
ANDREW EDWARD DEROCHER

Born: Vancouver, British Columbia, Canada
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Impact Measures (December 11, 2023)	
Total Citations Google Scholar	18,432
h-index Google Scholar	74
Total Citations Web of Science	10,946
h-index Web of Science	54
Publications	
Peer-reviewed Journal Articles	221
Other Publications	78
Books	1
Funding	
Research Grants (PI): past 15 years	>\$7,000,000
HQP Supervision	
PDF	6
Ph.D.	16
M.Sc.	32
B.Sc.	21

Honours and Distinctions

2017-2022	Faculty of Science Research Fellowship
2018-2019	Killam Annual Professorship
2019	Faculty of Science Learning and Innovation Award for Teaching Excellence
2016	William Rowan Distinguished Service Award, Alberta Chapter of the Wildlife Society
2016	Faculty of Science Graduate Mentoring Award
2016-2017	Faculty of Science Students' Choice Honour Roll for your excellence in teaching
2012	Capilano University Distinguished Alumni Award
2012	National Faculty of Science Teaching Honor Roll
2012	National Outdoor Book Award, Honorable Mention for Polar Bears: A complete guide to their biology and behavior
2010	University of Alberta Alumni Honour Award

Publications in Refereed Journals

Names of supervised students and PDFs are underlined

1. Dunham KD, Dyck M, **Derocher AE**, Regehr EV, Stern H, Ware J, Koons DN. Quantifying effects of environmental conditions on Davis Strait polar bear survival. *Marine Mammal Science*. In press.
2. McGeachy D, Lunn NJ, Richardson ES, **Derocher AE**. Spatiotemporal dynamics of remnant sea ice in seasonal ice areas: Impacts on transients and survival of male polar bears (*Ursus maritimus*). *Arctic Science* in revision
3. Tidière M, Conde DA, Staerk J, Adkensson M, Andersen DH, Bland L, Boye M, Brando S, Clegg I, Cubayne S, Cutting A, De Man D, **Derocher AE**, et al., Fernando Colchero. 2023. Survival improvements of marine mammals in zoological institutions mirror historical advances in human longevity. *Proceedings of the Royal Society: Biology*
4. Morehouse AT, Mallory M, **Derocher AE**, Edwards MA, Obbard M. Black bear cub rehabilitation across North America. *Ursus* accepted September 18, 2023
5. Hamilton SG, Henderson EM, **Derocher AE**. 2023. Spatial and temporal harvest risk of polar bears in the Canadian Beaufort Sea. *Arctic Science* dx.doi.org/10.1139/as-2023-0003
6. Miller EN, Trim V, Lunn NJ, McGeachy D, **Derocher AE**. 2023. Human-polar bear conflict during the autumn migratory period in Hudson Bay, Canada. *Arctic Science* dx.doi.org/10.1139/as-2023-0004
7. Togunov RR, **Derocher AE**, Lunn NJ, Auger-Méthé M. 2022. Drivers of polar bear behavior and the possible effects of prey availability on foraging strategy. *Movement Ecology* 10:50
8. Rode KD, Taras BD, Stricker CA, Atwood TC, Boucher NP, Durner GM, **Derocher AE**, Richardson ES, Cherry SG, Quakenbush L, Horstmann L, & Bromaghin JF. 2022. Diet energy density estimated from stable isotopes in predator hair associated with survival, habitat use, and population dynamics. *Ecological Applications* 2022:e2751
9. Miller EN, Lunn NJ, McGeachy D, **Derocher AE**. 2022. Autumn migration phenology of polar bears (*Ursus maritimus*) in Hudson Bay, Canada. *Polar Biology* 45:1023-1034
10. Thompson PR, Lewis MA, Edwards MA, **Derocher AE**. 2022. Time-dependent memory and individual variation in Arctic brown bears (*Ursus arctos*). *Movement Ecology* 10:18
11. Klappstein NJ, Potts JR, Michelot T, Börga L, Pilfold NW, Lewis MA, **Derocher AE**. 2022. Energy selection functions: modelling the energetic drivers of animal movement and habitat use. *Journal of Animal Ecology* 91:946-957
12. Vongraven D, **Derocher AE**, Pilfold NW, Yoccoz NG. 2022. Polar bear harvest patterns across the circumpolar Arctic. *Frontiers in Conservation Science* 3:836544
13. Dietz R.... **Derocher AE**, et al. 2022. A risk assessment review of mercury exposure in Arctic marine and terrestrial mammals. *Science of the Total Environment* doi.org/10.1016/j.scitotenv.2022.154445
14. Smith T, **Derocher AE**, Mazur R, York G, Owen M, Obbard ME, Richardson ES, Amstrup SC. 2022. Anthropogenic food: An emerging threat to polar bear conservation. *Oryx* 57:1-10
15. Maduna SN, Aars J, Fløystad I, Klütsch CFC, Zeyl Fiskebeck EML, Wiig Ø, Ehrich D, Andersen M, Bachmann L, **Derocher AE**, Nyman T, Eiken HG, Hagen SB. 2021. Sea-ice reduction drives genetic differentiation among Barents Sea polar bears. *Proceedings of the Royal Society B* 288: doi: 10.1098/rspb.2021.1741
16. Thompson PR, **Derocher AE**, Edwards MA, Lewis MA. 2022. Detecting seasonal episodic-like spatio-temporal memory patterns using animal movement modelling. *Methods in Ecology and Evolution* 13:105-120
17. Henderson EM, **Derocher AE**. 2021. Polar bear (*Ursus maritimus*) use of the Cape Bathurst polynya and flaw lead. *Arctic Science* 8:395-413

