

Supplementary File

Publications organized by year since 1940 relevant to the thermal physiology of marine mammals. Refer to the caption of Figure 1 for an explanation of what types of publications were included, how they were classified, and how the different categories are defined. The following are indicated in the 'Notes' column: (1) studies that are relevant but traditionally considered a study on diving physiology; (2) whether field studies were performed on land or in the water; (3) the type of biotelemetry technology used for studies that used biotelemetry to study physiology and/or behavior in the lab or field. Biotelemetry methods for (1) physiology: STP = stomach temperature pill (a temperature-sensitive radio transmitter that is ingested), IRT = infrared thermography (used for skin temperature unless otherwise stated), ECG = electrocardiogram (heart rate), HF = heat flux sensor, TR = thermistor (temperature location specified), TC = thermocouple (temperature location specified); (2) behavior: TDR = time-depth recorder (diving behavior), SAT = satellite tag (location/movement data), GPS = global positioning satellite tag (location/movement data), VHF = very high frequency transmitter (location/movement data), CTD = conductivity-temperature-depth tag (*in situ* water temperature).

Publication				Study Setting			Animal State							Biotelemetry		Notes
Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior	Notes	
1940-1949																
1	Scholander, PF; Irving, Laurence; Grinnell, SW	On the Temperature and Metabolism of the seal during diving	Journal of Cellular and Comparative Physiology	1942		X				X					diving physiology study	
2	Parry, DA;	The structure of whale blubber, and a discussion of its thermal properties	Journal of Cell Science	1949		X						X				
1950-1959																
3	Scholander, PF; Schevill, WE	Counter-Current Vascular Heat Exchange in the Fins of Whales	Journal of Applied Physiology	1955		X						X				
4	Bartholomew, GA; Wilke, F	Body temperature in the northern fur seal, <i>Callorhinus ursinus</i>	Journal of Mammalogy	1956	X				X	X					on land	
5	Irving, L; Hart, JS	The metabolism and insulation of seals as bare-skinned mammals in cold water	Canadian Journal of Zoology	1957		X			X							
6	Hart, JS; Irving, L	The energetics of harbor seals in air and in water with special consideration of seasonal changes	Canadian Journal of Zoology	1959		X			X							
1960-1969																
7	Irving, L; Peyton, LJ; Bahn, CH; Peterson, RS	Regulation of temperature in fur seals	Physiological Zoology	1962	X	X			X	X						
8	Bryden, MM	Insulating capacity of the subcutaneous fat of the southern elephant seal	Nature	1964		X						X				
9	Ling, JK	Functional significance of sweat glands and sebaceous glands in seals	Nature	1965		X						X				
10	Ling, JK	The skin and hair of the Southern Elephant Seal <i>Mirounga leonina</i> (L.) III. morphology of the adult integument	Australian Journal of Zoology	1968		X						X				
1970-1979																
11	Tarasoff, FJ; Fisher, HD	Anatomy of the hind flippers of two species of seals with reference to thermoregulation	Canadian Journal of Zoology	1970		X						X				
12	Hampton, IFG; Whittow, GC; Szekerczes, J; Rutherford, S	Heat transfer and body temperature in the Atlantic bottlenosed dolphin, <i>Tursiops truncatus</i>	The International Journal of Biometerology	1971		X			X				X		STP	
13	McGinnis, SM; Southworth, TP	Thermoregulation in the northern elephant seal, <i>Mirounga angustirostris</i>	Comparative Biochemistry and Physiology	1971	X	X		X	X				X		STP, implanted radio telemeters (T _{subcutaneous}), field component on land	
14	White, FN; Odell, DK	Thermoregulatory behavior of the northern elephant seal, <i>Mirounga angustirostris</i>	Journal of Mammalogy	1971	X			X					X		STP, on land	

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15	McGinnis, SM; Whittow, GC; Ohata, CA; Huber, H	Body heat dissipation and conservation in two species of dolphins	Comparative Biochemistry and Physiology Part A: Physiology	1972		X			X					X		STP, implanted radio telemeters (T _{subcutaneous})
16	Ohata, CA; Matsuura, DT; Whittow, GC; Tinker, SW	Diurnal Rhythm of Body Temperature in the Hawaiian Monk Seal (<i>Monachus schauinslandi</i>)	Pacific Science	1972		X			X					X		STP
17	Whittow, GC; Matsuura, DT; Lin, YC	Temperature regulation in the California sea lion (<i>Zalophus californianus</i>)	Physiological Zoology	1972		X							X			
18	Gentry, RL	Thermoregulatory behavior of eared seals	Behaviour	1973	X		X									on land
19	Matsuura, DT; Whittow, GC	Evaporative heat loss in the California sea lion and harbor seal	Comparative Biochemistry and Physiology Part A: Physiology	1974		X			X	X				X		rectal telemetry capsule
20	Morrison, P; Rosenmann, M; Estes, JA	Metabolism and thermoregulation in the sea otter	Physiological Zoology	1974		X			X	X						
21	Odell, DK	Behavioral thermoregulation in the California sea lion	Behavioral Biology	1974	X		X									on land
22	Ohata, CA; Whittow, GC	Conductive heat loss to sand in California sea lions and a harbor seal	Comparative Biochemistry and Physiology	1974		X			X							
23	Whittow, GC; Hampton, IFG; Matsuura, DT; Ohata, CA; Smith, RM; Allen, JF	Body Temperature of Three Species of Whales	Journal of Mammalogy	1974		X			X					X		STP, IRT
24	Luecke, RH; Natarajan, V; South, RE	A mathematical biothermal model of the California sea lion	Journal of Thermal Biology	1975			X									
25	McGinnis, SM	Peripheral Heat Exchange in Phocids	Rapp. P.-v. Reun. Cons. int. Explor. Mer.	1975	X	X	X		X					X		STP, field component performed on land
26	Miller, K; Irving, L	Metabolism and temperature regulation in young harbor seals <i>Phoca vitulina richardi</i>	American Journal of Physiology-Legacy Content	1975		X			X							
27	Molyneux, GS; Bryden, MM	Arteriovenous anastomoses in the skin of the Weddell seal, <i>Leptonychotes weddelli</i>	Science	1975		X							X			
28	Whittow, GC; Szekerczes, J; Kridler, E; Olsen, DL	Skin structure of the Hawaiian monk seal (<i>Monachus schauinslandi</i>)	Pacific Science	1975		X							X			
29	Hampton, IFG; Whittow, GC	Body temperature and heat exchange in the Hawaiian spinner dolphin, <i>Stenella longirostris</i>	Comparative Biochemistry and Physiology Part A: Physiology	1976		X		X	X					X		IRT
30	Miller, K; Rosenmann, M; Morrison, P	Oxygen uptake and temperature regulation of young harbor seals (<i>Phoca vitulina richardi</i>) in water	Comparative Biochemistry and Physiology Part A: Physiology	1976		X			X							

