096686   -0.04747342    0.03081502    0.26451867   -0.83533164
    b.grass
    0.03672329

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0498179
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.2950123

$`Pathogen infection`$M81
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 10.01789
  Coefficients:
    a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
    0.098925437   0.101531748   0.009025709  -2.351995946   0.532222527
    b.leg
    0.643522441

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2224362

$`Pathogen infection`$M821
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 22.5384
  Coefficients:
    a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
    -0.07669542    0.13151616   0.05104610   -7.19642980    2.13544872
b.leg
2.18378864

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.53344
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4215282

$`Pathogen infection`$M832
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 20.33727
Coefficients:
  a. (Intercept) a.grass a.leg b. (Intercept) b.grass b.leg
  -0.2263303 0.1909072 0.1084571 -8.2401081 2.4852494 2.5679252

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.04815979
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2965642

$`Pathogen infection`$M91
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: -30.72924
Coefficients:
  a. (Intercept) a.funcgr a.grass a.leg b. (Intercept) b.funcgr b.grass b.leg
  -0.20346459 0.07648041 0.01745988 0.04114572 -8.26905948 0.73453285 0.49320408 2.24886640

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.3705138

$`Pathogen infection`$M921
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 29.65802
Coefficients:
\[
\begin{array}{cccccc}
    a. (Intercept) & a. funcgr & a. grass & a. leg & b. (Intercept) \\
    0.45532940 & -0.06550872 & -0.01862946 & -0.07761899 & -0.65218575 \\
    b. funcgr & b. grass & b. leg \\
    -0.67215733 & 0.20398034 & 0.25616851
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

\[
\text{power} = -0.5382397
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.3944616

$`Pathogen infection`$M932
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 27.69777

Coefficients:
\[
\begin{array}{cccccc}
    a. (Intercept) & a. funcgr & a. grass & a. leg & b. (Intercept) \\
    0.45850322 & -0.07697651 & -0.01825330 & -0.05959983 & -0.81909361 \\
    b. funcgr & b. grass & b. leg \\
    -0.69808154 & 0.24445621 & 0.37799471
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:

\[
\text{expon} = -0.04769536
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2736495

$`Pathogen infection`$M101
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 15.63085

Coefficients:
\[
\begin{array}{cccccc}
    a. (Intercept) & a. leg & b. (Intercept) & b. leg & d. (Intercept) \\
    -1.8769758 & 0.6127942 & -12.6950174 & 14.1764627 & 2.2144567 \\
    d. leg \\
    -0.8912429
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2077197

$`Pathogen infection`$M111
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 7.242137

Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass d.(Intercept)
0.335216061 -0.873690391 -24.019345060 30.702949523 0.525171326
d.grass
0.007916547

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2300947

$`Pathogen infection`$M1121
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 38.55366

Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass d.(Intercept)
1.8736911 -2.5342207 -104.4572393 107.5495609 0.8819469
d.grass
-0.1823112

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.7442117

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4741324

$`Pathogen infection`$M1132
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 27.98844

Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass d.(Intercept)
0.62113535 -1.16310539 -39.71052367 44.19381445 0.61716159
d.grass
-0.04033186

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.05041029

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2754147
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 7.241623

Coefficients:
a (Intercept)  a.funcgr  b (Intercept)  b.funcgr  d (Intercept)
-0.7622345269 -0.0009909639 14.1195856009 -2.899972467  0.4596863801
d.funcgr
0.0875688521

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2300961

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 37.74945

Coefficients:
a (Intercept)  a.funcgr  b (Intercept)  b.funcgr  d (Intercept)
-0.98200730   0.09631328   19.15189671   -3.72527626    0.52605448
d.funcgr
0.02587024

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.7352549

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4724807

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 27.93144

Coefficients:
a (Intercept)  a.funcgr  b (Intercept)  b.funcgr  d (Intercept)
-0.86925803    0.04442597 16.82837956   -3.42021192    0.48272004
d.funcgr
0.06178171

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.0503925
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2755642

Pathogen infection
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 40.39215

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>b</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.53160313</td>
<td>0.01436848</td>
<td>-1.43263123</td>
<td>-74.74320566</td>
<td>0.62001038</td>
</tr>
<tr>
<td>b.grass</td>
<td>75.15550100</td>
<td>1.35695488</td>
<td>-0.01919253</td>
<td>-0.40342630</td>
<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.7558632

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.4813047

Pathogen infection
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 29.02421

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>b</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-0.35095492</td>
<td>0.01186935</td>
<td>-0.67827550</td>
<td>-50.59864626</td>
<td>0.63583728</td>
</tr>
<tr>
<td>b.grass</td>
<td>50.51429990</td>
<td>1.68084481</td>
<td>-0.02715952</td>
<td>-0.55652955</td>
<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.0502669

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2771482

Pathogen infection
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 16.37626

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>a.grass</th>
<th>a.leg</th>
<th>b</th>
<th>b.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-2.542670174</td>
<td>0.182135418</td>
<td>0.859436137</td>
<td>-6.846966892</td>
<td>-0.005541167</td>
</tr>
</tbody>
</table>
\begin{verbatim}
    b.leg  d.(Intercept)  d.grass  d.leg 
    7.969688072  2.712112531  -0.113230780  -1.042069802

    Degrees of freedom: 82 total; 73 residual
    Residual standard error: 0.210027

    $`Pathogen infection`$M161
    Generalized nonlinear least squares fit
    Model: response ~ d + a * sowndiv/(b + sowndiv)
    Data: DF
    Log-likelihood: 20.15388

    Coefficients:
    a.(Intercept)      a.funcgr       a.grass         a.leg b.(Intercept)
    -3.0959747     0.2528777     0.7215863     0.4626971   -13.7837611
    b.funcgr       b.grass         b.leg d.(Intercept)      d.funcgr
    1.3098456    10.2926627     1.2790994     3.4745556    -0.2931023
    d.grass         d.leg 
    -0.8871969    -0.5031307

    Degrees of freedom: 82 total; 70 residual
    Residual standard error: 0.2048237

    $`Pathogen infection`$E2
    Nonlinear regression model
    model:  response ~ a + b * exp(sowndiv)
    data:  DF
    a          b
    3.442e-01 -2.377e-27
    residual sum-of-squares: 5.343

    Number of iterations to convergence: 4
    Achieved convergence tolerance: 7.217e-09

    $`Pathogen infection`$E4
    Nonlinear regression model
    model:  response ~ a + exp(sowndiv)
    data:  DF
    a
    1
    residual sum-of-squares: 5.217e+52

    Number of iterations to convergence: 0
    Achieved convergence tolerance: 6.17e-20

    $`Pathogen infection`$E5
    Nonlinear regression model
    model:  response ~ b * exp(sowndiv)
    data:  DF
    b 6.374e-28
    residual sum-of-squares: 14.58

    Number of iterations to convergence: 4
\end{verbatim}
Achieved convergence tolerance: 1.328e-09

$`Pathogen infection`$E22
Generalized nonlinear least squares fit
Model: response ~ a + b * exp(sowndiv)
Data: DF
Log-likelihood: 10.27396

Coefficients:
\[
\begin{array}{c}
a \\
b \\
2.659267e-01 \\
-1.691235e-27 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
expon \\
-0.05116319 \\
\end{array}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3353335

$`Pathogen infection`$E31
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 20.33815

Coefficients:
\[
\begin{array}{c}
a \\
c \\
-0.739578883 \\
-0.003686748 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
power \\
-0.668375 \\
\end{array}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5156326

$`Pathogen infection`$E32
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 15.63486

Coefficients:
\[
\begin{array}{c}
a \\
c \\
-0.671375834 \\
-0.004962035 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
<table>
<thead>
<tr>
<th>Model</th>
<th>Equation</th>
<th>Data</th>
<th>Log-Likelihood</th>
<th>Coefficients</th>
<th>Variance Function</th>
<th>Degrees of Freedom</th>
<th>Residual Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathogen infection E41</td>
<td>response ~ a + exp(sowndiv)</td>
<td>DF</td>
<td>-1784.916</td>
<td>a: -2.237326</td>
<td>Power of variance</td>
<td>82 total; 80 residual</td>
<td>0.3110812</td>
</tr>
<tr>
<td>Pathogen infection E42</td>
<td>response ~ a + exp(sowndiv)</td>
<td>DF</td>
<td>-801.5788</td>
<td>a: -2.887314</td>
<td>Exponential</td>
<td>82 total; 81 residual</td>
<td>0.1957100</td>
</tr>
<tr>
<td>Pathogen infection E51</td>
<td>response ~ b * exp(sowndiv)</td>
<td>DF</td>
<td>-26.12111</td>
<td>b: 6.373547e-28</td>
<td></td>
<td>82 total; 81 residual</td>
<td>0.7090351</td>
</tr>
</tbody>
</table>
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.5857162
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.7987482

Pathogen infection
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: -23.22938

Coefficients:
  b
  6.373546e-28

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.06014282
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.5416311

Pathogen infection
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 10.46526

Coefficients:
  c
  -0.1926283

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.5336081
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.473197

Pathogen infection
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -0.3309196

Coefficients:
  c
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
      -0.02824344
 Degrees of freedom: 82 total; 81 residual
 Residual standard error: 0.3115213

$`Pathogen infection`$Ea10
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:
  a.(Intercept)         a.leg
    -2963126        911706
 Degrees of freedom: 82 total; 80 residual
 Residual standard error: 2.553606e+25

$`Pathogen infection`$Ea12
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 2.366908
Coefficients:
  c.(Intercept)         c.leg
    0.2235841    -0.4160421
 Degrees of freedom: 82 total; 80 residual
 Residual standard error: 0.2380066

$`Pathogen infection`$Ea911
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 37.10579
Coefficients:
  a.(Intercept)         a.leg c.(Intercept)         c.leg
    0.7955720    -0.7161086    -0.4041537     0.1927873

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
      -0.7028233
 Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4479634

Pathogen infection

Generalized nonlinear least squares fit
   Model: response ~ a + exp(c * sowndiv)
   Data: DF
   Log-likelihood: 31.59849

Coefficients:
   a.(Intercept)         a.leg c.(Intercept)         c.leg
   0.7504362    -0.6764945    -0.4530437     0.2154851

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
      -0.04860523

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2561513

Pathogen infection

Generalized nonlinear least squares fit
   Model: response ~ a + exp(sowndiv)
   Data: DF
   Log-likelihood: -1772.911

Coefficients:
   a.(Intercept)         a.leg
   -1.3750303    -0.4927403

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power
      14.86538

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1565160

Pathogen infection

Generalized nonlinear least squares fit
   Model: response ~ a + exp(sowndiv)
   Data: DF
   Log-likelihood: -801.5766

Coefficients:
   a.(Intercept)         a.leg
   -3.00682052    0.06888411

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
$\text{Pathogen infection}\$\ Ea121
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 17.24413
Coefficients:
c.(Intercept) c.leg
  0.05738158 -0.21642256

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.4689588
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3982487

$\text{Pathogen infection}\$\ Ea1221
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 9.960481
Coefficients:
c.(Intercept) c.leg
  0.2254390 -0.4046875

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.02608192
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2714062

$\text{Pathogen infection}\$\ Eb16
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516
Coefficients:
a.(Intercept) a.grass
-3508713 1286426

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

Pathogen infection Eb18
Generalized nonlinear least squares fit
    Model: response ~ exp(c * sowndiv)
    Data: DF
    Log-likelihood: -8.31271

Coefficients:
c.(Intercept)       c.grass
-0.21886155   -0.07792917

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2711135

Pathogen infection Eb1511
Generalized nonlinear least squares fit
    Model: response ~ a + exp(c * sowndiv)
    Data: DF
    Log-likelihood: 30.92529

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-1.07592822    0.30407815    0.02790709   -0.03079686

Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        power
        -0.7235179

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4981026

Pathogen infection Eb1521
Generalized nonlinear least squares fit
    Model: response ~ a + exp(c * sowndiv)
    Data: DF
    Log-likelihood: 23.33727

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-0.98327578    0.25923446    0.02652600   -0.03032510

Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        expon
        -0.05047716

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2878922

Pathogen infection Eb1611
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1784.570

Coefficients:
a.(Intercept)       a.grass
-2.40045636    0.09321746

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
14.81090
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1956272

$`Pathogen infection`$Eb1621
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -801.4177

Coefficients:
a.(Intercept)       a.grass
-3.9026850     0.5854318

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
1.014227
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7112604

$`Pathogen infection`$Eb1811
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 10.46792

Coefficients:
c.(Intercept)       c.grass
-0.188712702  -0.002865015

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.533238
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4758683

$`Pathogen infection`$Eb1821
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 0.004373489

Coefficients:
  c.(Intercept)       c.grass
  -0.1874735    -0.0760091

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02819225

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3120460

$`Pathogen infection`$Ec22
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)      a.funcgr
  252096.0     -912137.6

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Pathogen infection`$Ec24
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: -4.515243

Coefficients:
  c.(Intercept)      c.funcgr
  -0.52792613    0.08859517

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2588444

$`Pathogen infection`$Ec2121
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 25.88963

Coefficients:
a.(Intercept) a.funcgr c.(Intercept) c.funcgr
-0.38673349 -0.08330820 -0.04683816 0.01074062

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
  -0.05052097

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2791742

$`Pathogen infection`$Ec2211
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1784.916

Coefficients:
  a.(Intercept) a.funcgr
  2.410351 -4.647677

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
  14.80928

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1969297

$`Pathogen infection`$Ec2221
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.9174

Coefficients:
  a.(Intercept) a.funcgr
  3.803231 -6.300221

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
  1.021196

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6188969

$`Pathogen infection`$Ec2411
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
Log-likelihood: 12.0144

Coefficients:
c.(Intercept) c.funcgr
-0.27574825 0.02990515

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.5101623
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4512508

$`Pathogen infection`$Ec2421
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 3.569997

Coefficients:
c.(Intercept) c.funcgr
-0.49172921 0.08228715

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.02744894
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2968674

$`Pathogen infection`$Ed28
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept) a.funcgr a.leg
872779.7 -990730.7 -307654.9

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Pathogen infection`$Ed2811
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1772.911

Coefficients:
a. (Intercept)       a.funcgr         a.leg
3.3958313    -4.7708616    -0.4927403

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  14.86538

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1575035

$`Pathogen infection`$Ed2821
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.8008

Coefficients:
  a. (Intercept)       a.funcgr         a.leg
  4.681659     -6.408737     -0.439901

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.021411

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6207676

$`Pathogen infection`$Ed3021
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 10.00241

Coefficients:
  c. (Intercept)       c.funcgr         c.leg
  0.262913852  -0.007659155  -0.420433155

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02606521

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2729398

$`Pathogen infection`$Ee40
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)  a.funcgr  a.grass
-335850.5  -839615.5  296563.3

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

Pathogen infection
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1784.570

Coefficients:
a.(Intercept)  a.funcgr  a.grass
2.22391583  -4.62437217  0.09321745

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
14.81090

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1968614

Pathogen infection
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -794.9127

Coefficients:
a.(Intercept)  a.funcgr  a.grass
3.62722844  -6.27817043  0.08797433

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
1.021204

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6227213

Pathogen infection
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a. (Intercept)  a.grass  a.leg  
-5251826  1394676  1054750

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Pathogen infection`$Ef3721
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2734.132

Coefficients:
   a.(Intercept)  a.grass  a.leg  b.(Intercept)  b.grass  
  1.5462587026 -0.0791169040 -0.5285599169 0.0002201421 0.9999863539
   b.leg  c.(Intercept)  c.grass  c.leg
    0.0002201421 1.0000242034 1.0000015328 0.9999863539

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
   expon 4.438892

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.002182565

$`Pathogen infection`$Ef3921
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 31.63233

Coefficients:
   a.(Intercept)  a.grass  a.leg  c.(Intercept)  c.grass  c.leg
    0.7542599397 -0.0096190568 -0.6707113944 0.0002201421 1.0000015328
    0.2097583393

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
   expon -0.04858349

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2593443

$`Pathogen infection`$Ef4011
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1772.553
Coefficients:
\[
\begin{align*}
&\text{a. (Intercept)} & \text{a.grass} & \text{a.leg} \\
&-1.18857840 & -0.07990796 & -0.51937627 \\
\end{align*}
\]
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[\text{power} = 14.86705\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1564264

$`Pathogen infection`$Ef4021
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -801.376

Coefficients:
\[
\begin{align*}
&\text{a. (Intercept)} & \text{a.grass} & \text{a.leg} \\
&-4.6522264 & 0.6991411 & 0.3183637 \\
\end{align*}
\]
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[\text{expon} = 1.014223\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7154107

$`Pathogen infection`$Ef4211
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 17.24931

Coefficients:
\[
\begin{align*}
&\text{c. (Intercept)} & \text{c.grass} & \text{c.leg} \\
&0.061493432 & -0.003270806 & -0.215969163 \\
\end{align*}
\]
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[\text{power} = -0.4686998\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.400582

$`Pathogen infection`$Ef4221
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 10.07287

Coefficients:
c.(Intercept)      c.grass      c.leg
    0.25230736   -0.02450144   -0.39705377

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
    expon
-0.02604326

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2726540

$`Pathogen infection`\$Eg46
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)      a.funcgr      a.grass      a.leg
  292092.6     -918391.6      183181.2     -199834.4

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

$`Pathogen infection`\$Eg4611
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1772.553

Coefficients:
a.(Intercept)      a.funcgr      a.grass      a.leg
  3.60891924   -4.79749760   -0.07990798   -0.51937628

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
    power
  14.86705

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1574259

$`Pathogen infection`\$Eg4621
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -794.7962
Coefficients:
   a.(Intercept)   a.funcgr    a.grass     a.leg
      4.94391878    -6.44147104   -0.09478368   -0.47627302

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
     expon
           1.021419

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6246552

$`Pathogen infection`$Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
     a     b
      0.400395 -0.008086
residual sum-of-squares: 4.753

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.597e-09

$`Pathogen infection`$Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
     a     c
    -0.4791 -0.1512
residual sum-of-squares: 4.15

Number of iterations to convergence: 9
Achieved convergence tolerance: 6.922e-07

$`Pathogen infection`$Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
     b     c
      0.5268 -0.3581
residual sum-of-squares: 4.221

Number of iterations to convergence: 9
Achieved convergence tolerance: 8.406e-06

$`Pathogen infection`$Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
  data: DF
     c
     -0.7926
residual sum-of-squares: 8.646

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doi:10.1038/nature09492

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Number of iterations to convergence: 11  
Achieved convergence tolerance: 1.359e-06  

$`\text{Pathogen infection}`$ Pb1  
Generalized nonlinear least squares fit  
Model: $\text{response} ~ a + b \times \text{sowndiv}^c$  
Data: DF  
Log-likelihood: 6.155177  

Coefficients:  
\[
\begin{array}{ccc}
a & b & c \\
17.389084042 & -16.878929226 & 0.007091838 \\
\end{array}
\]

Degrees of freedom: 82 total; 79 residual  
Residual standard error: 0.228695  

$`\text{Pathogen infection}`$ Pb2  
Generalized nonlinear least squares fit  
Model: $\text{response} ~ a + b \times \text{sowndiv}$  
Data: DF  
Log-likelihood: 0.4103512  

Coefficients:  
\[
\begin{array}{cc}
a & b \\
0.400395226 & -0.008086146 \\
\end{array}
\]

Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.2437538  

$`\text{Pathogen infection}`$ Pb3  
Generalized nonlinear least squares fit  
Model: $\text{response} ~ a + \text{sowndiv}^c$  
Data: DF  
Log-likelihood: 5.973103  

Coefficients:  
\[
\begin{array}{cc}
a & c \\
-0.4791161 & -0.1511808 \\
\end{array}
\]

Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.2277664  

$`\text{Pathogen infection}`$ Pb4  
Generalized nonlinear least squares fit  
Model: $\text{response} ~ b \times \text{sowndiv}^c$  
Data: DF  
Log-likelihood: 5.277567  

Coefficients:  
\[
\begin{array}{cc}
b & c \\
0.5268355 & -0.3580622 \\
\end{array}
\]

Degrees of freedom: 82 total; 80 residual  
Residual standard error: 0.2297065  

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Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -24.11859

Coefficients:
c-0.7925799

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.3267126

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 19.84966

Coefficients:
a0.252266257
b-0.003136881

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.6777543

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5259867

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 15.02697

Coefficients:
a0.318745681
b-0.004120877

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.05025831

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3140001
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 32.80125

Coefficients:
  a          c
-0.4941662 -0.1456434

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.652355

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4325173

Pathogen infection

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 25.68335

Coefficients:
  a          c
-0.4946555 -0.1390135

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.05008193

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.275317

Pathogen infection

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 33.70441

Coefficients:
  b          c
0.6557468 -0.5273297

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.7281074

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4786975
Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.56124

Coefficients:
  b          c
0.5687183 -0.4933223

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0508083

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2808564

Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 26.03236

Coefficients:
  c
-0.685694

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.8465402

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6228107

Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 1.50058

Coefficients:
  c
-0.6508648

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.05733502
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.3910730

$`Pathogen infection`$Pd61
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 6.362197

Coefficients:
<table>
<thead>
<tr>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.64277785</td>
<td>0.04052562</td>
<td>-0.13180153</td>
<td>-0.05181246</td>
<td>0.47003111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.06680323</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2325771

$`Pathogen infection`$Pd71
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 5.596674