18. Smereka CA, Frame PF, Edwards MA, Slater OM, Frame D, **Derocher AE**. 2021. Home-range and space use characteristics of cougars at the northern edge their range. *Journal of Mammalogy* 40:1042-1053
19. Togunov RR, **Derocher AE**, Lunn NJ, Auger-Méthé M. 2021. Characterising menotatic behaviours in movement data using hidden Markov models. *Methods in Ecology and Evolution* 12:1984-1998
20. Bohart AM, Lunn NJ, **Derocher AE**. 2021. Migration and movement dynamics of polar bears (*Ursus maritimus*) in western Hudson Bay. *Behavioral Ecology* 32:440-451 doi:10.1093/beheco/araa140
21. Heemskerk S, Johnson AC, Hedman D, Trim V, Lunn NJ, McGeachy D, **Derocher AE**. 2020. Temporal dynamics of human-polar bear interactions in Churchill, Manitoba. *Global Ecology and Conservation* 24: doi: 10.1016/j.gecco.2020.e01320.
22. Smereka CA, Frame PF, Edwards MA, Frame DD, Slater OM, **Derocher AE**. 2020. Seasonal habitat selection of cougars (*Puma concolor*) by sex and reproductive state in west-central Alberta, Canada. *Wildlife Biology* 2020: wlb.00735
23. Biddlecombe B, Lunn NJ, McGeachy D, Bayne E, **Derocher AE**. 2021. Effects of sea ice fragmentation on individual variation in polar bear movement in Hudson Bay. *Marine Ecology Progress Series* 666:231-241
24. Bechshoft T, Luo Y, Bohart AM, **Derocher AE**, Richardson ES, Lunn NJ, Pearson DG. 2020. Monitoring spatially resolved trace elements in polar bear hair using single spot laser ablation ICP-MS. *Ecological Indicators* 119:106822
25. Johnson AC, Reimer JR, Lunn NJ, Stirling I, McGeachy D, **Derocher AE**. 2020. Influence of sea ice dynamics on population energetics of Western Hudson Bay polar bears. *Conservation Physiology* 8:10.1093/conphys/coaa1132
26. Henderson EM, **Derocher AE**, Lunn NJ, Montpetit B, Merrill EH, Richardson ES. 2021. Polar bear (*Ursus maritimus*) use of the western Hudson Bay flaw lead. *Marine Ecology Progress Series* 644:227-242
27. Johnson AC, **Derocher AE**. 2020. Variation in habitat use of Beaufort Sea polar bears. *Polar Biology* 43:1247-1260
28. Shave JR, **Derocher AE**, Cherry SG, Fortin, D. 2020. Seasonal and inter-annual variation in diet for gray wolves (*Canis lupus*) in Prince Albert National Park, Saskatchewan. *Wildlife Research* 2020:wlb.00695
29. Togunov RR, Klappstein NJ, Lunn NJ, **Derocher AE**, Auger-Méthé M. 2020. Opportunistic evaluation of modelled sea ice drift using passively drifting telemetry collars in Hudson Bay, Canada. *The Cryosphere* 14:1937-1950
30. Boucher N, **Derocher AE**, Richardson E. 2020. Spatial and temporal variability in ringed seal (*Pusa hispida*) stable isotopes in the Beaufort Sea. *Ecology and Evolution* 10:4178-4192
31. Lippold A, Aars J, Andersen M, Aubail A, **Derocher AE**, Dietz R, Eulaers I, Sonne C, Welker J, Wiig Ø, Routti H. 2020. Two decades of mercury concentrations in Barents Sea polar bears in relation to dietary sulfur, carbon and nitrogen. *Environmental Sciences & Technology* 54:7388-7397
32. Florko KRN, Higdon JW, **Derocher AE**, Richardson ES, Sahanatien V, Petersen SD. 2020. Polar bear denning distribution in the Canadian Arctic. *Polar Biology* 43:617-621
33. Klappstein NJ, Togunov RR, Lunn NJ, **Derocher AE**. 2020. Going against the flow: spatiotemporal patterns of ice drift and polar bear (*Ursus maritimus*) movement in Hudson Bay. *Marine Ecology Progress Series* 641:227-240
34. Boonstra R, Bodner K, Bosson C, Delehanty B, Richardson ES, Lunn NJ, **Derocher AE**, Molnár PK. 2020. The stress of Arctic warming on polar bears. *Global Change Biology* doi.org/10.1111/gcb.1542

35. Biddlecombe B, Lunn NJ, McGeachy D, Bayne E, **Derocher AE**. 2020. Comparing sea ice habitat fragmentation metrics using integrated step selection analysis. *Ecology and Evolution* 10:4791-4800
36. Yurkowski DJ, Richardson E, Lunn NJ, Muir DCG, Johnson AC, **Derocher AE**, Ehrman AD, Houde, M, Young BG, Debets CD, Sciullo L, Thiemann GW, Ferguson SH. 2020. Contrasting temporal patterns of mercury, niche dynamics, and body condition of polar bears and ringed seals in a melting icescape. *Environmental Science and Technology* 54:2780-2789
37. Richardson ES, Davis C, Stirling I, **Derocher AE**, Lunn NJ. 2020. Variance in lifetime reproductive success of male polar bears. *Behavioral Ecology* 31:1224-1232
38. Boucher N, **Derocher AE**, Richardson E. 2019. Variability in polar bear (*Ursus maritimus*) stable isotopes in relation to environmental change in the Canadian Beaufort Sea. *Marine Ecology Progress Series* 630:215-225
39. Stirling I, Laidre K, **Derocher AE**, van Meurs R. 2019. Observations of short-term food caching in polar bears. *Arctic Science* 6:41-52
40. Reimer JR, Mangel M, **Derocher AE**, Lewis MA. 2019. Matrix methods for stochastic dynamic programming in ecology and evolutionary biology. *Methods in Ecology and Evolution* 10:1952-1965
41. Boucher N, **Derocher AE**, Richardson E. 2019. Space-use patterns affect stable isotopes of polar bears (*Ursus maritimus*) in the Beaufort Sea. *Polar Biology* 42:1581-1593
42. Shave JR, **Derocher AE**, Cherry SG, Thiemann GW. 2019. Chronic stress and body condition of wolf-killed prey in Prince Albert National Park, Saskatchewan. *Conservation Physiology* 7:coz037
43. Johnson AC, Hobson KA, Lunn NJ, McGeachy D, Richardson E, **Derocher AE**. 2019. Temporal variation in the foraging ecology of polar bears in western Hudson Bay. *Marine Ecology Progress Series* 619:187-199
44. Lambert Koizumi C, **Derocher AE**. 2019. Effect of grizzly bear and wolf predation risk on the habitat use and sexual segregation of a northern alpine ungulate. *PLoS One* 14:e0215519
45. Biddlecombe B, **Derocher AE**, Richardson E, Stirling I. 2019. Mating ecology of polar bears in the Beaufort Sea, Canada. *Polar Biology* 42:919-929
46. Reimer JR, Mangel M, **Derocher AE**, Lewis MA. 2019. Modelling optimal responses and fitness consequences in a changing Arctic. *Global Change Biology* 25:3450-3461
47. Reimer JR, Caswell H, **Derocher AE**, Lewis M. 2019. Ringed seal demography in a changing climate. *Ecological Applications* 29:e01855
48. Folio DM, Aars J, Gimenez O, **Derocher AE**, Wiig Ø, Cubaynes S. 2019. How many cubs can a mum raise? Maternal age and size influence litter size in polar bears. *Biology Letters* 15:20190070
49. Bechshoft T, Dyck M, St Pierre KA, **Derocher AE**, St Louis V. 2019. The use of hair as a proxy for total and methylmercury burdens in polar bear muscle tissue. *Science of the Total Environment* 686:1120-1128
50. Hamilton SG, **Derocher AE**. 2019. Assessment of global polar bear abundance and vulnerability. *Animal Conservation* 22:83-95
51. Lippold A, Bourgeon S, Aars J, Andersen M, Polder A, Lyche JL, Bytingsvik J, Jenssen BM, **Derocher AE**, Welker J, Routti H. 2018. Temporal trends of persistent organic pollutants in Barents Sea polar bears (*Ursus maritimus*) in relation to changes in feeding habits and body condition. *Environmental Science and Technology* 53:984-995
52. Liu Y, Richardson ES, **Derocher AE**, Lunn NJ, Lehmler H-J, Li X, Zhang Y, Cui JY, Cheng L, Martin JW. 2018. Hundreds of unrecognized organohalogen contaminants discovered in polar bear blood. *Angewandte Chemie* 57:16401-16406