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31	Hammel, HT; Elsner, RW; Heller, HC; Maggert, JA; Bainton, CR	Thermoregulatory responses to altering hypothalamic temperature in the harbor seal	1977		X					X							
32	Ohata, CA; Miller, LK	Northern fur seal thermoregulation: Thermal responses to forced activity on land	1977	X							X						on land
33	Ohata, CA; Miller, LK	Some temperature responses of northern fur seal (<i>Callorhinus ursinus</i>) pups	1977	X						X							on land
34	Ohata, CA; Miller, LK; Kajimura, H	Northern fur seal thermoregulation: Thermal responses to pelagic conditions	1977	X							X						in water
35	Bryden, MM; Molyneux, GS	Arteriovenous anastomoses in the skin of seals. II. The California sea lion <i>Zalophus californianus</i> and the northern fur seal <i>Callorhinus ursinus</i> (Pinnipedia: Otariidae)	1978		X								X				
36	Molyneux, GS; Bryden, MM	Arteriovenous anastomoses in the skin of seals. I. The Weddell Seal <i>Leptonychotes weddelli</i> and the Elephant Seal <i>Mirounga leonina</i> (Pinnipedia: Phocidae)	1978		X								X				
37	Øritsland, NA; Ronald, K	Aspects of temperature regulation in harp seal pups evaluated by in vivo experiments and computer simulations	1978		X	X				X							
38	Blix, AS; Grav, H; Ronald, K	Some aspects of temperature regulation in newborn harp seal pups	1979		X								X				
39	Blix, AS; Miller, LK; Keyes, MC; Grav, HJ; Elsner, R	Newborn northern fur seals (<i>Callorhinus ursinus</i>)--do they suffer from cold?	1979		X				X	X		X	X				
40	Gallivan, GJ; Ronald, K	Temperature regulation in freely diving harp seals (<i>Phoca groenlandica</i>)	1979		X				X					X			STP, diving physiology study
41	Zapol, WM; Liggins, GC; Schneider, RC; Qvist, J; Snider, MT; Creasy, RK; Hochachka, PW	Regional blood flow during simulated diving in the conscious Weddell seal	1979		X					X							diving physiology study
1980-1989																	
42	Kooyman, GL; Wahrenbrock, EA; Castellini, MA; Davis, RW; Sinnott, EE	Aerobic and anaerobic metabolism during voluntary diving in Weddell seals: Evidence of preferred pathways from blood chemistry and behavior	1980	X			X			X					X		TDR, diving physiology study, in water
43	Costa, DP; Kooyman, GL	Oxygen consumption, thermoregulation, and the effect of fur oiling and washing on the sea otter, <i>Enhydra lutris</i>	1982		X				X				X	X			STP, implanted radio telemeters (T _{subcutaneous})

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44	Blix, AA; Fay, FH; Ronald, K	On testicular cooling in phocid seals	Polar Research	1983	X	X					X	X				field component on land
45	Gallivan, GJ; Best, RC; Kanwisher, JW	Temperature regulation in the Amazonian manatee <i>Trichechus inunguis</i>	Physiological Zoology	1983		X			X					X		STP
46	Irvine, AB	Manatee metabolism and its influence on distribution in Florida	Biological Conservation	1983		X			X					X		STP
47	Costa, DP; Kooyman, GL	Contribution of specific dynamic action to heat balance and thermoregulation in the sea otter <i>Enhydra lutris</i>	Physiological Zoology	1984		X			X							
48	Brodie, P; Paasche, A	Thermoregulation and energetics of fin and sei whales based on postmortem, stratified temperature measurements	Canadian Journal of Zoology	1985	X						X					in water
49	Limberger, D; Trillmich, F; Biebach, H; Stevenson, RD	Temperature regulation and microhabitat choice by free-ranging Galapagos fur seal pups (<i>Arctocephalus galapagoensis</i>)	Oecologia	1986	X			X						X		STP, IRT, on land
50	Yasui, WY; Gaskin, DE	Energy budget of a small cetacean, the harbour porpoise, <i>Phocoena phocoena</i> (L.)	Ophelia	1986		X	X						X			
51	Folkow, LP; Blix, AS	Nasal heat and water exchange in gray seals	American Journal of Physiology-Regulatory, Integrative and Comparative Physiology	1987		X			X							
52	Hill, RD; Schneider, RC; Liggins, GC; Schuette, AH; Elliott, RL; Guppy, M; Hochachka, PW; Qvist, J; Falke, KJ; Zapol, WM; Lig-Gins, GC	Heart rate and body temperature during free diving of Weddell seals	The American Physiological Society	1987	X						X			X	X	ECG, blood samples, thermistor-tipped catheter (T _{blood}), TDR, VHF, diving physiology study, in water
53	Thompson, SD; Ono, KA; Oftedal, OT; Boness, DJ	Thermoregulation and resting metabolic rate of California sea lion (<i>Zalophus californianus</i>) pups	Physiological Zoology	1987	X					X						on land
54	Campagna, C; Le Boeuf, BJ	Thermoregulatory behaviour of southern sea lions and its effect on mating strategies	Behaviour	1988	X				X							on land
55	Ryg, M; Smith, TG; Øritsland, NA	Thermal significance of the topographical distribution of blubber in ringed seals (<i>Phoca hispida</i>)	Canadian Journal of Fisheries and Aquatic Sciences	1988		X					X	X	X			
56	Folkow, LP; Blix, AS	Thermoregulatory control of expired air temperature in diving harp seals	American Journal of Physiology-Regulatory, Integrative and Comparative Physiology	1989		X			X	X						diving physiology study
57	Kasting, NW; Adderley, SAL; Safford, T; Hewlett, KG	Thermoregulation in beluga (<i>Delphinapterus leucas</i>) and killer (<i>Orcinus orca</i>) whales	Physiological Zoology	1989		X			X							
1990-1999																
58	Doidge, DW	Integumentary heat loss and blubber distribution in the beluga, <i>Delphinapterus leucas</i> , with comparisons to the narwhal, <i>Monodon monoceros</i>	Canadian Bulletin of Fisheries and Aquatic Science	1990		X						X	X			