Coefficients:
<table>
<thead>
<tr>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.580708967</td>
<td>-0.065761705</td>
<td>-0.037535882</td>
<td>0.008233629</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2317293

$`Pathogen infection`$Pd81
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 6.645464

Coefficients:
<table>
<thead>
<tr>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.63376839</td>
<td>0.13208947</td>
<td>-0.01274415</td>
<td>-0.11602548</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2287843

$`Pathogen infection`$Pd91
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 6.652229

Coefficients:
<table>
<thead>
<tr>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3038077</td>
<td>0.1925425</td>
<td>-0.1882545</td>
<td>-0.1428979</td>
</tr>
</tbody>
</table>
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2287654

$`Pathogen infection`$Pd101
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -23.76424

Coefficients:
c.(Intercept)     c.funcgr
    -0.9801819     0.0774386

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3273307

$`Pathogen infection`$Pe721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 33.78239

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
  0.591491661 -0.088132108 -0.034202349   0.007851525

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.7217787

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4798059

$`Pathogen infection`$Pe731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 25.64964

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
  0.597345064 -0.082917648 -0.035951344   0.008183271

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.05056455

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2800972
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 35.41856

Coefficients:
a.(Intercept)   a.funcgr  c.(Intercept)   c.funcgr
-0.54256793   0.12916547   -0.08619778   -0.12242958

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.718809

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.468258

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 26.79289

Coefficients:
a.(Intercept)   a.funcgr  c.(Intercept)   c.funcgr
-0.64216670   0.15337936   -0.01394444   -0.13654842

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.05034638

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2757023

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.78714

Coefficients:
b.(Intercept)   b.funcgr  c.(Intercept)   c.funcgr
0.47926579   0.10651744   -0.45781397   -0.04303702

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4665699

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 26.50037

Coefficients:
b.(Intercept)      b.funcgr c.(Intercept)      c.funcgr
0.38463530    0.13011088   -0.34486447   -0.06839052

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.05030885

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2765984

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 27.52781

Coefficients:
c.(Intercept)      c.funcgr
-0.80367373    0.03760853

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.8715216

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6386162

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 2.939418

Coefficients:
c.(Intercept)      c.funcgr
-0.91068411    0.06736651

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
   expon
-0.05736787
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.386774

`Pathogen infection`$Pf121$
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 4.472134
   Coefficients:
   a.(Intercept)       a.grass b.(Intercept)       b.grass
   0.15180571    0.18472544    0.01484520   -0.02055777
   Degrees of freedom: 82 total; 78 residual
   Residual standard error: 0.2349291

`Pathogen infection`$Pf131$
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 6.267973
   Coefficients:
   a.(Intercept)       a.grass c.(Intercept)       c.grass
   -0.558976228   0.045968384  -0.133341616   -0.004543258
   Degrees of freedom: 82 total; 78 residual
   Residual standard error: 0.2298400

`Pathogen infection`$Pf141$
Generalized nonlinear least squares fit
   Model: response ~ b * sowndiv^c
   Data: DF
   Log-likelihood: 5.673176
   Coefficients:
   b.(Intercept)       b.grass c.(Intercept)       c.grass
   0.46823359    0.03248395   -0.43786763    0.06766446
   Degrees of freedom: 82 total; 78 residual
   Residual standard error: 0.2315132

`Pathogen infection`$Pf151$
Generalized nonlinear least squares fit
   Model: response ~ sowndiv^c
   Data: DF
   Log-likelihood: -24.11854
   Coefficients:
   c.(Intercept)       c.grass
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.328748

$`Pathogen infection`$Pg171
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 3.781036

Coefficients:
  a.(Intercept)   a.leg b.(Intercept)   b.leg
  0.520987791    -0.062058141   0.002374644  -0.010972918

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2369174

$`Pathogen infection`$Pg181
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 15.18665

Coefficients:
  a.(Intercept)   a.leg c.(Intercept)   c.leg
  0.2342888    -0.4135707    -0.6574593     0.2755329

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2061531

$`Pathogen infection`$Pg191
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 14.89550

Coefficients:
  b.(Intercept)   b.leg c.(Intercept)   c.leg
  1.2751201    -0.4349334    -0.8062905     0.2530300

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2061531

$`Pathogen infection`$Pg201
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -22.79454

Coefficients:
  c.(Intercept)   c.leg
  -0.2942345   -0.3697108
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3234826

Pathogen infection Ph221
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 13.25366

Coefficients:
  a.(Intercept)  a.funcgr  a.leg  b.(Intercept)  b.funcgr
  1.21395171   -0.14488472 -0.31644469 -0.08012208  0.01358211
  b.leg
       0.02118918

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2138297

Pathogen infection Ph231
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 15.30070

Coefficients:
  a.(Intercept)  a.funcgr  a.leg  c.(Intercept)  c.funcgr
  0.215325995  0.002685901 -0.405829998 -0.577760481 -0.015821105
  c.leg
       0.248547542

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2085577

Pathogen infection Ph241
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 16.30459

Coefficients:
  b.(Intercept)  b.funcgr  b.leg  c.(Intercept)  c.funcgr
  1.0770606  0.1327776 -0.4110494 -0.3526272 -0.1526833
  c.leg
       0.1170629

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.20602

Pathogen infection Ph251
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -22.74608
Coefficients:
c.(Intercept) c.funcgr c.leg
-0.13917163 -0.03415626 -0.42420852

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3253312

$`Pathogen infection`$Pi271
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 6.179161
Coefficients:
a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr
  0.402359211 -0.043471204  0.089157290 -0.026651518  0.006870574
  b.grass
  -0.005431838

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2330969

$`Pathogen infection`$Pi281
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 7.224315
Coefficients:
a.(Intercept) a.funcgr a.grass c.(Intercept) c.funcgr
  -0.757526600  0.149440983  0.060270485 -0.015814983 -0.118601866
  c.grass
  0.004972221

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2301447

$`Pathogen infection`$Pi291
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 7.348475
Coefficients:
b.(Intercept) b.funcgr b.grass c.(Intercept) c.funcgr
  0.0886962570  0.2221097543  0.104945183 -0.015814983 -0.1494640959
  c.grass
  -0.0007277157

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2297965

$`Pathogen infection`$Pi301
Generalized nonlinear least squares fit
Model: \( \text{response} \sim \text{sowndiv}^c \)  
Data: DF  
Log-likelihood: -23.64254

Coefficients:
\[
\begin{array}{ccc}
\text{c.(Intercept)} & \text{c.funcgr} & \text{c.grass} \\
-1.2267265 & 0.1061809 & 0.1261345
\end{array}
\]

Degrees of freedom: 82 total; 79 residual  
Residual standard error: 0.3289073

Pathogen infection\( ^\text{Pj321} \)
Generalized nonlinear least squares fit  
Model: \( \text{response} \sim a + b \ast \text{sowndiv} \)  
Data: DF  
Log-likelihood: 7.22208

Coefficients:
\[
\begin{array}{cccc}
\text{a.(Intercept)} & \text{a.grass} & \text{a.leg} & \text{b.(Intercept)} & \text{b.grass} \\
0.345746486 & 0.162805803 & -0.095474300 & 0.018086212 & -0.020452025 \\
\text{b.leg} & -0.004610679
\end{array}
\]

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.230151

Pathogen infection\( ^\text{Pj331} \)
Generalized nonlinear least squares fit  
Model: \( \text{response} \sim a + \text{sowndiv}^c \)  
Data: DF  
Log-likelihood: 15.62466

Coefficients:
\[
\begin{array}{cccccc}
\text{a.(Intercept)} & \text{a.grass} & \text{a.leg} & \text{c.(Intercept)} & \text{c.grass} & \text{c.leg} \\
0.41366306 & -0.07830015 & -0.44085594 & -0.85201888 & 0.07244390 & 0.31778889
\end{array}
\]

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.2077354

Pathogen infection\( ^\text{Pj341} \)
Generalized nonlinear least squares fit  
Model: \( \text{response} \sim b \ast \text{sowndiv}^c \)  
Data: DF  
Log-likelihood: 15.80527

Coefficients:
\[
\begin{array}{cccccc}
\text{b.(Intercept)} & \text{b.grass} & \text{b.leg} & \text{c.(Intercept)} & \text{c.grass} & \text{c.leg} \\
1.5484336 & -0.1248992 & -0.4715035 & -1.0605645 & 0.1480564 & 0.2629894
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2072783

$`Pathogen infection`$Pj351
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -22.79102

Coefficients:
\[
\begin{array}{ccc}
  c.(\text{Intercept}) & c.\text{grass} & c.\text{leg} \\
  -0.27050929 & -0.01666012 & -0.36984159 \\
\end{array}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3255095

$`Pathogen infection`$Pk371
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 14.05393

Coefficients:
\[
\begin{array}{cccccc}
  a.(\text{Intercept}) & a.\text{funcgr} & a.\text{grass} & a.\text{leg} & b.(\text{Intercept}) \\
  1.566257199 & -0.188929890 & -0.114559777 & -0.378075810 & -0.101988825 \\
  b.\text{funcgr} & b.\text{grass} & b.\text{leg} \\
  0.016310012 & 0.007284333 & 0.024860662 \\
\end{array}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2145954

$`Pathogen infection`$Pk381
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 16.00184

Coefficients:
\[
\begin{array}{cccccc}
  a.(\text{Intercept}) & a.\text{funcgr} & a.\text{grass} & a.\text{leg} & c.(\text{Intercept}) \\
  0.545966595 & -0.041897838 & -0.114185682 & -0.455705651 & -0.739975860 \\
  c.\text{funcgr} & c.\text{grass} & c.\text{leg} \\
  0.007694655 & 0.063767101 & 0.26597784 \\
\end{array}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2095578

$`Pathogen infection`$Pk391
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 16.81188

Coefficients:
\[
\begin{array}{cccccc}
  b.(\text{Intercept}) & b.\text{funcgr} & b.\text{grass} & b.\text{leg} & c.(\text{Intercept}) \\
  1.27131908 & 0.10651982 & -0.06995057 & -0.43632790 & -0.09012089 \\
\end{array}
\]
\begin{verbatim}
c.funcgr     c.grass      c.leg
-0.18101740 -0.06498643  0.04010283

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2074978

Pathogen infection\textsuperscript{P}k401
Generalized nonlinear least squares fit
  Model: response ~ sowndiv\textsuperscript{c}
  Data: DF
  Log-likelihood: -22.60385

Coefficients:
c.(Intercept)     c.funcgr      c.grass      c.leg
  0.4455496       -0.1075155    -0.1704884    -0.5495846

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.3268426

Pathogen infection\textsuperscript{P}m1221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 30.72892

Coefficients:
a.(Intercept)     a.grass      b.(Intercept)     b.grass
  -0.05470556        0.27850068     0.01922535    -0.02179708

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.7264104

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.5014456

Pathogen infection\textsuperscript{P}m1231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 23.10365

Coefficients:
a.(Intercept)     a.grass      b.(Intercept)     b.grass
  0.02235393        0.24732462     0.01893354   -0.02222426

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.05054528
\end{verbatim}
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2888824

$\text{Pathogen infection}\text{$Pm1321$}
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.36998

Coefficients:
  a.(Intercept)       a.grass c.(Intercept)       c.grass
  -0.7443924824  0.1816348284  0.0009382821 -0.1143512467

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.7035424

degrees of freedom: 82 total; 78 residual
residual standard error: 0.4636558

$\text{Pathogen infection}\text{$Pm1331$}
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 26.19698

Coefficients:
  a.(Intercept)       a.grass c.(Intercept)       c.grass
  -0.63145194    0.09005373   -0.06625075   -0.05310468

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.05029657

degrees of freedom: 82 total; 78 residual
residual standard error: 0.2775944

$\text{Pathogen infection}\text{$Pm1421$}
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 33.97974

Coefficients:
  b.(Intercept)       b.grass c.(Intercept)       c.grass
  0.648218293   -0.003367885 -0.576349547   0.046013278

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:

- Power: -0.7195395

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4770639

Pathogen infection\textsubscript{Pm1431} Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 25.26296

Coefficients:
\begin{align*}
b. (\text{Intercept}) & : 0.56285166 \\
b. grass & : -0.00599163 \\
c. (\text{Intercept}) & : -0.60279791 \\
c. grass & : 0.11015190 \\
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
expon & : -0.05054672 \\
\end{align*}

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2813781

Pathogen infection\textsubscript{Pm1521} Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 26.07841

Coefficients:
\begin{align*}
c. (\text{Intercept}) & : -0.66399455 \\
c. grass & : -0.01765004 \\
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\begin{align*}
\text{power} & : -0.8499086 \\
\end{align*}

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6294793

Pathogen infection\textsubscript{Pm1531} Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 1.864626

Coefficients:
\begin{align*}
c. (\text{Intercept}) & : -0.5491821 \\
c. grass & : -0.0980320 \\
\end{align*}
Variance function:
Structure: Exponential of variance covariate
Formula: \(-\text{sowndiv}\)
Parameter estimates:
\[
\begin{align*}
\text{expon} & \quad -0.05741988
\end{align*}
\]
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.392052

\textit{Pathogen infection}\textsubscript{PN1721}
Generalized nonlinear least squares fit
Model: response \sim a + b \times \text{sowndiv}
Data: DF
Log-likelihood: 24.87227

Coefficients:
\[
\begin{array}{ccccc}
\text{a.(Intercept)} & \text{a.leg} & \text{b.(Intercept)} & \text{b.leg} \\
0.200617953 & 0.075031609 & 0.008294706 & -0.011774644 \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: \(-\text{sowndiv}\)
Parameter estimates:
\[
\begin{align*}
\text{power} & \quad -0.6829825
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.5049429

\textit{Pathogen infection}\textsubscript{PN1731}
Generalized nonlinear least squares fit
Model: response \sim a + b \times \text{sowndiv}
Data: DF
Log-likelihood: 18.97063

Coefficients:
\[
\begin{array}{ccccc}
\text{a.(Intercept)} & \text{a.leg} & \text{b.(Intercept)} & \text{b.leg} \\
0.31356687 & 0.03641362 & 0.00859263 & -0.01322794 \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: \(-\text{sowndiv}\)
Parameter estimates:
\[
\begin{align*}
\text{expon} & \quad -0.04991894
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.3021867

\textit{Pathogen infection}\textsubscript{PN1821}
Generalized nonlinear least squares fit
Model: response \sim a + \text{sowndiv}^c
Data: DF
Log-likelihood: 40.70109

Coefficients:
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 32.52407

Coefficients:
 a.(Intercept)   a.leg  c.(Intercept)   c.leg
   0.5369887   -0.5404474   -1.1358277   0.4933570

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
   power
   -0.70344

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4291394

"Pathogen infection"$Pn1831
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 40.36177

Coefficients:
 a.(Intercept)   a.leg  c.(Intercept)   c.leg
   0.1581660   -0.3712603   -0.4958903   0.1874014

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
   expon
   -0.04781907

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2515725

"Pathogen infection"$Pn1921
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 40.36177

Coefficients:
 b.(Intercept)   b.leg  c.(Intercept)   c.leg
   1.3755319   -0.4478205   -0.7724605   0.1494138

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
   power
   -0.6996985

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.428532

"Pathogen infection"$Pn1931
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 33.54727

Coefficients:
\[
\begin{array}{cccc}
  b. & \text{(Intercept)} & b. & \text{leg} & c. & \text{(Intercept)} & c. & \text{leg} \\
  1.3237939 & -0.4535601 & -0.8355527 & 0.2319202 \\
\end{array}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: sowndiv
- Parameter estimates:
  - expon: -0.04852583

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.249965

$`Pathogen infection`$Pn2021

Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: 30.35833

Coefficients:
\[
\begin{array}{cc}
  c. & \text{(Intercept)} & c. & \text{leg} \\
  -0.4760070 & -0.1749738 \\
\end{array}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: sowndiv
- Parameter estimates:
  - power: -0.872265

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6176294

$`Pathogen infection`$Pn2031

Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: 3.932815

Coefficients:
\[
\begin{array}{cc}
  c. & \text{(Intercept)} & c. & \text{leg} \\
  -0.3498407 & -0.2919234 \\
\end{array}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: sowndiv
- Parameter estimates:
  - expon: -0.05713115

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.3813409

$`Pathogen infection`$Pp2221
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 40.56058

Coefficients:
\[
\begin{array}{cccc}
  a. & a. & a. & b. \\
  \text{(Intercept)} & \text{funcgr} & \text{leg} & \text{(Intercept)} & \text{funcgr} \\
  \text{1.16383517} & -0.15972421 & -0.2862912 & -0.06942929 & 0.01224794 \\
  b. & \text{leg} & \\
  \text{0.01764681} & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{power} \\
  -0.7243738 \\
\end{array}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4492416

Pathogen infection Pp2231
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 32.30315

Coefficients:
\[
\begin{array}{cccc}
  a. & a. & a. & b. \\
  \text{(Intercept)} & \text{funcgr} & \text{leg} & \text{(Intercept)} & \text{funcgr} \\
  \text{1.21196911} & -0.15928435 & -0.3074931 & -0.07519254 & 0.01309549 \\
  b. & \text{leg} & \\
  \text{0.01956398} & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
  \text{expon} \\
  -0.04891789 \\
\end{array}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2579709

Pathogen infection Pp2321
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv\(^c\)
Data: DF
Log-likelihood: 40.74666

Coefficients:
\[
\begin{array}{cccc}
  a. & a. & a. & c. \\
  \text{(Intercept)} & \text{funcgr} & \text{leg} & \text{(Intercept)} & \text{funcgr} \\
  \text{0.585725478} & -0.005558248 & -0.561473704 & -1.187933317 & 0.001736407 \\
  c. & \text{leg} & \\
  \text{0.518784488} & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.7051416
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4356068

$`Pathogen infection`$Pp2331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 33.67642

Coefficients:
  a.(Intercept)   a.funcgr   a.leg   c.(Intercept)   c.funcgr
  -0.26877151   0.03795901   -0.44707876   -0.76119675   -0.03739801
  c.leg
  0.34432540

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04842482
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.252615

$`Pathogen infection`$Pp2421
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 41.32051

Coefficients:
  b.(Intercept)   b.funcgr   b.leg   c.(Intercept)   c.funcgr
  1.18765444   0.03751063   -0.38199167   -0.47885211   -0.05681594
  c.leg
  0.04867709

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.6745853
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4133846

$`Pathogen infection`$Pp2431
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
Log-likelihood: 34.30758

Coefficients:
\begin{align*}
b. (\text{Intercept}) & \quad b. \text{funcgr} & \quad b. \text{leg} & \quad c. (\text{Intercept}) & \quad c. \text{funcgr} \\
1.16393456 & \quad 0.04260682 & \quad -0.39874233 & \quad -0.50456970 & \quad -0.05722525 \\
c. \text{leg} & \quad & \quad & \quad & 0.10445539 \\
\end{align*}

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon
    - -0.04812667
- Degrees of freedom: 82 total; 76 residual
- Residual standard error: 0.2500372

$`Pathogen infection`$Pp2521
Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: 30.49712

Coefficients:
\begin{align*}
c. (\text{Intercept}) & \quad c. \text{funcgr} & \quad c. \text{leg} \\
-0.39432817 & \quad -0.01486023 & \quad -0.20392405 \\
\end{align*}

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power
    - -0.8675753
- Degrees of freedom: 82 total; 79 residual
- Residual standard error: 0.6161702

$`Pathogen infection`$Pp2531
Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: 3.933912

Coefficients:
\begin{align*}
c. (\text{Intercept}) & \quad c. \text{funcgr} & \quad c. \text{leg} \\
-0.332818339 & \quad -0.002669313 & \quad -0.298454797 \\
\end{align*}

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon
    - -0.05712641
- Degrees of freedom: 82 total; 79 residual
- Residual standard error: 0.3837261
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 35.04252

Coefficients:
\[ a.\text{(Intercept)} \quad a.\text{funcgr} \quad a.\text{grass} \quad b.\text{(Intercept)} \quad b.\text{funcgr} \]
\[ 0.326832204 \quad -0.055235717 \quad 0.132509077 \quad -0.016585617 \quad 0.005661481 \]
\[ b.\text{grass} \quad -0.008845867 \]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[ \text{power} \quad -0.7327585 \]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4865318

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 26.27065

Coefficients:
\[ a.\text{(Intercept)} \quad a.\text{funcgr} \quad a.\text{grass} \quad b.\text{(Intercept)} \quad b.\text{funcgr} \]
\[ 0.399638947 \quad -0.058154417 \quad 0.098906818 \quad -0.022833494 \quad 0.006552094 \]
\[ b.\text{grass} \quad -0.006597396 \]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[ \text{expon} \quad -0.05047323 \]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2813972

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 36.32609

Coefficients:
\[ a.\text{(Intercept)} \quad a.\text{funcgr} \quad a.\text{grass} \quad c.\text{(Intercept)} \quad c.\text{funcgr} \]
\[ -0.43180274 \quad 0.11824861 \quad -0.05721805 \quad -0.24830740 \quad -0.10987822 \]
\[ c.\text{grass} \quad 0.08840723 \]
### Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power: -0.7255503
- Degrees of freedom: 82 total; 76 residual
- Residual standard error: 0.473877

### Pathogen infection $Pq2831$
- Generalized nonlinear least squares fit
  - Model: response ~ a + sowndiv^c
  - Data: DF
  - Log-likelihood: 27.26533

#### Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.71477256</td>
<td>0.16356831</td>
<td>0.03472733</td>
<td>-0.03337152</td>
<td>-0.13698572</td>
<td>0.01418161</td>
</tr>
</tbody>
</table>

### Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon: -0.05018408
- Degrees of freedom: 82 total; 76 residual
- Residual standard error: 0.2773151

### Pathogen infection $Pq2921$
- Generalized nonlinear least squares fit
  - Model: response ~ b * sowndiv^c
  - Data: DF
  - Log-likelihood: 35.86733

#### Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
<th>b.grass</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.01988272</td>
<td>0.16978224</td>
<td>0.21844623</td>
<td>-0.27004661</td>
<td>-0.07210098</td>
<td>-0.07763660</td>
</tr>
</tbody>
</table>

### Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power: -0.7160409
- Degrees of freedom: 82 total; 76 residual
- Residual standard error: 0.4698553

### Pathogen infection $Pq2931$
- Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c  
Data: DF  
Log-likelihood: 27.13800

Coefficients:
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>b. (Intercept)</td>
<td>b.funcgr</td>
<td>b.grass c.(Intercept)</td>
<td>c.funcgr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.14942529</td>
<td>0.15949966</td>
<td>0.11626134</td>
<td>-0.29051521</td>
<td>-0.07687286</td>
<td></td>
</tr>
<tr>
<td>c.grass</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.02033653</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Variance function:  
Structure: Exponential of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
expon  
-0.05016477  
Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.2777

`Pathogen infection`$Pq3021  
Generalized nonlinear least squares fit  
Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: 27.83864

Coefficients:
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>c.(Intercept)</td>
<td>c.funcgr</td>
<td>c.grass</td>
</tr>
<tr>
<td>-0.91075435</td>
<td>0.05012470</td>
<td>0.05598724</td>
</tr>
</tbody>
</table>

Variance function:  
Structure: Power of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
power  
-0.8698623  
Degrees of freedom: 82 total; 79 residual  
Residual standard error: 0.6386388

`Pathogen infection`$Pq3031  
Generalized nonlinear least squares fit  
Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: 3.039909

Coefficients:
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>c.(Intercept)</td>
<td>c.funcgr</td>
<td>c.grass</td>
</tr>
<tr>
<td>-1.06680637</td>
<td>0.08651391</td>
<td>0.07939970</td>
</tr>
</tbody>
</table>

Variance function:  
Structure: Exponential of variance covariate  
Formula: ~sowndiv  
Parameter estimates:  
expon  
-0.05733312
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.3886216

$\text{Pathogen infection}\$Pr3221
Generalized nonlinear least squares fit
Model: \text{response} ~ a + b \times \text{sowndiv} 
Data: DF 
Log-likelihood: 33.90717

Coefficients:
\begin{align*}
\text{a. (Intercept)} & : 0.005943660 \\
\text{a. grass} & : 0.251988098 \\
\text{a. leg} & : -0.003016704 \\
\text{b. (Intercept)} & : 0.022109167 \\
\text{b. grass} & : -0.020285560 \\
\text{b. leg} & : -0.004901915
\end{align*}

Variance function:
Structure: Power of variance covariate 
Formula: ~sowndiv 
Parameter estimates:
power 
-0.73504

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4949887

$\text{Pathogen infection}\$Pr3231
Generalized nonlinear least squares fit
Model: \text{response} ~ a + b \times \text{sowndiv} 
Data: DF 
Log-likelihood: 25.26129

Coefficients:
\begin{align*}
\text{a. (Intercept)} & : 0.132661671 \\
\text{a. grass} & : 0.220561411 \\
\text{a. leg} & : -0.035468580 \\
\text{b. (Intercept)} & : 0.022185991 \\
\text{b. grass} & : -0.020880026 \\
\text{b. leg} & : -0.005397104
\end{align*}

Variance function:
Structure: Exponential of variance covariate 
Formula: ~sowndiv 
Parameter estimates:
expon 
-0.04999286

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2837099

$\text{Pathogen infection}\$Pr3321
Generalized nonlinear least squares fit
Model: \text{response} ~ a + \text{sowndiv}^c 
Data: DF 
Log-likelihood: 40.94132

Coefficients:
\begin{align*}
\text{a. (Intercept)} & : 0.53508004 \\
\text{a. grass} & : -0.03420016 \\
\text{a. leg} & : -0.51387104 \\
\text{c. (Intercept)} & : -1.09222031 \\
\text{c. grass} & : 0.03070465
\end{align*}
### Model 1: Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 34.18246

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a.grass</th>
<th>a.leg</th>
<th>c.(Intercept)</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (Intercept)</td>
<td>0.55171887</td>
<td>-0.09450098</td>
<td>-0.49298051</td>
<td>-1.00335738</td>
<td>0.07473468</td>
</tr>
<tr>
<td>c.leg</td>
<td>0.38415896</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
- power
  -0.6998773

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4311908

### Model 2: Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 40.72115

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>b. (Intercept)</th>
<th>b.grass</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. (Intercept)</td>
<td>1.52253176</td>
<td>-0.09664305</td>
<td>-0.44735268</td>
<td>-0.85865553</td>
<td>0.07285594</td>
</tr>
<tr>
<td>c.leg</td>
<td>0.13685559</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
- expon
  -0.0483615

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2509244

### Model 3: Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ c
Data: DF
Log-likelihood: 34.18246

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>c. (Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. (Intercept)</td>
<td>-1.00335738</td>
<td>0.07473468</td>
</tr>
<tr>
<td>c.leg</td>
<td>0.38415896</td>
<td></td>
</tr>
</tbody>
</table>

### Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
- power
  -0.6824517

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.4213088
Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.28993

Coefficients:
<table>
<thead>
<tr>
<th>b. (Intercept)</th>
<th>b.grass</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.grass</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.51875259</td>
<td>-0.11150486</td>
<td>-0.46170712</td>
<td>-0.91856767</td>
<td>0.09387145</td>
<td>0.19608061</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
<table>
<thead>
<tr>
<th>expon</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.0481987</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2502457

Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 30.37014

Coefficients:
<table>
<thead>
<tr>
<th>c.(Intercept)</th>
<th>c.grass</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.46729575</td>
<td>-0.00809387</td>
<td>-0.17412478</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
<table>
<thead>
<tr>
<th>power</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.8734558</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6225362

Pathogen infection

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 3.963421

Coefficients:
<table>
<thead>
<tr>
<th>c.(Intercept)</th>
<th>c.grass</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.32953259</td>
<td>-0.02866563</td>
<td>-0.28276448</td>
</tr>
</tbody>
</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
$`Pathogen infection`$Ps3721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 40.94776

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg  b.(Intercept)
  1.368405236  -0.185235982  -0.064442841  -0.323974657  -0.078223373
  b.funcgr       b.grass         b.leg
  0.013356484   0.002846580   0.019153217

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.7212753

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.4510478

$`Pathogen infection`$Ps3731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 32.93724

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg  b.(Intercept)
  1.53499500   -0.19960288   -0.10413913   -0.36487010   -0.09254169
  b.funcgr       b.grass         b.leg
  0.01526722    0.00571484    0.02250734

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04872914

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2589999

$`Pathogen infection`$Ps3821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 41.67135

Coefficients:
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 34.28005

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & : 0.90955164 \\
\text{a.funcgr} & : -0.04578968 \\
\text{a.grass} & : -0.09438064 \\
\text{a.leg} & : -0.62776474 \\
\text{c.(Intercept)} & : -1.41806644 \\
\text{c.funcgr} & : 0.02860772 \\
\text{c.grass} & : 0.06524672 \\
\text{c.leg} & : 0.56852317
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} = -0.7138855
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.4422071

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.76924

Coefficients:
\[
\begin{align*}
\text{b.(Intercept)} & : 1.25223567 \\
\text{b.funcgr} & : 0.03031320 \\
\text{b.grass} & : -0.02607755 \\
\text{b.leg} & : -0.38810759 \\
\text{c.(Intercept)} & : -0.24231910 \\
\text{c.funcgr} & : -0.08572935 \\
\text{c.grass} & : -0.06258484 \\
\text{c.leg} & : -0.01128599
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} = -0.04829322
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2538414

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 41.76924

Coefficients:
\[
\begin{align*}
\text{b.(Intercept)} & : 1.25223567 \\
\text{b.funcgr} & : 0.03031320 \\
\text{b.grass} & : -0.02607755 \\
\text{b.leg} & : -0.38810759 \\
\text{c.(Intercept)} & : -0.24231910 \\
\text{c.funcgr} & : -0.08572935 \\
\text{c.grass} & : -0.06258484 \\
\text{c.leg} & : -0.01128599
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} = -0.6743579
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.4165067

Pathogen infection\$Ps3931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 34.76142

Coefficients:
  b.(Intercept)      b.funcgr       b.grass         b.leg c.(Intercept)
  1.38510116    0.01422292   -0.07927894   -0.42890830   -0.35397278
  c.funcgr       c.grass         c.leg
  -0.07429969   -0.03085131    0.05353984

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0480017

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.2517247

Pathogen infection\$Ps4021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 30.96249

Coefficients:
  c.(Intercept)      c.funcgr       c.grass         c.leg
  -0.10508617   -0.05065033   -0.08249203   -0.26801339

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.869056

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.617955

Pathogen infection\$Ps4031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: 4.084734

Coefficients:
  c.(Intercept)      c.funcgr       c.grass         c.leg
  0.07405364   -0.05287018   -0.11761492   -0.38705343

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.0571068
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.3854035

$`Pathogen infection`$AS1
Nonlinear regression model
  model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
  data: DF
  Asym       R0      lrc
  0.06345  0.54735 -2.14483
  residual sum-of-squares: 4.06
  Number of iterations to convergence: 3
  Achieved convergence tolerance: 3.048e-06

$Invasion$L0

Call:
  lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)
Coefficients:
  (Intercept)         blockB2         blockB3         blockB4
  sowndiv      0.307063       -0.010065        0.020042        0.067829       -
  0.044326
  funcgr            grass            leg  sowndiv:funcgr
  sowndiv:grass      -0.039788       -0.053540        0.087993        0.008202       -
  0.002328
  sowndiv:leg      funcgr:grass      funcgr:leg      grass:leg
  0.012370        0.067425       -0.089575       -0.029469

$Invasion$L2

Call:
  lm(formula = response ~ sowndiv + funcgr + leg, data = DF)
Coefficients:
  (Intercept)      sowndiv       funcgr          leg
  0.310237    -0.002566    -0.040160    -0.064401

$Invasion$M1
Nonlinear regression model
  model: response ~ a * sowndiv/(b + sowndiv)
  data: DF
  a       b
0.06933 -0.69849
residual sum-of-squares: 2.098
Number of iterations to convergence: 14
Achieved convergence tolerance: 2.804e-06

$Invasion$M1a
Nonlinear regression model
model: response \sim \text{SSmicmen}(sowndiv, Vm, k)
data: DF
Vm k
0.06933 -0.69849
residual sum-of-squares: 2.098
Number of iterations to convergence: 6
Achieved convergence tolerance: 3.848e-06

$Invasion$M2
Nonlinear regression model
model: response \sim d + a \times \frac{sowndiv}{b + sowndiv}
data: DF
a b d
-0.4052 1.8313 0.3768
residual sum-of-squares: 1.914
Number of iterations to convergence: 11
Achieved convergence tolerance: 9.98e-06

$Invasion$E2
Nonlinear regression model
model: response \sim a + b \times \exp(sowndiv)
data: DF
a b
1.127e-01 -9.306e-28
residual sum-of-squares: 2.400
Number of iterations to convergence: 4
Achieved convergence tolerance: 4.839e-08

$Invasion$E4
Nonlinear regression model
model: response \sim a + \exp(sowndiv)
data: DF
a
1
residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 5.804e-20

$Invasion$E5
Nonlinear regression model
model: response \sim b \times \exp(sowndiv)
data: DF
$\text{Invasion}\ Pa2$
Nonlinear regression model
  model: \text{response} \sim a + b \times \text{sowndiv}
  data: DF
  \begin{align*}
  a & \quad b \\
  0.139360 & -0.003725 \\
  \text{residual sum-of-squares: } & \quad 2.260
  \end{align*}
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.968e-09

$\text{Invasion}\ Pa3$
Nonlinear regression model
  model: \text{response} \sim a + \text{sowndiv}^c
  data: DF
  \begin{align*}
  a & \quad c \\
  -0.78071 & -0.08258 \\
  \text{residual sum-of-squares: } & \quad 1.951
  \end{align*}
Number of iterations to convergence: 9
Achieved convergence tolerance: 1.029e-06

$\text{Invasion}\ Pa4$
Nonlinear regression model
  model: \text{response} \sim b \times \text{sowndiv}^c
  data: DF
  \begin{align*}
  b & \quad c \\
  0.2413 & -0.7030 \\
  \text{residual sum-of-squares: } & \quad 1.942
  \end{align*}
Number of iterations to convergence: 11
Achieved convergence tolerance: 2.792e-06

$\text{Invasion}\ Pa5$
Nonlinear regression model
  model: \text{response} \sim \text{sowndiv}^c
  data: DF
  \begin{align*}
  c \\
  -2.211 \\
  \text{residual sum-of-squares: } & \quad 11.03
  \end{align*}
Number of iterations to convergence: 12
Achieved convergence tolerance: 1.480e-06

$\text{Invasion}\ AS1$
Nonlinear regression model
  model: \text{response} \sim \text{SSasymp(sowndiv, Asym, R0, lrc)}
### Invasion

**Nonlinear regression model**
- model: response ~ SSbiexp(sowndiv, A1, lrc1, A2, lrc2)
- data: DF
  - A1     lrc1       A2     lrc2
    0.30291 -1.11141  0.01553 -4.54329
- residual sum-of-squares: 1.904
- Number of iterations to convergence: 3
- Achieved convergence tolerance: 3.384e-06

### Bioturbation

**Generalized least squares fit by maximum likelihood**
- Model: response ~ block + (sowndiv + funcgr + grass + leg)^2
  - data: DF
- Log-likelihood: 43.91721
- Coefficients:
  - (Intercept)        blockB2        blockB3        blockB4
    sowndiv                 0.939685       -0.122863       -0.173566       -0.133465
     0.014722
    funcgr          grass            leg sowndiv:funcgr
    sowndiv:grass     -0.025605       -0.225735       -0.356849       -0.002209
     0.004379
    sowndiv:leg    funcgr:grass      funcgr:leg       grass:leg
    -0.009272       -0.015221        0.018932        0.094472

**SUPPLEMENTARY INFORMATION**
- doi:10.1038/nature09492

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**RESEARCH**

[DOI:10.1038/nature09492]

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$\text{Variance function:}$
$\text{Structure: Power of variance covariate}$
$\text{Formula: } ~ \text{sowndiv}$
$\text{Parameter estimates:}$
$\begin{align*}
\text{power} & = 0.1361320 \\
\text{Degrees of freedom: } 82 \text{ total; } 68 \text{ residual} \\
\text{Residual standard error: } 0.1157163
\end{align*}$

$\text{Bioturbation}\L_021$

$\text{Generalized least squares fit by maximum likelihood}$
$\text{Model: } \text{response} \sim \text{block} + (\text{sowndiv} + \text{funcgr} + \text{grass} + \text{leg})^2$
$\text{Data: } \text{DF}$
$\text{Log-likelihood: } 43.03142$

$\text{Coefficients:}$
$\begin{align*}
\text{(Intercept)} & = 0.348149 \\
\text{sowndiv} & = 0.001355 \\
\text{funcgr} & = 0.014130 \\
\text{grass} & = -0.162175 \\
\end{align*}$

$\text{Variance function:}$
$\text{Structure: Exponential of variance covariate}$
$\text{Formula: } ~ \text{sowndiv}$
$\text{Parameter estimates:}$
$\begin{align*}
\text{expon} & = -0.009508292 \\
\text{Degrees of freedom: } 82 \text{ total; } 68 \text{ residual} \\
\text{Residual standard error: } 0.1553492
\end{align*}$

$\text{Bioturbation}\L_2$

$\text{Call:}$
$\text{lm(formula = response } \sim \text{ sowndiv + funcgr + leg, data = DF)}$

$\text{Coefficients:}$
$\begin{align*}
\text{(Intercept)} & = 0.348149 \\
\text{sowndiv} & = 0.001355 \\
\text{funcgr} & = 0.014130 \\
\text{leg} & = -0.162175 \\
\end{align*}$

$\text{Bioturbation}\L_21$

$\text{Generalized least squares fit by maximum likelihood}$
$\text{Model: } \text{response} \sim \text{sowndiv} + \text{funcgr} + \text{leg}$
Data: DF
Log-likelihood: 51.24852

Coefficients:
(Intercept) sowndiv funcgr leg
0.3453936054 0.0004288869 0.0188291929 -0.1617153986

Variance function:
Structure: Power of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  power
0.6301896

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.5123178

$Bioturbation$L22
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 51.39079

Coefficients:
(Intercept) sowndiv funcgr leg
0.3547843965 0.0004500239 0.0158132682 -0.1644044363

Variance function:
Structure: Exponential of variance covariate
Formula: ~fitted(.)
Parameter estimates:
  expon
5.367966

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.05791745

$Bioturbation$L211
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 33.49418

Coefficients:
(Intercept) sowndiv funcgr leg
0.34899051 0.00157920 0.01169825 -0.16065109

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.06728227

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1455421
Generalized least squares fit by maximum likelihood
  Model: response ~ sowndiv + funcgr + leg
  Data: DF
  Log-likelihood: 33.55628

Coefficients:
  (Intercept)       sowndiv        funcgr           leg
  0.3544782684  0.0007802275  0.0165363208 -0.1661246254

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.008501686

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1728776

Nonlinear regression model
  model:  response ~ a * sowndiv/(b + sowndiv)
  data:  DF
    a      b
  0.2871  4.1803
  residual sum-of-squares: 2.71

Number of iterations to convergence: 13
Achieved convergence tolerance: 5.113e-06

Nonlinear regression model
  model:  response ~ SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm      k
  0.2871  4.1808
  residual sum-of-squares: 2.71

Number of iterations to convergence: 8
Achieved convergence tolerance: 4.668e-06

Nonlinear regression model
  model:  response ~ d + a * sowndiv/(b + sowndiv)
  data:  DF
    a      b      d
  0.31275 17.74720  0.07374
  residual sum-of-squares: 2.656

Number of iterations to convergence: 17
Achieved convergence tolerance: 7.513e-06

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.64247

Coefficients:

a           b           d
0.32431482  20.03155883  0.07691525

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.0671265
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1652203

$Bioturbation$M222
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 24.49748

Coefficients:

a           b           d
0.28653389  14.47177598  0.07072373

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.006697846
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1936798

$Bioturbation$M311
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.90006

Coefficients:

a.(Intercept)         a.leg b.(Intercept)         b.leg
0.5541098    -0.2505078     2.5021192    -1.1931605

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.01571449
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1622717
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.64752

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & : 0.4289151 \\
\text{a. grass} & : -0.1264902 \\
\text{b. (Intercept)} & : 8.7289961 \\
\text{b. grass} & : -3.9222587
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1859425

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 23.87064

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & : 0.40143641 \\
\text{a. grass} & : -0.09754347 \\
\text{b. (Intercept)} & : 8.15533856 \\
\text{b. grass} & : -3.28576836
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
\text{expon} & : -0.00708299
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1970636

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 27.55336

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & : -0.02603163 \\
\text{a. funcgr} & : 0.09617381 \\
\text{b. (Intercept)} & : -1.53596020 \\
\text{b. funcgr} & : 1.23768316
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1772933

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 27.66535

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & : -0.02603163 \\
\text{a. funcgr} & : 0.09617381 \\
\text{b. (Intercept)} & : -1.53596020 \\
\text{b. funcgr} & : 1.23768316
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1772933
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.03694585

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1676017

$Bioturbation$M522
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 27.88576

Coefficients:
  a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
  -0.01518126    0.08702784   -1.21398056    0.94363987

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007720393

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1886765

$Bioturbation$M6
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 35.50639

Coefficients:
  a.(Intercept)      a.funcgr         a.leg b.(Intercept)      b.funcgr
  0.31027217    0.06294473   -0.17187777   -2.17669471    1.77695252
    b.leg
    0.07244900

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1630089

$Bioturbation$M611
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 36.17238

Coefficients:
  a.(Intercept)      a.funcgr         a.leg b.(Intercept)      b.funcgr
  0.26527518    0.07358406   -0.15378081   -2.57961594    1.98117606
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.1015376
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1390651

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 35.59414

Coefficients:
a.(Intercept)       a.funcgr       a.leg       b.(Intercept)       b.funcgr
  0.31944992   0.05565844   -0.17251619   -1.93111160    1.54661207
  b.leg
  0.06606451

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.00409521
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1686615

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 28.97385

Coefficients:
a.(Intercept)       a.funcgr       a.grass       b.(Intercept)       b.funcgr
  -0.2151597       0.1187088       0.0965719    -5.5950727     1.8310602
  b.grass
  1.7680605

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1765263

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 29.10370
Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. funcgr} & \text{a. grass} & \text{b. (Intercept)} & \text{b. funcgr} \\
-0.2140510 & 0.1195090 & 0.0943110 & -5.6241783 & 1.8639799 \\
\text{b. grass} & \\
1.7524778 & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{power} \\
0.04073174 \\
\end{array}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1659053

$\text{Bioturbation}\text{M722}$
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 29.35075