53. Yurkowski DJ,... **Derocher, AE** et al. 2018. Abundance and species diversity hotspots of tracked marine predators across the North American Arctic. *Diversity and Distributions* 25:328-345
54. Tartu S, Aars J, Andersen M, Polder A, Bourgeon S, Merkel B, Lowther AD, Bytingsvik J, Welker JM, **Derocher AE**, Jenssen BM, Routti H. 2018. Choose your poison – Space-use strategy influences pollutant exposure in Barents Sea polar bears. *Environmental Science and Technology* 52:3211-3221
55. O'Donovan SA, Budge SM, Hobson KA, Kelly AP, **Derocher AE**. 2018. Stable isotopes and fatty acids reveal intrapopulation variability in wolf diet. *Ecosphere* 9:e02420
56. Vongraven D, **Derocher AE**, Bohart AM. 2018. Polar bear research – has science helped conservation? *Environmental Reviews* 26:358-368
57. Viengkone M, **Derocher AE**, Richardson ES, Obbard ME, Dyck MG, Lunn NJ, Sahanatien V, Robinson BG, Davis CS. 2018. Assessing spatial discreteness of Hudson Bay polar bear populations using telemetry and genetics. *Ecosphere* 9(7):e02364
58. Rode KD, Wilson RR, Douglas DC, Muhlenbruch V, Atwood TC, Regehr EV, Richardson E, Pilfold N, **Derocher AE**, Durner G, Stirling I, Peacock E, Amstrup S, St Martin M, Pagano A, Simac K. 2018. Spring fasting behavior among polar bears provides an index of ecosystem productivity. *Global Change Biology* 24:410-423
59. Bechshøft TO, **Derocher AE**, Viengkone M, Routti H, Aars J, Letcher RJ, Dietz R, Sonne C, Richardson E, Lunn NJ. 2018. On the integration of ecological and physiological variables in polar bear toxicology research: a systematic review. *Environmental Reviews* 26:1-12
60. Robinson BG, Franke A, Derocher AE. 2017. Stable isotope mixing models fail to estimate the diet of an avian predator. *The Auk* 135:60-70
61. Togunov RR, **Derocher AE**, Lunn NJ. 2017. Windscares and olfactory foraging in a large carnivore. *Scientific Reports* 7:46332
62. Johnson A, Pongracz J, **Derocher AE**. 2017. Long distance movement of a female polar bear from Canada to Russia. *Arctic* 70:121-128
63. Yee M, Reimer JM, Lunn NJ, Togunov RR, Pilfold NW, McCall AG, **Derocher AE**. 2017. Polar bear (*Ursus maritimus*) migration from maternal dens in western Hudson Bay. *Arctic* 70:319-327
64. Castro de la Guardia L, Myers PG, **Derocher AE**, Lunn NJ, Terwisscha van Scheltinga AD. 2017. Sea ice cycle in western Hudson Bay, Canada, from a polar bear perspective. *Marine Ecology Progress Series* 364:225-233
65. Robinson BG, Franke A, **Derocher AE**. 2017. Weather-mediated prey depletion causes food-limitation in a top avian predator. *Journal of Avian Biology* 48:1-11
66. Nguyen L, Pilfold NW, **Derocher AE**, Stirling I, Bohart AM, Richardson E. 2017. Ringed seal (*Pusa hispida*) tooth annuli as an index of reproduction in the Beaufort Sea. *Ecological Indicators* 77:286-292
67. Auger-Méthé M, Albertsen CM, Jonsen ID, Derocher AE, Lidgard DC, Studholme KR, Bowen WD, Crossin GT, Mills Flemming J. 2017. Spatiotemporal modelling of marine movement data using Template Model Builder (TMB). *Marine Ecology Progress Series* 565:237-249
68. Bechshøft TO, **Derocher AE**, Richardson E, Lunn NJ, St Louis V. 2016. Hair mercury concentrations in polar bear family groups. *Environmental Science and Technology* 50:5313-5319
69. Pilfold NW, Hedman D, Stirling I, **Derocher AE**, Lunn NJ, Richardson E. 2016. Mass loss rates of fasting polar bears. *Physiological and Biochemical Zoology* 89:377–388
70. Viengkone M, **Derocher AE**, Richardson E, Malenfant R, Miller J, Obbard M, Dyck M, Sahanatien V, Lunn N, Davis C. 2016. Comparing two genetic marker systems for assessing polar bear (*Ursus maritimus*) population structure in the Hudson Bay region.