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59	Hokkanen, JEI	Temperature regulation of marine mammals	Journal of Theoretical Biology	1990			X										
60	Innes, S; Worthy, GAJ.; Lavigne, DM; Ronald, K	Surface area of phocid seals	Canadian Journal of Zoology	1990		X							X				
61	Lavigne, DM; Innes, S; Worthy, GAJ; Edwards, EF	Lower critical temperatures of blue whales, <i>Balaenoptera musculus</i>	Journal of Theoretical Biology	1990			X										
62	Øristland, NA; Markussen, NH	Outline of a physiologically based model for population energetics	Ecological Modelling	1990			X										
63	Ryg, M; Lydersen, C; Markussen, NH; Smith, TG; Øritsland, NA	Estimating the blubber content of phocid seals	Canadian Journal of Fisheries and Aquatic Sciences	1990		X						X	X				
64	Trites, AW	Thermal budgets and climate spaces: the impact of weather on the survival of Galapagos (<i>Arctocephalus galapagoensis</i> Heller) and northern fur seal pups (<i>Callorhinus ursinus</i> L.)	Functional Ecology	1990			X										
65	Worthy, GAJ; Edwards, EF	Morphometric and biochemical factors affecting heat loss in a small temperate cetacean (<i>Phocoena phocoena</i>) and a small tropical cetacean (<i>Stenella attenuata</i>)	Physiological Zoology	1990		X						X	X				
66	Francis, JM; Boness, DJ	The effect of thermoregulatory behaviour on the mating system of the Juan Fernandez fur seal, <i>Arctocephalus philippii</i>	Behaviour	1991	X			X									on land
67	Little, GJ	Thyroid morphology and function and its role in thermoregulation in the newborn southern elephant seal (<i>Mirounga leonina</i>) at Macquarie Island	Journal of Anatomy	1991	X	X				X				X			field component on land
68	Smith, TG; Hammill, MO; Taugbøl, G	A review of the developmental, behavioural and physiological adaptations of the ringed seal, <i>Phoca hispida</i> , to life in the Arctic winter	Arctic	1991		X				X		X	X				
69	Worthy, GAJ	Insulation and thermal balance of fasting harp and grey seal pups	Comparative Biochemistry and Physiology Part A: Physiology	1991		X			X		X		X	X			STP
70	Cuyler, LC; Wiulsrød, R; Øritsland, NA	Thermal infrared radiation from free living whales	Marine Mammal Science	1992	X			X						X			IRT, in water
71	Folkow, LP; Blix, AS	Metabolic rates of minke whales (<i>Balaenoptera acutorostrata</i>) in cold water	Acta Physiologica Scandinavica	1992	X	X		X			X						field component in water
72	Rommel, SA; Pabst, DA; McLellan, WA; Mead, JG; Potter, CW	Anatomical evidence for a countercurrent heat exchanger associated with dolphin testes	The Anatomical Record	1992		X						X	X				
73	Ponganis, PJ; Kooyman, GL; Castellini, MA; Ponganis, EP; Ponganis, KV	Muscle temperature and swim velocity profiles during diving in a Weddell seal, <i>Leptonychotes weddellii</i>	Journal of Experimental Biology	1993	X			X						X	X		percutaneous TR _{muscle} , TDR, swim velocity, diving physiology study, in water

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74	Rommel, SA; Pabst, DA; McLellan, WA	Functional morphology of the vascular plexuses associated with the cetacean uterus	The Anatomical Record	1993		X						X	X				
75	Ryg, M; Lydersen, C; Knutsen, LØ; Bjørge, A; Smith, TG; Øritsland, NA	Scaling of insulation in seals and whales	Journal of Zoology	1993		X						X	X				
76	Watts, P; Hansen, S; Lavigne, DM	Models of heat loss by marine mammals: thermoregulation below the zone of irrelevance	Journal of Theoretical Biology	1993			X										
77	Kvadsheim, PH; Folkow, LP; Blix, AS	A new device for measurement of the thermal conductivity of fur and blubber	Journal of Thermal Biology	1994		X							X				
78	Rommel, SA; Pabst, DA; McLellan, WA; Williams, TM; Friedl, WA	Temperature regulation of the testes of the bottlenose dolphin (<i>Tursiops truncatus</i>): evidence from colonic temperatures	Journal of Comparative Physiology B	1994		X		X									
79	Beck, GG; Smith, TG	Distribution of blubber in the northwest Atlantic harp seal, <i>Phoca groenlandica</i>	Canadian Journal of Zoology	1995		X						X	X	X			
80	Boily, P	Theoretical heat flux in water and habitat selection of phocid seals and beluga whales during the annual molt	Journal of Theoretical Biology	1995			X										
81	Hansen, S; Lavigne, DM; Innes, S	Energy metabolism and thermoregulation in juvenile harbor seals (<i>Phoca vitulina</i>) in air	Physiological Zoology	1995		X			X					X		STP	
82	Kastelein, RA; Van der Sijs, SJ; Staal, C; Nieuwstraten, SH	Blubber thickness in harbour porpoises (<i>Phocoena phocoena</i>)	Food Consumption and Growth of Marine Mammals	1995		X			X					X		IRT	
83	Little, GJ	Body temperature in the newborn southern elephant seal, <i>Mirounga leonina</i> , at Macquarie Island	Marine Mammal Science	1995	X					X						on land	
84	Pabst, DA; Rommel, SA; McLellan, WA; Williams, TM; Rowles, TK	Thermoregulation of the intra-abdominal testes of the bottlenose dolphin (<i>Tursiops truncatus</i>) during exercise	The Journal of Experimental Biology	1995		X		X						X		TC _{rectal}	
85	Rommel, SA; Early, GA; Matassa, KA; Pabst, DA; McLellan, WA	Venous structures associated with thermoregulation of phocid seal reproductive organs	The Anatomical Record	1995		X						X	X				
86	Boily, P; Lavigne, DM	Thermoregulation of juvenile grey seals, <i>Halichoerus grypus</i> , in air	Canadian Journal of Zoology	1996		X			X					X		STP	
87	Kvadsheim, PH; Folkow, LP; Blix, AS	Thermal conductivity of minke whale blubber	Journal of Thermal Biology	1996		X							X				
88	Hansen, S; Lavigne, DM	Ontogeny of the thermal limits in the harbor seal (<i>Phoca vitulina</i>)	Physiological Zoology	1997		X			X					X		STP	
89	Heyning, JE; Mead, JG	Thermoregulation in the mouths of feeding gray whales	Science	1997		X							X				
90	Hind, AT; Gurney, WS	The metabolic cost of swimming in marine homeotherms	The Journal of Experimental Biology	1997			X										
91	Kastelein, RA; Koene, P; Nieuwstraten, SH; Labberté, S	Skin surface temperature changes in a harbour porpoise (<i>Phocoena phocoena</i>) while on land	The Biology of the Harbour Porpoise	1997		X			X					X		IRT	