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. funcgr} & \text{a. grass} & \text{b. (Intercept)} & \text{b. funcgr} \\
-0.2101225 & 0.1099884 & 0.1015824 & -5.2978240 & 1.5558792 \\
\text{b. grass} & \\
1.7920335 & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{expon} \\
-0.008194379 \\
\end{array}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1885240

$\text{Bioturbation}\text{M81}$
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.34542

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a. grass} & \text{a. leg} & \text{b. (Intercept)} & \text{b. grass} & \text{b. leg} \\
0.5646320 & -0.0671946 & -0.2056116 & 2.1323027 & -0.7826511 & -0.4690916 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1673619

$\text{Bioturbation}\text{M832}$
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF  
Log-likelihood: 33.92761

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. grass} & \quad \text{a. leg} & \quad \text{b. (Intercept)} & \quad \text{b. grass} \\
0.57984693 & \quad -0.04420419 & \quad -0.23295275 & \quad 2.29658918 & \quad -0.40430943 \\
\text{b. leg} & \quad -0.86995521
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate  
Formula: ~sowndiv  
Parameter estimates:
\[
\text{expon} = -0.01006584
\]

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.1811775

$Bioturbation$M91  
Generalized nonlinear least squares fit  
Model: response ~ a * sowndiv/(b + sowndiv)  
Data: DF  
Log-likelihood: 36.35256

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. funcgr} & \quad \text{a. grass} & \quad \text{a. leg} & \quad \text{b. (Intercept)} \\
0.23574086 & \quad 0.06231327 & \quad 0.03300789 & \quad -0.14675267 & \quad -19.18522971 \\
\text{b. funcgr} & \quad \text{b. grass} & \quad \text{b. leg} \\
3.08922815 & \quad 5.15865452 & \quad 5.50224685
\end{align*}
\]

Degrees of freedom: 82 total; 74 residual  
Residual standard error: 0.1635011

$Bioturbation$M932  
Generalized nonlinear least squares fit  
Model: response ~ a * sowndiv/(b + sowndiv)  
Data: DF  
Log-likelihood: 36.47370

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. funcgr} & \quad \text{a. grass} & \quad \text{a. leg} & \quad \text{b. (Intercept)} \\
0.24751758 & \quad 0.05484814 & \quad 0.03364624 & \quad -0.14906852 & \quad -18.01221774 \\
\text{b. funcgr} & \quad \text{b. grass} & \quad \text{b. leg} \\
2.79301174 & \quad 4.88419441 & \quad 5.18981073
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate  
Formula: ~sowndiv  
Parameter estimates:
\[
\text{expon} = -0.004752046
\]

Degrees of freedom: 82 total; 74 residual  
Residual standard error: 0.1700582
Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 28.33993

Coefficients:
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>a</td>
<td>0.17373657</td>
<td>5.46986504</td>
<td>-1.17232284</td>
<td>0.1944129</td>
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<tr>
<td>a.funcgr</td>
<td>-0.08975697</td>
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<tr>
<td>b</td>
<td>6.13880172</td>
<td>-1.33266112</td>
<td>0.18659237</td>
<td></td>
</tr>
<tr>
<td>b.funcgr</td>
<td>0.04303777</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>4.2538311</td>
<td>-0.9363812</td>
<td>0.2102266</td>
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</tr>
<tr>
<td>d.funcgr</td>
<td>0.18659237</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1778963

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 28.49348

Coefficients:
<p>| | | | | |</p>
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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>a</td>
<td>0.16615799</td>
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<tr>
<td>a.funcgr</td>
<td>-0.08178482</td>
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<td>b</td>
<td>6.13880172</td>
<td>-1.33266112</td>
<td>0.18659237</td>
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<tr>
<td>b.funcgr</td>
<td>0.04303777</td>
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</tr>
<tr>
<td>d</td>
<td>4.2538311</td>
<td>-0.9363812</td>
<td>0.2102266</td>
<td></td>
</tr>
<tr>
<td>d.funcgr</td>
<td>0.18659237</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>power</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1665733

Generalized nonlinear least squares fit
Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 28.62024

Coefficients:
<p>| | | | | |</p>
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<tbody>
<tr>
<td>a</td>
<td>0.1833977</td>
<td>4.2538311</td>
<td>-0.9363812</td>
<td>0.2102266</td>
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<tr>
<td>a.funcgr</td>
<td>0.1061460</td>
<td></td>
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<tr>
<td>b</td>
<td>6.13880172</td>
<td>-1.33266112</td>
<td>0.18659237</td>
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<tr>
<td>b.funcgr</td>
<td>0.04303777</td>
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<tr>
<td>d</td>
<td>4.2538311</td>
<td>-0.9363812</td>
<td>0.2102266</td>
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</tr>
<tr>
<td>d.funcgr</td>
<td>0.18659237</td>
<td></td>
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</table>

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
<p>| |</p>
<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>expon</td>
</tr>
</tbody>
</table>
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1884637

*Bioturbation*$M1321
Generalized nonlinear least squares fit
   Model: response ~ d + a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 36.17853

Coefficients:
   a.(Intercept)        a.funcgr        a.leg b.(Intercept)        b.funcgr
   0.66997800   -0.01625768   -0.31048317   58.77468031   -9.08573990
   b.leg d.(Intercept)        d.funcgr        d.leg
   -21.18018131    0.36180386   -0.04782457   -0.13442095

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power
      0.06807649

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1491093

*Bioturbation*$M1432
Generalized nonlinear least squares fit
   Model: response ~ d + a * sowndiv/(b + sowndiv)
   Data: DF
   Log-likelihood: 30.41767

Coefficients:
   a.(Intercept)        a.funcgr        a.grass b.(Intercept)        b.funcgr
   -2.41670451    0.81372146    0.80778882   -0.45988788    0.01829668
   b.grass d.(Intercept)        d.funcgr        d.grass
   0.51768074    2.14713253   -0.70461381   -0.66367097

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
      -0.008350164

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1901263

*Bioturbation*$E2
Nonlinear regression model
   model: response ~ a + b * exp(sowndiv)
   data:  DF
   a         b
   1.439e-01 1.170e-27
   residual sum-of-squares: 2.871

Number of iterations to convergence: 4
Achieved convergence tolerance: 4.662e-08

Nonlinear regression model
model: response ~ a + exp(sowndiv)
data: DF

a
1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
b
2.43e-27
residual sum-of-squares: 4.487

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.04e-08

Generalized nonlinear least squares fit
Model: response ~ a + b * exp(sowndiv)
Data: DF
Log-likelihood: 21.15609

Coefficients:
 a      b
1.464626e-01 1.147535e-27

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.004039713
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1959470

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 23.46193

Coefficients:
 a      c
-0.885548703 0.003653482

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.08739955
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1616268

$Bioturbation$E32
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 22.87766
Coefficients:
  a        c
-0.877117952  0.003109013

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.003097963
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1903309

$Bioturbation$E41
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1746.568
Coefficients:
  a
  -2.616607

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    14.98847
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.09396732

$Bioturbation$E42
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.2417
Coefficients:
  a
  210.2417
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014480
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.7038134

$\text{Bioturbation}\$E51
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: 4.582206
Coefficients:
  b
  2.430036e-27

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.1443433
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1858206

$\text{Bioturbation}\$E52
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: 2.81848
Coefficients:
  b
  2.430036e-27

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.003316847
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2286297

$\text{Bioturbation}\$E61
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 6.736101
Coefficients:
\[ c = -2.143234 \]

Variance function:
- Structure: Power of variance covariate
- Formula: \( \sim \text{sowndiv} \)
- Parameter estimates:
  \[ \text{power} = 0.2256813 \]

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1604146

Generalized nonlinear least squares fit
- Model: \( \text{response} \sim \exp(c \times \text{sowndiv}) \)
- Data: DF
- Log-likelihood: 4.096374

Coefficients:
\[ c = -2.092924 \]

Variance function:
- Structure: Exponential of variance covariate
- Formula: \( \sim \text{sowndiv} \)
- Parameter estimates:
  \[ \text{expon} = 0.01624483 \]

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2014474

Generalized nonlinear least squares fit
- Model: \( \text{response} \sim a + \exp(\text{sowndiv}) \)
- Data: DF
- Log-likelihood: -4912.516

Coefficients:
\[ a.\text{(Intercept)} = -2963126.2 \]
\[ a.\text{leg} = 911705.8 \]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

Generalized nonlinear least squares fit
- Model: \( \text{response} \sim \exp(c \times \text{sowndiv}) \)
- Data: DF
- Log-likelihood: 4.91415

Coefficients:
\[ c.\text{(Intercept)} \]
1.374812  -2.348107

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2307268

$\text{Bioturbation}\$Ea911
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 33.42807

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.625548077  -0.160907125   0.004697923  -0.002630952

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
   power
0.07500636

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1476448

$\text{Bioturbation}\$Ea921
Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 32.7739

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
 1.439809     -1.193793     -6.042223      3.020886

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
   expon
-0.007434664

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1773224

$\text{Bioturbation}\$Ea1011
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1726.313

Coefficients:
a.(Intercept)         a.leg
-2.1156104    -0.2862839

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
15.08313
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.06417506

$\text{Bioturbation}\ Ea1021$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -801.2105

Coefficients:
a. (Intercept) a. leg
  -3.7086881 0.2563954

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
1.014485
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7078932

$\text{Bioturbation}\ Ea121$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 13.91363

Coefficients:
c. (Intercept) c. leg
  1.232690 -2.312641

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
0.3349592
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1257392

$\text{Bioturbation}\ Ea1221$
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 8.354766

Coefficients:
c. (Intercept) c. leg
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.02174387
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1835701

$Bioturbation$Eb16
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:
  a.(Intercept)       a.grass
    -3508713       1286426
Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$Bioturbation$Eb18
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 2.171385
Coefficients:
  c.(Intercept)       c.grass
    -5.799670      1.951380
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2385748

$Bioturbation$Eb1511
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 23.94108
Coefficients:
  a.(Intercept)       a.grass c.(Intercept)       c.grass
    -0.835820596  -0.038401915  -0.003052411   0.006162009

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.06736577
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1676448

Generalized nonlinear least squares fit
Model: response ~ a + exp(c * sowndiv)
Data: DF
Log-likelihood: 23.78207

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-0.803597842  -0.057815009  -0.005233268   0.007742796

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.006475795
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1962509

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1744.127

Coefficients:
a.(Intercept)       a.grass
-2.8203552     0.1164274

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
14.99988
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.09023714

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -801.0719

Coefficients:
a.(Intercept)       a.grass
-4.2990828     0.5968514

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
$Bioturbation$Eb1811
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 7.51318
Coefficients:
c.(Intercept) c.grass
  -6.013761  2.038840
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.2386021
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1568538

$Bioturbation$Eb1821
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 4.545051
Coefficients:
c.(Intercept) c.grass
  -5.826237  1.962299
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.01683463
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2005782

$Bioturbation$Ec22
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:
a.(Intercept) a.funcgr
  252095.6  -912137.5
Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$Bioturbation$Ec24
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 7.66888

Coefficients:
  c.(Intercept)  c.funcgr
     -2.5935390    0.5919952

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2231045

$Bioturbation$Ec2121
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 27.30375

Coefficients:
  a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
     -0.9877393684  0.0614971579   0.0019556117 -0.0003330070

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      expon
     -0.008661683

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1915623

$Bioturbation$Ec2211
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1746.568

Coefficients:
  a.(Intercept)  a.funcgr
     2.053868     -4.670476

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      power
     14.98847

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.09455278

$Bioturbation$Ec2221
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.4478

Coefficients:
  a.(Intercept)   a.funcgr
  3.434836       -6.307975

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.021975
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6112592

$\textit{Bioturbation}$Ec2411
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 13.13934

Coefficients:
  c.(Intercept)   c.funcgr
  -2.694993       0.611774

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.2254497
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1493404

$\textit{Bioturbation}$Ec2421
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 11.04788

Coefficients:
  c.(Intercept)   c.funcgr
  -2.6096511      0.5914553

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.02027195
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1798981

Generalized nonlinear least squares fit
Model: response ~ a + \exp(\text{sowndiv})
Data: DF
Log-likelihood: -4912.516

Coefficients:
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. funcgr} & \quad \text{a. leg} \\
872779.2 & \quad -990730.5 & \quad -307654.9
\end{align*}

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

Generalized nonlinear least squares fit
Model: response ~ a + \exp(\text{sowndiv})
Data: DF
Log-likelihood: -1726.313

Coefficients:
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. funcgr} & \quad \text{a. leg} \\
2.6264361 & \quad -4.7420465 & \quad -0.2862839
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: \sim \text{sowndiv}
Parameter estimates:
\begin{align*}
\text{power} = 15.08313
\end{align*}
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.06457993

Generalized nonlinear least squares fit
Model: response ~ a + \exp(\text{sowndiv})
Data: DF
Log-likelihood: -794.4097

Coefficients:
\begin{align*}
\text{a. (Intercept)} & \quad \text{a. funcgr} & \quad \text{a. leg} \\
3.9320377 & \quad -6.3696884 & \quad -0.2488338
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: \sim \text{sowndiv}
Parameter estimates:
\begin{align*}
\text{expon} = 1.022049
\end{align*}
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6144413
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 15.00419

Coefficients:
c.(Intercept)  c.funcgr  c.leg
0.5083306   0.3186349 -2.0340878

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
0.02611714

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1640628

$Bioturbation$Ee40
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept)  a.funcgr  a.grass
-335851.0 -839615.4  296563.4

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$Bioturbation$Ee341
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1744.127

Coefficients:
a.(Intercept)  a.funcgr  a.grass
1.8210135 -4.6413687  0.1164274

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
14.99988

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.09080645

$Bioturbation$Ee342
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -794.4417

Coefficients:
a. (Intercept)       a.funcgr       a.grass
   3.23598882   -6.28304893    0.09938625

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
   1.021987
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.615008

$Bioturbation\$Ef40
Generalized nonlinear least squares fit
   Model: response ~ a + exp(sowndiv)
   Data: DF
   Log-likelihood: -4912.516

Coefficients:
a. (Intercept)       a.grass         a.leg
   -5251826       1394676       1054750

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$Bioturbation\$Ef3721
Generalized nonlinear least squares fit
   Model: response ~ a + b * exp(c * sowndiv)
   Data: DF
   Log-likelihood: -2690.078

Coefficients:
a. (Intercept)       a.grass         a.leg b. (Intercept)       b.grass
   0.5548137983  0.0260987202 -0.2846109987 -0.0001674899 -0.0000636444
   b.leg c. (Intercept)       c.grass         c.leg
   0.0001480782  1.0000102418  1.0000040363  0.9999908333

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
   4.485142
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.0008574329

$Bioturbation\$Ef3921
Generalized nonlinear least squares fit
   Model: response ~ a + exp(c * sowndiv)
   Data: DF
   Log-likelihood: 34.28635
Coefficients:
\begin{align*}
  \text{a.(Intercept)} & \quad \text{a.grass} & \quad \text{a.leg} & \quad \text{c.(Intercept)} & \quad \text{c.grass} \\
  1.524922249 & \quad -0.069509092 & \quad -1.183004918 & \quad -4.925669312 & \quad 0.002784789 \\
  \text{c.leg} & \quad 2.460050374 \\
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007472562
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1764148

$\textit{Bioturbation}\$Ef4011
Generalized nonlinear least squares fit
Model: \( \text{response} \sim \text{a} + \exp(\text{sowndiv}) \)
Data: DF
Log-likelihood: -1726.127

Coefficients:
\begin{align*}
  \text{a.(Intercept)} & \quad \text{a.grass} & \quad \text{a.leg} \\
  -2.17073403 & \quad 0.02362441 & \quad -0.27840908 \\
\end{align*}

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
15.08399
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.06435071

$\textit{Bioturbation}\$Ef4021
Generalized nonlinear least squares fit
Model: \( \text{response} \sim \text{a} + \exp(\text{sowndiv}) \)
Data: DF
Log-likelihood: -800.951

Coefficients:
\begin{align*}
  \text{a.(Intercept)} & \quad \text{a.grass} & \quad \text{a.leg} \\
  -5.5649812 & \quad 0.7888307 & \quad 0.5377992 \\
\end{align*}

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
1.01468
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7089252
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 21.1568

Coefficients:
c.(Intercept) c.grass c.leg
3.4788405 -0.8482737 -2.9116410

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.3272253
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1171728

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 16.33443

Coefficients:
c.(Intercept) c.grass c.leg
3.3963682 -0.8468143 -2.8206565

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
0.02704742
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1601387

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
a.(Intercept) a.funcgr a.grass a.leg
292091.9 -918391.4 183181.3 -199834.3

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25
Data: DF
Log-likelihood: -1726.127

Coefficients:
\[ \begin{array}{cccc}
  a. & (Intercept) & a.\text{funcgr} & a.\text{grass} & a.\text{leg} \\
  2.5634377 & -4.7341717 & 0.0236244 & -0.2784091 \\
\end{array} \]

Variance function:
Structure: Power of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
\[ \text{power} \]
15.08399
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.06476188

Nonlinear regression model
\[ \text{model: } \text{response} \sim a + \exp(\text{sowndiv}) \]
Data: DF
Log-likelihood: -794.4097

Coefficients:
\[ \begin{array}{cccc}
  a. & (Intercept) & a.\text{funcgr} & a.\text{grass} & a.\text{leg} \\
  3.919326225 & -6.368099261 & 0.004593295 & -0.247071469 \\
\end{array} \]

Variance function:
Structure: Exponential of variance covariate
Formula: \text{~sowndiv}
Parameter estimates:
\[ \text{expon} \]
1.022049
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6183672

Nonlinear regression model
\[ \text{model: } \text{response} \sim a + b \times \text{sowndiv}^c \]
data: DF
\[ \text{a} \quad \text{b} \quad \text{c} \]
\[-0.01253 \quad 0.10004 \quad 0.29191 \]
residual sum-of-squares: 2.674

Number of iterations to convergence: 13
Achieved convergence tolerance: 9.707e-06

Nonlinear regression model
\[ \text{model: } \text{response} \sim a + b \times \text{sowndiv} \]
data: DF
\[ \text{a} \quad \text{b} \]
\[ 0.117396 \quad 0.003851 \]
residual sum-of-squares: 2.741
Number of iterations to convergence: 1
Achieved convergence tolerance: 1.288e-09

$Bioturbation$Pa3
Nonlinear regression model
  model:  response ~ a + sowndiv^c
  data:  DF
      a   c
  -0.92247  0.04651
  residual sum-of-squares: 2.684

Number of iterations to convergence: 8
Achieved convergence tolerance: 6.969e-07

$Bioturbation$Pa4
Nonlinear regression model
  model:  response ~ b * sowndiv^c
  data:  DF
      b   c
  0.08883 0.31290
  residual sum-of-squares: 2.674

Number of iterations to convergence: 6
Achieved convergence tolerance: 3.015e-06

$Bioturbation$Pa5
Nonlinear regression model
  model:  response ~ sowndiv^c
  data:  DF
      c
  -2.762
  residual sum-of-squares: 17.30

Number of iterations to convergence: 19
Achieved convergence tolerance: 3.873e-06

$Bioturbation$Pb11
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 24.00040

Coefficients:
      a   b   c
-0.01241529 0.09993389 0.29209681

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1839685

$Bioturbation$Pb21
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 22.97626
Coefficients:
a           b
0.117395702 0.003850672

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1851127

$Bioturbation$Pb31
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 23.84666

Coefficients:
  a           c
-0.92248622 0.04651519

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1831582

$Bioturbation$Pb41
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 23.99912

Coefficients:
  b          c
0.08882811 0.31289910

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1828180

$Bioturbation$Pb51
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -52.56294

Coefficients:
  c
-2.761908

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4621841

$Bioturbation$Pc121
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 24.40538

Coefficients:
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  0.07070471

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1648208

$Bioturbation$Pc221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 23.59869

Coefficients:
  a      b
  0.111430210 0.004262715

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  0.08713694

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1614204

$Bioturbation$Pc231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 23.00438

Coefficients:
  a      b
  0.119800789 0.003584724

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
  -0.002697487

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1893848

$Bioturbation$Pc321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
Log-likelihood: 24.20479

Coefficients:
  a   c
-0.91947688  0.04465388

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.06698336
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1650982

$Bioturbation$Pc331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 24.11075

Coefficients:
  a   c
-0.92258973  0.04679888

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007176073
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1941709

$Bioturbation$Pc421
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 24.40240

Coefficients:
  b   c
  0.0884446  0.3148123

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.06989742
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1639898

$Bioturbation$Pc431
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 24.1683

Coefficients:
  b  c
  0.09161767  0.29669160

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00582621
  Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1917990

$Bioturbation$Pc521
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -40.05222

Coefficients:
  c
  -1.911287

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.2864076
  Degrees of freedom: 82 total; 81 residual
  Residual standard error: 0.6070366

$Bioturbation$Pc531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -49.41452

Coefficients:
  c
  -2.685284

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01415142
  Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.5022324

$Bioturbation$Pd61
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 27.66071

Coefficients:
\[
\begin{align*}
a \text{(Intercept)} & \quad a \text{.funcgr} & \quad b \text{.(Intercept)} & \quad b \text{.funcgr} & \quad c \text{(Intercept)} \\
0.090422754 & \quad 0.006870324 & \quad -0.033541577 & \quad 0.024344864 & \quad 0.826115563 \\
& \quad c \text{.funcgr} & \quad -0.130010635
\end{align*}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1793760

$Bioturbation$Pd71
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 26.93754

