

## CURRICULUM VITAE

**Name:** W. Don Bowen

**Personal Data:** Born 2 September 1948  
Canadian Citizen

**Present Position:** Unit Leader: Groundfish, Seals and Seaturtles  
Research Scientist

**Business Address:** Population Ecology Division  
Bedford Institute of Oceanography  
Department of Fisheries and Oceans  
P.O. Box 1006  
Dartmouth, Nova Scotia  
Canada, B2Y 4A2  
Tel: 902-426-8909  
E-mail: don.bowen@dfo-mpo.gc.ca

**Education:** B.Sc. 1971 University of Guelph, Ontario Zoology  
M.Sc. 1973 University of Guelph, Ontario Zoology  
Ph.D. 1978 University of British Columbia Zoology

**Awards:** Killam Predoctoral Fellowship 1976-1977  
H. R. McMillan Family Fellowship 1975-1976  
H. R. McMillan Family Fellowship 1974-1975  
Canadian Wildlife Service Scholarship 1975  
Canadian Wildlife Service Scholarship 1974  
National Research Council Bursary 1972-1973  
National Research Council Bursary 1971-1972

### Professional Organizations:

Sigma Xi Research Society (elected 1982)  
Society for Marine Mammalogy  
Canadian Society of Ecology and Evolution

### Research Interests:

- Mammalian life histories

- Foraging and reproductive ecology
- Diet estimation and predation
- Population energetics
- Population dynamics and assessment
- Marine mammal/sea turtle-fisheries ecological interactions
- Marine ecosystem structure and functioning

### **Professional Experience**

- 2007- Unit Leader, Population Ecology Division, leading ecological research and assessment programs on groundfish, seals, and sea turtles.
- 1988- 2006 Research on the population dynamics, foraging and reproductive ecology, and ecological energetics of pinnipeds with the objectives of understanding the diversity of pinniped life histories, the factors affecting abundance, the nature of competitive interactions between seals and commercial fisheries, the role of marine mammals in marine ecosystems, and determining sustainable levels of harvest.
- 1984-1988 Division Chief, Marine Fish Division, Bedford Institute of Oceanography, responsible for scientific programs associated with the provision of biological advice on commercial fish and marine mammal populations on the Scotian Shelf. Supervised staff of 63, including 35 professionals.
- 1978-1984 Head, Marine Mammal program, Northwest Atlantic Fisheries Centre, St. John's, Newfoundland, responsible for research on the population dynamics of large cetaceans and harp and hooded seals.

### **Committees and Appointments:**

- 2011-2014 Chair, Special Committee on Seals, Natural Environment Research Council, United Kingdom
- 2011-2013 Member of Science Panel of the North Pacific Research Board, Anchorage, Alaska
- 2010-2011 External reviewer of squid-fishery/seal lion interactions in New Zealand. Deep Water Group, New Zealand.
- 2010 External reviewer of Sea Mammal Research Unit, St. Andrews University, St. Andrews, Scotland.

- 2009 Member Scientific Advisory Committee of Ocean Tracking Network Canada, NSERC Strategic Network Grant
- 2009 - Member of evaluation team of Marine Stewardship Council Certification of Alaskan Pacific pollock fisheries. Moody Marine Ltd., U. K.
- 2008 Chair, National Workshop on the Impacts of Seals on Fish Populations in Eastern Canada (Part 2), Halifax, NS, DFO.
- 2008 - Associate Editor, International Journal of Zoology
- 2008 - Member of evaluation team of Marine Stewardship Council Certification of Alaskan Pacific cod fisheries. Moody Marine Ltd., U. K.
- 2008 Member of review team of permitted research by NOAA on Steller seal lions and northern fur seals in US waters. NMFS, Washington, DC
- 2007- Chair, National Marine Mammal Peer Review Committee, Department of Fisheries and Oceans, Canada
- 2007 Chair, National Workshop on the Impacts of Seals on Fish Populations in Eastern Canada (Part 1), Halifax, NS, DFO.
- 2007- Appointed to the Special Committee on Seals, Natural Environment Research Council, United Kingdom
- 2007- Appointed to NSERC Industrial Postdoctoral Review Committee
- 2007 Member of evaluation team of Marine Stewardship Council Certification of Alaskan Pollock fishery. Moody Marine Ltd., U. K.
- 2007 Chair, Review NMFS Steller seal lion recovery plan for the North Pacific Fishery Management Council.
- 2007 Reviewed NMFS Leatherback turtle assessment for Center of Independent Experts, Univ. Miami, February, 2007
- 2006 - Reappointed to the Hawaiian monk seal recovery and implementation team.
- 2006 Reviewed draft of revised recovery plan for Steller sea lions, NMFS.

- 2006 Invited participant to review and planning workshop on killer whale ecology. NMFS, National Marine Mammal Laboratory, Seattle, WA.
- 2006 Member of evaluation team of Marine Stewardship Council Certification of Alaskan Pollock fishery. Moody Marine Ltd., U. K.
- 2005 Invited participant in NOAA Workshop on the foraging ecology of Hawaiian monk seal. Honolulu, HA.
- 2005 Invited participant to US Marine Mammal Commission Workshop on the role of killer whales in marine ecosystems. Seattle, WA.
- 2004 Organized and chaired an international workshop on the Seal Exclusion Zones, a potential pinniped management tool. DFO, Halifax, N.S.
- 2003 External reviewer of the Southwest Bottlenose Dolphin population estimation program. Peer Review of U.S. Sponsored Programs, Center for Independent Experts, Univ. Miami
- 2003-4 Member of US National Academy of Science panel to develop strategic research plan for the North Pacific Research Board
- 2002-2005 Member of the Science Panel of the North Pacific Research Board, Anchorage, Alaska
- 2001- 2005 Member of the NOAA Hawaiian monk seal recovery team.
- 2001 Chair, review of the NMFS Nov 2000 Biological Opinion of the endangered Steller sea lion. Commissioned by the North Pacific Fisheries Management Council.
- 2001 Invited external reviewer of studies on the foraging ecology of Hawaiian monk seals sponsored by Joint Initiative in Marine Research, University of Hawaii
- 2001 Invited to conduct independent review of the population assessment of Eastern Tropical Pacific dolphins. Peer Review of U.S. Sponsored Programs, Center for Independent Experts, Univ. Miami
- 2001 Invited to review research proposals on Steller sea lion ecology submitted to Co-operative Institute for Arctic Research (CIFAR), Seattle, WA.