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92	Kvadsheim, PH; Folkow, LP	Blubber and flipper heat transfer in harp seals	Acta Physiologica Scandinavica	1997		X	X		X				X			
93	Kvadsheim, PH; Gotaas, ARL; Folkow, LP; Blix, AS	An experimental validation of heat loss models for marine mammals	Journal of Theoretical Biology	1997		X	X		X		X		X			
94	Rosen, DAS; Renouf, D	Seasonal changes in blubber distribution in Atlantic harbor seals: indications of thermodynamic considerations	Marine Mammal Science	1997		X			X							
95	Hind, AT; Gurney, WSC	Are there thermoregulatory constraints on the timing of pupping for harbour seals?	Canadian Journal of Zoology	1998			X									
96	Koopman, HN	Topographical distribution of the blubber of harbor porpoises (<i>Phocoena phocoena</i>)	Journal of Mammalogy	1998		X						X				
97	Heath, ME; Ridgway, SH	How dolphins use their blubber to avoid heat stress during encounters with warm water	American Journal of Physiology-Regulatory, Integrative and Comparative Physiology	1999		X			X					X		HF, TC _{rectal}
98	Noren, DP; Williams, TM; Berry, P; Butler, E	Thermoregulation during swimming and diving in bottlenose dolphins, <i>Tursiops truncatus</i>	Journal of Comparative Physiology B	1999	X				X							diving physiology study, in water
99	Williams, TM; Noren, D; Berry, P; Estes, JA; Allison, C; Kirtland, J	The diving physiology of bottlenose dolphins (<i>Tursiops truncatus</i>). III. Thermoregulation at depth	Journal of Experimental Biology	1999	X				X					X	X	ECG, TDR, diving physiology study, in water
2000-2009																
100	Boily, P; Kvadsheim, PH; Folkow, LP	Cutaneous heat flux models do not reliably predict metabolic rates of marine mammals	Journal of Theoretical Biology	2000		X	X			X		X	X			
101	Boyd, IL	Skin temperatures during free-ranging swimming and diving in Antarctic fur seals	Journal of Experimental Biology	2000	X		X	X						X	X	$\Delta T_{R_{skin-water}}$, TDR, field component in water
102	Donohue, MJ; Costa, DP; Goebel, ME; Baker, JD	The ontogeny of metabolic rate and thermoregulatory capabilities of northern fur seal, <i>Callorhinus ursinus</i> , pups in air and water	Journal of Experimental Biology	2000	X					X						on land and in water
103	Mauck, B; Eysel, U; Dehnhardt, G	Selective heating of vibrissal follicles	Journal of Experimental Biology	2000		X			X					X		IRT (vibrissal pad)
104	Heyning, JE	Thermoregulation in feeding baleen whales: Morphological and physiological evidence	Aquatic Mammals	2001		X			X					X		IRT (tongue)
105	Jobsis, PD; Ponganis, PJ; Kooyman, GL	Effects of training on forced submersion responses in harbor seals	Journal of Experimental Biology	2001		X			X	X				X		ECG, muscle blood flow (via laser Doppler), diving physiology study
106	Rommel, SA; Pabst, DA; McLellan, WA	Functional morphology of venous structures associated with the male and female reproductive systems in Florida manatees (<i>Trichechus manatus latirostris</i>)	The Anatomical Record: An Official Publication of the American Association of Anatomists	2001		X							X			

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107	Koopman, HN; Pabst, DA; McLellan, WA; Dillaman, RM; Read, AJ	Changes in blubber distribution and morphology associated with starvation in the harbor porpoise (<i>Phocoena phocoena</i>): evidence for regional differences in blubber structure and function	2002		X							X	X			
108	Kvadshheim, PH; Aarseth, JJ	Thermal function of phocid seal fur	2002		X								X			
109	Meagher, EM; McLellan, WA; Westgate, AJ; Wells, RS; Frierson Jr, D; Pabst, DA	The relationship between heat flow and vasculature in the dorsal fin of wild bottlenose dolphins <i>Tursiops truncatus</i>	2002	X						X				X		ECG, HF with integrated TC _{skin} in water
110	Noren, DP	Thermoregulation of weaned northern elephant seal (<i>Mirounga angustirostris</i>) pups in air and water	2002		X				X							
111	Twiss, SD; Wright, NC; Dunstone, N; Redman, P; Moss, S; Pomeroy, PP	Behavioral evidence of thermal stress from overheating in UK breeding gray seals	2002	X			X									in water
112	Mauck, B; Bilgmann, K; Jones, DD; Eysel, U; Dehnhardt, G	Thermal windows on the trunk of hauled-out seals: hot spots for thermoregulatory evaporation?	2003		X			X	X					X		IRT
113	Rommel, SA; Caplan, H	Vascular adaptations for heat conservation in the tail of Florida manatees (<i>Trichechus manatus latirostris</i>)	2003		X							X	X			
114	Rosen, DAS; Trites, AW	No evidence for bioenergetic interaction between digestion and thermoregulation in Steller sea lions <i>Eumetopias jubatus</i>	2003		X			X								
115	Elsner, R; George, JC; O'hara, T	Vasomotor responses of isolated peripheral blood vessels from bowhead whales: thermoregulatory implications	2004		X								X			
116	Elsner, R; Meiselman, HJ; Baskurt, OK	Temperature-viscosity relations of bowhead whale blood: A possible mechanism for maintaining cold blood flow	2004		X								X			
117	Ortiz, RM; Worthy, GAJ	Could lower body fat mass contribute to cold-water susceptibility in calves of the West Indian manatee (<i>Trichechus manatus</i>)?	2004		X				X							
118	Rutishauser, MR; Costa, DP; Goebel, ME; Williams, TM	Ecological implications of body composition and thermal capabilities in young Antarctic fur seals (<i>Arctocephalus gazella</i>)	2004	X		X				X						field component on land and in water
119	Samuel, AM; Worthy GAJ	Variability in fatty acid composition of bottlenose dolphin (<i>Tursiops truncatus</i>) blubber as a function of body site, season, and reproductive state	2004		X								X			
120	Silva, RG	Assessment of body surface temperature in cetaceans: an iterative approach	2004			X										
121	Struntz, DJ; McLellan, WA; Dillaman, RM; Blum, JE; Kucklick, JR; Pabst, DA	Blubber development in bottlenose dolphins (<i>Tursiops truncatus</i>)	2004		X							X	X			

