

Appendix 1. Average values for physiological, hematological, and morphological parameters for sea otters, polar bears, northern fur seals, and harbor seals

Variables	Units	SEA OTTER (<i>Enhydra lutris</i>)		POLAR BEAR (<i>Ursus maritimus</i>)		NORTHERN FUR SEAL (<i>Callorhinus ursinus</i>)		HARBOR SEAL (<i>Phoca vitulina</i>)	
		Adult	Pup	Adult	Cub	Adult	Pup	Adult	Newborn
Average Weight: Male	kg	27-48	<2 mo. 11-4.4 2-8 mo. 4.5-13.6	350-650	birth wt 0.6-0.8 4-5 mo 8-11	180-270	5-22.7 (yearling) 18.2-31.8	87-170 ²	11-19 ¹ (yearling) 60-120
Average Weight: Female	kg	16-17		175-300		26-50		60-142 ⁴	
Average standard Length: Male	m	135	nd	2.5-3	nd	1.1	nd	1.61-1.86 ²	0.79-0.98 ¹
Average standard Length: Female	m	125	nd	2-2.5	nd	1.5	nd	1.48-1.69 ²	0.79-0.98 ¹
Normal Heart rate	bpm	144 to 156	nd	nd	nd	50-120	nd	130-150	n.o.
Normal respiration rate	bpm	17-20	nd	15-30	nd	0	nd	3-4	nd
Normal core body temperature	°C (OF)	37.5-38.1 (99.5-100.6)	nd	30.5-38.3 (97.6-101)	nd	30.0-37.7 (96.8-99.9)	nd	36.9-38.7 (98.4-101.7)	nd
RBC	10 ⁶ /mm ³	3.21-6.54 ¹	2.68-4.85 ¹	4.5-8.6 ¹	nd	3.84-5.29 ¹	nd	3.99-5.61 ¹	5.0-6.3 ¹
Hb	g/dl	10.8-22.9 ¹	8.3-17.8 ¹	12-15 ¹	nd	12.7-17.8 ¹	nd	14.4-24.0 ¹	18.1-22.2 ¹
PCV	%	33-70 ¹	25-51 ¹	37-50 ¹	nd	34-51 ¹	nd	40-60 ¹	50-61 ¹
MCV	fL	82-129 ¹	86-110 ¹	50-99 ¹	nd	85-105 ¹	nd	92-121 ¹	87-108 ¹
MCH	pg	27-37 ¹	27-37 ¹	17-31 ¹	nd	29-35 ¹	nd	33-44 ¹	31-40 ¹
MCHC	g/dl	31-38 ¹	31-38 ¹	24-35 ¹	nd	32-38 ¹	na	34-38 ¹	34-39 ¹
WBC	10 ³ /mm ³	5.2-21.6 ¹	1.1-10 ¹	2.8-11.6 ¹	nd	7.0-13.8 ¹	nd	7.6-19.4 ¹	5.5-14.6 ¹
PMNs	%	37-84 ¹	40-76 ¹	nd	nd	53-83 ¹	nd	46-85 ¹	57-89 ¹
Bands	%	ol	ol	nd	nd	0-2 ¹	nd	0-5 ¹	0-9 ¹
Lymphs	%	13-61 ¹	21-60 ¹	nd	nd	11-38 ¹	nd	9-45 ¹	9-24 ¹
Monos	%	1-7 ¹	1-12 ¹	nd	nd	0-8 ¹	nd	1-17 ¹	5-12 ¹
Eos	%	1-6 ¹	1-4 ¹	nd	nd	0-11 ¹	nd	0-9 ¹	0-1 ¹
Basos	%	0 ¹	0 ¹	nd	nd	0 ¹	nd	0-2 ¹	0 ¹
AST	U/L	500 max	500 max	8-55 ¹	nd	56-129 ¹	nd	70-241 ¹	198 ¹
ALT	U/L	33-366 ¹	5-357 ¹	0-15 ¹	nd	13-76 ¹	nd	36-69 ¹	nd
Total bilirubin	mg/dl	nd	nd	0.6-0.8 ¹	nd	0.0-0.2 ¹	nd	0.1-0.5 ¹	3.9 ¹
CK	U/L	490 max	490 max	nd	nd	nd	nd	nd	nd
GGT	U/L	nd	nd	nd	nd	no	nd	nd	nd
BUN	mg/dl	25-101 ¹	29-190 ¹	2-23 ¹	nd	20-73 ¹	nd	25-97 ¹	57.6 ¹
Creatinine	mg/dl	0.3-3.9 ¹	0.2-2.0 ¹	nd	nd	0.2-0.8 ¹	nd	0.4-1.4 ¹	1011
AP	U/L	27-714 ¹	21-688 ¹	4-30 ¹	8-118 ¹	80-124 ¹	no	30-303 ¹	221 ¹
LOH	U/L	419 max	419 max	37-406 ¹	nd	620-955 ¹	nd	321-1250 ¹	nd
Glucose	mg/dl	60-237 ¹	27-174 ¹	48-156 ¹	nd	84-210 ¹	nd	41-164 ¹	108 ¹
Triglyceride	mg/dl	nd	nd	nd	nd	7-294 ¹	nd	22-362 ¹	53 ¹
Cholesterol	mg/dl	97-414 ¹	113-885 ¹	153-525 ¹	nd	265-317 ¹	nd	212-302 ¹	302 ¹
Lipase	U/L	10-228 ¹	15-142 ¹	nd	nd	nd	nd	nd	nd
Protein, Total	g/dl	4.3-11.6 ¹	3.2-7.7 ¹	5.9-8.2 ¹	nd	6.3-7.8 ¹	nd	6.1-9.7 ¹	5.8 ¹
Albumin	g/dl	1.2-5.0 ¹	1.2-3.9 ¹	nd	nd	3.8-4.5 ¹	nd	3.1-4.0 ¹	3.8 ¹
Globulin	g/dl	3.1-6.6 ¹	2.0-3.8 ¹	nd	nd	1.8-4.0 ¹	nd	1.8-4.0 ¹	2.0 ¹
Sodium (Na ⁺)	mEq/L	139-163 ¹	128-180 ¹	123-157 ¹	nd	147-157 ¹	no	145-156 ¹	152 ¹
Potassium (K ⁺)	mEq/L	4.0-5.6 ¹	3.6-5.6 ¹	2.2-3.9 ¹	nd	4.4-5.1 ¹	nd	4.0-6.0 ¹	4.5 ¹
Chloride (Cl ⁻)	mEq/L	95-120	95-120	94-108 ¹	nd	100-112 ¹	nd	97-111 ¹	106 ¹
Calcium (Ca ⁺⁺)	mg/dl	5.4-14.5 ¹	6.2-12.6 ¹	7.7-9.7 ¹	8.6-10.9 ¹	9.4-9.8 ¹	nd	8.8-10.9 ¹	9.0 ¹
Phosphorus ¹	mg/dl	3.3-14.4 ¹	3.8-13.2 ¹	3.3-7.9 ¹	nd	4.7-7.7 ¹	nd	4.3-7.9 ¹	nd

¹ Bossart, G. D. and L. A. Dierauf. 1990. "Marine mammal clinical laboratory medicine." In *CRC handbook of marine mammal medicine*. L. A. Dierauf, ed. Boca Raton: CRC Press Inc.

² Bigg, M. A. 1991. "Harbor seal." In *Handbook of marine mammals. Volume 2*. S. H. Ridgway and R. J. Harrison, eds. London: Academic Press.