- 2000 Conducted independent review of population assessment on Hawaiian monk seals for Peer Review of U.S. Sponsored Programs, Univ. Miami
- 2000 Invited to conduct independent review of NMFS Biological Opinion on Steller sea lions Peer Review of U.S. Sponsored Programs, Univ. Miami
- 2000 Invited to serve on NSERC Doctoral Prize Selection Committee, Ottawa
- 2000-01 Member of National Academy of Sciences, U.S.A., study team on Ecosystem Monitoring of the Gulf of Alaska
- 2000 External member of Science and Management Audit of Sea Mammal Research Unit, St. Andrews University, St. Andrews, Scotland conducted by British Natural Environment Research Council
- 2000-04 Editor of Marine Mammal Science and member of the Board of the Society for Marine Mammalogy
- 1999 Chair, Review Panel of NMFS Biological Opinion on effect of pollock fishery on Steller sea lion recovery, Seattle WA. Panel commissioned by Northwest Fisheries Management Council
- 1998 External reviewer of foraging ecology research plans proposed by the USA Hawaiian monk seal recovery team
- 1998 External reviewer of physiology and foraging ecology programs overseen by the USA Steller sea lion recovery team, Seattle, Washington
- 1998 External reviewer of Sea Mammal Research Unit, St. Andrews University, St. Andrews, Scotland
- 1997 External reviewer of telemetry and behavioural ecology research overseen by the Steller sea lion recovery team, Seattle, Washington
- 1997 Rapporteur of international workshop on the harp seal-fisheries interactions sponsored by the Canadian Centre for Fisheries Innovation, St. John's, NF.
- 1997 Invited study team member of Steller sea lion ecology program planning sponsored by the US National Marine Mammal Laboratory, Seattle, Washington.

- 1996-97 Appointed to Scientific Advisory Board of Seal Rehabilitation Research Center, Pieterburen, The Netherlands.
- 1995 Session chairperson at the NAFO/ICES conference on The Role of Marine Mammals in Marine Ecosystems, Dartmouth, N.S.
- 1995 Program Committee of the Society for Marine Mammalogy and session chair of population ecology, Orlando, FL.
- 1994 Chair, NSERC Site Visit Team for an Industry/NSERC Chair in Biotelemetry, Waterloo University.
- 1993- 96 Appointed research associate of the Department of Zoological Research, Smithsonian Institution, Washington, D.C.
- 1993-03 Member of British Natural Environment Research Council's Special Committee on Seals
- 1993-95 Member of U.S. National Academy of Sciences study team on the Bering Sea Ecosystem
- 1986- Adjunct Professor, Biology Department, Dalhousie University, Halifax, Nova Scotia
- 1991 Member, external review committee of marine mammal programs conducted by the National Marine Fisheries Service, Woods Hole, MA
- 1989-91 Member, National Science and Engineering Research Council of Canada (NSERC), Evolution and Ecology Grant Selection Committee
- 1990 Invited to Chair, Working Group on the Biology of Pilot Whales, International Council for the Exploration Of the Seas, Copenhagen. Declined
- 1989 Chair, Population Biology Session, 8th Biennial Conference on the Biology of Marine Mammals, Pacific Grove, CA
- 1987-88 Chair, International Seal/Sealworm Workshops, Halifax
- 1987 Member, external review committee of northern fur seal science programs conducted by National Marine Mammal Laboratory, Seattle, WA

- 1987 Chair, Fish Stock Assessment Session, Oceans '87 Conference, Halifax
- 1985 Chair, ad hoc working group on seals convened by the Northwest Atlantic Fisheries Organization, Copenhagen
- 1983 Member, external review committee of northern fur seal science programs conducted by National Marine Mammal Laboratory, Seattle, WA
- 1981-83 Chair, Marine Mammals Subcommittee, Canadian Atlantic Fisheries Scientific Advisory Committee

**Research Grants (excluding Department of Fisheries and Oceans):**

- 2010-16 National Science and Engineering Research Council of Canada, Strategic Network Grant - Understanding Species Movements, Interactions, and Environmental Variability across Canada's Three Oceans (\$280 K/yr)
- 2007-11 National Science and Engineering Research Council of Canada, Discovery Grant – Ecology of pinnipeds (\$144 K)
- 2007 National Science and Engineering Research Council of Canada, Equipment Grant - Gas Chromatograph (\$46K) with: Iverson, Sara
- 2005 National Science and Engineering Research Council of Canada, Equipment Grant - Gas Chromatograph (\$54K) with: Iverson, Sara
- 2002-06 National Science and Engineering Research Council of Canada, Operating Grant – Foraging and reproductive ecology of pinnipeds (\$150K)
- 2000 National Science and Engineering Research Council of Canada, Equipment Grant - Satellite time-depth recorders (\$38.5K) with: Iverson, Sara
- 2000 National Science and Engineering Research Council of Canada, Equipment Grant - Digital four channel, multi-frequency radio-acoustic positioning and telemetry system (RAPT) (\$114,500K) with: O'dor Ron, Hutchings Jeffrey, Kerr Stephen
- 1998-2001 National Science and Engineering Research Council of Canada, Operating Grant – Foraging and reproductive ecology of pinnipeds (\$97K)

- 1997 National Science and Engineering Research Council of Canada, Equipment Grant – Fourier-transform Infrared Spectrophotometer (\$34K) with: Iverson, Sara
- 1994-97 National Science and Engineering Research Council of Canada, Operating Grant - Life history of pinnipeds (\$48K)
- 1992-95 National Science and Engineering Research Council of Canada, Strategic Grant - Use of Fatty Acids to Determine Marine Mammal Diets (\$370 K)
- 1991-93 National Science and Engineering Research Council of Canada, Operating Grant - Life history of pinnipeds (\$60 K)
- 1988-90 National Science and Engineering Research Council of Canada, Operating Grant - Life history of pinnipeds (\$42 K)

**Total Scientific Publications: 195**

**Referred Journal Publications: 118**

118. Lang, S. L. C., Iverson, S. J. and Bowen, W. D. 2011. The influence of reproductive experience on milk energy output and lactation performance in the grey seal (*Halichoerus grypus*). PlosOne 6: 1-11, e19487.
117. Breed, G. D., Bowen, W. D. and Leonard, M. L. 2011. Development of foraging strategies with age in a long-lived marine predator. Mar. Ecol. Prog. Ser. 431:267-279.
116. Wood, S.; Frasier, T.; McLeod, B.; White, B.; Bowen, W. D.; Hammill, M. O.; Gilbert, J.; Waring, G.; Brault, S. 2011. The genetics of recolonization: an analysis of gray seal (*Halichoerus grypus*) stock structure in the northwest Atlantic. Can. J. Zool. 89:490-497.
115. Lang, S. L. C., D. J. Boness, W. D. Bowen and S. J. Iverson. 2010. Primiparous females do not exhibit reduced maternal care in gray seals (*Halichoerus grypus*). Mar. Mamm. Sci. DOI: 10.1111/j.1748-7692.2010.00443.x
114. Lang, S. L. C., Iverson, S. J. and Bowen, W. D. 2009. Repeatability in lactation performance and the consequences for maternal reproductive success in grey seals. Ecology 90:2513-2523.
113. Tucker, S., W. D. Bowen, and S. J. Iverson, W. Blanchard, and G. Stenson. 2009. Sources of variation in diets of harp (*Pagophilus groenlandicus*) and hooded (*Cystophora cristata*) seals estimated from quantitative fatty acid signature analysis (QFASA). Mar. Ecol. Prog. Ser. 384:287-302.
112. Breed, G. A., I. D. Jonsen, R. A. Myers, W. D. Bowen, and M. L. Leonard. 2009. Sex-specific, seasonal foraging tactics in adult grey seals (*Halichoerus grypus*) are revealed by behaviour discriminating state-space models. Ecology 90:3209-3221.

