

Seasonal and Developmental Patterns of Energy Intake and Growth in Alaskan Ice Seals

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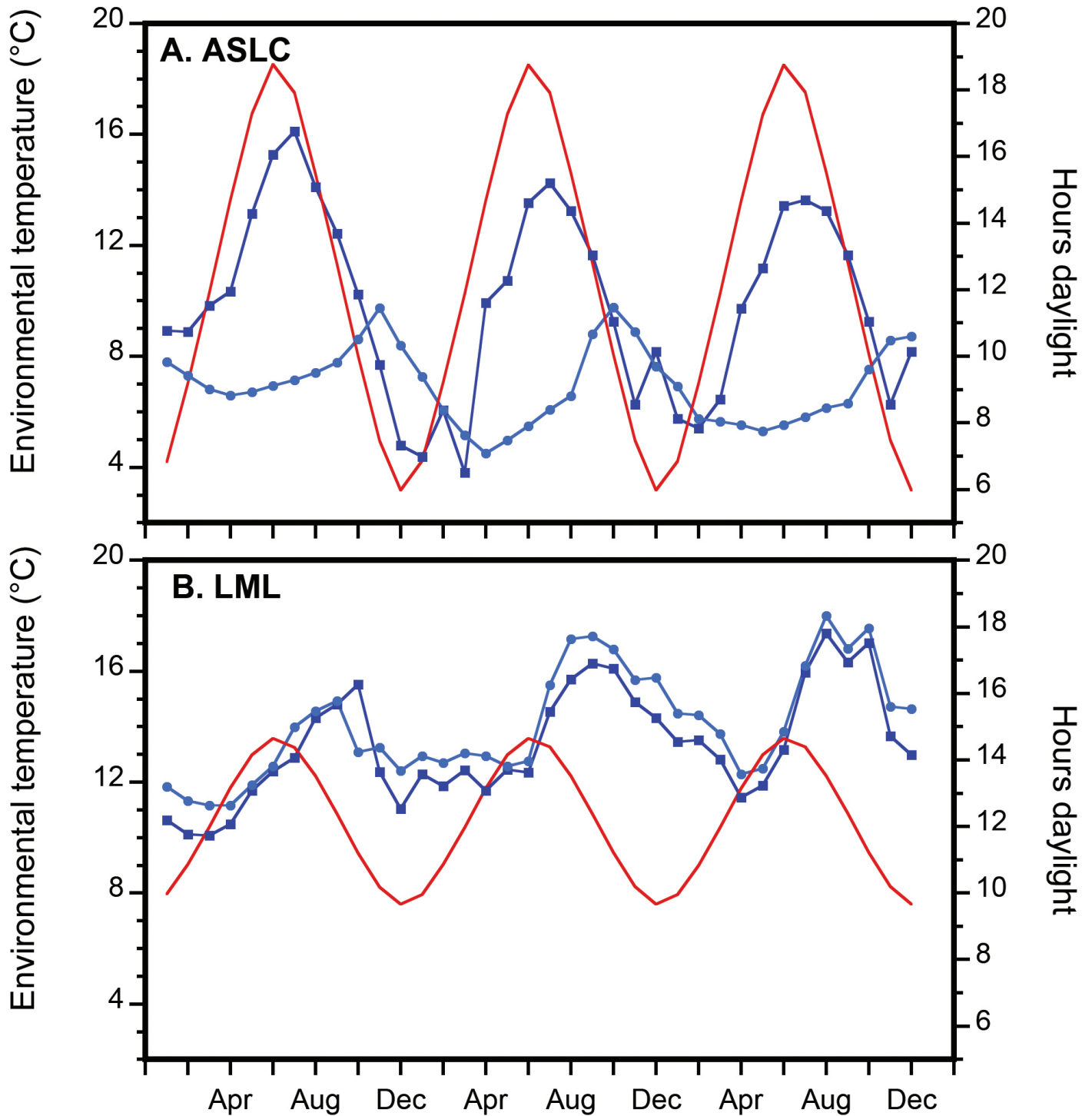
Supplementary Materials

Supplementary Table 1. Mean energy intake and body mass of individual seals. Annual data are presented as mean \pm SD for gross energy intake (kcal d⁻¹), mass-specific gross energy intake (kcal kg⁻¹ d⁻¹), and body mass (kg). Annual means calculated from the 12 monthly averages for each individual seal.