71. Smereka CS, Edwards MA, Pongracz J, Branigan M, Pilfold N, **Derocher AE**. 2016. Barren-ground grizzly bear den selection, Mackenzie Delta, Northwest Territories. *Polar Biology* 40:503-516
72. Auger-Méthé M, Field C, Moesgaard Albertsen C, **Derocher AE**, Lewis MA, Jonsen ID, Mills Flemming J. 2016. State-space models' dirty little secrets: even simple linear Gaussian models can have parameter and state estimation problems. *Scientific Reports* 6:26677
73. Pilfold NW, McCall A, **Derocher AE**, Lunn NJ, Richardson E. 2016. Migratory response of polar bears to sea ice loss: to swim or not to swim. *Ecography* 40:189-199
74. Mislan P, **Derocher AE**, St Louis VL, Richardson E, Lunn NJ, Janz DM. 2016. Assessing stress in western Hudson Bay polar bears using hair cortisol concentration as a biomarker. *Ecological Indicators* 71:47-54
75. Pongracz J, **Derocher AE**. 2016. Summer refugia of polar bears (*Ursus maritimus*) in the southern Beaufort Sea. *Polar Biology* 40:753-763
76. McCall AG, Pilfold NW, **Derocher AE**, Lunn NJ. 2016. Seasonal habitat selection by adult female polar bears in western Hudson Bay. *Population Ecology* 58:407-419
77. Auger-Méthé M, **Derocher AE**, DeMars CA, Plank MJ, Codling EA, Lewis MA. 2016. Evaluating random search strategies for three mammals from distinct guilds. *Journal of Animal Ecology* 85:1411-1421
78. Cullingham C, Thiessen CD, **Derocher AE**, Paquet PC, Miller JM, Hamilton JA, Coltman DW. 2016. Population structure and dispersal of wolves in the Canadian Rocky Mountains. *Journal of Mammalogy* 97:839-851
79. Cherry SG, **Derocher AE**, Lunn NJ. 2016. Habitat-mediated timing of migration in polar bears: an individual perspective. *Ecology and Evolution* 6:5032-5042
80. Sahanatien VS, Peacock E, **Derocher AE**. 2015. Spatial ecology of polar bears in a seasonal sea ice ecozone. *Ecology and Evolution* 5:2851-2864
81. Pilfold NW, **Derocher AE**, Stirling I, Richardson E. 2015. Multi-temporal drivers of spring predation events for polar bears in a changing climate. *Oikos* 124:1098-1107
82. Auger-Méthé M, Lewis MA, **Derocher AE**. 2015. Home ranges in moving habitats: polar bears and sea ice. *Ecography* 39:26-35
83. Bechshøft TO, **Derocher AE**, Richardson E, Mislan P, Lunn NJ, Sonne C, Dietz R, Janz D, St Louis V. 2015. Cortisol and mercury in western Hudson Bay polar bear hair: is there a link? *Ecotoxicology* 24:1315-1321
84. Robinson BG, Franke A, **Derocher AE**. 2015. Estimating nestling diet with cameras: quantifying uncertainty from unidentifiable food deliveries. *Wildlife Biology* 21:277-282
85. McCall AG, **Derocher AE**, Lunn NJ. 2015. Home range distribution of polar bears in western Hudson Bay. *Polar Biology* 38:343-355
86. Edwards MA, **Derocher AE**. 2015. Mating-related behaviour of grizzly bears inhabiting marginal habitat at the periphery of their North American range. *Biological Processes* 111:75-83
87. Auger-Méthé M, **Derocher AE**, Plank MJ, Codling EA, DeMars CA, Lewis MA. 2015. Differentiating between the Lévy and the intermittent search strategies. *Methods in Ecology and Evolution* 6:1179-1189
88. Peacock E, Sonsthagen AS, Obbard ME, Boltunov A, Regehr EV, Ovsayanikov N, Aars J, Atkinson S, Sage GK, Zeyl E, Bachmann L, Ehrich D, Scribner KT, Amstrup SC, Belikov S, Born E, **Derocher AE**, Stirling I, Taylor MK, Wiig Ø, Paetkau D, Talbot SL. 2015. Implications of the circumpolar genetic structure of polar bears for their ecology, evolution and conservation biology. *PLoS One* 10:e112021
89. Bromaghin JF, Amstrup SC, McDonald TL, Stirling I, **Derocher AE**, Richardson ES, Regehr EV, Douglas DC, Durner GM. 2014. Polar bear population dynamics in the