Supplementary File

Publication				Study Setting			Animal State						Biotelemetry		Notes	
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior	
122	Bossart, GD; Meisner, RA; Rommel, SA; Ghim, S-J; Jensen, AB	Pathological features of the Florida manatee cold stress syndrome	2005		X							X				
123	Dunkin, RC; McLellan, WA; Blum, JE; Pabst, DA	The ontogenetic changes in the thermal properties of blubber from Atlantic bottlenose dolphin <i>Tursiops truncatus</i>	2005		X							X	X			
124	Harding, KC; Fujiwara, M; Axberg, Y; Härkönen, T	Mass-dependent energetics and survival in harbour seal pups	2005	X		X				X						field component on land
125	Kvadsheim, PH; Folkow, LP; Blix, AS	Inhibition of shivering in hypothermic seals during diving	2005		X			X		X				X		EMG, TC _{brain} , TC _{rectal} , diving physiology study
126	McCafferty, DJ; Moss, S; Bennett, K; Pomeroy, PP	Factors influencing the radiative surface temperature of grey seal (<i>Halichoerus grypus</i>) pups during early and late lactation	2005	X						X				X		IRT (rectal), on land
127	Rotherham, LS; van Der Merwe, M; Bester, MN; Oosthuizen, WH	Morphology and distribution of sweat glands in the Cape fur seal, <i>Arctocephalus pusillus pusillus</i> (Carnivora: Otariidae)	2005		X								X			
128	Thornton, SJ; Hochachka, PW; Crocker, DE; Costa, DP; LeBoeuf, BJ; Spielman, DM; Pelc, NJ	Stroke volume and cardiac output in juvenile elephant seals during forced dives	2005		X					X						diving physiology
129	Willis, K; Horning, M	A novel approach to measuring heat flux in swimming animals	2005	X	X		X	X						X		HF with integrated TC _{skin} , field component in water
130	Willis, K; Horning, M; Rosen, DAS; Trites, AW	Spatial variation of heat flux in Steller sea lions: evidence for consistent avenues of heat exchange along the body trunk	2005		X	X		X						X	X	HF with integrated TR _{skin} , swim speed
131	Beentjes, MP	Behavioral thermoregulation of the New Zealand sea lion (<i>Phocarctos hookeri</i>)	2006	X			X					X				
132	Ponganis, PJ; Stockard, T; Knowler, Levenson, DH; Berg, L; Baranov, EA	Cardiac output and muscle blood flow during rest-associated apneas of elephant seals	2006		X				X					X		muscle blood flow (via laser Doppler), ECG, thermistor-tipped catheter (T _{blood})
133	Koopman, HN	Phylogenetic, ecological, and ontogenetic factors influencing the biochemical structure of the blubber of odontocetes	2007		X								X			
134	Mellish, JE; Horning, M; York, AE	Seasonal and spatial blubber depth changes in captive harbor seals (<i>Phoca vitulina</i>) and Steller's sea lions (<i>Eumetopias jubatus</i>)	2007		X			X								
135	Werth, AJ	Adaptations of the cetacean hyolingual apparatus for aquatic feeding and thermoregulation	2007		X								X			

Supplementary File

Publication					Study Setting			Animal State							Biotelemetry		Notes
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior		
136	Westgate, AJ; McLellan, WA; Wells, RS; Scott, MD; Meagher, EM; Pabst, DA	A new device to remotely measure heat flux and skin temperature from free-swimming dolphins	Journal of Experimental Marine Biology and Ecology	2007	X			X							X	X	HF with integrated TR _{skin} , swim velocity, TDR, VHF, in water
137	Hasselberg, BA; Thomas, JA	Using an infrared temperature sensor to study microhabitat selection in captive California Sea Lions (<i>Zalophus californianus</i>)	Aquatic Mammals	2008		X			X						X		IRT
138	Meagher, EM; McLellan, WA; Westgate, AJ; Wells, RS; Blum, JE; Pabst, DA	Seasonal patterns of heat loss in wild bottlenose dolphins (<i>Tursiops truncatus</i>)	Journal of Comparative Physiology B	2008	X					X					X		HF with integrated TC _{skin} , TC _{rectal} , in water
139	Montie, EW; Garvin, SR; Fair, PA; Bossart, GD; Mitchum, GB; McFee, WE; Speakman, T; Starczak, VR; Hahn, ME	Blubber morphology in wild bottlenose dolphins (<i>Tursiops truncatus</i>) from the Southeastern United States: influence of geographic location, age class, and reproductive state	Journal of Morphology	2008		X							X				
140	Noren, SR; Pearson, LE; Davis, J; Trumble, SJ; Kanatous, SB	Different thermoregulatory strategies in nearly weaned pup, yearling, and adult Weddell seals (<i>Leptonychotes weddelli</i>)	Physiological and Biochemical Zoology	2008	X					X							on land
141	Ponganis, PJ; Kreutzer, U; Stockard, TK; Lin, P-C; Sailasuta, N; Tran, T-K; Hurd, R; Jue, T	Blood flow and metabolic regulation in seal muscle during apnea	Journal of Experimental Biology	2008		X			X						X		muscle blood flow (via laser Doppler)
142	Yeates, LC; Houser, DS	Thermal tolerance in bottlenose dolphins (<i>Tursiops truncatus</i>)	Journal of Experimental Biology	2008		X			X								
143	Castellini, MA; Trumble, SJ; Mau, TL; Yochem, PK; Stewart, BS; Koski, MA	Body and blubber relationships in Antarctic pack ice seals: implications for blubber depth patterns	Physiological and Biochemical Zoology	2009	X					X							on land
144	Hammill, MO; Ryg, M; Chabot, D	Seasonal changes in energy requirements of harp seals	Journal of Northwest Atlantic Fishery Science	2009			X										
145	Liwanag, HEM; Williams, TM; Costa, DP; Kanatous, SB; Davis, RW; Boyd, IL	The effects of water temperature on the energetic costs of juvenile and adult California sea lions (<i>Zalophus californianus</i>): the importance of skeletal muscle thermogenesis for thermal balance	Journal of Experimental Biology	2009		X			X						X		STP
146	Noren, SR; Wells, RS	Blubber deposition during ontogeny in free-ranging bottlenose dolphins: balancing disparate roles of insulation and locomotion	Journal of Mammalogy	2009	X					X							in water
2010-2019																	
147	Barbieri, MM; McLellan, WA; Wells, RS; Blum, JE; Hofmann, S; Gannon, J; Pabst, DA	Using infrared thermography to assess seasonal trends in dorsal fin surface temperatures of free-swimming bottlenose dolphins (<i>Tursiops truncatus</i>) in Sarasota Bay, Florida	Marine Mammal Science	2010	X			X							X		IRT (dorsal fin), in water
148	Blix, AS; Walløe, L; Messelt, EB; Folkow, LP	Selective brain cooling and its vascular basis in diving seals	Journal of Experimental Biology	2010		X				X			X	X			TC _{brain} , TC _{blood} , TC _{muscle} , TC _{rectal} , diving physiology study

