SUPPLEMENTAL MATERIAL

Table S1. Recovery of certified reference materials (CRM) used to determine concentrations in shearwater feathers (n = 10). # > LoD = number of samples above the minimum level of detection (n = 2 replicates of the reference materials).

Element	# > LoD	CRM concentration (mg/kg)	% recovery
Al	0	159	93%
Mn	1	5.64	109%
Co	2	0.476	98%
Ni	1	6.6	103%
Cu	0	132	101%
Zn	0	179	98%
As	12	2.64	89%
Mo	1	0.473	102%
Ag	7	0.77	104%
Cd	3	0.24	117%
Sb	39	0.205	104%
Ba	2	1.48	98%
Hg	5	4.49	96%
Tl	0	0.18	106%
Pb	0	5.28	101%

Table S2. Recovery of certified reference materials (CRM) used to determine concentrations in shearwater muscle (n = 14). # > LoD = number of samples above the minimum level of detection (n = 4 replicates of the reference materials).

Element	# > LoD	CRM concentration (mg/kg)	% recovery
Mg	0	5300	90%
V	14	–	–
Mn	0	33	108%
Co	7	0.48	80%
Cu	0	9.42	92%
Zn	0	335	93%
As	0	33.3	92%
Br	3	235	86%
Sr	1	69.3	88%
Ag	10	0.033	88%
Cd	6	0.82	97%
Hg	10	0.63	120%
Pb	4	2.27	95%

Table S3. Trace element concentrations in feather (n = 10) and muscle tissue (n = 14) from Tasmanian Short-tailed Shearwaters. Values are presented as mean ± SD in μg/g fresh weight for feathers, μg/g wet weight for muscle. <LoD: all samples below limit of detection. Minimum and maximum values provided in parentheses. When the minimum was <LoD, mean ± S.D. is for those samples with measurable concentrations.

Element/ Compound	Feathers	Muscle
Mg	-	326.54 ± 21.40 (262.71-357.68)
Al	607.57 ± 538.13 (109.45-1927.56)	-
V	0.64 ± 0.64 (0.13-2.31)	<LoD (0.18)
Fe	-	129.23 ± 38.69 (77.33-188.03)
Mn	4.82 ± 3.44 (1.94-12.77)	0.53 ± 0.14 (0.27-0.76)
Co	0.09 ± 0.08 (0.00-0.29)	0.01 ± 0.01 (<LoD-0.02)
Ni	4.28 ± 7.08 (0.57-23.19)	-
Cu	18.51 ± 3.69 (11.17-23.88)	4.00 ± 1.71 (1.97-6.66)
Zn	90.09 ± 15.56 (65.97-115.23)	14.25 ± 6.11 (8.46-28.72)
As	0.26 ± 0.28 (0.00-0.86)	0.15 ± 0.14 (0.01-0.45)
Br	-	1.27 ± 0.91 (<LoD-2.98)
Rb	-	1.39 ± 0.25 (1.11-1.80)
Sr	-	0.13 ± 0.11 (<LoD-0.46)

Mo	0.30 ± 0.12 (0.14-0.56)	-
Ag	0.09 ± 0.06 (0.00-0.21)	0.39 ± 0.20 (<LoD-0.62)
Cd	0.03 ± 0.02 (0.01-0.09)	0.01 ± 0.01 (<LoD-0.04)
Sb	<LoD (0.02)	<LoD (0.03)
Ba	1.74 ± 097 (0.88-3.46)	-
Ce	-	0.02 ± 0.02 (<LoD-0.08)
Hg	0.14 ± 0.08 (0.05-0.28)	0.03 ± 0.00 (<LoD-0.03)
Tl	0.00 ± 0.00 (0.00-0.01)	<LoD (0.02)
Pb	0.37 ± 0.17 (0.19-0.70)	0.07 ± 0.13 (<LoD-0.49)

Table S4. Summary of duplicate Short-tailed Shearwater muscle samples. Data are in µg/g. % Difference = (analysis 1 – analysis 2) / mean of both analyses; n = 2 duplicates (14% of total samples). Samples where concentrations were below the level of detection are not included.

	Sample 1			Sample 2		
Element	Analysis 1	Analysis 2	% Difference	Analysis 1	Analysis 2	% Difference
Mg	330	335	1.4	1532	1430	6.9
Mn	0.76	0.59	25.5	2.91	2.74	15.8
Co	< LoD	< LoD	-	< LoD	0.04	-
Cu	6.34	6.33	0.2	26.08	23.85	8.9
Zn	22.99	17.88	25.0	55.16	50.74	8.3
As	0.02	0.01	40.7	0.58	0.62	6.7
Br	1.19	1.51	23.2	34.0	24.7	31.7
Sr	0.16	0.21	26.8	0.97	0.35	93.5
Ag	0.13	0.62	129.8	0.08	< LoD	-
Cd	0.01	0.01	0.0	< LoD	< LoD	-
Hg	0.03	0.02	14.6	< LoD	< LoD	-
Pb	< LoD	0.07	-	0.01	< LoD	-