Coefficients:
\[
\begin{align*}
a \text{(Intercept)} & \quad a \text{.funcgr} & \quad b \text{(Intercept)} & \quad b \text{.funcgr} \\
2.047334e-02 & \quad 5.620433e-02 & \quad 1.280412e-03 & \quad -1.063256e-05
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1786298

$Bioturbation$Pd81
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 27.49939

Coefficients:
\[
\begin{align*}
a \text{(Intercept)} & \quad a \text{.funcgr} & \quad c \text{(Intercept)} & \quad c \text{.funcgr} \\
-0.93532670 & \quad 0.02576123 & \quad -0.02233440 & \quad 0.01576871
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1774100

$Bioturbation$Pd91
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 27.28719

Coefficients:
\[
\begin{align*}
b \text{(Intercept)} & \quad b \text{.funcgr} & \quad c \text{(Intercept)} & \quad c \text{.funcgr} \\
0.04203848 & \quad 0.03847577 & \quad 0.02546373 & \quad 0.02667007
\end{align*}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1778697

$\text{Bioturbation}$Pd101
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -50.17306

Coefficients:
  c.(Intercept)   c.funcgr
     -4.4580807     0.9698987

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4517052

$\text{Bioturbation}$Pe721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 27.10298

Coefficients:
  a.(Intercept)   a.funcgr   b.(Intercept)   b.funcgr
    0.0260562595  0.0534350924  0.0007781034  0.0001644070

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.04570946

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1665738

$\text{Bioturbation}$Pe731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 27.30641

Coefficients:
  a.(Intercept)   a.funcgr   b.(Intercept)   b.funcgr
    0.0124213469  0.0613230994  0.0019820244 -0.0003323379

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.008631376

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1915062

$\text{Bioturbation}$Pe821
Generalized nonlinear least squares fit

Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 27.68336

Coefficients:
a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
-0.93005092  0.02255344  -0.02575398  0.01736256

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.04729445
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1650102

$Bioturbation$Pe831

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 27.71025

Coefficients:
a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
-0.94654717  0.03451148  -0.01568649  0.01146816

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.006667932
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1873800

$Bioturbation$Pe921

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 27.46146

Coefficients:
b.(Intercept)  b.funcgr  c.(Intercept)  c.funcgr
0.04893414  0.03558083  -0.01527418  0.03942979

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.04695037
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1655419

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 27.57543

Coefficients:
  b.(Intercept)  b.funcgr  c.(Intercept)  c.funcgr
  0.030621412   0.045334214   0.076371574   0.004510836

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00775824

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1894535

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -28.74399

Coefficients:
  c.(Intercept)  c.funcgr
  -2.4400868     0.5167844

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4552348

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6837095

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -38.04807

Coefficients:
  c.(Intercept)  c.funcgr
  -3.5532481     0.8078551

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
expon
-0.03938309
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5463622

$\text{Bioturbation}^{\text{Pf121}}$
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 23.61129

Coefficients:
a.(Intercept)       a.grass b.(Intercept)       b.grass
0.177986911  -0.047795803  -0.003986296   0.007206700

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1860247

$\text{Bioturbation}^{\text{Pf131}}$
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.03977

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-0.97454636    0.03440398    0.07595446   -0.02172944

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1850552

$\text{Bioturbation}^{\text{Pf141}}$
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.00855

Coefficients:
b.(Intercept)       b.grass c.(Intercept)       c.grass
0.09788187   -0.00698996    0.26321239    0.04151768

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1851256

$\text{Bioturbation}^{\text{Pf151}}$
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -52.40454

Coefficients:
c.(Intercept)       c.grass
-0.4183022   -1.3940567
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4641662

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 33.07242

Coefficients:
\[
\begin{array}{c}
\text{a.(Intercept)} \quad \text{a.leg} \quad \text{b.(Intercept)} \quad \text{b.leg} \\
0.381032096 \quad -0.164168934 \quad 0.004614275 \quad -0.002580315
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1657532

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 33.68927

Coefficients:
\[
\begin{array}{c}
\text{a.(Intercept)} \quad \text{a.leg} \quad \text{c.(Intercept)} \quad \text{c.leg} \\
-0.71136186 \quad -0.11810263 \quad 0.07484050 \quad -0.03850862
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1645110

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 33.74637

Coefficients:
\[
\begin{array}{c}
\text{b.(Intercept)} \quad \text{b.leg} \quad \text{c.(Intercept)} \quad \text{c.leg} \\
0.2995776 \quad -0.1236926 \quad 0.3610934 \quad -0.1998566
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1643964

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -52.12373

Coefficients:
\[
\begin{array}{c}
\text{c.(Intercept)} \quad \text{c.leg} \\
0.7240597 \quad -1.9993387
\end{array}
\]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4625795
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 33.79861

Coefficients:
\( a. (\text{Intercept}) \quad a.\text{funcgr} \quad a.\text{leg} \quad b. (\text{Intercept}) \quad b.\text{funcgr} \)
\[
\begin{array}{crrrrrr}
0.240117748 & 0.028364952 & -0.111920141 & 0.023275004 & -0.003059289 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1664394

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 33.87082

Coefficients:
\( a. (\text{Intercept}) \quad a.\text{funcgr} \quad a.\text{leg} \quad c. (\text{Intercept}) \quad c.\text{funcgr} \quad c.\text{leg} \)
\[
\begin{array}{crrrrrr}
-0.664039405 & -0.009220624 & -0.136118062 & 0.024308912 & 0.009441823 & -0.020329905 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1662929

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 33.79754

Coefficients:
\( b. (\text{Intercept}) \quad b.\text{funcgr} \quad b.\text{leg} \quad c. (\text{Intercept}) \quad c.\text{funcgr} \quad c.\text{leg} \)
\[
\begin{array}{crrrrrr}
0.306084247 & 0.002209656 & -0.128182974 & 0.260905678 & 0.013563389 & -0.166701571 \\
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1664416

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -50.10325

Coefficients:
\( c. (\text{Intercept}) \quad c.\text{funcgr} \quad c.\text{leg} \)
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.177043

$Bioturbation$Pi271
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 28.60465

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
 0.001918873   0.058290644   0.008003733  -0.016566622   0.002038545
b.grass
 0.009672533

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1773229

$Bioturbation$Pi281
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 28.60465

Coefficients:
a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr
 -0.96974921    0.02889816   0.01750170   -0.08688764    0.02384061
  c.grass
  0.03346103

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1773229

$Bioturbation$Pi291
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 29.352

Coefficients:
b.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
 0.10606916    0.02547831  -0.02889878  -1.08829102    0.18256216
          c.grass
          0.51668509

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1757141

$Bioturbation$Pi301
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: 28.42850

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
 0.001918873   0.058290644   0.008003733  -0.016566622   0.002038545
b.grass
 0.009672533

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4541682
Log-likelihood: -50.16532

Coefficients:
c.(Intercept) c.funcgr c.grass
-3.7790109 0.8970458 -0.3885011

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4545122

$Bioturbation$Pj321
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 34.31503

Coefficients:
a.(Intercept) a.grass a.leg b.(Intercept) b.grass
0.4784603489 -0.0766578880 -0.1550877624 -0.0005561406 0.0067421916
b.leg -0.0049769486

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1653945

$Bioturbation$Pj331
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 34.07762

Coefficients:
a.(Intercept) a.grass a.leg c.(Intercept) c.grass
-0.648312837 -0.024220764 -0.130033650 0.073556770 -0.007021413
c.leg -0.035390603

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1653945

$Bioturbation$Pj341
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.12622

Coefficients:
b.(Intercept) b.grass b.leg c.(Intercept) c.grass
0.37245440 -0.04085719 -0.12815813 0.31918751 0.05430574
c.leg -0.25259056

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1657758
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -49.66763

Coefficients:
c.(Intercept)      c.grass      c.leg
  4.064480     -2.268931     -2.410857

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4517619

Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 34.36648

Coefficients:
a.(Intercept)      a.funcgr      a.grass      a.leg  b.(Intercept)
  0.4725605157 -0.0006957403 -0.0755600610 -0.1526106880  0.0084821953
  b.funcgr      b.grass      b.leg
  -0.0012143573  0.0049131891 -0.0072629798

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1675096

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.32068

Coefficients:
a.(Intercept)      a.funcgr      a.grass      a.leg  c.(Intercept)
  -0.476801490  -0.032846402  -0.063298530  -0.166216802  -0.005282417
  c.funcgr      c.grass      c.leg
  0.013269903   0.012216920  -0.018003920

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1676031

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 34.23534

Coefficients:
b.(Intercept)      b.funcgr      b.grass      b.leg  c.(Intercept)
  0.46763535   -0.01691296   -0.05867698  -0.15220321   -0.04461337
  c.funcgr      c.grass      c.leg
  0.05033639    0.12769118  -0.13942377
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1677777

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -49.65182

Coefficients:
c.(Intercept) c.funcgr c.grass c.leg
3.4426091 0.0805594 -2.1217066 -2.2345531

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4545609

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 23.97687

Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass
0.157518163 -0.035039921 -0.002498814 0.006073544

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  0.06873129

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1672323

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 23.79105

Coefficients:
a.(Intercept) a.grass b.(Intercept) b.grass
0.191730882 -0.055614764 -0.005252438 0.008047494

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.006311827

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1959533
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.55167

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-0.98932774    0.04531749    0.08643845   -0.03039373

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.08173598

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1628888

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 24.21951

Coefficients:
a.(Intercept)       a.grass c.(Intercept)       c.grass
-0.96314922    0.02740374    0.06774067   -0.01597323

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.006130352

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1946287

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.41109

Coefficients:
b.(Intercept)       b.grass c.(Intercept)       c.grass
0.080762625   0.005975706   0.364261044  -0.041348578

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1652983

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 24.21807

Coefficients:
b.(Intercept)   b.grass   c.(Intercept)   c.grass
0.11082719   -0.01534247   0.18461061   0.09678874

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv

Parameter estimates:
expon
-0.006659658

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1955185

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -37.62511

Coefficients:
c.(Intercept)   c.grass
1.587913   -2.304960

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv

Parameter estimates:
power
-0.3486845

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.650445

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -49.11184

Coefficients:
c.(Intercept)   c.grass
0.7071402   -1.9471625

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.01487552
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5066395

$Bioturbation$Pn1721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 33.47118
Coefficients:
a.(Intercept)  a.leg  b.(Intercept)  b.leg
  0.370839580  -0.159109495  0.005187234  -0.002872769

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.07493689
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1475824

$Bioturbation$Pn1731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 33.32823
Coefficients:
a.(Intercept)  a.leg  b.(Intercept)  b.leg
  0.399144944  -0.173468453  0.003275591  -0.001861383

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.007369728
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1760296

$Bioturbation$Pn1821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 33.80667
Coefficients:
a.(Intercept)  a.leg  c.(Intercept)  c.leg
  -0.70464511  -0.12177065  0.07123015  -0.03640052
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.04057679
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1546719

$Bioturbation$Pn1831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.11719

Coefficients:
  a.(Intercept) a.leg c.(Intercept) c.leg
  -0.69208397 -0.12778602  0.06437164  -0.03325332

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.008265646
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1756902

$Bioturbation$Pn1921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 33.89558

Coefficients:
  b.(Intercept) b.leg c.(Intercept) c.leg
  0.3015308  -0.1249988  0.3445728  -0.1850122

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.04491114
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1535133

$Bioturbation$Pn1931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 34.10345
Coefficients:
\[
\begin{align*}
\text{b. (Intercept)} & = 0.3205605 \\
\text{b. leg} & = -0.1342101 \\
\text{c. (Intercept)} & = 0.3012658 \\
\text{c. leg} & = -0.1700300
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon: -0.007821472

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1750508

$Bioturbation$Pn2021
Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: -29.44721

Coefficients:
\[
\begin{align*}
\text{c. (Intercept)} & = 2.357618 \\
\text{c. leg} & = -2.785384
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power: -0.516523

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7552858

$Bioturbation$Pn2031
Generalized nonlinear least squares fit
- Model: response ~ sowndiv^c
- Data: DF
- Log-likelihood: -43.2218

Coefficients:
\[
\begin{align*}
\text{c. (Intercept)} & = 2.595188 \\
\text{c. leg} & = -2.928451
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - expon: -0.04218271

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5961022

$Bioturbation$Pp2221
Generalized nonlinear least squares fit
- Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 33.94237

Coefficients:
\[
\begin{array}{cccccc}
\text{a.}(\text{Intercept}) & \text{a.funcgr} & \text{a.leg} & \text{b.}(\text{Intercept}) & \text{b.funcgr} \\
0.259520753 & 0.023843873 & -0.118537958 & 0.020848350 & -0.002624988 \\
\text{b.leg} & -0.008878656 & & & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{power} \\
0.04694129
\end{array}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1549636

$Bioturbation$Pp2231
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 34.3744

Coefficients:
\[
\begin{array}{cccccc}
\text{a.}(\text{Intercept}) & \text{a.funcgr} & \text{a.leg} & \text{c.}(\text{Intercept}) & \text{c.funcgr} \\
0.222725163 & 0.035199923 & -0.108112317 & 0.025739242 & -0.003650583 \\
\text{c.leg} & -0.010498597 & & & \\
\end{array}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{array}{c}
\text{expon} \\
-0.01018459
\end{array}
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1803768

$Bioturbation$Pp2321
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 34.12793

Coefficients:
\[
\begin{array}{cccccc}
\text{a.}(\text{Intercept}) & \text{a.funcgr} & \text{a.leg} & \text{c.}(\text{Intercept}) & \text{c.funcgr} \\
-0.631748888 & -0.016364190 & -0.148669746 & -0.002038307 & 0.014328145 \\
\text{c.leg} & -0.009882523 & & & \\
\end{array}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
0.06342833
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1508749

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.16786

Coefficients:
  a.(Intercept)      a.funcgr         a.leg c.(Intercept)      c.funcgr
c.leg
-0.686642087   0.001772718 -0.131300015   0.044089480   0.002979477
  -0.026028774

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.007748569

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1770891

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 34.17012

Coefficients:
  b.(Intercept)      b.funcgr         b.leg c.(Intercept)      c.funcgr
c.leg
0.27984895    0.01108098   -0.12012605    0.40888234   -0.01726270
  -0.23456085

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
-0.008548835

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1783050

Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -24.89573
Coefficients:
\[
\begin{align*}
\text{c. (Intercept)} & \quad \text{c_funcgr} & \quad \text{c_leg} \\
1.2715910 & \quad 0.1816573 & \quad -2.3540206
\end{align*}
\]
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} = -0.5329723
\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.736788

$\text{Bioturbation}\$Pp2531
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -37.20437

Coefficients:
\[
\begin{align*}
\text{c. (Intercept)} & \quad \text{c_funcgr} & \quad \text{c_leg} \\
-0.02734227 & \quad 0.39849374 & \quad -1.88714463
\end{align*}
\]
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} = -0.04040393
\]
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.5489716

$\text{Bioturbation}\$Pg2721
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 28.47831

Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad \text{a_funcgr} & \quad \text{a_grass} & \quad \text{b. (Intercept)} & \quad \text{b_funcgr} & \quad \text{b_grass} \\
-0.0005616369 & \quad 0.0574229531 & \quad 0.0109303811 & \quad -0.0161719470 & \quad 0.0020582164 & \quad 0.0093075934
\end{align*}
\]
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} = 0.02586895
\]
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1709051

$\text{Bioturbation}\$Pg2731
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 29.0505

Coefficients:
   a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
-0.0007580935  0.0635892472  0.0042480145 -0.0169238973  0.0017927198
   b.grass
  0.0103410001

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
    -0.01073567

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1933892

$\text{Bioturbation}^{*} Pq2821$

Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 28.68171

Coefficients:
   a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr
-0.97907198    0.02845559    0.02391696   -0.07976082    0.02372241
   c.grass
  0.02869500

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power
    0.03210338

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1689111

$\text{Bioturbation}^{*} Pq2831$

Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 28.99412

Coefficients:
   a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr
-0.96944056    0.03816405    0.01015874   -0.09194624    0.02000233
   c.grass
  0.04043881

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  \( \text{expon} = -0.008876756 \)
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1904583

$Bioturbation$Pg2921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 29.35581

Coefficients:
\[
\begin{array}{cccccc}
  b.(\text{Intercept}) & b.\text{funcgr} & b.\text{grass} & c.(\text{Intercept}) & c.\text{funcgr} \\
  0.11050423 & 0.02519128 & -0.03165430 & -1.10438967 & 0.18334537 \\
  c.\text{grass} & \\
  0.52813421 \\
\end{array}
\]

Variance function:
  Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  \( \text{power} = -0.007681667 \)
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1777212

$Bioturbation$Pg2931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 30.22263

Coefficients:
\[
\begin{array}{cccccc}
  b.(\text{Intercept}) & b.\text{funcgr} & b.\text{grass} & c.(\text{Intercept}) & c.\text{funcgr} \\
  0.13016381 & 0.02991060 & -0.04897648 & -1.17168096 & 0.16929743 \\
  c.\text{grass} & \\
  0.59550747 \\
\end{array}
\]

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  \( \text{expon} = -0.01255157 \)
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1936400

$Bioturbation$Pg3021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
Log-likelihood: -26.58377

Coefficients:
c.(Intercept)  c.funcgr  c.grass
  -4.6872953  0.8517815  0.9116164

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4908771
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.7065488

$Bioturbation$Pq3031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -37.23556

Coefficients:
c.(Intercept)  c.funcgr  c.grass
  -7.369318  1.415558  1.385722

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.04021953
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.5483117

$Bioturbation$Pr3221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 34.44572

Coefficients:
a.(Intercept)  a.grass  a.leg  b.(Intercept)  b.grass  b.leg
  0.4664508357 -0.0686581699 -0.1547717726  0.0003362215  0.0058888736

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.04426243
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.154629
Bioturbation

Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 34.86083

Coefficients:
  a.(Intercept)     a.grass     a.leg    b.(Intercept)     b.grass
  0.507184515   -0.087926722  -0.161615324  -0.002641003   0.007917389
  b.leg
  -0.004653162

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00990154
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1788748

Bioturbation

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.25963

Coefficients:
  a.(Intercept)     a.grass     a.leg    c.(Intercept)     c.grass
  -0.65109417   -0.01549335   -0.13581529    0.07732550   -0.01453568
  c.leg
  -0.03152467

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.0531182
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1529561

Bioturbation

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.46845

Coefficients:
  a.(Intercept)     a.grass     a.leg    c.(Intercept)     c.grass
  -0.611129650   -0.039475637  -0.136811612   0.051503885   0.004337563
  c.leg
  -0.032562667
Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.00840066
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1774316

$Bioturbation$Pr3421
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.25591

Coefficients:
b.(Intercept)  b.grass  b.leg  c.(Intercept)  c.grass
  0.3722089548 -0.0304760173 -0.1365701987  0.3245319330 -0.0003614163
c.leg
  -0.2040730172

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
  0.04734209
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1542804

$Bioturbation$Pr3431
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.5987

Coefficients:
b.(Intercept)  b.grass  b.leg  c.(Intercept)  c.grass
  0.40039810   -0.05627665   -0.12960915    0.24286601    0.12028860
c.leg
  -0.27349415

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
  -0.009261622
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1784643

$Bioturbation$Pr3521
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -26.20735

Coefficients:
c.(Intercept) c.grass c.leg
2.6739484 -0.3836014 -2.6697555

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.5124061
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7261549

$\text{Bioturbation}$$Pr3531$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -37.3807

Coefficients:
c.(Intercept) c.grass c.leg
4.762819 -2.404348 -2.683563

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
       -0.03989264
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.5477437

$\text{Bioturbation}$$Ps3721$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 34.49875

Coefficients:
a.(Intercept) a.funcgr a.grass a.leg b.(Intercept)
  0.475471300 -0.003060448 -0.070874397 -0.155795203 0.008101759
  b.funcgr b.grass b.leg
   -0.001040796 0.004350183 -0.006827840

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
       0.04478591
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1564817

$Bioturbation$Ps3731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 34.91548

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  a.leg  b.(Intercept)
  0.467191034  0.004529247 -0.079051421  -0.151226095  0.008820779
  b.funcgr  b.grass  b.leg
  -0.001536411  0.005513315  -0.007538081

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.009953389

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1812358

$Bioturbation$Ps3821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.56993

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  a.leg  c.(Intercept)
  -0.475680687  -0.035944710  -0.053255225  -0.173382097  -0.007653094
  c.funcgr  c.grass  c.leg
  0.015093637  0.004818793  -0.012037383

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.06261787

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1522613

$Bioturbation$Ps3831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.59147

Coefficients:
  a.(Intercept)  a.funcgr  a.grass  a.leg  c.(Intercept)
  -0.4840353021  -0.0241089209  -0.0680978348  -0.1639842895  -0.0006995378
c.funcgr  c.grass  c.leg  
0.0088575924  0.0167121841 -0.0207935876

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.007444694

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1780763

$Bioturbation$Ps3921
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.42413

Coefficients:
  b.(Intercept)  b.funcgr  b.grass  b.leg  c.(Intercept)
0.48321727    -0.02096103  -0.05086292  -0.16416828  -0.04283231
  c.funcgr  c.grass  c.leg
0.05306475    0.06647898  -0.08013323

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
0.0567199

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1538737

$Bioturbation$Ps3931
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 34.62813

Coefficients:
  b.(Intercept)  b.funcgr  b.grass  b.leg  c.(Intercept)
0.451092073  -0.008471912  -0.065189908  -0.143143459  -0.012369136
  c.funcgr  c.grass  c.leg
0.034410303  0.173025733  -0.199523966