Supplementary File

Publication				Study Setting			Animal State						Biotelemetry		Notes		
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior		
149	Liwanag, HEM	Energetic costs and thermoregulation in northern fur seal (<i>Callorhinus ursinus</i>) pups: the importance of behavioral strategies for thermal balance in furred marine mammals	2010		X			X	X								
150	Meir, JU; Ponganis, PJ	Blood temperature profiles of diving elephant seals	2010	X			X							X	X	P ₀₂ electrode, TR _{blood} , TDR, SAT, VHF, diving physiology study, in water	
151	Nienaber, J; Thomson, H; Horning, M; Polasek, L; Mellish, J-A	Surface temperature patterns in seals and sea lions: a validation of temporal and spatial consistency	2010		X			X						X		IRT	
152	Norris, AL; Houser, DS; Crocker, DE	Environment and activity affect skin temperature in breeding adult male elephant seals (<i>Mirounga angustirostris</i>)	2010	X			X							X		IRT, on land	
153	Houser, DS; Yeates, LC; Crocker, DE	Cold stress induces an adrenocortical response in bottlenose dolphins (<i>Tursiops truncatus</i>)	2011		X			X	X								
154	Bagge, LE; Koopman, HN; Rommel, SA; McLellan, WA; Pabst, DA	Lipid class and depth-specific thermal properties in the blubber of the short-finned pilot whale and the pygmy sperm whale	2012		X								X				
155	Durban, JW; Pitman, RL	Antarctic killer whales make rapid, round-trip movements to subtropical waters: evidence for physiological maintenance migrations?	2012	X			X								X	SAT, in water	
156	Erdsack, N; Hanke, FD; Dehnhardt, G; Hanke, W	Control and amount of heat dissipation through thermal windows in harbor seals (<i>Phoca vitulina</i>)	2012		X	X	X	X						X		IRT	
157	Khamas, WA; Smodlaka, H; Leach-Robinson, J; Palmer, L	Skin histology and its role in heat dissipation in three pinniped species	2012		X								X				
158	Liwanag, HEM; Berta, A; Costa, DP; Abney, M; Williams, TM	Morphological and thermal properties of mammalian insulation: the evolution of fur for aquatic living	2012		X								X				
159	Liwanag, HEM; Berta, A; Costa, DP; Budge, SM; Williams, TM	Morphological and thermal properties of mammalian insulation: the evolutionary transition to blubber in pinnipeds	2012		X								X				
160	McClelland, SJ; Gay, M; Pabst, DA; Dillaman, R; Westgate, AJ; Koopman, HN	Microvascular patterns in the blubber of shallow and deep diving odontocetes	2012		X								X				
161	Mellish, J; Nienaber, J; Polasek, L; Horning, M	Beneath the surface: Profiling blubber depth in pinnipeds with infrared imaging	2012		X			X						X		IRT	
162	Paterson, W; Sparling, CE; Thompson, D; Pomeroy, PP; Currie, JI; McCafferty, DJ	Seals like it hot: Changes in surface temperature of harbour seals (<i>Phoca vitulina</i>) from late pregnancy to moult	2012		X				X					X		IRT	

Supplementary File

Publication				Study Setting			Animal State						Biotelemetry		Notes	
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior	
163	Erdsack, N; Dehnhardt, G; Hanke, W	Coping with heat: function of the natal coat of Cape fur seal (<i>Arctocephalus pusillus pusillus</i>) pups in maintaining core body temperature	2013		X				X	X				X		IRT
164	Ford Jr, TJ; Werth, AJ; George, JC	An intraoral thermoregulatory organ in the bowhead whale (<i>Balaena mysticetus</i>), the corpus cavernosum maxillarlis	2013		X								X	X		IRT (oral cavity)
165	Rodríguez-Prieto, V; Rubio-García, A; Melero, M; García, D; Sánchez-Vizcaíno, JM	Identification of the pattern of appearance and development of thermal windows in the skin of juvenile Pacific walruses (<i>Odobenus rosmarus divergens</i>) in a controlled environment	2013		X			X						X		IRT
166	Dalton, AJM; Rosen, DAS; Trites, AW	Broad thermal capacity facilitates the primarily pelagic existence of northern fur seals (<i>Callorhinus ursinus</i>)	2014		X			X								
167	Erdsack, N; Dehnhardt, G; Hanke, W	Thermoregulation of the vibrissal system in harbor seals (<i>Phoca vitulina</i>) and Cape fur seals (<i>Arctocephalus pusillus pusillus</i>)	2014	X				X						X		IRT (vibrissal pad), on land
168	Garlepp, L; Logan, M; Kirkwood, R	Behavioral responses of Australian fur seals (<i>Arctocephalus pusillus doriferus</i>) to environmental variations	2014	X			X									on land
169	Horgan, P; Booth, D; Nichols, C; Lanyon, JM	Insulative capacity of the integument of the dugong (<i>Dugong dugon</i>): thermal conductivity, conductance and resistance measured by in vitro heat flux	2014		X								X			
170	Liwanag, HEM; Orazo, J; Costa, DP; Williams, TM	Thermal benefits of aggregation in a large marine endotherm: huddling in California sea lions	2014	X			X							X		IRT, on land
171	Pearson, LE; Liwanag, HEM; Hammill, MO; Burns, JM	Shifts in thermoregulatory strategy during ontogeny in harp seals (<i>Pagophilus groenlandicus</i>)	2014		X							X	X			
172	Pearson, LE; Liwanag, HEM; Hammill, MO; Burns, JM	To each its own: Thermoregulatory strategy varies among neonatal polar phocids	2014		X							X	X			
173	Rosen, DAS; Trites, AW	Thermal limits in young northern fur seals, <i>Callorhinus ursinus</i>	2014		X			X								
174	Ball, HC; Stavaz, M; Oldaker, J; Usip, S; Londraville, RL; George, JC; Thewissen, JGM; Duff, RJ	Seasonal and ontogenetic variation in subcutaneous adipose of the bowhead whale (<i>Balaena mysticetus</i>)	2015		X								X			
175	Ekdale, EG; Kienle, SS	Passive Restriction of Blood Flow and Counter-Current Heat Exchange Via Lingual Retia in the Tongue of a Neonatal Gray Whale <i>Eschrichtius robustus</i> (Cetacea, Mysticeti)	2015		X							X				