- southern Beaufort Sea during a period of sea ice decline. *Ecological Applications* 25:634-651
90. Barker OE, **Derocher AE**, Edwards MA. 2014. Use of Arctic ground (*Urocitellus parryii*) by brown bears (*Ursus arctos*). *Polar Biology* 38:369-379
 91. Hamilton SG, Castro de la Guardia L, **Derocher AE**, Sahanatien V, Tremblay B, Huard D. 2014. Projected polar bear sea ice habitat in the Canadian Arctic Archipelago. *PLoS One* 9:e113746
 92. Robinson B, Franke A, **Derocher AE**. 2014. The influence of weather and lemmings on spatiotemporal in the abundance of multiple avian guilds in the Arctic. *PLoS One* 9:e101495
 93. Pilfold NW, **Derocher AE**, Richardson E. 2014. Influence of interference competition on the distribution of a wide-ranging, non-territorial carnivore. *Global Ecology and Biogeography* 23:425-435
 94. Pilfold NW, **Derocher AE**, Stirling I, Richardson E. 2013. Polar bear predatory behaviour reveals seascape distribution of ringed seal lairs. *Population Ecology* 56:129-136
 95. Molnár PK, Lewis MA, **Derocher AE**. 2013. Estimating Allee dynamics before they can be observed: polar bears as a case study. *PLoS One* 9:e85410
 96. Rode KD, Regehr EV, Douglas D, Durner G, **Derocher AE**, Thiemann GW, Budge S. 2013. Variation in the response of an Arctic top predator experiencing habitat loss: feeding and reproductive ecology of two polar bear populations. *Global Change Biology* 20:76-88
 97. Castro de la Guardia L, **Derocher AE**, Myers P, Terwisscha van Scheltinga AD, Lunn NJ. 2013. Future sea ice conditions in western Hudson Bay and consequences for polar bears in the 21st century. *Global Change Biology* 19:2675-2687
 98. Dietz R, Sonne C, Basu N, Braune B, O'Hara T, Letcher RJ, Scheuhammer T, Andersen M, Andreassen C, Andriashek D, Asmund G, Aubail A, Baagøe H, Born EW, Chan HM, **Derocher AE**, Grandjean P, Knott K, Kirkegaard M, Krey A, Lunn N, Messier F, Obbard M, Olsen MT, Ostertag S, Peacock E, Renzoni A, Rigét FF, Skaare JU, Stern G, Stirling I, Taylor M, Wiig Ø, Wilson S, Aars J. 2013. What are the toxicological effects of mercury in Arctic biota? *Science of the Total Environment* 443:775-790
 99. Bytingsvik J, Simon E, Leonards PEG, Lamoree M, Lie E, Aars J, **Derocher AE**, Wiig Ø, Jenssen BM, Hamers T. 2013. Transthyretin-binding activity of contaminants in blood from polar bears (*Ursus maritimus*) cubs. *Environmental Science and Technology* 47:4778-4786
 100. Edwards MA, **Derocher AE**, Nagy JA. 2013. Home range size variation in female Arctic grizzly bears relative to reproductive status and resource availability. *PloS One* 8:e68130
 101. Thiemann GW, **Derocher AE**, Cherry SG, Lunn NJ, Peacock E, Sahanatien V. 2013. Effects of chemical immobilization on the movement rates of free-ranging polar bears. *Journal of Mammalogy* 94:386-397
 102. **Derocher AE**, Aars J, Amstrup SC, Cutting A, Lunn NJ, Molnár PK, Obbard ME, Stirling I, Thiemann GW, Vongraven D, Wiig Ø, York G. 2013. Rapid ecosystem change and polar bear management. *Conservation Letters* 6:368-375
 103. Cherry SG, **Derocher AE**, Thiemann GW, Lunn NJ. 2013. Polar bear migratory patterns and seasonal fidelity in relation to sea ice dynamics. *Journal of Animal Ecology* 82:912-921
 104. Miller SD, McLellan BN, **Derocher AE**. 2013. Large carnivore management in North America. *International Journal of Environmental Science* 70:383-398
 105. Stirling I, **Derocher AE**. 2012. Effects of climate warming on polar bears: a review of the evidence. *Global Change Biology* 18:2694-2706

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107. Bytingsvik J, Leeuwen SPJ, Hamers T, Swart K, Aars J, Lie E, Nilsen EME, Wiig Ø, **Derocher AE**, Jenssen BM. 2012. Perfluoralkyl substances in polar bear mother-cub pairs: A comparative study based on plasma levels in 1998 and 2008. *Environment International* 49:92-99
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109. Sahanatien V, **Derocher AE**. 2012. Monitoring sea ice habitat fragmentation for polar bear conservation. *Animal Conservation* 15:397-406
110. Andersen M, **Derocher AE**, Wiig Ø, Aars J. 2012. Polar bear (*Ursus maritimus*) maternity den distribution in Svalbard, Norway. *Polar Biology* 35:499-508
111. Bytingsvik J, Lie E, Aars J, Wiig Ø, **Derocher AE**, Jenssen BM. 2012. PCBs and OH-PCBs in polar bear mother-cub pairs: A comparative study based on plasma levels in 1998 and 2008. *Science of the Total Environment* 417-418:117-128
112. **Derocher AE**, Andersen M, Wiig Ø, Aars J, Hansen E, Biuw M. 2011. Sea ice dynamics affects polar bear den ecology at Hopen Island, Svalbard, Norway. *Marine Ecology Progress Series* 441:273-279
113. Auger-Méthé M, Cassady St Clair C, Lewis MA, **Derocher AE**. 2011. Sampling rate and misidentification of Lévy and non-Lévy movement paths: comment. *Ecology* 92:1699-1701
114. St Louis VL, **Derocher AE**, Stirling I, Graydon JA, Lee C, Jocksch E, Richardson E, Ghorpade S, Kwan AK, Kirk JL, Lehnher I, Swanson HK. 2011. Differences in mercury bioaccumulation between polar bears (*Ursus maritimus*) from the Canadian high and sub Arctic. *Environmental Sciences and Technology* 45:5922-5928
115. **Derocher AE**. 2010. The prospect for polar bears. *Nature* 468:905-906
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117. Molnár PK, **Derocher AE**, Klanjscek T, Lewis MA. 2011. Predicting climate change impacts on polar bear litter size. *Nature Communications* 2:186
118. Peacock L, **Derocher AE**, Thiemann GW, Stirling I. 2011. Conservation of Canada's polar bears in a changing world. *Canadian Journal of Zoology* 89:371-384
119. Nagy JA, Johnson DL, Larter NC, Campbell MW, **Derocher AE**, Kelly A, Dumond M, Allaire D, Croft B. 2011. Subpopulation structure of caribou (*Rangifer tarandus* L.) in arctic and sub-arctic Canada. *Ecological Applications* 21:2334-2348
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Peer Review of Manuscripts

<i>Acta Oecologica</i>	<i>Frontiers in Ecology and Evolution</i>
<i>Animal Behaviour</i>	<i>General and Comparative Endocrinology</i>
<i>Animal Biotelemetry</i>	<i>Global Change Biology</i>
<i>Animals</i>	<i>Global Ecology and Conservation</i>
<i>Arctic</i>	<i>Integrative Zoology</i>
<i>Arctic Science</i>	<i>International Journal of Ecology</i>
<i>Behavioural Ecology and Sociobiology</i>	<i>Journal of Animal Ecology</i>
<i>Behavioural Processes</i>	<i>Journal of Avian Biology</i>
<i>Biological Conservation</i>	<i>Journal of Biogeography</i>
<i>Biology Letters</i>	<i>Journal of Fish and Wildlife Management</i>
<i>BMC Biology</i>	<i>Journal of Mammalogy</i>
<i>BMC Veterinary Research</i>	<i>Journal of Wildlife Management</i>
<i>Canadian Field-Naturalist</i>	<i>Journal of Zoology</i>
<i>Canadian Geographer</i>	<i>Mammal Review</i>
<i>Canadian Journal of Zoology</i>	<i>Marine Ecology Progress Series</i>
<i>Communications Biology</i>	<i>Marine Mammal Science</i>
<i>Conservation Biology</i>	<i>Marine Pollution Bulletin</i>
<i>Conservation Physiology</i>	<i>Nature</i>
<i>Diversity and Distributions</i>	<i>Nature Climate Change</i>
<i>Ecography</i>	<i>Nature Ecology and Evolution</i>
<i>Ecohealth</i>	<i>North Atlantic Marine Mammal Commission Scientific Publications</i>
<i>Ecological Modelling</i>	<i>Oecologia</i>
<i>Ecological Monographs</i>	<i>Oikos</i>
<i>Ecology</i>	<i>PLoS Biology</i>
<i>Ecology and Evolution</i>	<i>PLoS One</i>
<i>Ecoscience</i>	<i>Polar Biology</i>
<i>Ecosphere</i>	<i>Polar Record</i>
<i>Ecosystems</i>	<i>Polar Research</i>
<i>Ecotoxicology and Environmental Safety</i>	<i>Rapid Communications in Mass Spectrometry</i>
<i>Endangered Species Research</i>	<i>Royal Society Open Science</i>
<i>Environmental Challenges</i>	<i>Sarsia</i>
<i>Environmental Conservation</i>	<i>Science</i>
<i>Environmental Pollution</i>	<i>Science Advances</i>
<i>Environmental Research</i>	<i>The Cryosphere</i>
<i>Environmental Reviews</i>	<i>Trends in Ecology and Evolution</i>
<i>Environmental Science and Policy</i>	<i>Ursus</i>
<i>Forestry Chronicle</i>	<i>Wildlife Biology</i>

