HOKKAIDO UNIVERSITY

Title	Lead exposure in raptors from Japan and source identification using Pb stable isotope ratios
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Table 1. Hepatic Pb levels (mg/kg, wet weight, range) and the assesments of Pb exposure in raptors from Hokkaido after the regulation.

Species	Sample size	Pb concentration in liver	Assessments		
		mg/kg, wet wt, median, (range)	Pb poisoning (> 2.0 mg.kg)	High Pb exposure (0.2 - 2.0 mg/kg)	Non toxic (< 0.2 mg/kg)
Steller's sea eagle	43	0.12 (ND - 36.6)	18	2	23
White-tailed sea eagle	50	0.06 (ND - 56.4)	12	4	34
Blakiston's fish owl	13	0.01 (ND - 0.04)	0	0	13
Mountain hawk eagle	7	0.01 (ND - 0.09)	0	0	7
Northern goshawk	6	0.01 (ND - 0.04)	0	0	6
Sparrowhawk	2	- (ND - 0.04)	0	0	2
Peregrine falcon, Black kite	1, each species	0.07 (0.01 - 0.12)	0	0	2

ND: non detectable (The limit of detection for Pb was 0.01 μg/L in digested solution.)

Table 2. Hepatic concentrations of Pb depending on age in Steller's sea eagle and White-tailed sea eagle.

Species	Age	Sample size	Pb concentration in liver mg/kg, wet wt, median, (range)
Steller's sea eagle	ad.	22	2.5 (ND – 36.6) †
	sub.	8	17.2 (0.02 – 23.8) ‡
	juv.	13	0.01 (ND – 3.7)†, ‡
	unk.	0	
White-tailed sea eagle	ad.	18	0.1 (0.01 – 53.7)
	sub.	19	0.1 (ND – 56.4)
	juv.	10	0.02 (ND – 10.8)
	unk.	3	0.1 (ND – 0.24)

ad.: adult; sub.: sub-adult; juv.: juvenile; unk.: unknown; ND: non detectable (The limit of detection for Pb was 0.01 μg/L in digested solution.)

Steel-Dwass test for each age was used.

†: Significantly ($p < 0.01$) different between adults and juvenile in Steller's sea eagle.

‡: Significantly ($p < 0.01$) different between sub-adults and juvenile in Steller's sea eagle.

Table 3. Hepatic Pb levels (mg/kg, wet weight, range) and the assesments of Pb exposure in raptors from Honshu and Shikoku.

Species	Sample size	Pb concentration in liver	Assessments		
		mg/kg, wet wt, median, (range)	Pb poisoning (> 2.0 mg.kg)	High Pb exposure (0.2 - 2.0 mg/kg)	Non toxic (< 0.2 mg/kg)
Golden eagle	13	0.04 (0.01 - 2.3)	1	1	11
Northern goshawk	9	0.02 (0.01 - 0.35)	0	1	8
Black kite	9	0.05 (0.02 - 0.42)	0	1	8
Ural owl	4	0.02 (0.01 - 0.03)	0	0	4
Sparrowhawk	2	0.04 (0.02 - 0.06)	0	0	2
Brown hawk owl	2	0.08 (0.02 - 0.13)	0	0	2
Mountain hawk eagle, Peregrine falcon, Osprey, Grey-faced buzzard, Japanese sparrowhawk, Common kestrel, Sunda scops owl	1, each species	0.01 (ND - 0.04)	0	0	7

ND: non detectable (The limit of detection for Pb was 0.01 μg/L in digested solution.)