

Component loadings	All taxa (no bill measures)				Males and unsexed specimens only			
	PC1	PC 2	PC 3	PC 4	PC 1	PC 2	PC 3	PC 4
External measurements								
Culmen from feathers	—	—	—	—	0.01	0.29	0.02	0.005
Bill height at distal nares	—	—	—	—	0.02	0.04	0.09	-0.02
Bill width at distal nares	—	—	—	—	-0.03	0.08	0.05	0.004
Wing length (flattened)	0.12	2.01	-0.89	0.17	0.003	2.23	-0.78	-0.13
Primary 1 shortfall	0.17	1.13	0.79	-0.75	-0.02	1.04	0.68	0.48
Primary 2 shortfall	0.23	0.64	1.08	0.23	0.34	0.73	1.16	0.08
Tarsus length	0.19	0.35	0.52	0.94	0.37	0.27	0.57	-0.88
Hallux claw length	0.09	0.16	0.06	0.08	0.06	0.11	0.05	-0.18
Tail length	3.93	-0.17	-0.09	-0.03	4.46	-0.07	-0.13	0.07
Eigenvalues	15.55	5.92	2.88	1.54	20.14	6.78	2.77	1.06
Percent of total variance	58.09	22.11	10.77	5.74	62.97	21.20	8.66	3.32
Plumage scoring								
Lower mandible color	-0.18	0.89	1.38	-1.24				
Upperparts color	1.24	-0.79	0.54	0.09				
Supercilium prominence	-1.12	0.47	0.01	0.30				
Throat ground color	0.18	-0.26	-0.21	-0.41				
Throat speckling	1.74	0.27	-0.59	-0.09				
Breast ground color	-0.56	2.10	-0.07	0.19				
Breast speckling	2.43	0.89	-0.84	0.02				
Upper flank markings	2.00	0.22	-0.47	0.13				
Flank color	1.13	-0.18	1.00	0.99				
Undertail coverts color	2.44	-0.18	0.55	0.01				
Undertail coverts tip contrast	0.56	0.30	0.67	0.91				
Undertail coverts tip breadth	-0.49	0.30	0.78	1.06				
Leg color	1.90	0.25	0.60	-0.13				
Eigenvalues	27.50	7.34	6.19	3.88				
Percent of total variance	47.24	12.61	10.63	6.66				

Table S2. Summary statistics for PCAs for the *Locustella mandelli* complex. First external measurement character set was maximized for inclusion of specimens of all taxa, so no bill measurements were included. Second external measurement character set includes only birds in adult or first-winter plumage sexed as males or unsexed. Loadings deemed especially important in bold italic, those of intermediate importance in bold only.