111. Tucker, S., W. D. Bowen, S. J. Iverson and G. B. Stenson. 2009. Intrinsic and extrinsic sources of variation in the diets of harp and hooded seals revealed by fatty acid profiles. *Can. J. Zool.* 87:139-151.
110. Noren, S. R., D. J. Boness, S. J. Iverson, J. McMillan, W. D. Bowen. 2008. Body Condition at Weaning Affects the Duration of the Postweaning Fast in Gray Seal Pups (*Halichoerus grypus*). *Physiol Biochem. Zool.* 81: 269-277
109. Lidgard, D. C., D. J. Boness, W. D. Bowen and J. I. McMillan. 2008. The implications of stress on male mating behavior and success in a sexually dimorphic polygynous mammal, the grey seal. *Hormones and Behaviour* 53: 241-248.
108. Tucker, S., W. D. Bowen, and S. J. Iverson. 2008. Convergence of diet estimates from fatty acids and stable isotopes, support for long-term integration of natural diets within individual grey seals. *Mar. Ecol. Prog. Ser.* 354: 267-276.
107. Beck, C. A., I. J. Iverson, W. D. Bowen, and W. Blanchard. 2007. Sex differences in grey seal diet reflect seasonal variation in foraging behaviour and reproductive expenditure: evidence from quantitative fatty acid signature analysis. *J. Anim. Ecol.* 76:490-502.
106. Tucker, S., W. D. Bowen, and S. J. Iverson. 2007. Dimensions of diet segregation in grey seals *Halichoerus grypus* through stable isotopes of carbon ( $\delta^{13}C$ ) and nitrogen ( $\delta^{15}N$ ). *Marine Ecology Progress Series* 339: 271-282.
105. Boness, D. J., W. D. Bowen, B. M. Bulheier and G. J. Marshall. 2006. Mating tactics and mating system of an aquatic-mating pinniped: the harbor seal, *Phoca vitulina*. *Behav. Ecol. Sociobiol.* 61: 119-130.
104. Bowen, W. D., S. J. Iverson, J. I. McMillan, and D. J. Boness. 2006. Reproductive performance in grey seals: age-related improvement and senescence in a capital breeder. *J. Anim. Ecology* 75: 1340-1351.
103. Bowen, W. D., J. I. McMillan, and W. Blanchard. 2007. Reduced rate of population growth of gray seals at Sable Island: evidence from pup production and age of primiparity. *Marine Mammal Science* 23:48-64.
102. Austin, D., W.D. Bowen, J.I. McMillan and S.J. Iverson. 2006. Linking movement, diving and habitat to feeding in a large marine predator. *Ecology.* 87:3095-3108.
101. Trzcinski, M. K., R. Mohn, and W. D. Bowen. 2006. Continued decline of the threatened Eastern Scotian Shelf Atlantic cod population: how important is grey seal predation. *Ecological Applications* 16:2276-2292.
100. Breed, G. A., W. D. Bowen, J. I. McMillan, and M.L. Leonard. 2006. Sexual segregation of seasonal foraging habitats in a non-migratory marine mammal. *Proc. R. Soc. B.* 273:2319-2326.
99. Bowen, W. D., C. A. Beck, S. J. Iverson, D. Austin, J. I. McMillan. 2006. Linking predator foraging behaviour and diet with variability in continental shelf ecosystems: grey seals of eastern Canada, p 63-81. *In* Boyd, I., Wanless, S. and Camphuysen, C. J. (eds) *Top Predators in marine ecosystems. Their role in monitoring and management.* Cambridge University Press, Cambridge, UK

98. Austin, D. W. D. Bowen, J. I. McMillan, and D. J. Boness. 2006. Stomach temperature telemetry reveals temporal patterns of foraging success in a free-ranging marine mammal. *J. Anim. Ecol.* 75:408-420.
97. Lang, S. L. C., S. J. Iverson, and W. D. Bowen. 2005. Individual variation in milk composition over lactation in harbour seals (*Phoca vitulina*) and the consequences of intermittent attendance. *Can. J. Zool.* 83:1525-1531.
96. Beck, C. A., S. J. Iverson and W. D. Bowen. 2005. Blubber fatty acids of grey seals reveal sex differences in diet of a size-dimorphic marine carnivore. *Can. J. Zool.* 83(3): 377-388.
95. Lidgard, D. C., D. J. Boness, W. D. Bowen, and J. I. McMillan. 2005. State-dependent male mating tactics in the grey seal: the importance of body size. *Behav. Ecol.* 16:541-549.
94. Schulz, T. M. and W. D. Bowen. 2005. The evolution of pinniped lactation strategies: a comparative phylogenetic analysis. *Ecol. Monogr.* 75:159-177.
93. Lidgard, D. C., D. J. Boness, W. D. Bowen, J. I. McMillan and R. C. Fleischer. 2004. The rate of fertilization in male mating tactics of the polygynous grey seal. *Mol. Ecol.* 13:3543-3548.
92. Schulz, T.M. and W.D. Bowen. 2004. Pinniped lactation strategies: evaluation of data on maternal and offspring life-history traits. *Marine Mammal Science* 20: 86-114.
91. Austin, D., W.D. Bowen and J.I. McMillan. 2004. Intraspecific variation in movement patterns: modelling individual behaviour in a large marine predator. *Oikos* 105:15-30.
90. Iverson, S. J., C. Field, W. D. Bowen, and W. Blanchard. 2004. Quantitative fatty acid signature analysis: A new method of estimating predator diets. *Ecological Monographs* 74:211-235.
89. Lidgard, D. C., Boness, D. J., Bowen, W. D., and McMillan, J. I. 2003. Diving behaviour during the breeding season in the terrestrial breeding male grey seal: implications for alternative mating tactics. *Canadian Journal of Zoology.* 81:1025-1033.
88. Bowen, W. D., J. McMillan, and R. Mohn. 2003. Sustained exponential population growth of grey seals on Sable Island, Nova Scotia. *ICES J. mar. Sci.* 60: 1265-1274.
87. Beck, C. A., W. D. Bowen, J. I. McMillan, and S. J. Iverson. 2003. Sex differences in diving at multiple temporal scales in a size-dimorphic capital breeder. *J. Anim. Ecol.* 72:979-993.
86. Bowen, W. D., S. L. Ellis, S. J. Iverson, and D. J. Boness. 2003. Maternal and newborn life-history traits during periods of contrasting population trends: implications for explaining the decline of harbour seals, *Phoca vitulina*, on Sable Island. *J. Zool., Lond.* 261:155-163.
85. Beck, C. A., W. D. Bowen, and S. J. Iverson. 2003. Seasonal energy storage and expenditure in a phocid seal: evidence of sex-specific trade-offs. *J. Anim. Ecol.* 72:280-291.
84. Muelbert, M. M. C., W. D. Bowen, and S. J. Iverson. 2003. Weaning mass affects changes in body composition and food intake in harbour seal pups during the first month of independence. *Physiol. Biochem. Zool.* 76: 418-427.
83. Beck, C. A., W. D. Bowen, J. I. McMillan, and S. J. Iverson. 2003. Sex differences in the diving behaviour of a size dimorphic capital breeder: the grey seal. *Anim. Behav.* 66: 777-789.