Education

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|------|---|
| 1991 | Ph.D., Zoology, University of Alberta. Dissertation: Population dynamics and ecology of polar bears in western Hudson Bay. |
| 1987 | M.Sc., Zoology, University of Alberta. Thesis: The distribution and abundance of polar bears (<i>Ursus maritimus</i> Phipps) during the ice-free period in Western Hudson Bay. |
| 1983 | B.S.F. (Honours), Forest Biology, University of British Columbia. Thesis title: A sensitivity analysis of a population model for three species of bears. |

Positions Held Since Doctoral Degree

- | | |
|--------------|---|
| 2002-present | Professor, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada |
| 1999-2002 | Section Head, Terrestrial Ecology Program, Norwegian Polar Institute, Tromsø, Norway |
| 1996-2002 | Senior Research Scientist in Mammalogy Section Head of the Terrestrial Ecology Program, Norwegian Polar Institute, Tromsø, Norway |
| 1993-1996 | Research Wildlife Ecologist, Ministry of Forests, Nanaimo, British Columbia, Canada |
| 1993-1996 | Adjunct Professor, Centre for Applied Conservation Biology, University of British Columbia, Vancouver, British Columbia, Canada |
| 1991-1993 | Biologist, Canadian Wildlife Service, Edmonton, Alberta, Canada |

Research Projects

- | | |
|-------------------------------|--|
| 1984-1992, 2004-present | Churchill, Manitoba: polar bears |
| 2018-present | Alberta: cougars |
| 1985-1987, 1992, 2003-present | Northwest Territories: polar bears, grizzly bears, Dall sheep, caribou, wolves |
| 2006-present | Nunavut: polar bears, peregrine falcons, caribou |
| 1996-2002 | Svalbard, Norway: polar bears |
| 1988 | Antarctica: seals, penguins |
| 1983 | Yukon Territory: peregrine falcons, gyrfalcons |
| 1981-1996 | British Columbia: marbled murrelets, Stone's sheep, grizzly bears, Haida Gwaii ermine, black-tailed deer |

Professional Activities

- Editor-in-Chief, *Ursus*, journal of the International Association for Bear Research and Management, 2022-ongoing
- Chair, Natural Sciences and Engineering Research Council of Canada, Northern Research Supplement Grant Committee, 2022-ongoing
- Co-Chair, Natural Sciences and Engineering Research Council of Canada, Northern Research Supplement Grant Committee, 2020-2022
- Editorial Board, *Arctic* (journal of the Arctic Institute of North America), 2018-ongoing

- IUCN/SSC Polar Bear Specialist Group, Member (1996-ongoing, Chair 2005-2009)
- Conservation and Science Committee of the Board of Directors of WWF-Canada (2005-2015)
- Curator of Mammalogy, Zoology Museum, University of Alberta (2003-ongoing)
- Federal-Provincial Polar Bear Technical Committee (2002-2010)
- International Association for Bear Research and Management, Council Member (2000-2007, 2 terms)
- Arctic Institute of North America, Member
- Society for Conservation Biology, Member
- Marine Mammal Society, Member
- American Society of Mammalogists, Member
- Wild Bear Advisory Committee, Polar Bears International (2004-ongoing)
- Polar Continental Shelf Project, Science Steering Committee, Natural Resources Canada (2003-2007)
- Polar Continental Shelf Project Advisory Committee, Natural Resources Canada (2004-2007)
- Associate Editor, Wildlife Biology, 2005-2009
- Associate Editor, Ursus, 2001-2003

Training and Mentoring

Post-doctoral Fellow Supervision

1. Kylee Dunham, 2019-2021. Current position: Cornell Lab of Ornithology, Ithaca, NY
2. Jessica Haines, 2017-2018. Current position: Assistant Professor, MacEwan University, Edmonton, AB
3. Thea Bechshoft, 2013-2016. Current position: Research Associate, Aarhus University, Denmark
4. Nick Pilfold, 2015. Current position: Research Scientist, San Diego Zoo Conservation Research Center
5. Ane Eriksen, 2012-2014. Current position: Associate Professor, Inland Norway University of Applied Sciences, Norway
6. Gregory Thiemann, 2010-2011. Current position: Associate Professor, York University, Toronto

Ph.D. Supervisor

1. David McGeachy, 2021-ongoing.
2. Peter Thompson, 2019-ongoing.
3. Stephen Hamilton, 2010-2022. Polar bear conservation in a period of Arctic warming.
4. Amy Johnson, 2015-2020. Polar bear (*Ursus maritimus*) foraging, spatial, and energetics ecology in the changing Arctic. Current position: Research Ecologist, Ecofish Research Ltd., Courtney, BC
5. Jody Reimer, 2013- 2019. Predator and prey, past, present, and projected: Modelling polar bears and ringed seals in a dynamic Arctic. Supervised with M Lewis. Current position: Assistant Professor, University of Utah, Salt Lake City, UT
6. Barry Robinson, 2009-2015. Population demographics of peregrine falcons in Nunavut in relation to climate. Current position: Habitat Biologist, Environment and Climate Change Canada, Edmonton, AB
7. Vicki Sahanatien, 2005-2015. Polar bear (*Ursus maritimus*) habitat, space use, and movements in a seasonal sea ice ecoregion. Current position: Central Coast