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.008853391

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1801625
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -24.70716

Coefficients:
c.(Intercept)    c.funcgr   c.grass     c.leg
0.5115089       0.2788810  0.2216273  -2.2026888

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.5403363
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.7479248

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -37.20459

Coefficients:
c.(Intercept)    c.funcgr   c.grass     c.leg
-1.7976692       0.6273966  0.4585626  -1.4909473

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.04052005
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.553032

Nonlinear regression model
model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
Asym      R0     lrc
0.3108  0.0742 -2.7121
residual sum-of-squares: 2.646

Number of iterations to convergence: 13
Achieved convergence tolerance: 8.964e-06

Nonlinear regression model
model: response ~ SSasympOff(sowndiv, Asym, lrc, c0)
data: DF
Asym     lrc      c0
0.3108  0.0742 -2.7121
Number of iterations to convergence: 13
Achieved convergence tolerance: 8.592e-06

$\text{Bioturbation}$AS3
Nonlinear regression model
model: response ~ SSasympOrig(sowndiv, Asym, lrc)
data: DF
Asym lrc
0.2661 -1.8517
residual sum-of-squares: 2.743

Number of iterations to convergence: 8
Achieved convergence tolerance: 7.667e-06

$\text{Bioturbation}$LG1
Nonlinear regression model
model: response ~ SSfpl(sowndiv, A, B, xmid, scal)
data: DF
A B xmid scal
0.1146 0.2780 12.0984 0.9216
residual sum-of-squares: 2.574

Number of iterations to convergence: 4
Achieved convergence tolerance: 3.830e-06

$\text{Bioturbation}$LG2
Nonlinear regression model
model: response ~ SSlogis(sowndiv, Asym, xmid, scal)
data: DF
Asym xmid scal
0.3087 7.0248 6.8339
residual sum-of-squares: 2.624

Number of iterations to convergence: 26
Achieved convergence tolerance: 7.795e-06

$`\text{Ant activity}`$
$`\text{Ant activity}`$L0

Call:
\text{lm(formula = response ~ block + (sowndiv + funcgr + grass + leg)^2, data = DF)}

Coefficients:
\begin{verbatim}
(Intercept)         blockB2         blockB3         blockB4
sowndiv  0.564023 0.081826 -0.061935 -0.088584 -
          0.017374
funcgr    0.017374
grass    0.017374
leg      0.017374
sowndiv:funcgr
\end{verbatim}
\begin{verbatim}
\$\text{`Ant activity`}$L2

Call:
lm(formula = response \sim sowndiv + funcgr + leg, data = DF)

Coefficients:
(Intercept)     sowndiv       funcgr          leg
 -0.094718    -0.005478     0.080125     0.205373

\$\text{`Ant activity`}$M1

Nonlinear regression model
  model:  response \sim a * sowndiv/(b + sowndiv)
  data:  DF
    a       b
  0.3108 -0.1547
residual sum-of-squares: 4.208
Number of iterations to convergence: 8
Achieved convergence tolerance: 4.278e-06

\$\text{`Ant activity`}$M1a

Nonlinear regression model
  model:  response \sim SSmicmen(sowndiv, Vm, k)
  data:  DF
    Vm       k
  0.3108 -0.1547
residual sum-of-squares: 4.208
Number of iterations to convergence: 7
Achieved convergence tolerance: 3.289e-06

\$\text{`Ant activity`}$E2

Nonlinear regression model
  model:  response \sim a + b * exp(sowndiv)
  data:  DF
    a       b
  3.405e-01 -1.766e-27
residual sum-of-squares: 4.092
Number of iterations to convergence: 4
Achieved convergence tolerance: 1.546e-08

\$\text{`Ant activity`}$E4

Nonlinear regression model
  model:  response \sim a + exp(sowndiv)
  data:  DF
  a
\end{verbatim}
residual sum-of-squares: 5.217e+52
Number of iterations to convergence: 0
Achieved convergence tolerance: 6.21e-20

Ant activity E5
Nonlinear regression model
model: response ~ b * exp(sowndiv)
data: DF
   b
1.216e-27
residual sum-of-squares: 13.02
Number of iterations to convergence: 4
Achieved convergence tolerance: 3.943e-09

Ant activity Pa1
Nonlinear regression model
model: response ~ a + b * sowndiv^c
data: DF
   a   b   c
0.38567 -0.01359 0.71096
residual sum-of-squares: 4.021
Number of iterations to convergence: 7
Achieved convergence tolerance: 1.700e-06

Ant activity Pa2
Nonlinear regression model
model: response ~ a + b * sowndiv
data: DF
   a   b
0.365884 -0.004067
residual sum-of-squares: 4.027
Number of iterations to convergence: 1
Achieved convergence tolerance: 4.376e-09

Ant activity Pa3
Nonlinear regression model
model: response ~ a + sowndiv^c
data: DF
   a   c
-0.60866 -0.04243
residual sum-of-squares: 4.085
Number of iterations to convergence: 8
Achieved convergence tolerance: 9.944e-07

Ant activity Pa4
Nonlinear regression model
model: response ~ b * sowndiv^c
data: DF
$\text{Ant activity}^{\text{Pa5}}$
Nonlinear regression model
model: response ~ sowndiv^c
data: DF
c
-0.7096
residual sum-of-squares: 11.73

Number of iterations to convergence: 12
Achieved convergence tolerance: 7.087e-06

$\text{Ant activity}^{\text{AS1}}$
Nonlinear regression model
model: response ~ SSasymp(sowndiv, Asym, R0, lrc)
data: DF
Asym    R0      lrc
0.04215  0.37798 -3.88109
residual sum-of-squares: 4.019

Number of iterations to convergence: 2
Achieved convergence tolerance: 1.179e-06

$\text{Ant activity}^{\text{BIEXP}}$
Nonlinear regression model
model: response ~ SSbiexp(sowndiv, A1, lrc1, A2, lrc2)
data: DF
A1     lrc1       A2     lrc2
0.01625 -2.07917  0.36335 -4.14229
residual sum-of-squares: 4.019

Number of iterations to convergence: 27
Achieved convergence tolerance: 9.841e-06

$\text{Vole abundance}^{\text{L0}}$

Call:
\text{lm}(\text{formula = response} \sim \text{block} + (\text{sowndiv} + \text{funcgr} + \text{grass} + \text{leg})^2, \text{data} = \text{DF})

Coefficients:
(Intercept)         blockB2 blockB3 blockB4
sowndiv            0.951945       -0.126667       -0.105571       -0.131574       -0.035584
funcgr           grass       leg sowndiv:funcgr
$\text{Vole abundance}\$\text{L011}$

Generalized least squares fit by maximum likelihood
- Model: $\text{response} \sim \text{block} + (\text{sowndiv} + \text{funcgr} + \text{grass} + \text{leg})^2$
- Data: DF
- Log-likelihood: 49.8624

Coefficients:

<table>
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<tr>
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<th>blockB2</th>
<th>blockB3</th>
<th>blockB4</th>
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<td>0.073332686</td>
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</table>

Variance function:
- Structure: Power of variance covariate
- Formula: ~sowndiv
- Parameter estimates:
  - power
    -0.1293169

Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.1596079

$\text{Vole abundance}\$\text{L021}$

Generalized least squares fit by maximum likelihood
- Model: $\text{response} \sim \text{block} + (\text{sowndiv} + \text{funcgr} + \text{grass} + \text{leg})^2$
- Data: DF
- Log-likelihood: 49.26548

Coefficients:

<table>
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<th>blockB2</th>
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<th>blockB4</th>
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</table>

Variance function:
- Structure: Exponential of variance covariate
- Formula: ~sowndiv
Parameter estimates:
expon
-0.006268122
Degrees of freedom: 82 total; 68 residual
Residual standard error: 0.1400266

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
```
(Intercept)      sowndiv       funcgr          leg
 0.474582     0.001490    -0.046296    -0.202039
```

Variance function:
```
Structure: Exponential of variance covariate
Formula: ~fitted(.)
```

Parameter estimates:
expon
12.57196
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.02731221

Call:
`lm(formula = response ~ sowndiv + funcgr + leg, data = DF)`

Coefficients:
```
(Intercept)      sowndiv       funcgr          leg
 0.3370848477 -0.0002421946 -0.0080595177 -0.1561066777
```

Variance function:
```
Structure: Power of variance covariate
Formula: ~sowndiv
```

Parameter estimates:
power
-0.1078284
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1691399
Generalized least squares fit by maximum likelihood
Model: response ~ sowndiv + funcgr + leg
Data: DF
Log-likelihood: 41.63748

Coefficients:
(Intercept)    sowndiv       funcgr        leg
  0.473656633    0.001477073  -0.045965634    -0.201809467

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
      expon
   -0.003760035

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1504038

Nonlinear regression model
model:  response ~ a * sowndiv/(b + sowndiv)
data:  DF
   a     b
 0.1069 0.5273
residual sum-of-squares: 2.322

Number of iterations to convergence: 5
Achieved convergence tolerance: 3.976e-06

Nonlinear regression model
model:  response ~ SSmicmen(sowndiv, Vm, k)
data:  DF
   Vm     k
 0.1069 0.5273
residual sum-of-squares: 2.322

Number of iterations to convergence: 3
Achieved convergence tolerance: 2.833e-06

Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 40.60858

Coefficients:
a. (Intercept)    a.leg b. (Intercept)        b.leg
  0.2734926   -0.1317393   -0.6116736   0.1751649

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
-0.1028333
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1761366

$`Vole abundance`$M321
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 39.8467

Coefficients:
  a.(Intercept)      a.leg b.(Intercept)      b.leg
  0.2814202  -0.1401830  1.0394553  -1.4805730

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
  -0.003535839
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1573139

$`Vole abundance`$M4
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 31.99636

Coefficients:
  a.(Intercept)      a.grass b.(Intercept)      b.grass
  0.24282267  -0.04440752  35.66012829  -17.54511460

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1679426

$`Vole abundance`$M411
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 33.59695

Coefficients:
  a.(Intercept)      a.grass b.(Intercept)      b.grass
  0.3285272    -0.0831872    56.7954349   -28.0350094

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
-0.1300518
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1997718

$`Vole abundance`$M422
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.49015

Coefficients:
a.(Intercept)       a.grass b.(Intercept)       b.grass
0.30982553   -0.07619422   49.43846759  -24.40803505

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.005508889

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1750193

$`Vole abundance`$M5
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 27.79669

Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
-0.10616378    0.08533021   -9.53424185    5.00684641

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1767680

$`Vole abundance`$M511
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 32.25110

Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
0.03588480    0.04172376   -2.89874994    2.79180948

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1294631

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2029002
Vole abundance
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 31.11355

Coefficients:
a.(Intercept) a.funcgr b.(Intercept) b.funcgr
0.04394466 0.03990742 -2.86165741 2.84958771

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
-0.005582173
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1780943

Vole abundance
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 34.13117

Coefficients:
a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr b.grass
-0.30841402 0.09831412 0.16717467 12.13116531 2.88631678
-7.44818755

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1657658

Vole abundance
Generalized nonlinear least squares fit
Model: response ~ a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 36.71778

Coefficients:
a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr
-0.4778884 0.2353747 0.1685602 210.7752506 6.6285879
-108.7890121

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
-0.1701222
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2067670
$`Vole abundance`$M722
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 34.74957
Coefficients:
  a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
  -0.3125675     0.0961427     0.1693153    13.0870667     2.6141543
  b.grass
  -7.7978309

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.005930703
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1731142

$`Vole abundance`$M821
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 41.94184
Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  0.31960853    0.01797969   -0.16704653    8.25378266   -4.40647315
  b.leg
  0.34866034

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1218059
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1805766

$`Vole abundance`$M832
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 40.86461
Coefficients:
  a.(Intercept)       a.grass         a.leg b.(Intercept)       b.grass
  0.30455382    0.01833347   -0.15875106    6.19309208   -3.48501093
  b.leg
  0.52387201
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.004108751
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1581804

$`Vole abundance`$M91
Generalized nonlinear least squares fit
  Model: response ~ a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 38.25930

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg b.(Intercept)
  -3.171288e-01  3.215469e-01  4.624296e-03 -8.826355e-03  3.455697e+02
    b.funcgr       b.grass         b.leg
  9.516940e+00 -1.784428e+02 -1.821789e-01

  Degrees of freedom: 82 total; 74 residual
  Residual standard error: 0.1597431

$`Vole abundance`$M1221
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 32.5492

Coefficients:
  a.(Intercept)      a.funcgr         a.leg b.(Intercept)      b.funcgr d.(Intercept)
  0.07767281    0.01668098         -9.82795683    9.79809650   -0.03980090
    d.funcgr
  0.03094714

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1249480
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.2034385

$`Vole abundance`$M131
Generalized nonlinear least squares fit
  Model: response ~ d + a * sowndiv/(b + sowndiv)
  Data: DF
  Log-likelihood: 45.40044

Coefficients:
  a.(Intercept)      a.funcgr       a.leg b.(Intercept)      b.funcgr
$`Vole abundance`$M1321

Generalized nonlinear least squares fit

Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 47.19049

Coefficients:

a.(Intercept) a.funcgr a.leg b.(Intercept) b.funcgr
8.432449e-01 -8.605890e-02 -3.589947e-01 -1.061103e+01 1.090989e+01
b.leg d.(Intercept) d.funcgr d.leg
-7.091420e-02 -5.552650e-02 3.647082e-02 -5.032918e-04

Variance function:

Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:

   power
   -0.06942761

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1474196

$`Vole abundance`$M141

Generalized nonlinear least squares fit

Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 33.94516

Coefficients:

a.(Intercept) a.funcgr a.grass b.(Intercept) b.funcgr
-0.44770532 0.41705771 0.03275953 -224.50033132 237.56505455
b.grass d.(Intercept) d.funcgr d.grass
-16.93938825 -0.15631705 0.02957062 0.11915057

Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.1598960

$`Vole abundance`$M1632

Generalized nonlinear least squares fit

Model: response ~ d + a * sowndiv/(b + sowndiv)
Data: DF
Log-likelihood: 45.66862

Coefficients:

a.(Intercept) a.funcgr a.grass a.leg b.(Intercept)
-9.94477890 2.90179225 2.33078388 2.34358288 0.74125341
b.funcgr b.grass b.leg d.(Intercept) d.funcgr
-0.10093264 -0.06497991 -0.24888993 10.47661201 -2.94270443
d.grass         d.leg
-2.29912889   -2.60001580

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.002255671

Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1529881

$`Vole abundance`$E2
Nonlinear regression model
  model:  response ~ a + b * exp(sowndiv)
  data:  DF
  a         b
  8.668e-02 7.766e-28
residual sum-of-squares: 2.304

Number of iterations to convergence: 4
Achieved convergence tolerance: 2.076e-09

$`Vole abundance`$E4
Nonlinear regression model
  model:  response ~ a + exp(sowndiv)
  data:  DF
  a
  1
residual sum-of-squares: 5.217e+52

Number of iterations to convergence: 0
Achieved convergence tolerance: 6.17e-20

$`Vole abundance`$E5
Nonlinear regression model
  model:  response ~ b * exp(sowndiv)
  data:  DF
  b
  1.536e-27
residual sum-of-squares: 2.890

Number of iterations to convergence: 4
Achieved convergence tolerance: 8.364e-09

$`Vole abundance`$E11
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(c * sowndiv)
  Data: DF
  Log-likelihood: 31.78908

Coefficients:
  a            b            c
  -0.816273255 0.893358489 0.001749862
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1267338
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2019313

$\text{Vole abundance}$
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(c * sowndiv)
  Data: DF
  Log-likelihood: 30.71219
Coefficients:
  a            b            c
  -0.448858136  0.526439423  0.002853185

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.005592654
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1778479

$\text{Vole abundance}$
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(sowndiv)
  Data: DF
  Log-likelihood: 30.60478
Coefficients:
  a            b
  8.719291e-02 7.721511e-28

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.005548607
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1768976

$\text{Vole abundance}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 31.78908
Coefficients:
   a            c
-0.922963866  0.001572206

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
     power
-0.1267367
 Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.2006661

$`Vole abundance`$E32
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 30.71209

Coefficients:
   a            c
-0.922714163  0.001563299

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
     expon
-0.005593602
 Degrees of freedom: 82 total; 80 residual
  Residual standard error: 0.1767345

$`Vole abundance`$E41
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1739.972

Coefficients:
   a
-2.650185

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
     power
15.01930
 Degrees of freedom: 82 total; 81 residual
  Residual standard error: 0.0828256

$`Vole abundance`$E42
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -801.1801

Coefficients:
a-3.293645

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  1.014558
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.7028127

$`Vole abundance`$E51
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: 21.77960

Coefficients:
b1.535657e-27

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  -0.1019726
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.2171815

$`Vole abundance`$E52
Generalized nonlinear least squares fit
  Model: response ~ b * exp(sowndiv)
  Data: DF
  Log-likelihood: 21.34804

Coefficients:
b1.535709e-27

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  -0.006176123
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1978747
Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 20.45969
Coefficients:
c
-2.467515

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.02697761
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1974517

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 20.40241
Coefficients:
c
-2.476849

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
0.001092734
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.1880599

Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516
Coefficients:
a.(Intercept) a.leg
-2963126.3  911705.8
Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

Generalized nonlinear least squares fit
Model: response ~ exp(c * sowndiv)
Data: DF
Log-likelihood: 26.32071

Coefficients:
c.(Intercept)         c.leg
2.837536     -3.767779

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1777146

$\text{Vole abundance}$Ea911
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(c * sowndiv)
  Data: DF
  Log-likelihood: 39.94793

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.707468603  -0.137632468   0.001568491  -0.001305327

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1178584

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1815666

$\text{Vole abundance}$Ea921
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(c * sowndiv)
  Data: DF
  Log-likelihood: 38.95136

Coefficients:
a.(Intercept)         a.leg c.(Intercept)         c.leg
-0.694924700  -0.144032404   0.001225303  -0.001120110

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00427486

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1600532

$\text{Vole abundance}$Ea1011
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(sowndiv)
  Data: DF
  Log-likelihood: -1722.982
Coefficients:
\( \text{a. (Intercept)} \quad \text{a. leg} \)
\[ -2.2344510 \quad -0.2375622 \]

Variance function:
Structure: Power of variance covariate
Formula: \( \text{~sowndiv} \)
Parameter estimates:
\( \text{power} \)
15.09869
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.06021289

\$`Vole abundance`$Ea1021
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -801.1458

Coefficients:
\( \text{a. (Intercept)} \quad \text{a. leg} \)
\[ -3.7595644 \quad 0.2685874 \]

Variance function:
Structure: Exponential of variance covariate
Formula: \( \text{~sowndiv} \)
Parameter estimates:
\( \text{expon} \)
1.014567
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.7068375

\$`Vole abundance`$Ea121
Generalized nonlinear least squares fit
Model: response ~ \( \exp(c \times \text{sowndiv}) \)
Data: DF
Log-likelihood: 26.36015

Coefficients:
\( \text{c. (Intercept)} \quad \text{c. leg} \)
\[ 2.816248 \quad -3.757761 \]

Variance function:
Structure: Power of variance covariate
Formula: \( \text{~sowndiv} \)
Parameter estimates:
\( \text{power} \)
0.01962412
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1725288

\$`Vole abundance`$Ea1221
Generalized nonlinear least squares fit
Model: response ~ \( \exp(c \times \text{sowndiv}) \)
Data: DF
Log-likelihood: 26.53524

Coefficients:
c.(Intercept) c.leg
2.829921 -3.764135

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
0.003498243
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1720059

$`Vole abundance`$Eb16
Generalized nonlinear least squares fit
   Model: response ~ a + exp(sowndiv)
   Data: DF
   Log-likelihood: -4912.516
   Coefficients:
a.(Intercept) a.grass
-3508714 1286426

Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Vole abundance`$Eb18
Generalized nonlinear least squares fit
   Model: response ~ exp(c * sowndiv)
   Data: DF
   Log-likelihood: 20.93076
   Coefficients:
c.(Intercept) c.grass
-17.810731 7.839853

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1897884

$`Vole abundance`$Eb1511
Generalized nonlinear least squares fit
   Model: response ~ a + exp(c * sowndiv)
   Data: DF
   Log-likelihood: 34.42448
   Coefficients:
a.(Intercept) a.grass c.(Intercept) c.grass
-1.013023893 0.051730191 -0.002319126 0.004423846

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
- power
  -0.1414914
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2011532

$`Vole abundance`$Eb1521
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(c \times \text{sowndiv})
  Data: DF
  Log-likelihood: 33.04809

Coefficients:
  a. \text{(Intercept)}  a.\text{grass}  c.\text{(Intercept)}  c.\text{grass}
-1.020325836  0.057280218  -0.001823701  0.003973504

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
- expon
  -0.005804109
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1742737

$`Vole abundance`$Eb1611
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(\text{sowndiv})
  Data: DF
  Log-likelihood: -1738.08

Coefficients:
  a. \text{(Intercept)}  a.\text{grass}
-2.80907787  0.09079603

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
- power
  15.02814
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.08037925

$`Vole abundance`$Eb1621
Generalized nonlinear least squares fit
  Model: response ~ a + \exp(\text{sowndiv})
  Data: DF
  Log-likelihood: -801.0112

Coefficients:
  a. \text{(Intercept)}  a.\text{grass}
-4.3247248  0.5944908
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    1.014698
 Degrees of freedom: 82 total; 80 residual
 Residual standard error: 0.704887