82. Austin, D. J., I. McMillan, W. D. Bowen. 2003. A three-stage algorithm for correcting ARGOS satellite locations. *Marine Mammal Science* 19:371-383.
81. Bowen, W. D., Tully, D., Boness, D. J., Bulheier, B., and Marshall, G. 2002. Prey-dependent foraging tactics and prey profitability in a marine mammal. *Mar. Ecol. Prog. Ser.* 244: 235-245.
80. Baechler, J., C.A. Beck, & W.D. Bowen. 2002. Dive shapes reveal temporal changes in the foraging behaviour of different age and sex classes in harbour seals (*Phoca vitulina*). *Canadian Journal of Zoology* 80: 1569-1577.
79. Beck, C. A., J. I. McMillan and W. D. Bowen. 2002. An algorithm to improve geolocation positions using sea surface temperature and diving-depth. *Marine Mammal Science* 18:940-951.
78. Budge, S., Iverson, S. J. and Bowen, W. D. 2002. Among and within species variability in fatty acid signatures of marine fish and invertebrates on the Scotian Shelf, Georges Bank and southern Gulf of St. Lawrence. *Can. J. Fish. Aquat. Sci.* 59:886-898.
77. Bowen, W. D., Ellis, S., S. J. Iverson, and D. J. Boness. 2001. Maternal effects on offspring growth rate and weaning mass in harbour seals. *Can. J. Zool.* 79: 1088-1101.
76. Lidgard, D. C., Boness, D. J., Bowen, W. D. 2001. A novel mobile approach to investigating mating tactics in male grey seals (*Halichoerus grypus*). *J. Zool., Lond.* 255: 313-320.
75. Bowen, W. D., Iverson, S. J., Boness, D. J. and Oftedal, O. T. 2001. Foraging effort, food intake, and lactation performance depend on maternal mass in a small phocid seal. *Functional Ecology* 15:325-334.
74. Ellis, S., W. D. Bowen, D. J. Boness, and S. J. Iverson. 2000. Maternal effects on offspring birth mass in the harbour seal. *J. Mammal.* 81: 1143-1156.
73. Mellish, J-A., Iverson, S. J. and Bowen, W. D. 2000. Metabolic compensation during high energy output in fasting, lactating grey seals (*Halichoerus grypus*): metabolic ceilings revisited. *Proc. R. Soc. Lond. B.* 267: 1245-1251.
72. Kirsh, P., Iverson, S. J., and Bowen, W. D. 2000. Effect of a low fat diet on body composition and blubber fatty acids of captive juvenile harp seals (*Phoca groenlandica*). *Physiol. Biochem. Zool.* 73: 45-59.
71. Bowen, W. D. 2000. Reconstruction of pinniped diets: Accounting for complete digestion of otoliths and cephalopod beaks. *Can. J. Fish. Aquat. Sci.* 57: 898-905.
70. Beck, C. A., Bowen, W. D., and Iverson, S. J. 2000. Effect of seasonal changes in buoyancy on diving behaviour in grey seals. *J. Expt. Biol.* 203: 2323-2330.
69. Smith, S. J., S. J. Iverson, and W. D. Bowen. 1999. Reply: Fatty acid signatures and classification trees: new tools for investigating the foraging ecology of seals. *Can. J. Fish. Aquat. Sci.* 56: 2224-2226.
68. Mellish, J-A. E., S. J. Iverson, and W. D. Bowen. 1999. Individual variation in maternal energy allocation and milk production in grey seals and consequences for pup growth and weaning characteristics. *Physiol. Biochem. Zool.* 72: 677-690.
67. Mellish, J-A. E., S. J. Iverson, W. D. Bowen, and M. O. Hammill. 1999. Fat transfer and energetics in the hooded seal, *Cystophora cristata*: the roles of tissue lipoprotein lipase

- in milk fat secretion and pup blubber deposition. *Comp. Biochem. Physiol. B* 169:377-390.
66. Ambs, S. M., D. J. Boness, W. D. Bowen, E. A. Perry, and R. C. Fleischer. 1999. Proximate factors associated with high levels of extra-consort fertilizations in polygynous grey seals. *Anim. Behav.* 58: 527-535.
  65. Bowen, W. D., D. J. Boness, and S. J. Iverson. 1999. Diving behaviour of lactating harbour seals and their pups during maternal foraging trips. *Can. J. Zool.* 77: 978-988.
  64. Bowen, W. D., C. A. Beck, and S. J. Iverson. 1999. Bioelectrical impedance analysis as a means of estimating total body water in grey seals. *Can. J. Zool.* 77:418-422.
  63. Schaeff, C. M., Boness, D. J., Bowen, W. D. 1999. Female distribution, genetic relatedness, and fostering behavior in harbor seals, *Phoca vitulina*. *Anim. Behav.* 57: 427-434.
  62. Coltman, D. W., Bowen, W. D. and Wright, J. 1999. A multivariate analysis of phenotype and paternity in male harbour seals, *Phoca vitulina*, at Sable Island, Nova Scotia. *Behav. Ecol.* 10: 169-177.
  61. Bowen, W. D., Boness, D. J., Iverson, S. J. 1998. Estimation of total body water in harbour seals: How useful is bioelectrical impedance analysis? *Mar. Mammal. Sci.* 14: 767-777.
  60. Marcus, J., Bowen, W. D., and Eddington, J. 1998. Effects of meal size on otolith recovery from fecal samples of grey and harbor seals. *Mar. Mammal Sci.* 14: 789-802.
  59. Kirsh, P., Iverson, S. J., Bowen, W. D., Kerr, S., and Ackman, R. 1998. Dietary effects on fatty acid signatures of whole Atlantic cod. *Can. J. Fish. Aquat. Sci.* 55: 1378-1386.
  58. Bowen, W. D. and Iverson, S. J. 1998. Estimation of total body water in pinnipeds using hydrogen-isotope dilution. *Physiol. Zool.* 71: 329-332.
  57. Coltman, D. W., Bowen, W. D., Iverson, S. J., and Boness, D. J. 1998. Energetics of male reproduction in an aquatically mating pinniped: the harbour seal. *Physiol. Zool.* 71: 387-399.
  56. Coltman, D. W., Bowen, W. D. and Wright, J. 1998. Male mating success in an aquatically mating pinniped, the harbour seal (*Phoca vitulina*), assessed by microsatellite DNA markers. *Mol. Ecol.* 7: 627-638.
  55. Coltman, D. W., Bowen, W. D. and Wright, J. 1998. Birth weight and neonatal survival of harbour seals are positively correlated with genetic variation measured by microsatellites. *Proc. Royal Soc. Lond., B.* 265: 803-809.
  54. Coltman, D. W., Bowen, W. D., Boness, D. J., Iverson, S. J. 1997. Balancing foraging and reproduction in the male harbour seal: an aquatically mating pinniped. *Anim. Behav.* 54: 663-678.
  53. Bowen, W. D. 1997. The role of marine mammals in aquatic ecosystems. *Mar. Ecol. Prog. Ser.* 158: 267-274.
  52. Smith, S., Iverson, S. J., Bowen, W. D. 1997. Analysis of fatty acid signatures using classification and regression trees: A new tool for investigating the foraging ecology of seals. *Can. J. Fish Aquat. Sci.* 54:1377-1386.