Supplementary File

Publication				Study Setting			Animal State						Biotelemetry		Notes	
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior	
176	Erdsack, N; Dehnhardt, G; Witt, M; Wree, A; Siebert, U; Hanke, W	Unique fur and skin structure in harbour seals (<i>Phoca vitulina</i>)—thermal insulation, drag reduction, or both?	2015		X								X			
177	Gmuca, NV; Pearson, LE; Burns, JM; Liwanag, HEM	The fat and the furriest: morphological changes in harp seal fur with ontogeny	2015		X								X			
178	Gómez-Campos, E; Borrell, A; Correas, J; Aguilar, A	Topographical variation in lipid content and morphological structure of the blubber in the striped dolphin	2015		X								X			
179	Hashimoto, O; Ohtsuki, H; Kakizaki, T; Amou, K; Sato, R; Doi, S; Kobayashi, S; Matsuda, A; Sugiyama, M; Funaba, M	Brown adipose tissue in cetacean blubber	2015		X								X			
180	Hindle, AG; Horning, M; Mellish, JAE	Estimating total body heat dissipation in air and water from skin surface heat flux telemetry in Weddell seals	2015	X		X	X							X	X	STP, HF sensor with integrated thermistor (T _{skin}), IRT, TDR, accelerometer, SAT, VHF, field component on land and in water
181	Melero, M; Rodríguez-Prieto, V; Rubio-García, A; García-Párraga, D; Sánchez-Vizcaíno, JM	Thermal reference points as an index for monitoring body temperature in marine mammals	2015		X			X						X		IRT
182	Mellish, J-A; Hindle, A; Skinner, J; Horning, M	Heat loss in air of an Antarctic marine mammal, the Weddell seal	2015	X		X	X			X				X		IRT, field component on land
183	Noren, SR; Udevitz, MS; Triggs, L; Paschke, J; Oland, L; Jay, CV	Identifying a reliable blubber measurement site to assess body condition in a marine mammal with topographically variable blubber, the Pacific walrus	2015		X			X								
184	Sakurai, Y; Okamatsu-Ogura, Y; Saito, M; Kimura, K; Nakao, R; Ohnuma, A; Kobayashi, M	Brown adipose tissue expresses uncoupling protein 1 in newborn harbor seals (<i>Phoca vitulina</i>)	2015		X								X			
185	Zeng, X; Ji, J; Hao, Y; Wang, D	Topographical distribution of blubber in finless porpoises (<i>Neophocaena asiaeorientalis sunameri</i>): a result from adapting to living in coastal waters	2015		X							X	X			
186	Codde, SA; Allen, SG; Houser, DS; Crocker, DE	Effects of environmental variables on surface temperature of breeding adult female northern elephant seals, <i>Mirounga angustirostris</i> , and pups	2016	X			X							X		IRT, on land
187	Cornick, LA; Quakenbush, LT; Norman, SA; Pasi, C; Maslyk, P; Burek, DA; Goertz, CEC; Hobbs, RC	Seasonal and developmental differences in blubber stores of beluga whales in Bristol Bay, Alaska using high-resolution ultrasound	2016	X						X		X				in water

Supplementary File

Publication				Study Setting			Animal State							Biotelemetry		Notes
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior	
188	Beltran, RS; Testa, JW; Burns, JM	An agent-based bioenergetics model for predicting impacts of environmental change on a top marine predator, the Weddell seal	Ecological Modelling	2017			X									
189	Ladds, MA; Slip, DJ; Harcourt, RG	Intrinsic and extrinsic influences on standard metabolic rates of three species of Australian otariid	Conservation physiology	2017		X		X								
190	Sharma, N; Liwanag, HEM	The effects of submergence on the thermal function of pinniped fur	Marine Mammal Science	2017		X							X			
191	Singleton, EM; McLellan, WA; Koopman, HN; Pokorny, A; Scharf, FS; Pabst, DA	Lipid composition and thermal properties of the blubber of Gervais' beaked whale (<i>Mesoplodon europaeus</i>) across ontogeny	Marine Mammal Science	2017		X							X			
192	Chaise, LL; Prinnet, I; Toscani, C; Gallon, SL; Paterson, W; McCafferty, DJ; Théry, M; Ancel, A; Gilbert, C	Local weather and body condition influence habitat use and movements on land of molting female southern elephant seals (<i>Mirounga leonina</i>)	Ecology and Evolution	2018	X			X							X	GPS, VHF, on land
193	Erdsack, N; Phillips, SRM; Rommel, SA; Pabst, DA; McLellan, WA; Reynolds, JE	Heat flux in manatees: an individual matter and a novel approach to assess and monitor the thermal state of Florida manatees (<i>Trichechus manatus latirostris</i>)	Journal of Comparative Physiology B	2018		X			X							
194	García-Aguilar, AC; Turrent, C; Elorriaga-Verplancken, FR; Arias-Del-Razo, A; Schramm, Y	Climate change and the northern elephant seal (<i>Mirounga angustirostris</i>) population in Baja California, Mexico	PLoS ONE	2018	X			X								on land
195	Krmpotic, CM; Loza, CM; Negrete, J; Scarano, AC; Carlini, AA; Guerrero, A; Barbeito, CG	Integument in Antarctic seals: a comparative study and its relation to extreme environments	Acta Zoologica	2018		X							X			
196	Rojano-Doñate, L; McDonald, BI; Wisniewska, DM; Johnson, M; Teilmann, J; Wahlberg, M; Højer-Kristensen, J; Madsen, PT	High field metabolic rates of wild harbour porpoises	Journal of Experimental Biology	2018	X	X		X	X						X	TDR, accelerometer, SAT, VHF, field component in water
197	Zeh, DR; Heupel, MR; Hamann, M; Jones, R; Limpus, CJ; Marsh, H	Evidence of behavioural thermoregulation by dugongs at the high latitude limit to their range in eastern Australia	Journal of Experimental Marine Biology and Ecology	2018	X			X							X	SAT, GPS, acoustic transmitter (depth & T _{water}), in water
198	Adamczak, SK; Pabst, DA; McLellan, WA; Thorne, LH	Using 3D Models to Improve Estimates of Marine Mammal Size and External Morphology	Frontiers in Marine Science	2019			X					X				
199	Chaise, LL; McCafferty, DJ; Krellenstein, A; Gallon, SL; Paterson, WD; Théry, M; Ancel, A; Gilbert, C	Environmental and physiological determinants of huddling behavior of molting female southern elephant seals (<i>Mirounga leonina</i>)	Physiology & Behavior	2019	X			X						X	X	STP, IRT, VHF, TDR, on land