$`\text{Vole abundance}`$ Eb1811
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 20.98078

Coefficients:
  c.(Intercept)       c.grass
    -19.510549      8.694368

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.02162383
 Degrees of freedom: 82 total; 80 residual
 Residual standard error: 0.1958604

$`\text{Vole abundance}`$ Eb1821
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 20.9619

Coefficients:
  c.(Intercept)       c.grass
    -19.495897      8.682048

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.001322912
 Degrees of freedom: 82 total; 80 residual
 Residual standard error: 0.1875738

$`\text{Vole abundance}`$ Ec22
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516
Coefficients:
a. (Intercept)   a.funcgr
   252095.6     -912137.5
Degrees of freedom: 82 total; 80 residual
Residual standard error: 2.553606e+25

$`Vole abundance`$Ec24
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 22.11827
Coefficients:
c. (Intercept)   c.funcgr
   -3.1193576     0.6694901
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1870597

$`Vole abundance`$Ec1921
Generalized nonlinear least squares fit
  Model: response ~ a + b * exp(c * sowndiv)
  Data: DF
  Log-likelihood: -2892.173
Coefficients:
a. (Intercept)   a.funcgr b. (Intercept)   b.funcgr c. (Intercept)
   0.4790783847 -0.4272080730  0.0033461113 -0.0008365248  0.9997909708
   c.funcgr
   1.0000522573
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
  4.812509
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.0005945556

$`Vole abundance`$Ec2121
Generalized nonlinear least squares fit
  Model: response ~ a + exp(c * sowndiv)
  Data: DF
  Log-likelihood: 30.85769
Coefficients:
a. (Intercept)   a.funcgr c. (Intercept)   c.funcgr
   -0.9221932781  0.0034840587 -0.0015671817  0.0007422668
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon
-0.005608878
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1786919

$`Vole abundance`$Ec2211
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1739.972

Coefficients:
  a.(Intercept)      a.funcgr
     2.042045     -4.692230

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
   15.01930
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.08334164

$`Vole abundance`$Ec2221
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2974

Coefficients:
  a.(Intercept)      a.funcgr
     3.433087     -6.334346

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
  1.022225
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.608831

$`Vole abundance`$Ec2411
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 22.19316

Coefficients:
  c.(Intercept)      c.funcgr
     -3.107804      0.666768
Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
  -0.02584390
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1941988

\$`Vole abundance`$Ec2421
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 22.16077

Coefficients:
  c.(Intercept)      c.funcgr
  -3.1206664     0.6697517

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
  0.001532718
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1845187

\$`Vole abundance`$Ed28
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)      a.funcgr         a.leg
  872779.2     -990730.6     -307654.9
Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

\$`Vole abundance`$Ed2811
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1722.982

Coefficients:
  a.(Intercept)      a.funcgr         a.leg
  2.5171693    -4.7516203    -0.2375622

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
15.09869
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.06059276

$`Vole abundance`$Ed2821
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2623

Coefficients:
  a.(Intercept)   a.funcgr    a.leg
     3.908710    -6.393405    -0.238022

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
     1.022291
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6120607

$`Vole abundance`$Ed3021
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 27.43937

Coefficients:
  c.(Intercept)   c.funcgr    c.leg
     2.3063235    0.2067950   -3.6031252

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
     0.003707495
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1708858

$`Vole abundance`$Ee40
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)   a.funcgr    a.grass
  -335851.0     -839615.5     296563.4
Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25

$`Vole abundance`$\text{Ee341}
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -1738.08

Coefficients:
```
  a.(Intercept)    a.funcgr   a.grass
  1.86045293     -4.66953078  0.09079602
```

Variance function:
```
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
  15.02814
```

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.08088636

$`Vole abundance`$\text{Ee342}
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -794.2918

Coefficients:
```
  a.(Intercept)    a.funcgr   a.grass
  3.24387873     -6.31063313  0.09457138
```

Variance function:
```
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
  1.022235
```

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6125763

$`Vole abundance`$\text{Ef40}
Generalized nonlinear least squares fit
Model: response ~ a + exp(sowndiv)
Data: DF
Log-likelihood: -4912.516

Coefficients:
```
  a.(Intercept)   a.grass   a.leg
  -5251826       1394676    1054750
```

Degrees of freedom: 82 total; 79 residual
Residual standard error: 2.569717e+25
Generalized nonlinear least squares fit

Model: response ~ a + b * exp(c * sowndiv)

Data: DF

Log-likelihood: -2672.509

Coefficients:

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<th>a. leg</th>
<th>b. (Intercept)</th>
<th>b. grass</th>
<th>b. leg</th>
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Variance function:

Structure: Exponential of variance covariate
Formula: ~sowndiv

Parameter estimates:

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Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.0008228012

Generalized nonlinear least squares fit

Model: response ~ a + exp(c * sowndiv)

Data: DF

Log-likelihood: 40.37047

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. grass</th>
<th>a. leg</th>
<th>c. (Intercept)</th>
<th>c. grass</th>
<th>c. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.783111120</td>
<td>0.041861886</td>
<td>-0.133089755</td>
<td>-0.000903571</td>
<td>0.002870171</td>
<td>-0.001270419</td>
</tr>
</tbody>
</table>

Variance function:

Structure: Exponential of variance covariate
Formula: ~sowndiv

Parameter estimates:

<table>
<thead>
<tr>
<th></th>
<th>expon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.00464513</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1598710

Generalized nonlinear least squares fit

Model: response ~ a + exp(sowndiv)

Data: DF

Log-likelihood: -1722.917

Coefficients:

<table>
<thead>
<tr>
<th></th>
<th>a. (Intercept)</th>
<th>a. grass</th>
<th>a. leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2.26492367</td>
<td>0.01305971</td>
<td>-0.23320894</td>
</tr>
</tbody>
</table>

Variance function:

Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
15.09899
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.0605182

$`Vole abundance`$Ef4021
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -800.8841
Coefficients:
  a.(Intercept)       a.grass         a.leg
    -5.6212139     0.7911002     0.5508086

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  exp
1.014764
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.7078377

$`Vole abundance`$Ef4211
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 27.79898
Coefficients:
  c.(Intercept)       c.grass         c.leg
    4.2421441    -0.5333544    -4.1849064

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
0.02257006
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.169853

$`Vole abundance`$Ef4221
Generalized nonlinear least squares fit
  Model: response ~ exp(c * sowndiv)
  Data: DF
  Log-likelihood: 26.05006
Coefficients:
  c.(Intercept)       c.grass         c.leg
   -17.99137     10.13706      -3.28580
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon 0.003413014
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1742458

$`Vole abundance`$\text{Eg46}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -4912.516

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg
  292092.0     -918391.5      183181.3     -199834.3

Degrees of freedom: 82 total; 78 residual
Residual standard error: 2.586137e+25

$`Vole abundance`$\text{Eg4611}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -1722.917

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg
  2.48234347   -4.74726710    0.01305970   -0.23320896

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power 15.09899
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.06090489

$`Vole abundance`$\text{Eg4621}$
Generalized nonlinear least squares fit
  Model: response ~ a + exp(sowndiv)
  Data: DF
  Log-likelihood: -794.2623

Coefficients:
  a.(Intercept)      a.funcgr       a.grass         a.leg
  3.898153176  -6.392085011   0.003814884  -0.236558433

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
1.022291
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6159715

Vole abundance Pa1
Nonlinear regression model
  model: response ~ a + b * sowndiv^c
  data: DF
    a        b        c
0.0789408 0.0009802 1.1247634
residual sum-of-squares: 2.298

Number of iterations to convergence: 5
Achieved convergence tolerance: 9.193e-06

Vole abundance Pa2
Nonlinear regression model
  model: response ~ a + b * sowndiv
  data: DF
    a        b
0.077016 0.001630
residual sum-of-squares: 2.298

Number of iterations to convergence: 1
Achieved convergence tolerance: 1.488e-11

Vole abundance Pa3
Nonlinear regression model
  model: response ~ a + sowndiv^c
  data: DF
    a        c
-0.93067  0.01436
residual sum-of-squares: 2.312

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.148e-06

Vole abundance Pa4
Nonlinear regression model
  model: response ~ b * sowndiv^c
  data: DF
    b        c
0.06845  0.17678
residual sum-of-squares: 2.309

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.599e-06

Vole abundance Pa5
Nonlinear regression model
  model: response ~ sowndiv^c
data: DF
c -3.039
residual sum-of-squares: 16.64

Number of iterations to convergence: 14
Achieved convergence tolerance: 8.808e-06

$`Vole abundance`$ Pb11
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 30.20772

Coefficients:
\[ \begin{array}{ccc}
    a & b & c \\
    0.0789407874 & 0.0009802535 & 1.1247620868 \\
\end{array} \]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1705563

$`Vole abundance`$ Pb21
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 30.20531

Coefficients:
\[ \begin{array}{cc}
    a & b \\
    0.077015819 & 0.001629815 \\
\end{array} \]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1694920

$`Vole abundance`$ Pb31
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 29.96347

Coefficients:
\[ \begin{array}{cc}
    a & c \\
    -0.93066862 & 0.01435921 \\
\end{array} \]

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1699926

$`Vole abundance`$ Pb41
Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 30.01754

Coefficients:
\begin{verbatim}
 b   c 0.06844269 0.17679967

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1698805

$`Vole abundance`$Pb51
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -50.95346

Coefficients:
  c -3.03919

Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.4532009

$`Vole abundance`$Pc121
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 31.79059

Coefficients:
  a           b           c 0.078384127 0.001126413 1.091312173

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power -0.1267101

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.2019204

$`Vole abundance`$Pc131
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 30.71338

Coefficients:
  a           b           c 0.078604726 0.001090269 1.098087326

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon -0.005591308
\end{verbatim}
Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.1778432

$`Vole abundance`$Pc221
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 31.78887
Coefficients:
   a           b
   0.076613763 0.001649942

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power
      -0.1267606
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2006738

$`Vole abundance`$Pc231
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 30.7117
Coefficients:
   a           b
   0.076930403 0.001638873

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
      -0.005594652
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1767369

$`Vole abundance`$Pc321
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 31.40529
Coefficients:
   a           c
   -0.93667327  0.01782072

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
Parameter estimates:
    power
-0.1214991
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2000460

$`Vole abundance`$Pc331
Generalized nonlinear least squares fit
    Model: response ~ a + sowndiv^c
    Data: DF
    Log-likelihood: 30.38030

Coefficients:
    a    c
-0.93396730  0.01711384

Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        expon
-0.005142579
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1767652

$`Vole abundance`$Pc421
Generalized nonlinear least squares fit
    Model: response ~ b * sowndiv^c
    Data: DF
    Log-likelihood: 31.52889

Coefficients:
    b    c
0.06242188  0.21899122

Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
    Parameter estimates:
        power
-0.1248596
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.2007436

$`Vole abundance`$Pc431
Generalized nonlinear least squares fit
    Model: response ~ b * sowndiv^c
    Data: DF
    Log-likelihood: 30.47989

Coefficients:
    b    c
0.06526755  0.20603574
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.005417345
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.1769677

Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -24.12052
Coefficients:
  c
  -2.639352

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4137499
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.6038647

Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -44.47803
Coefficients:
  c
  -2.999267

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0195558
Degrees of freedom: 82 total; 81 residual
Residual standard error: 0.495348

Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 30.35339
Coefficients:
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 30.46955

Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr  
   0.0798936945 0.0023909157 -0.0018755688 0.0008597466

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1713415

$`Vole abundance``Pd81$

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 30.40186

Coefficients:
b.(Intercept)      b.funcgr c.(Intercept)      c.funcgr  
   0.093230941 -0.009808833 -0.146829760 0.110422719

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1710990

$`Vole abundance``Pd91$

Generalized nonlinear least squares fit
Model: response ~ b * sowndiv^c
Data: DF
Log-likelihood: 30.40186

Coefficients:
b.(Intercept)      b.funcgr c.(Intercept)      c.funcgr  
   0.093230941 -0.009808833 -0.146829760 0.110422719

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1712403

$`Vole abundance``Pd101$

Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -50.77987

Coefficients:
c.(Intercept)      c.funcgr  
   -4.5152470  0.8127435

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4550602

$`Vole abundance``Pe631$

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv^c
Data: DF
Log-likelihood: 31.49123

Coefficients:
a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr c.(Intercept)  
   0.095152522 -0.009078972 -0.004145131 0.002800389 1.808680157
c.funcgr
-0.278565001

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00587033
  Degrees of freedom: 82 total; 76 residual
  Residual standard error: 0.1800382

$`Vole abundance`$Pe721
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 31.99404
  Coefficients:
    a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
    0.0759751150  0.0044370019 -0.0015719101  0.0007519266

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1288829
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2033621

$`Vole abundance`$Pe731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 30.86338
  Coefficients:
    a.(Intercept)      a.funcgr b.(Intercept)      b.funcgr
    0.0785083127  0.0031259622 -0.0016908823  0.0007931503

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.005606957
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1786765

$`Vole abundance`$Pe821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
Log-likelihood: 32.11842

Coefficients:
a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
-0.8996658  -0.0147049  -0.0200474  0.0127856

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1289414
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2030715

$`Vole abundance`$Pe831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 30.97963

Coefficients:
a.(Intercept)  a.funcgr  c.(Intercept)  c.funcgr
-0.8998625  -0.0154639  -0.0185338  0.0126129

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0055984
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1784103

$`Vole abundance`$Pe921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 32.04834

Coefficients:
b.(Intercept)  b.funcgr  c.(Intercept)  c.funcgr
0.0990653  -0.0121479  -0.1823895  0.1235102

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1291012
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.2032933

$`Vole abundance`$Pe931
Generalized nonlinear least squares fit
  Model: response ~ b \* sowndiv^c
  Data: DF
  Log-likelihood: 30.91448

Coefficients:
  b.(Intercept)  b.funcgr  c.(Intercept)  c.funcgr
  0.09373521  -0.01000327  -0.14671765  0.11015871

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.005613898

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1785759

$`Vole abundance`$Pe1021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -22.02938

Coefficients:
  c.(Intercept)  c.funcgr
  -3.7143127  0.7467815

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4502701

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6253284

$`Vole abundance`$Pe1031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -43.24639

Coefficients:
  c.(Intercept)  c.funcgr
  -4.931776  1.089301

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02466727

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.5130306

$`Vole abundance`$ Pf121
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 32.46372

Coefficients:
   a.(Intercept)      a.grass    b.(Intercept)      b.grass
   -0.023046861   0.059128725  -0.001492139   0.003793059

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1669882

$`Vole abundance`$ Pf131
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 32.17638

Coefficients:
   a.(Intercept)      a.grass    c.(Intercept)      c.grass
   -1.090012521   0.094059781   0.038268965  -0.007618348

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1669882

$`Vole abundance`$ Pf141
Generalized nonlinear least squares fit
   Model: response ~ b * sowndiv^c
   Data: DF
   Log-likelihood: 32.28669

Coefficients:
   b.(Intercept)      b.grass    c.(Intercept)      c.grass
   -0.05352398    0.07536039    0.77738208   -0.28692536

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1669882

$`Vole abundance`$ Pf151
Generalized nonlinear least squares fit
   Model: response ~ sowndiv^c
   Data: DF
   Log-likelihood: -50.77963

Coefficients:
   c.(Intercept)      c.grass
   -9.161434        3.312493

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4550589
### Generalized nonlinear least squares fit

**Model:** response ~ a + b * sowndiv  
**Data:** DF  
**Log-likelihood:** 38.63271  

**Coefficients:**  
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.307917361</td>
<td>-0.145449126</td>
<td>0.001007519</td>
<td>-0.001009557</td>
</tr>
</tbody>
</table>

**Degrees of freedom:** 82 total; 78 residual  
**Residual standard error:** 0.1548863

### Generalized nonlinear least squares fit

**Model:** response ~ a + sowndiv^c  
**Data:** DF  
**Log-likelihood:** 38.92439  

**Coefficients:**  
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>-0.62936659</td>
<td>-0.17704150</td>
<td>-0.03009162</td>
<td>0.01301985</td>
</tr>
</tbody>
</table>

**Degrees of freedom:** 82 total; 78 residual  
**Residual standard error:** 0.1543363

### Generalized nonlinear least squares fit

**Model:** response ~ b * sowndiv^c  
**Data:** DF  
**Log-likelihood:** 39.00287  

**Coefficients:**  
<table>
<thead>
<tr>
<th></th>
<th>b.(Intercept)</th>
<th>b.leg</th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.39420850</td>
<td>-0.18929986</td>
<td>-0.02186961</td>
<td>-0.10960806</td>
</tr>
</tbody>
</table>

**Degrees of freedom:** 82 total; 78 residual  
**Residual standard error:** 0.1541887

### Generalized nonlinear least squares fit

**Model:** response ~ sowndiv^c  
**Data:** DF  
**Log-likelihood:** -50.1793  

**Coefficients:**  
<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>1.964560</td>
<td>-3.581039</td>
</tr>
</tbody>
</table>

**Degrees of freedom:** 82 total; 80 residual  
**Residual standard error:** 0.4517395
Model: response ~ a + b * sowndiv  
Data: DF  
Log-likelihood: 41.42962

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.leg</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.4959472982</td>
<td>-0.0498806776</td>
<td>-0.2094746796</td>
<td>-0.0032253563</td>
<td>0.0008218878</td>
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<tr>
<td></td>
<td>b.leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.0015264708</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.1516493

$`Vole abundance`$Ph231
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c  
Data: DF  
Log-likelihood: 41.72677

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.leg</th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.43771992</td>
<td>-0.07433160</td>
<td>-0.23114121</td>
<td>-0.06196593</td>
<td>0.01775905</td>
</tr>
<tr>
<td></td>
<td>c.leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.02396972</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual  
Residual standard error: 0.1511007

$`Vole abundance`$Ph251
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c  
Data: DF  
Log-likelihood: -49.46622

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>c.(Intercept)</th>
<th>c.funcgr</th>
<th>c.leg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.044629</td>
<td>-2.862539</td>
<td>-3.980330</td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 79 residual  
Residual standard error: 0.4506536

$`Vole abundance`$Pi271
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv  
Data: DF  
Log-likelihood: 34.07151

Coefficients:
<table>
<thead>
<tr>
<th></th>
<th>a.(Intercept)</th>
<th>a.funcgr</th>
<th>a.grass</th>
<th>b.(Intercept)</th>
<th>b.funcgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.054197929</td>
<td>0.018869247</td>
<td>0.065498296</td>
<td>-0.016591142</td>
<td>0.002478395</td>
</tr>
<tr>
<td></td>
<td>b.grass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.008267967</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1658864

$\text{Vole abundance}$\textsuperscript{Pi281}
Generalized nonlinear least squares fit
Model: response $\sim$ a + sowndiv$^c$
Data: DF
Log-likelihood: 34.02786

Coefficients:
\begin{align*}
a \text{.(Intercept)} & \quad a \text{.funcgr} & \quad a \text{.grass} & \quad c \text{.(Intercept)} & \quad c \text{.funcgr} \\
-1.024173432 & -0.001993515 & 0.063001522 & -0.090342065 & 0.021769792 \\
c \text{.grass} & \\
0.037451023 & \\
\end{align*}

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1659748

$\text{Vole abundance}$\textsuperscript{Pi291}
Generalized nonlinear least squares fit
Model: response $\sim$ b * sowndiv$^c$
Data: DF
Log-likelihood: 35.13921

Coefficients:
\begin{align*}
b \text{.(Intercept)} & \quad b \text{.funcgr} & \quad b \text{.grass} & \quad c \text{.(Intercept)} & \quad c \text{.funcgr} \\
-0.0112032739 & 0.0006383142 & 0.0537368615 & -1.3837995806 & 0.3044935216 \\
c \text{.grass} & \\
0.4969289846 & \\
\end{align*}

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1637405

$\text{Vole abundance}$\textsuperscript{Pi301}
Generalized nonlinear least squares fit
Model: response $\sim$ sowndiv$^c$
Data: DF
Log-likelihood: -50.53705

Coefficients:
\begin{align*}
c \text{.(Intercept)} & \quad c \text{.funcgr} & \quad c \text{.grass} \\
-9.310887 & 1.511906 & 2.025215 & \\
\end{align*}

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4565772

$\text{Vole abundance}$\textsuperscript{Pj321}
Generalized nonlinear least squares fit
Model: response $\sim$ a + b * sowndiv
Data: DF
Log-likelihood: 39.96735

Coefficients:
\begin{align*}
a \text{.(Intercept)} & \quad a \text{.grass} & \quad a \text{.leg} & \quad b \text{.(Intercept)} & \quad b \text{.grass} \\
0.2208274872 & 0.0429144322 & -0.1360146876 & -0.0009587644 & 0.0025272729 & \\
\end{align*}
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1543778

$`Vole abundance`$Pj331
Generalized nonlinear least squares fit
Model: response ~ a + sowdiv^c
Data: DF
Log-likelihood: 39.78445

Coefficients:
\[
\begin{array}{cccccc}
\text{a.}(\text{Intercept}) & \text{a.}\text{grass} & \text{a.}\text{leg} & \text{c.}(\text{Intercept}) & \text{c.}\text{grass} & \text{c.}\text{leg} \\
-0.737310260 & 0.044420199 & -0.158682853 & -0.015508749 & 0.003156306 & 0.007169930
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1547225