51. Brown, R. G., Bowen, W. D., Eddington, W. D., Kimmins, W.C., Mezei, M., Parsons, J. L., Pohajdak, B. 1997. Evidence for a long-lasting, single-administration contraceptive vaccine in wild grey seals. *J. Reprod. Immun.* 35: 43-51.
50. Brown, R. G., Bowen, W. D., Eddington, W. D., Kimmins, W.C., Mezei, M., Parsons, J. L., Pohajdak, B. 1997. Temporal trends in antibody production in captive grey, harp, and hooded seals to a single administration immunocontraceptive vaccine. *J. Reprod. Immun.* 35: 53-64.
49. Mohn, B. and Bowen, W.D. 1996. Grey seal predation on the Eastern Scotian Shelf: modelling the impact on Atlantic cod. *Can. J. Fish Aquat. Sci.* 53: 2722-2738.
48. Brown, R. G., Kimmins, W.C., Mezei, M., Parsons, J., Pohajdak, B., Bowen, W. D. 1996. A single-administration immunocontraceptive vaccine for grey seals. *Nature.* 379:30-31.
47. Boness, D. J. and Bowen, W. D. 1996. The evolution of maternal care in pinnipeds. *BioScience* 46:645-654.
46. Coltman, D. W., Bowen, W. D., and Wright, J. M. 1996. PCR primers for harbour seal (*Phoca vitulina concolor*) microsatellites amplify polymorphic loci in other pinniped species. *Mol. Ecol.* 5:161-163.
45. Oftedal, O. T., Bowen, W. D., Boness, D. J. 1996. Lactation performance of the harp seal, *Phoca groenlandica*, on the ice floes off southern Labrador. *Physiol. Zool.* 69:635-657.
44. Bowen, W. D. and Harrison, G. 1996. Comparison of harbour seal diets in two habitats of Atlantic Canada. *Can. J. Zool.* 74:125-135.
43. Iverson, S. J., Hamosh, M., and Bowen, W. D. 1995. Lipoprotein lipase activity and its relationship to high milk fat transfer during lactation in grey seals. *J. Comp. Physiol. B* 165:384-395.
42. Iverson, S. J., Oftedal, O. T., Bowen, W. D., Boness, D. J., and Sampugna, J. 1995. Prenatal and postnatal transfer of fatty acids from mother to pup in the hooded seal. *J. Comp. Physiol. B* 165:1-12.
41. Boness, D. J., W. D. Bowen, and S. J Iverson. 1995. Does male harassment of females contribute to reproductive synchrony in the grey seal by affecting maternal performance? *Behav. Ecol. Sociobiol.* 36:1-10.
40. Bowen, W. D. and Harrison, G. 1994. Offshore diets of grey seals (*Halichoerus grypus*) near Sable Island, Canada. *Mar. Ecol. Prog. Ser.* 112: 1-11.
39. Ross, P. S., de Swart, R. L., Visser, I. K. G., Vedder, L. J., Murk, W., Bowen, W. D., Osterhaus, A. D. M. E. 1994. Relative immunocompetence of the newborn harbour seal, *Phoca vitulina*. *Vet. Immunol. Immunopathol.* 42: 331-348.
38. Bowen, W. D., O. T. Oftedal, D. J. Boness, and S. J. Iverson. 1994. The effect of maternal age and other factors on birth mass in harbour seals. *Can. J. Zool.* 72:8-14.
37. Boness, D. J., W. D. Bowen, and O. T. Oftedal. 1994. Evidence from time-depth recorders of a foraging cycle during lactation in a small phocid, the harbour seal. *Behav. Ecol. Sociobiol.* 34:95-104.

36. Bowen, W. D., J. Lawson, and B. Beck. 1993. Seasonal and geographic variation in the species composition and size of prey consumed by grey seals (*Halichoerus grypus*) on the Scotian Shelf. *Can. J. Fish. Aquat. Sci.* 50: 1768-1778.
35. Muelbert, M. M. C. and W. D. Bowen. 1993. Duration of lactation and postweaning changes in mass and body composition of harbour seal pups. *Can. J. Zool.* 71:1405-1414.
34. Walker, B. G. and W. D. Bowen. 1993. Mass changes and feeding behaviour in male harbour seals, *Phoca vitulina*, in relation to female reproductive status and male age. *J. Zool. (Lond.)* 231:423-436.
33. Walker, B. G. and W. D. Bowen. 1993. Behavioural differences among adult male harbour seals during the breeding season may provide evidence of reproductive strategies. *Can. J. Zool.* 71:1585-1591.
32. Oftedal, O. T., W. D. Bowen, D. J. Boness. 1993. Energy transfer by lactating hooded seals, and nutrient deposition in their pups, during the four days from birth to weaning. *Physiol. Zool.* 66:366-390
31. Boness, D. J., W. D. Bowen, and J. Francis. 1993. Implications of DNA fingerprinting for understanding pinniped mating systems and reproductive strategies. *Symp. Zool. Soc. Lond.* 66: 61-93.
30. Iverson, S. J., W. D. Bowen, D. J. Boness, and O. T. Oftedal. 1993. The interrelationship of maternal size and milk energy output, and its effect on pup growth in grey seals. *Physiol. Zool.* 66:61-88
29. Ross, P. S., B. Pohajdak, W. D. Bowen, and R. F Addison. 1993. Immune function in free-ranging harbour seal mothers and their pups during lactation. *J. Wildl. Diseases* 29:21-29
28. Bowen, W. D., W. T. Stobo, and S. Smith. 1992. Mass change in grey seal pups on Sable Island: differential maternal investment reconsidered. *J. Zool. (Lond.)* 227:607-622.
27. Bowen, W. D., O. T. Oftedal, and D. J. Boness. 1992. Mass and energy transfer during lactation in a small phocid, the harbour seal. *Physiol. Zool.* 65:844-866.
26. Boness, D. J., W. D. Bowen, and O. T. Oftedal. 1992. Influence of storms and maternal size on mother-pup separations and fostering in the harbour seal. *Can. J. Zool.* 70:1640-1644.
25. Lawson, J. W., G. D. Harrison, and W. D. Bowen. 1992. Factors affecting the accuracy of age determination in harp seals. *Marine Mammal Sci.* 8:169-171.
24. Ross, P. S., I. K. G. Visser, M. W. G. van de Bilt, W. D. Bowen, and A. D. E. M. Osterhaus. 1992. Antibodies to phocine distemper virus in Canadian seals. *Vet. Record* 130:514-516.
23. Oftedal, O. T., W. D. Bowen, E. M. Widdowson, and D. J. Boness. 1991. The prenatal molt and its ecological significance in the hooded and harbor seal. *Can. J. Zool.* 69:2489-2493.
22. Benoit, D. and W. D. Bowen. 1990. Summer diet of grey seals (*Halichoerus grypus*) at Anticosti Island, Gulf of St. Lawrence, Canada. *Can. Bull. J. Fish. Aquat. Sci.* 222:227-242.