Supplementary File

Publication				Study Setting			Animal State						Biotelemetry		Notes	
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior	
200	Guerrero, AI; Rogers, TL	From low to high latitudes: changes in fatty acid desaturation in mammalian fat tissue suggest a thermoregulatory role	BMC Evolutionary Biology	2019		X							X			
201	Ji, J; Nabi, G; Zeng, X; Hao, Y; Wang, D	Histological variation in blubber morphology of the endangered east asian finless porpoise (<i>Neophocaena asiaeorientalis sunameri</i>) with ontogeny and reproductive states	Zoological Studies	2019		X						X	X			
202	Kastelein, RA; Helder-Hoek, L; Jennings, N; van Kester, R; Huisman, R	Reduction in Body Mass and Blubber Thickness of Harbor Porpoises (<i>Phocoena phocoena</i>) Due to Near-Fasting for 24 Hours in Four Seasons	Aquatic Mammals	2019		X		X								
203	Lonati, GI; Singleton, EM; Phelps, CE; Koopman, HN; Pabst, DA	The density of odontocete integument depends on blubber lipid composition and temperature	Marine Mammal Science	2019		X							X			
204	Pearson, LE; Weitzner, EL; Burns, JM; Hammill, MO; Liwanag, HEM	From ice to ocean: changes in the thermal function of harp seal pelt with ontogeny	Journal of Comparative Physiology B	2019		X	X						X			
205	Pitman, RL; Durban, JW; Joyce, T; Fearnbach, H; Panigada, S; Lauriano, G	Skin in the game: Epidermal molt as a driver of long-distance migration in whales	Marine Mammal Science	2019	X			X							X	SAT, TDR, in water
206	Plön, S; Frainer, G; Wedderburn-Maxwell, A; Cliff, G; Huggenberger, S	Dorsal fin and hump vascular anatomy in the Indo-Pacific humpback dolphin (<i>Sousa plumbea</i>) and the Indo-Pacific bottlenose dolphin (<i>Tursiops aduncus</i>)	Marine Mammal Science	2019		X							X			
207	Tuneu-Corral, C; Szteren, D; Cassini, MH	Living on the edge: thermoregulatory behaviour of South American sea lions, <i>Otaria flavescens</i> , at the northern limit of their Atlantic distribution	Acta Ethologica	2019	X			X								on land
2020-2021																
208	Adamczak, SK; Pabst, DA; McLellan, WA; Thorne, LH	Do bigger bodies require bigger radiators? Insights into thermal ecology from closely related marine mammal species and implications for ecogeographic rules	Journal of Biogeography	2020			X					X				not included in figure
209	Adamczak, SK; McLellan, WA; Read, AJ; Wolfe, CLP; Thorne, LH	The impact of temperature at depth on estimates of thermal habitat for short-finned pilot whales	Marine Mammal Science	2020	X			X							X	not included in figure, TDR
210	Chambault, P; Tervo, OM; Garde, E; Hansen, RG; Blackwell, SB; Williams, TM; Dietz, R; Albertsen, CM; Laidre, KL; Nielsen, NH	The impact of rising sea temperatures on an Arctic top predator, the narwhal	Scientific Reports	2020	X			X							X	not included in figure, SAT, GPS, in water

Supplementary File

Publication				Study Setting			Animal State							Biotelemetry		Notes
	Publication	Title	Year	Field	Lab	Modeling	Free-ranging	Trained	Captive	Restrained	Peri-mortem	Carcass	Ex vivo	Physiology	Behavior	
211	da Silva, AP; Machado, ASD; Le Bas, AE; Silva, RG; dos Anjos Silva, E; Hernandez-Blazquez, FJ	The skin structures and their role in the thermoregulation of the South American fur seal (<i>Arctocephalus australis</i>)	2020		X								X			not included in figure
212	Haase, CG; Fletcher Jr, RJ; Slone, DH; Reid, JP; Butler, SM	Traveling to thermal refuges during stressful temperatures leads to foraging constraints in a central-place forager	2020	X			X								X	not included in figure, SAT, GPS, in water
213	Heide-Jørgensen, MP; Blackwell, SB; Williams, TM; Sinding, MHS; Skovrind, M; Tervo, OM; Garde, E; Hansen, RG; Nielsen, NH; Ngô, MC	Some like it cold: Temperature-dependent habitat selection by narwhals	2020	X			X								X	not included in figure, TDR, CTD, SAT, GPS, in water
214	Walcott, SM; Kirkham, AL; Burns, JM	Thermoregulatory costs in molting Antarctic Weddell seals: impacts of physiological and environmental conditions	2020	X						X				X		not included in figure, IRT, on land
215	Guerrero, AI; Rogers, TL; Sepúlveda, M	Conditions influencing the appearance of thermal windows and the distribution of surface temperature in hauled-out southern elephant seals	2021	X			X							X		not included in figure, IRT, in water
216	John, JS; Thometz, NM; Boerner, K; Denum, L; Kendall, TL; Richter, BP; Gaspard, JC; Williams, TM	Metabolic tradeoffs in tropical and subtropical marine mammals—Unique maintenance and locomotion costs in West Indian manatees and Hawaiian monk seals	2021		X			X							X	not included in figure, accelerometry, on land
217	Sumich, JL	Why Baja? A bioenergetic model for comparing metabolic rates and thermoregulatory costs of gray whale calves (<i>Eschrichtius robustus</i>)	2021			X										not included in figure
218	Wright, T; Davis, RW; Pearson, HC; Murray, M; Sheffield-Moore, M	Skeletal muscle thermogenesis enables aquatic life in the smallest marine mammal	2021		X								X			not included in figure

References

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