		Gross energy intake (kcal d ⁻¹)								
Species, sex	Individual	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9
Spotted, M	Amak (NOA0006675)	3,327 \pm 654	4,060 \pm 446	4,479 \pm 459	5,227 \pm 367	4,102 \pm 454	4,388 \pm 865	4,290 \pm 1,091	4,672 \pm 939	4,602 \pm 1,283
Spotted, M	Tunu (NOA0006674)	3,106 \pm 610	3,551 \pm 479	4,025 \pm 278	4,648 \pm 345	3,896 \pm 546	4,450 \pm 636	4,029 \pm 851	4,436 \pm 563	4,449 \pm 1,204
Spotted, F	Sura (NOA0010309)	2,332 \pm 673	2,771 \pm 869	3,351 \pm 436	3,728 \pm 672	3,639 \pm 801	3,753 \pm 413	--	--	--
Spotted, M	Kunik (NOA0010310)	2,500 \pm 434	2,474 \pm 165	3,062 \pm 502	3,487 \pm 677	3,667 \pm 408	--	--	--	--
Ringed, F	Nayak (NOA0006783)	--	1,702 \pm 162	2,224 \pm 211	2,247 \pm 191	2,045 \pm 156	2,254 \pm 188	1,885 \pm 250	2,042 \pm 156	2,304 \pm 242
Ringed, M	Pimmiq (NOA0010311)	--	2,473 \pm 216	1,898 \pm 181	1,870 \pm 436	2,085 \pm 572	2,198 \pm 293	--	--	--
Ringed, F	Dutch (NOA0010460)	--	1,577 \pm 191	1,684 \pm 212	1,668 \pm 171	--	--	--	--	--
Bearded, M	Noatak (NOA0010270)	4,225 \pm 978	6,119 \pm 606	4,953 \pm 611	5,179 \pm 631	6,069 \pm 1,694	--	--	--	--
Bearded, M	Siku (NOA0010177)	6,501 \pm 1,075	6,395 \pm 1,257	--	--	--	--	--	--	--
		Mass-specific GEI (kcal kg ⁻¹ d ⁻¹)								
Species, sex	Individual	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9
Spotted, M	Amak (NOA0006675)	102 \pm 13	99 \pm 14	102 \pm 13	107 \pm 17	73 \pm 11	75 \pm 16	73 \pm 25	72 \pm 21	74 \pm 30
Spotted, M	Tunu (NOA0006674)	115 \pm 21	103 \pm 15	93 \pm 9	93 \pm 12	67 \pm 12	69 \pm 14	62 \pm 13	67 \pm 11	63 \pm 23
Spotted, F	Sura (NOA0010309)	138 \pm 61	81 \pm 32	82 \pm 13	90 \pm 18	70 \pm 23	60 \pm 14	--	--	--
Spotted, M	Kunik (NOA0010310)	112 \pm 33	68 \pm 5	73 \pm 14	68 \pm 19	58 \pm 12	--	--	--	--
Ringed, F	Nayak (NOA0006783)	--	89 \pm 11	102 \pm 11	99 \pm 8	87 \pm 10	94 \pm 7	63 \pm 15	69 \pm 6	71 \pm 8
Ringed, M	Pimmiq (NOA0010311)	--	136 \pm 35	66 \pm 7	68 \pm 16	72 \pm 23	66 \pm 12	--	--	--
Ringed, F	Dutch (NOA0010460)	--	96 \pm 16	72 \pm 14	60 \pm 7	--	--	--	--	--
Bearded, M	Noatak (NOA0010270)	42 \pm 11	65 \pm 7	44 \pm 6	42 \pm 5	46 \pm 13	--	--	--	--
Bearded, M	Siku (NOA0010177)	67 \pm 7	63 \pm 7	--	--	--	--	--	--	--

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		Body mass (kg)								
Species, sex	Individual	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9
Spotted, M	Amak (NOA0006675)	27.6 ± 6.8	41.1 ± 1.7	44.0 ± 2.1	49.5 ± 4.5	56.7 ± 2.5	59.2 ± 3.1	60.7 ± 6.6	66.2 ± 7.3	65.7 ± 11.6
Spotted, M	Tunu (NOA0006674)	23.8 ± 5.8	34.7 ± 1.7	43.5 ± 2.8	50.5 ± 3.1	58.7 ± 2.6	65.7 ± 5.4	64.8 ± 1.5	67.0 ± 4.7	73.4 ± 9.0
Spotted, F	Sura (NOA0010309)	17.8 ± 5.2	35.2 ± 4.5	41.0 ± 1.5	41.7 ± 2.2	53.1 ± 5.3	64.0 ± 9.8	--	--	--
Spotted, M	Kunik (NOA0010310)	22.8 ± 9.3	36.5 ± 1.1	42.1 ± 2.1	52.3 ± 4.2	64.9 ± 7.7	--	--	--	--
Ringed, F	Nayak (NOA0006783)	15.2 ± 5.2	19.4 ± 1.3	21.9 ± 1.0	22.6 ± 0.9	23.6 ± 1.1	24.1 ± 1.9	28.6 ± 1.2	29.8 ± 1.3	32.5 ± 0.4
Ringed, M	Pimniq (NOA0010311)	--	19.3 ± 5.4	28.9 ± 1.2	27.3 ± 0.7	29.5 ± 2.4	33.9 ± 2.3	--	--	--
Ringed, F	Dutch (NOA0010460)	--	16.7 ± 2.6	23.7 ± 2.9	28.1 ± 1.8	--	--	--	--	--
Bearded, M	Noatak (NOA0010270)	93.2 ± 6.5	94.4 ± 5.3	113.6 ± 2.9	122.6 ± 1.9	133.7 ± 6.3	--	--	--	--
Bearded, M	Siku (NOA0010177)	95.9 ± 5.2	104.1 ± 6.5	--	--	--	--	--	--	--



Supplementary Figure 1. Environmental conditions at the two study sites: (A) the Alaska SeaLife Center (Seward, Alaska) and (B) Long Marine Laboratory (Santa Cruz, CA). Monthly data over 3 y are presented for ambient air temperature (dark blue squares), water temperature (light blue circles), and hours daylight (red lines). Data for ASLC are from January 2016 to December 2018, while data for LML are from January 2013 to December 2016. Note the abnormally warm ambient seawater temperature at LML in winter 2014 associated with the “blob” (Peterson et al., 2015).