21. Benoit, D. and W. D. Bowen. 1990. Seasonal and geographic variation in the diet of grey seals (*Halichoerus grypus*) in eastern Canada. *Can. Bull. J. Fish. Aquat. Sci.* 222:215-226.
20. Zwanenberg, K. C. T. and W. D. Bowen. 1990. Population trends of the grey seal (*Halichoerus grypus*) in Eastern Canada. *Can. Bull. J. Fish. Aquat. Sci.* 222:185-197.
19. Oftedal, O. T., W. D. Bowen, E. M. Widdowson, and D. J. Boness. 1989. Effects of suckling and the postweaning fast on weights of the body and internal organs of harp and hooded seal pups. *Biol. Neonate* 56:283-300.
18. Myers, R. A. and W. D. Bowen. 1989. Estimating bias in aerial surveys of harp seal pup production. *J. Wildl. Manage.* 53:361-372.
17. Boness, D. J., W. D. Bowen, and O. T. Oftedal. 1988. Evidence of polygyny from the spatial patterns in hooded seals (*Cystophora cristata*). *Can. J. Zool.* 66:703-706.
16. Oftedal, O. T., D. J. Boness, and W. D. Bowen. 1988. The composition of hooded seal milk: An adaptation for postnatal fattening. *Can. J. Zool.* 66:318-322.
15. Bowen, W. D., R.A. Myers, and K. Hay. 1987. Abundance estimation of a dispersed and dynamic population: Hooded seals (*Cystophora cristata*) in the northwest Atlantic. *Can. J. Fish. Aquat. Sci.* 44:282-295.
14. Bowen, W. D., D. J. Boness, and O. T. Oftedal. 1987. Mass transfer from mother to pup and subsequent mass loss by the weaned pup in the hooded seal (*Cystophora cristata*). *Can. J. Zool.* 65:1-8.
13. Roff, D. and W. D. Bowen. 1986. Analysis of population trends in the Northwest Atlantic harp seal (*Phoca groenlandica*) from 1967-1983. *Can. J. Fish. Aquat. Sci.* 43:553-564.
12. Bowen, W. D., O. T. Oftedal, and D. J. Boness. 1985. Birth to weaning in four days: Remarkable growth in the hooded seal, (*Cystophora cristata*). *Can. J. Zool.* 63:2841-2846.
11. Roff, D. and W. D. Bowen. 1983. The population dynamics and management of northwest Atlantic harp seals (*Phoca groenlandica*). *Can. J. Fish. Aquat. Sci.* 40:919-932.
10. Bowen, W. D., D. E. Sergeant, and T. Oritsland. 1983. Validation of age estimation in the harp seal (*Phoca groenlandica*). *Can. J. Fish. Aquat. Sci.* 40:1430-1441.
9. Bowen, W. D. and D. E. Sergeant. 1983. Mark-recapture estimates of harp seal (*Phoca groenlandica*) pup production in the northwest Atlantic. *Can. J. Fish. Aquat. Sci.* 40:728-742.
8. Bowen, W. D. 1982. Home range and spatial organization of coyotes in Jasper National Park, Alberta. *J. Wildl. Manage.* 46:201-216.
7. Bowen, W. D. 1982. Determining age of coyotes, *Canis latrans*, by tooth sections and tooth-wear patterns. *Can. Field-Nat.* 96:339-341.
6. Bowen, W. D. 1982. Age structure of Northwest Atlantic harp seal catches, 1952-1980. *NAFO Sci. Coun. Studies* 3:53-66.
5. Bowen, W. D., C. K. Capstick, and D. E. Sergeant. 1981. Temporal changes in the reproductive potential of female harp seals (*Phoca groenlandica*). *Can. J. Fish. Aquat. Sci.* 38:495-503.
4. Bowen, W. D. 1981. Variation in coyote social organization: the influence of prey size. *Can. J. Zool.* 59:639-652.

3. Bowen, W. D. and I. McTaggart-Cowan. 1980. Scent marking in coyotes. *Can. J. Zool.* 58:473-480.
2. Bowen, W. D. 1980. Coyote-golden eagle interactions at an ungulate carcass. *J. Mammal.* 61:376-377.
1. Bowen, W. D. and R. J. Brooks. 1978. Social organization of confined male collared lemmings (*Dicrostonyx groenlandicus* Traill). *Anim. Behav.* 26:1126-1135.

### **Books and Book Chapters: 23**

23. Iverson, S. J., Sparling, C. E., Williams, T., Lang, S.L.C., and Bowen, W. D. 2010. Measurement of individual and population energetics of marine mammals, p. 191-221. *In* Boyd, I. L., Bowen, W. D., and Iverson, S. J. (eds.) *Marine Mammal Ecology and Conservation: A handbook of techniques*, Oxford University Press.
22. Bowen, W. D. and Northridge, S. 2010. Morphometrics, age estimation, and growth, p. 98-118. *In* Boyd, I. L., Bowen, W. D., and Iverson, S. J. (eds.) *Marine Mammal Ecology and Conservation: A handbook of techniques*, Oxford University Press.
21. Tollit, D., Pierce, G.J., Hobson, K. A., Bowen, W. D., and Iverson, S. J. 2010. Diet, p. 165-190. *In* Boyd, I. L., Bowen, W. D., and Iverson, S. J. (eds.) *Marine Mammal Ecology and Conservation: A handbook of techniques*, Oxford University Press.
20. Bowen, W. D., Baker, J. D., Boyd, I. L., Estes, J. A., Ford, J. K. B., Kraus, S. D., Siniff, D., Stirling, I., and Wells, R. S. 2010. Long-term studies, p. 283-305. *In* Boyd, I. L., Bowen, W. D., and Iverson, S. J. (eds.) *Marine Mammal Ecology and Conservation: A handbook of techniques*, Oxford University Press, Oxford, U. K.
19. Boyd, I. L., Bowen, W. D., and Iverson, S. J. 2010. *Marine Mammal Ecology and Conservation: A handbook of techniques*, Oxford University Press. 450p.
18. Bowen, W. D., Beck, C. A., and Austin, D. 2009. Pinniped ecology, p. 852-860. *In* *Encyclopedia of Marine Mammals*. Second Edition. W. F. Perrin, B. Wursig, and H. G. M. Thewissen (eds.) Academic Press
17. Stokesbury, M.J.S., Dadswell, M.J., Holland, K.N., Jackson, G.D., Bowen, W.D. and R.K. O'Dor. 2009. Tracking diadromous fishes at sea using hybrid acoustic and archival tags. *In* Haro, A. J., K. L. Smith, R. A. Rulifson, C. M. Moffitt, R. J. Klauda, M. J. Dadswell, R. A. Cunjak, J. E. Cooper, K. L. Beal, and T. S. Avery, editors. 2009. *Challenges for Diadromous Fishes in a Dynamic Global Environment*. American Fisheries Society, Symposium 69, Bethesda, Maryland.
16. Bowen, W.D. and G. Harrison. 2007. Seasonal and interannual variability in grey seal diets on Sable Island, eastern Scotian Shelf. P. 123-134. (In) T. Haug, M. Hammill and D. Olafsdottir (eds). *Grey seals in the North Atlantic and the Baltic*. Nammco scientific publications vol 6. 227 pp. The North Atlantic Marine Mammal Commission. Tromso. The printer is Grafisk Nord, Finnsnes.