- Indigenous Resource Alliance, BC
8. Nick Pilfold, 2010-2014. Polar bear (*Ursus maritimus*) foraging ecology in spring. Current position: Research Scientist, San Diego Zoo Global, San Diego, CA
 9. Marie Auger-Méthé, 2009-2014. Supervised with M Lewis. Mathematical modelling of polar bear movement ecology. Current position: Assistant Professor, University of British Columbia, Vancouver, BC
 10. Evan Richardson, 2007-2013. The mating system and life history of the polar bear. Current position: Research Scientist, Environment and Climate Change Canada, Winnipeg, MB
 11. Catherine Lambert-Koizumi, 2006-2012. Dall sheep (*Ovis dalli dalli*), grizzly bear (*Ursus arctos*) and wolf (*Canis lupus*) interactions in the Northern Richardson Mountains, Canada. Current position: Executive Director, Mi'kmaq Maliseet Aboriginal Fisheries Management Association, New Richmond, QC
 12. John Nagy, 2005-2011. Population ecology of caribou in northern Canada: distribution, migration, and herd structure. Current position: Private consulting biologist, Edmonton, AB
 13. Peter Molnar, 2004-2009. Co-supervisor. Modelling the population dynamics and ecology of polar bears. Supervised with M Lewis. Current position: Assistant Professor, University of Toronto (Scarborough), ON
 14. Mark Edwards, 2002-2009. Ecology of grizzly bears (*Ursus arctos*) in the northwestern NWT, Canada. Current position: Curator of Mammalogy, Royal Alberta Museum, Edmonton, AB
 15. Seth Cherry, 2004-2010. The ecology of polar bears in relation to sea ice dynamics. Parks Canada, Ecologist Team Leader, Invermere, BC
 16. Mette Mauritzen, 1996-2001. Movement patterns, habitat selection, and space use patterns of polar bears (*Ursus maritimus*) in the Barents Sea. University of Oslo. Ø Wiig, co-supervisor. Current position: Research Scientist, Marine Research Centre, Bergen, Norway

M.Sc. Supervisor

1. Nicholas Paroshy, 2021-ongoing.
2. Carter Littlefair, 2020-2023.
3. Steven Andriashek, 2020-ongoing.
4. Alexa MacPherson, 2018-withdrew.
5. Anna Jovtoulia, 2019-ongoing.
6. Kimberley Barrett, 2019-2023.
7. Delaney Frame, 2019-ongoing.
8. Camille Jodouin, 2019-2023.
9. Larissa Thelin, 2019-2022. Space and habitat use of polar bears (*Ursus maritimus*) in Davis Strait in relation to sea ice conditions and harp seals (*Pagophilus groenlandicus*).
10. Erin Miller, 2019-2021. Anthropogenic influence on the autumn migration of polar bears (*Ursus maritimus*) in Hudson Bay. Current position: Wildlife Biologist, Government of Alberta, Ft. MacMurray, AB
11. Sofia Karabatsos, 2018-2020. Horns and hotspots: detecting change in mountain sheep populations over large spatiotemporal scales. Current position: Biologist, Wildlife Infometrics, St. John's, NFL
12. Natasha Klappstein, 2018-2020. Energy selection functions: using energetics to inform analyses of animal movement and habitat use. Current position: Ph.D. candidate, Dalhousie University, Halifax, NS

13. Alyssa Bohart, 2016-2020. Migration dynamics of polar bears (*Ursus maritimus*) in western Hudson Bay. Current position: Polar Bear Scientist, Government of Nunavut, NU
14. Allicia Kelly, 2013-2020. Current position: Regional Wildlife Manager, Yellowknife, NT
15. Alexandra Beatty, 2016-2020. Habitat use and movement ecology of polar bears (*Ursus maritimus*) in western Hudson Bay. Current position: Wildlife Biologist, Yukon Government, Watson Lake, YK
16. Erin Henderson, 2016-2020. Polar bear (*Ursus maritimus*) use of the western Hudson Bay flaw lead polynya. Current position: Research Assistant, Parks Canada, AB
17. Brooke Biddlecombe, 2017-2019. Using spatial autocorrelation to quantify the effects of sea ice fragmentation on polar bear movement in Hudson Bay. Current position: Ph.D. candidate, University of Manitoba, MB
18. Corey Smereka, 2017-2019. Space use dynamics and habitat selection of cougars in west-central Alberta, Canada. Current position: Wildlife Biologist, AB Government, Stony Plain, AB
19. Nicole Boucher, 2016-2019. monitoring ecosystem dynamics in the beaufort sea using stable isotopes in polar bears (*Ursus maritimus*) and ringed seals (*Pusa hispida*). Current position: Ph.D. candidate, University of Victoria, BC
20. Sean O'Donovan, 2015-2018. Intrapopulation variability in wolf diet revealed using a combined stable isotope and fatty acid approach. Current position: Wildlife Biologist, Government of British Columbia, Kamloops, BC
21. Justin Shave, 2016-2018. Diet composition and prey selectivity of gray wolves (*Canis lupus*) in Prince Albert National Park, Saskatchewan. Current position: Advisian, WorleyParsons Canada Ltd., Calgary, AB
22. Ron Togunov, 2014-2016. Windscares and olfactory foraging among polar bears (*Ursus maritimus*). Current position: Post-doctoral fellow, Norwegian University of Science and Technology, Trondheim, Norway
23. Patrick Mislan, 2011-2015. Microanalysis of isotopes to assess polar bear ecology in western Hudson Bay. Current position: private consultant, ON
24. Michelle Viengkone, 2012-2015. Population structure and space-use of polar bears (*Ursus maritimus*) in Hudson Bay. Co-supervised with Dr. Corey Davis. Current position: rehabilitation physiotherapist
25. Jodie Pongracz, 2009-2014. Polar bear habitat use in the Southern Beaufort Sea. Current position: Carnivore Biologist, Yukon Government, Whitehorse, YK
26. Alysa McCall, 2010-2013. Polar bear habitat use in western Hudson Bay. Current position: Director of Conservation Outreach for Polar Bears International, Yellowknife, NT
27. Laura Castro de la Guardia, 2010-2012. (supervised with Paul Myers Earth and Atmospheric Sciences). Predictive modelling of polar bear sea ice habitat in the Hudson Bay ecosystem. Current position: Post-doctoral fellow, Norwegian Polar Institute, Tromsø, Norway
28. Oliver Barker, 2007-2011. Grizzly bear and Arctic ground squirrel relationships. Current position: Fisheries Biologist, Fisheries and Oceans Canada, Whitehorse, YK
29. Sarah Medill, M.Sc. 2006-2008. Reconstructing life histories using cementum: information recorded in premolars of polar bears (*Ursus maritimus*). Current position: Parks Ecologist, NS
30. Conrad Thiessen, 2003-2006. Dispersal of wolves in the Central Rockies. Current position: Regional Biologist, BC Ministry of Environment, Smithers, BC