$`Vole abundance`$Pj341
Generalized nonlinear least squares fit
Model: response ~ b * sowdiv^c
Data: DF
Log-likelihood: 40.11465

Coefficients:
\[
\begin{array}{cccccc}
\text{b.}(\text{Intercept}) & \text{b.}\text{grass} & \text{b.}\text{leg} & \text{c.}(\text{Intercept}) & \text{c.}\text{grass} & \text{c.}\text{leg} \\
0.23047684 & 0.05463177 & -0.15092247 & 0.98757059 & 0.06823424 & -1.07946390
\end{array}
\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1547225

$`Vole abundance`$Pj351
Generalized nonlinear least squares fit
Model: response ~ sowdiv^c
Data: DF
Log-likelihood: -50.06684

Coefficients:
\[
\begin{array}{cccc}
\text{c.}(\text{Intercept}) & \text{c.}\text{grass} & \text{c.}\text{leg} \\
3.3117007 & -0.5966959 & -3.9713695
\end{array}
\]

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.4539666

$`Vole abundance`$Pk361
Generalized nonlinear least squares fit
Model: response ~ a + b * sowdiv^c
Data: DF
Log-likelihood: 46.9446
Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} \\
\text{b.funcgr} & \text{b.grass} & \text{b.leg} & \text{c.(Intercept)} & \text{c.funcgr} \\
9.413775e-02 & 2.277085e-02 & 1.275719e-01 & -1.661144e+01 & 2.396583e+00 \\
\text{c.grass} & \text{c.leg} & \text{c.leg} & \text{c.leg} \\
4.778142e+00 & 2.408685e+00 & \end{array}
\]

Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.147737

$`Vole abundance`$Pk371
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 42.40291

Coefficients:
\[
\begin{array}{cccccc}
\text{a. (Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{b. (Intercept)} \\
0.716424823 & -0.077502805 & -0.069830636 & -0.250224079 & -0.045582142 \\
\text{b.funcgr} & \text{b.grass} & \text{b.leg} & \text{b.leg} \\
0.006067793 & 0.012961395 & 0.009944191 & 0.009944191 \\
\end{array}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1518716

$`Vole abundance`$Pk381
Generalized nonlinear least squares fit
Model: response ~ a + sowndiv$^c$
Data: DF
Log-likelihood: 42.34188

Coefficients:
\[
\begin{array}{cccccc}
\text{c.(Intercept)} & \text{c.funcgr} & \text{c.grass} & \text{c.leg} & \text{c.leg} \\
-0.24460589 & -0.09985782 & -0.06553000 & -0.26111208 & -0.22974318 \\
\text{c.funcgr} & \text{c.grass} & \text{c.leg} & \text{c.leg} \\
0.03921618 & 0.05455568 & 0.05291474 & 0.05291474 \\
\end{array}
\]

Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1519846

$`Vole abundance`$Pk401
Generalized nonlinear least squares fit
Model: response ~ sowndiv$^c$
Data: DF
Log-likelihood: -49.37142

Coefficients:
\[
\begin{array}{cccccc}
\text{c.(Intercept)} & \text{c.funcgr} & \text{c.grass} & \text{c.leg} \\
\end{array}
\]

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.4530092
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 34.40372

Coefficients:
\[
\begin{align*}
    a.\text{(Intercept)} & \quad a.\text{grass} & b.\text{(Intercept)} & \quad b.\text{grass} \\
    -0.014823201 & \quad 0.052597787 & -0.002269727 & \quad 0.004520349 \\
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
    \text{power} \\
    -0.1411505 \\
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.2011023

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 33.03548

Coefficients:
\[
\begin{align*}
    a.\text{(Intercept)} & \quad a.\text{grass} & b.\text{(Intercept)} & \quad b.\text{grass} \\
    -0.022083157 & \quad 0.058125573 & -0.001715965 & \quad 0.004019599 \\
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
    \text{expon} \\
    -0.005796744 \\
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1742894

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 33.76109

Coefficients:
\[
\begin{align*}
    a.\text{(Intercept)} & \quad a.\text{grass} & c.\text{(Intercept)} & \quad c.\text{grass} \\
    -1.098037903 & \quad 0.095950827 & 0.040187954 & \quad -0.006847478 \\
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\begin{align*}
    \text{power} \\
\end{align*}
\]
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1987610

$`Vole abundance`$Pm1331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 32.62988

Coefficients:
  a.(Intercept)       a.grass c.(Intercept)       c.grass
  -1.098887599   0.097994234   0.042785508  -0.009240569

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.005256648

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1743434

$`Vole abundance`$Pm1421
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 34.05113

Coefficients:
  b.(Intercept)       b.grass c.(Intercept)       c.grass
  -0.05109205    0.07105312    0.79119688   -0.27304166

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1355715

Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.200303

$`Vole abundance`$Pm1431
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 32.81991

Coefficients:
  b.(Intercept)       b.grass c.(Intercept)       c.grass
  -0.05477547    0.07533179    0.80910027   -0.29663420

Variance function:
  Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon -0.005646374
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1745228

$\text{Vole abundance}^{\text{Pm1521}}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -23.95272
Coefficients:
c.(Intercept) c.grass
-8.354208  3.069212

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power -0.4131694
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.6058627

$\text{Vole abundance}^{\text{Pm1531}}$
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -44.32019
Coefficients:
c.(Intercept) c.grass
-9.095510  3.296466

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  expon -0.01952035
Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4973244

$\text{Vole abundance}^{\text{Pn1721}}$
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 39.94771
Coefficients:
a.(Intercept) a.leg b.(Intercept) b.leg
0.292586136 -0.137673126 0.001559042 -0.001295385
Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1178497
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1815648

$`Vole abundance`$Pn1731
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 38.95131
  Coefficients:
    a.(Intercept)     a.leg b.(Intercept)     b.leg
    0.305140670  -0.144074831   0.001213468  -0.001109618

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
  expon
-0.004274248
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1600525

$`Vole abundance`$Pn1821
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 39.98889
  Coefficients:
    a.(Intercept)     a.leg c.(Intercept)     c.leg
    -0.665653030  -0.158405210  -0.010831946   0.002962058

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1089451
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.1790904

$`Vole abundance`$Pn1831
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 39.13389
Coefficients:
a. (Intercept)       a.leg         c. (Intercept)       c.leg
-0.640863887   -0.171255891   -0.021836249   0.008835745

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.003578656
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1587457

$`Vole abundance`$Pn1921
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 40.00391

Coefficients:
b. (Intercept)       b.leg         c. (Intercept)       c.leg
  0.3463813         -0.1649692     0.1911618    -0.2534415

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1068579
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1785036

$`Vole abundance`$Pn1931
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 39.18293

Coefficients:
b. (Intercept)       b.leg         c. (Intercept)       c.leg
  0.37794755   -0.18113704    0.05073633   -0.15188384

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.003355335
  Degrees of freedom: 82 total; 78 residual
  Residual standard error: 0.1583469

$`Vole abundance`$Pn2021
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -20.44487

Coefficients:
c.(Intercept)    c.leg
  3.452673    -4.315749

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4566172

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.619168

$`Vole abundance`$Pn2031
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -43.55967

Coefficients:
c.(Intercept)    c.leg
  2.558113    -3.876942

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.01983887

Degrees of freedom: 82 total; 80 residual
Residual standard error: 0.4940825

$`Vole abundance`$Pp2221
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 42.50794

Coefficients:
a.(Intercept)    a.funcgr    a.leg    b.(Intercept)    b.funcgr
  4.691199e-01   -4.528620e-02  -1.980373e-01   1.201864e-04  3.211153e-04
  b.leg
  8.883403e-05

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1071863

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1754839

Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 41.67058

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & : 0.4913693942 \\
\text{a.funcgr} & : -0.0489742282 \\
\text{a.leg} & : -0.2076973444 \\
\text{b.(Intercept)} & : -0.0023500675 \\
\text{b.funcgr} & : 0.0006768582 \\
\text{b.leg} & : 0.0011819605 \\
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
expon
\[-0.003684938\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1560643

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.73913

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & : -0.45376943 \\
\text{a.funcgr} & : -0.07135171 \\
\text{a.leg} & : -0.22365382 \\
\text{c.(Intercept)} & : -0.05082786 \\
\text{c.funcgr} & : 0.01607519 \\
\text{c.leg} & : 0.01845584 \\
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
power
\[-0.1030781\]

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1739258

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 41.94920

Coefficients:
\[
\begin{align*}
\text{a.(Intercept)} & : -0.44100562 \\
\text{a.funcgr} & : -0.07362988 \\
\text{a.leg} & : -0.22980002 \\
\text{c.(Intercept)} & : -0.05852121 \\
\text{c.funcgr} & : 0.01716541 \\
\text{c.leg} & : 0.01716541 \\
\end{align*}
\]

SUPPLEMENTARY INFORMATION
RESEARCH
doi:10.1038/nature09492
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.00353983
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1553413

$`Vole abundance`$Pp2421
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 34.22236

Coefficients:
  b.(Intercept)   b.funcgr   b.leg  c.(Intercept)  c.funcgr
  0.58611893   0.03103045  -0.30095113   2.21424738  -2.13193742
  c.leg
  -0.02255772

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    0.07938477
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1471733

$`Vole abundance`$Pp2431
Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 34.38259

Coefficients:
  b.(Intercept)   b.funcgr   b.leg  c.(Intercept)  c.funcgr
  0.60168935   0.02819242  -0.30707189   2.16391561  -2.10688598
  c.leg
  -0.02525788

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    0.00700676
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1556102

$`Vole abundance`$Pp2521
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -19.80458

Coefficients:
  c.(Intercept)      c.funcgr         c.leg
  2.6896497     0.1706482    -4.0724945

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4691893
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.6298753

$`Vole abundance`$Pp2531
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -42.67968

Coefficients:
  c.(Intercept)      c.funcgr         c.leg
  0.9808754     0.4869266    -3.5042830

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.02470518
  Degrees of freedom: 82 total; 79 residual
  Residual standard error: 0.5128787

$`Vole abundance`$Pq2621
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 39.7284

Coefficients:
  a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
  b.gram c.(Intercept)      c.funcgr       c.grass
  -2.926480919     -0.013162358   1.526432276   2.894745708   0.005785932
  -1.451830976     -1.375646908   0.011621307   1.353889499

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
-0.1862281
Degrees of freedom: 82 total; 73 residual
Residual standard error: 0.2082887

$`Vole abundance`$Pq2721
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 36.6959

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
  -0.041194429   0.019160936   0.055787754 -0.018100948   0.002548047
  b.grass
     0.009364162

Variance function:
   Structure: Power of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      power
     -0.1619676
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2043334

$`Vole abundance`$Pq2731
Generalized nonlinear least squares fit
   Model: response ~ a + b * sowndiv
   Data: DF
   Log-likelihood: 34.73776

Coefficients:
a.(Intercept)      a.funcgr       a.grass b.(Intercept)      b.funcgr
  -0.053124092   0.019275022   0.064146751 -0.016811480   0.002453020
  b.grass
     0.008515193

Variance function:
   Structure: Exponential of variance covariate
   Formula: ~sowndiv
   Parameter estimates:
      expon
     -0.006096945
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1733865

$`Vole abundance`$Pq2821
Generalized nonlinear least squares fit
   Model: response ~ a + sowndiv^c
   Data: DF
   Log-likelihood: 36.66455

Coefficients:
a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
  power
-0.1634284
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.2048553

$`Vole abundance`$Pq2831

Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 34.69199

Coefficients:
  a.(Intercept)      a.funcgr       a.grass c.(Intercept)      c.funcgr
  -1.018068479 -0.002219154   0.059485739  -0.095748771   0.022145704
  c.grass
  0.040490393

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.006095389

$n`Vole abundance`$Pq2931

Generalized nonlinear least squares fit
  Model: response ~ b * sowndiv^c
  Data: DF
  Log-likelihood: 35.95712

Coefficients:
  b.(Intercept)      b.funcgr       b.grass c.(Intercept)      c.funcgr
  -0.0060985319 -0.0004308258  0.0515797528  -1.4177682139  0.3114536174
  c.grass
  0.5103819231

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.006572376

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1734809
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -19.31187

Coefficients:
c.(Intercept)   c.funcgr   c.grass
   -8.505518    1.499956    1.789284

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
       -0.4691684

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6260825

Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -42.70443

Coefficients:
c.(Intercept)   c.funcgr   c.grass
   -9.268504    1.733189    1.765749

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
       -0.02495763

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.5141467

Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 41.72591

Coefficients:
a.(Intercept)   a.grass   a.leg b.(Intercept)   b.grass
   0.20604348   0.037615057  -0.124395866  -0.001229467   0.003763056
   b.leg
      -0.001687273

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
Parameter estimates:
  power
-0.1364971
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1850449

$`Vole abundance`$Pr3231
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv
  Data: DF
  Log-likelihood: 40.35824

Coefficients:
  a.(Intercept)   a.grass     a.leg   b.(Intercept)  b.grass
  0.2171837221  0.0426571810 -0.1340403795 -0.0009207816  0.0027629874
  b.leg
  -0.0011409440

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.004630655
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1598749

$`Vole abundance`$Pr3321
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 41.19455

Coefficients:
  a.(Intercept)   a.grass     a.leg   c.(Intercept)  c.grass
  -0.790531874   0.049318148  -0.135201912   0.005313923   0.004732596
  c.leg
  -0.004538053

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.1252558
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1831654

$`Vole abundance`$Pr3331
Generalized nonlinear least squares fit
  Model: response ~ a + sowndiv^c
  Data: DF
  Log-likelihood: 40.05149
Coefficients:
\[
\begin{align*}
\text{a. (Intercept)} & \quad 0.756805516 \\
\text{a.grass} & \quad 0.048389934 \\
\text{a.leg} & \quad -0.152024633 \\
\text{c.(Intercept)} & \quad -0.004721652 \\
\text{c.grass} & \quad 0.001704376 \\
\text{c.leg} & \quad 0.002911354
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: \( \sim \text{sowndiv} \)
- Parameter estimates:
  - \( \text{expon} \) = -0.003970387

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1595670

$`Vole abundance`$Pr3421

Generalized nonlinear least squares fit
- Model: response \( \sim b \ast \text{sowndiv}^c \)
- Data: DF
- Log-likelihood: 41.84573

Coefficients:
\[
\begin{align*}
\text{b.(Intercept)} & \quad 0.135078715 \\
\text{b.grass} & \quad 0.076818068 \\
\text{b.leg} & \quad -0.123559096 \\
\text{c.(Intercept)} & \quad 2.357160041 \\
\text{c.grass} & \quad -0.009710363 \\
\text{c.leg} & \quad -2.210164741
\end{align*}
\]

Variance function:
- Structure: Power of variance covariate
- Formula: \( \sim \text{sowndiv} \)
- Parameter estimates:
  - \( \text{power} \) = -0.1399466

Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.1857233

$`Vole abundance`$Pr3431

Generalized nonlinear least squares fit
- Model: response \( \sim b \ast \text{sowndiv}^c \)
- Data: DF
- Log-likelihood: 40.42276

Coefficients:
\[
\begin{align*}
\text{b.(Intercept)} & \quad 0.185071097 \\
\text{b.grass} & \quad 0.070375940 \\
\text{b.leg} & \quad -0.143140942 \\
\text{c.(Intercept)} & \quad 1.890842563 \\
\text{c.grass} & \quad 0.008824552 \\
\text{c.leg} & \quad -1.840698625
\end{align*}
\]

Variance function:
- Structure: Exponential of variance covariate
- Formula: \( \sim \text{sowndiv} \)
- Parameter estimates:
  - \( \text{expon} \) = -0.004326799
Degrees of freedom: 82 total; 76 residual
Residual standard error: 0.159333

Vole abundance
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -20.31241

Coefficients:
c.(Intercept)   c.grass     c.leg
  3.7415652   -0.1782686  -4.3660832

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    power
    -0.4574991

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.6228837

Vole abundance
Generalized nonlinear least squares fit
  Model: response ~ sowndiv^c
  Data: DF
  Log-likelihood: -42.97099

Coefficients:
c.(Intercept)   c.grass     c.leg
  4.905948     -1.017078     -4.605116

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
    expon
    -0.0225535

Degrees of freedom: 82 total; 79 residual
Residual standard error: 0.5052832

Vole abundance
Generalized nonlinear least squares fit
  Model: response ~ a + b * sowndiv^c
  Data: DF
  Log-likelihood: 46.30401

Coefficients:
a.(Intercept)    a.funcgr    a.grass    a.leg    b.(Intercept)
  -0.76039308    0.22436929  0.38262097 -0.08550191  1.57200865
  b.funcgr    b.grass    b.leg    c.(Intercept)    c.funcgr
  -0.32676752   -0.48628540 -0.17034684  1.98433650  -0.23809136
  c.grass    c.leg
  -0.42052385   -0.69425026
Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
Parameter estimates:
    power
-0.1287107
Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1802469

$\text{Vole abundance}$ $Ps3631$
Generalized nonlinear least squares fit
    Model: response ~ a + b * sowndiv^c
    Data: DF
    Log-likelihood: 47.06927
Coefficients:
    a.(Intercept) a.funcgr a.grass a.leg b.(Intercept)
    0.794944514 -0.122995550 -0.006427293 -0.287810017 -0.449301456
    b.funcgr b.grass b.leg c.(Intercept) c.funcgr
    0.091168810 0.025734382 0.124905843 -14.928440392 2.167524360
    c.grass c.leg
    4.275294681 2.176129477

Variance function:
    Structure: Exponential of variance covariate
    Formula: ~sowndiv
Parameter estimates:
    expon
-0.002647236
Degrees of freedom: 82 total; 70 residual
Residual standard error: 0.1509035

$\text{Vole abundance}$ $Ps3721$
Generalized nonlinear least squares fit
    Model: response ~ a + b * sowndiv
    Data: DF
    Log-likelihood: 43.77621
Coefficients:
    a.(Intercept) a.funcgr a.grass a.leg b.(Intercept)
    0.714687880 -0.075905263 -0.077827992 -0.243687619 -0.044794336
    b.funcgr b.grass b.leg
    0.005873409 0.013761632 0.009032228

Variance function:
    Structure: Power of variance covariate
    Formula: ~sowndiv
Parameter estimates:
    power
-0.1194679
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1783321
Generalized nonlinear least squares fit
Model: response ~ a + b * sowndiv
Data: DF
Log-likelihood: 42.67946

Coefficients:
\[
\begin{align*}
&\text{a.(Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{b.(Intercept)} \\
&0.713579451 & -0.076804487 & -0.070342344 & -0.248832870 & -0.044958020 \\
&\text{b.funcgr} & \text{b.grass} & \text{b.leg} \\
&0.005952149 & 0.013032557 & 0.009661657
\end{align*}
\]

Variance function:
Structure: Exponential of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{expon} -0.003883419
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1564917

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 43.77068

Coefficients:
\[
\begin{align*}
&\text{a.(Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{c.(Intercept)} \\
&-0.18399675 & -0.10677176 & -0.09199864 & -0.26485977 & -0.27231114 \\
&\text{c.funcgr} & \text{c.grass} & \text{c.leg} \\
&0.04438086 & 0.07213438 & 0.05615780
\end{align*}
\]

Variance function:
Structure: Power of variance covariate
Formula: ~sowndiv
Parameter estimates:
\[
\text{power} -0.123143
\]
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1793198

Generalized nonlinear least squares fit
Model: response ~ a + sowndiv^c
Data: DF
Log-likelihood: 42.61936

Coefficients:
\[
\begin{align*}
&\text{a.(Intercept)} & \text{a.funcgr} & \text{a.grass} & \text{a.leg} & \text{c.(Intercept)} \\
&-0.24068717 & -0.09997592 & -0.06809891 & -0.26083185 & -0.23380218 \\
&\text{c.funcgr} & \text{c.grass} & \text{c.leg} \\
&0.03950142 & 0.05698643 & 0.05278702
\end{align*}
\]
Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
  -0.003894833
Degrees of freedom: 82 total; 74 residual
Residual standard error: 0.1566218

$`Vole abundance`$Ps4021
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -18.88881

Coefficients:
c.(Intercept)  c.funcgr  c.grass  c.leg
  -0.6425910  0.5901654  0.8141783  -3.2245857

Variance function:
  Structure: Power of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  power
  -0.4789888
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.6360464

$`Vole abundance`$Ps4031
Generalized nonlinear least squares fit
Model: response ~ sowndiv^c
Data: DF
Log-likelihood: -42.63452

Coefficients:
c.(Intercept)  c.funcgr  c.grass  c.leg
  -2.9446339  0.9812844  0.9134404  -2.4618169

Variance function:
  Structure: Exponential of variance covariate
  Formula: ~sowndiv
  Parameter estimates:
  expon
  -0.02496867
Degrees of freedom: 82 total; 78 residual
Residual standard error: 0.51704

$`Vole abundance`$AS3
Nonlinear regression model
model:  response ~ SSasympOrig(sowndiv, Asym, lrc)
data:  DF
Asym  lrc
  0.09731  0.30727
residual sum-of-squares: 2.325
Number of iterations to convergence: 4
Achieved convergence tolerance: 8.61e-06

$`Vole abundance`$LG2
Nonlinear regression model
  model:  response ~ SSlogis(sowndiv, Asym, xmid, scal)
  data:  DF
  Asym    xmid    scal
  0.2643 33.5784 38.3153
  residual sum-of-squares: 2.298

Number of iterations to convergence: 3
Achieved convergence tolerance: 8.755e-07