15. Bowen, W. D. 2009. Maternal effects in offspring growth and development in pinnipeds, p. 104-132. *In* Maternal effects in mammals. Maestriperi, D. and Mateo, J. (eds.) Chicago University Press
14. NRC 2005. (12 authors, including W. D. Bowen) Final Comments on a Science Plan for the North Pacific Research Board. 33p. National Academy Press, Washington, D.C. (NRC)
13. NRC 2004. (12 authors, including W. D. Bowen) Elements of a Science Plan for the North Pacific Research Board. 125p. National Academy Press, Washington, D.C.
12. NRC. 2002. (11 authors, including W. D. Bowen) A Century of Ecosystem Science. Planning Long-Term Research in the Gulf of Alaska. 94p. National Academy Press, Washington, D.C.
11. Zwanenburg, K.C.T., D. Bowen, A. Bundy, K. Drinkwater, K. Frank, R. O'Boyle, D. Sameoto, and M. Sinclair. 2002. Decadal changes in the Scotian Shelf large marine ecosystem, p. 105-150. *In* K. Sherman and H.R. Skjoldal, eds. Large Marine Ecosystems of the North Atlantic: Changing States and Sustainability. Elsevier Science, Amsterdam.
10. Bowen, W. D., Beck, C. A., and Austin, D. 2002. Pinniped ecology, p. 911- 920. *In* Encyclopedia of Marine Mammals. W. F. Perrin, B. Wursig, and H. G. M. Thewissen (eds.) Academic Press
9. Bowen, W. D., Read, A., and Estes, J. 2002. Feeding ecology. p. 217-246. *In* Hoelzel, R. Marine mammals: An evolutionary approach. Blackwell.
8. Bowen, W. D. and Siniff, D. 1999. Distribution, population biology, and feeding ecology of marine mammals, p. 423-484. *In* Biology of Marine Mammals. J.E. Reynolds, III and S.A. Rommel (eds.) Smithsonian Institution Press, Washington, D.C.
7. NRC. 1996. The Bering Sea Ecosystem. National Academy Press, Washington, D.C. 307pp. (11 authors with W.D. Bowen).
6. Bowen, W. D. 1991. Behavioural ecology of pinniped neonates, p. 66-127. *In* D. Renouf (ed.) Behaviour of Pinnipeds. Chapman and Hall, London.
5. Bowen, W. D. (ed.) 1990. Population biology of sealworm (*Psuedoterranova decipiens*) in relation to its intermediate and seal hosts. Can. Bull. J. Fish. Aquat. Sci. 222. 306p.
4. Bowen, W. D. 1985. Harp seal feeding and interactions with commercial fisheries in the Northwest Atlantic, p. 135-152. *In* J. R. Beddington, R. J. H. Beverton, and D. M. Lavigne. (eds.) Marine Mammals and Fisheries. George Allen and Unwin Publishers, London.
3. Bowen, W. D. 1985. The coyote (*Canis latrans* Say). *In* D. MacDonald (ed). The Carnivores. Elsevier, Oxford.
2. Bowen, W. D. 1983. The harp seal, p. 209-213. *In* D. Pursley and G. Deems (eds.) North American Furbearers: A contemporary reference. Inter. Assoc. Fish and Wildl. Agencies.
1. Bowen, W. D. 1983. The hooded seal, p. 215-217. *In* D. Pursley and G. Deems (eds.) North American Furbearers: A contemporary reference. Inter. Assoc. Fish and Wildl. Agencies.

**Other Reports or Publications: 54**

54. Bowen, W. D., den Heyer, C. and M. Hammill. 2011. Pup production at Scotian Shelf grey seal (*Halichoerus grypus*) colonies in 2010. DFO Can. Sci. Advis. Sec. Res. Doc. 2011/0xx.
53. Bowen, W. D. 2011. Historical Grey Seal Abundance and Changes in the Abundance of Grey Seal Predators in the Northwest Atlantic. DFO Can. Sci. Advis. Sec. Res. Doc. 2011/026.
52. Bowen, W. D., Carter, P. and Hammill, M. 2011. Estimated Grey Seal Diets near Sable Island Derived from Fecal Samples: 1991 to 2010. DFO Can. Sci. Advis. Sec. Res. Doc. 2011/024.
51. Bowen, W. D. and Iverson, S. J. 2011. Sources of Bias and Uncertainty in Seal Diet Composition: Hard Part and Fatty Acid Analysis. DFO Can. Sci. Advis. Sec. Res. Doc. 2011/025.
50. Bowen, W. D. and Lidgard, D. 2011. Vertebrate Predator Control: Effects on Prey Populations in Terrestrial and Aquatic Ecosystems. DFO Can. Sci. Advis. Sec. Res. Doc. 2011/028.
49. DFO. 2011. Impacts of Grey Seals on Fish Populations in Eastern Canada. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2010/071.
48. Hammill, M. O., Bowen, W. D., and Blanchard, W. 2009. Timing of grey seal pupping on Hay Island. DFO Can. Sci. Advis. Sec. Res. Doc. 2009/091.
47. Trzcinski, M. K., Mohn, R. and Bowen, W. D. 2009. Estimating the impact of grey seals on the Eastern Scotian Shelf and Western Scotian Shelf cod populations. DFO Can. Sci. Advis. Sec. Res. Doc. 2009/052.
46. Bowen, W. D., Hammill, M. O., Koen-Alonso, M., Stenson, G., Swain, D.P., and Trzcinski K. 2009. Proceedings of the National Workshop on the Impacts of Seals on Fish Populations in Eastern Canada (Part 2) CSAS, Proceedings 2009/020
45. Thomas, L., Hammill, M. O., and Bowen, W. D. 2008. Assessment of population consequences of harvest strategies for the Northwest Atlantic grey seal population. CSAS Research Document 2008/078.
44. Bowen, W. D., Gage, L., Goodman, D., and Lowry, L. 2008. Report of the Independent Review Panel on the National Marine Fisheries Service's Implementation of the Permit Program for Research on Steller Sea Lions and Northern Fur Seals. 48p.
43. Bowen, W. D., Boness, D. J., and Lowry, L. F. 2007. Review of the 2007 Draft Steller Sea Lion Recovery Plan. Prepared for The North Pacific Fishery Management Council Review contracted by the North Pacific Research Board, July 2007, 24p.
42. Thomas, L., Hammill, M. O., and Bowen, W. D. 2007. Estimated size of the Northwest Atlantic grey seal population 1977-2007. CSAS Research Document 2007/082.
41. Bowen, W. D., Hammill, M. O., Koen-Alonso, M., Stenson, G., Swain, D.P., and Trzcinski K. 2008. Proceedings of the National Workshop on the Impacts of Seals on Fish Populations in Eastern Canada (Part 1). CSAS, Proceedings 2008/021.
40. Lidgard, D. and Bowen, W. D. 2008. Behavioural interactions between predators and their prey in marine ecosystems. CSAS Research Document 2008/032
39. Bowen, W.D, McMillan, J.I., Lidgard, D., and Blanchard, W. 2007. Continued reduction in population growth rate of grey seals at Sable Island. CSAS Research Document 2007/087