31. Lindsay Towns, 2003-2006. Long-term patterns of polar bear distribution in western Hudson Bay. Current position: The Fauna Foundation, Montréal, QC
32. Emily Parks, 2003-2005. Habitat use of female polar bears in Hudson Bay relative to climate change. High school teacher, Halifax, NS

Undergraduate Supervisor

1. Simonne Tremblay, 2023-2024
2. Sam Reimer, 2023-2024
3. Hope Goerz-Ledwos, 2022-2023
4. Arya Horon, 2021-2022
5. Caitlan Morganson, 2020-2021
6. Gary Elaschuk, 2020-2021
7. Claudia Gauk, 2019-2020
8. Steven Andriashek, 2019-2019
9. Taylor Boyd, 2018-2019
10. Keenan Guillas, 2018
11. Morgan Dobroski, 2017-2018
12. Sarah Heemskerk, 2017-2018*
13. Natasha Klappstein, 2017-2018*
14. Aaron Moizis, 2017-2018
15. Brooke Biddlecombe, 2016-2017*
16. Meredith Yee, 2015-2016*
17. Linda Nguyen, 2015-2016*
18. Alexandra Beatty, 2015-2016
19. Corey Smereka, 2014-2015*
20. Kerri Krawchuk, 2012-2013
21. Kristen Peck, 2012-2012
22. Sean Haughian, 2004-2005
23. Sarah Downey, 2004-2005

* senior authored a peer-reviewed paper from their research project

Research Support

2023	WWF Canada - \$25,000
2022	San Diego Zoo Global - \$101,000
2021-2022	Polar Bears International - \$62,000
2021-2023	Environment and Climate Change Canada - \$199,500
2021-2023	Environment and Climate Change Canada - \$122,000
2020-2021	WWF Canada - \$15,000
2019-2021	MITACS - \$120,000
2019-2025	NSERC Discovery - \$210,000
2019-2025	NSERC Northern Supplement - \$110,000
2019-2020	The Ocean Foundation - \$5,000
2009-2025	Polar Bears International - \$800,000
2019-2025	San Diego Zoo Global - \$150,000
2013-2021	Environment and Climate Change Canada - \$525,000
2017-2012	Faculty of Science Research Fellowship - \$100,000
2008-2019	World Wildlife Fund Canada - \$390,000
2018-2019	Alberta Conservation Association - \$8,000

2004-2019	Polar Continental Shelf Project - \$800,000
2008-2015	ArcticNet - \$260,000
2002-2018	NSERC Discovery, Northern Supplement, RTI - \$843,075
2008-2009	NSERC International Polar Year - \$15,000
2014-2015	Pittsburgh Zoo and PPG Aquarium - \$3,000
2014-2015	Kansas City Zoo - \$5,000
2012-2014	Hauser Bears - \$30,000
2013-2014	Aquarium du Québec Conservation Fund - \$3,000
2010-2015	Quark Expeditions - \$100,000
2008-2011	Canadian Wildlife Federation - \$70,000
2004-2013	U.S. Department of the Interior - \$1,300,000
2004-2007	Government of the Northwest Territories - \$60,000
2002-2019	Northern Science Training Program - \$135,000

Selected Notable Lectures

2019	Thompson Rivers University, Public Presentation
2018	International Association for Bear Research and Management, Public Presentation – Ljubljana, Slovenia
2018	One Health Conference, Stanford University, Palo Alto, California
2016	Annual Paul L. Errington Memorial Lecture, Iowa State University, Ames, Iowa
2014	The 13 th Leading Special Lecture, Hokkaido University, Sapporo, Japan
2014	International Conference on Animal Care, Kobe, Japan
2013	Bellarmino University, Louisville, Kentucky
2012	Departmental Lecture, Brigham Young University, Provo, Utah
2012	Oceanographic Institute, Paris, France
2011	Dennis H. Chitty Lecture, University of British Columbia, Vancouver, BC
2011	Aarhus University, Aarhus, Denmark
2011	Wildlife Disease Society Keynote, Québec City, QC

Selected Media Interviews

<i>Alaska Public Radio</i>	<i>Mother Jones Magazine</i>
<i>Arctic Deeply</i>	<i>National Geographic</i>
<i>Australian Broadcasting Corporation</i>	<i>National Post</i>
<i>BBC 2</i>	<i>Nature News</i>
<i>BBC Radio 1</i>	<i>NBC News</i>
<i>BBC Wildlife</i>	<i>New Scientist</i>
<i>Buzzfeed</i>	<i>New York Times</i>
<i>Canadian Geographic</i>	<i>Nunutsiaq News</i>
<i>Carbon Brief</i>	<i>Poland Radio 1</i>
<i>CBC North</i>	<i>Radio Canada International</i>
<i>CBC Quirks and Quarks</i>	<i>Radio Slovenia</i>
<i>CBC The Current</i>	<i>Science News</i>
<i>Charles Adler Radio Show</i>	<i>Slate</i>
<i>CNN</i>	<i>Southern California Public Radio</i>

CTV Alberta Primetime
Edmonton Journal
Globe and Mail
Hakai Magazine
Inside Climate News
Iowa Public Radio
Le Soleil
Los Angeles Times
Macleans

The Atlantic
The Guardian
The Observer
The Times of London
Toronto Star
Up Here Magazine
Washington Post
WFPL Radio Kentucky
Winnipeg Free Press