38. Bowen, W. D., Boness, D. J., and Lowry, L. L. 2007. Review of the 2007 Draft Steller Sea Lion Recovery Plan. For the The North Pacific Fishery Management Council. July 2007. 25 p.
37. Zwanenburg, K.C.T., Bundy, A., Strain, P., Bowen, W.D., Breeze, H., Campana, S.E., Hannah, C., Head, and Gordon, D. 2006. Implications of ecosystem dynamics for the management of the eastern Scotian Shelf. *Can. Tech. Rep. Fish. Aquat. Sci.* 2652: xiii, 91 p.
36. Trzcinski, M. K., Mohn, R. and Bowen, W.D. 2005. Estimation of grey seal population size and trends at Sable Island. *DFO Can. Sci. Advis. Sec. Res. Doc.* 2005/067.
35. Bowen, W.D, McMillan, J.I., and Blanchard, W. 2005. Reduced rate of increase in grey seals at Sable Island: an estimate of 2004 pup production. *DFO Can. Sci. Advis. Sec. Res. Doc.* 2005/068.
34. Bowen, W.D. 2005. From the Editor: Reflections with comments on the collection and analysis of data. *Marine Mammal Science* 21:178-183.
33. Thiemann, G.W., Budge, S.M., Bowen, W.D., and Iverson, S.J. 2004. Comment on Grahl-Nielsen et al. (2003) 'Fatty acid composition of the adipose tissue of polar bears and of their prey: ringed seals, bearded seals and harp seals. *Marine Ecology Progress Series* 281: 297-301.
32. Bowen, W. D. 2004. Report of Seal Exclusion Zone Workshop. *DFO Can. Sci. Advis. Sec., Proceed. Ser.* 2004/022.
31. Bowen, W. D., Harwood, J, Goodman, D. and Swartzman, G. L. 2001. Review of the November 2000 Biological Opinion and Incidental Take Statement with Respect to the Western Stock of the Steller Seal Lion, with Comments on the Draft August 2001 Biological Opinion. Report to the North Pacific Fisheries Management Council, September 2001.
30. Reeves, R. (ed.) Canadian recovery plan for the North Atlantic right whale. DFO, Ottawa.
29. Boudreau, P. R., and 23 other authors, including W. D. Bowen. 1999. The possible environmental impacts of petroleum exploration activities on the Georges Bank ecosystem. *Can. Tech. Rep. Fish. Aquat. Sci.* 2259.
28. Bowen, W. D., Goodman, D., Northridge, S. P., Swain, D. P., and Swartzman, G. L. 1999. Report of the Independent Review of the scientific bases for the 3 Dec 98 Biological Opinion regarding interactions between Steller sea lions and Bering Sea and Gulf of Alaska pollock fisheries. Report to the North Pacific Fisheries Management Council, April 1999.
27. Whitehead, H., Bowen, W. D., Hooker, S. K., and Cowans, S. 1998. Marine Mammals, p 186-221. In *The Gully: A scientific review of its environment and ecosystem*. Eds. Harrison, W. G. and Fenton, D. G. CSAS Research Doc. 98/83.
26. Anon. 1997. Report of the Workshop on harp seal-fishery interactions in the Northwest Atlantic: Toward research and management actions. 24-27 Feb. 1997, St. John's, NF. Sponsored by Canadian Centre for Fisheries Innovation and Memorial University of Newfoundland. (W. D. Bowen served as one of two rapporteurs).

25. Mohn, B. and Bowen, W. D. 1994. A model of the effect of culling and female contraception on the population dynamics of Sable Island grey seals. DFO Atlantic Fisheries Research Doc. 94/xx.
24. Mohn, B. and Bowen, W. D. 1994. A model of grey seal predation on 4VsW cod and its effects on the dynamics and potential yield of cod. DFO Atlantic Fisheries Research Doc. 94/64.
23. Bowen, W. D. 1993. The population energetics of seals on the Scotian Shelf. *BIO Review* 91/92, p. 13-17.
22. Bowen, W. D. 1992. Book review of Harps and Hoods: Ice-breeding seals of the northwest Atlantic. *Marine Mammal Sci.* 8:94-95.
21. Bowen, W. D. 1989. Book review of Approaches to Marine Mammal Energetics. *Amer. Sci.* 77:496.
20. Bowen, W. D. 1988. Sealworm (*Pseudoterranova decipiens*), grey seals, and fisheries: A review. *ICES C.M.* 1988/N:6, Session O.
19. Bowen, W. D. (ed.) 1987. A review of stock structure in the Gulf of Maine Area: A workshop report. *CAFSAC Res. Doc.* 87/21. 51p.
18. Zwanenberg, K. C. T., W. D. Bowen, and D. E. Sergeant. Assessment of northwest Atlantic grey seal pup production for 1977 to 1984. *CAFSAC Res. Doc.* 85/67.
17. Hay, K., R. A. Myers, and W. D. Bowen. 1985. Estimation of pup production of hooded seals in the northwest Atlantic during March 1984. *NAFO SCR Doc.* 85/1/14. Serial No. N948.
16. Bowen, W. D. and D. E. Sergeant. 1985. A mark-recapture estimate of harp seal pup production in 1983. *NAFO SCR Doc.* 85/1/1. Serial No. N935.
15. Bowen, W. D. 1985. An estimate of the proportion of recovered harp seal tags returned for reward: the 1983 mark-recapture experiment. *NAFO SCR Doc.* 85/1/2. Serial No. N936.
14. Bowen, W. D. and K. Hay. 1983. Observation on pup growth and the condition of lactating female hooded seals. *Inter. Workshop on the biology of Hooded Seals, Bergen, Norway.*
13. Bowen, W. D. 1983. The harp seal. *Underwater World Factsheet.* DFO 8p.
12. Winters, G., K. Hay, and W. D. Bowen. 1982. Review of the demography of hooded seals in the northwest Atlantic. *ICES Ad Hoc Working Group on Harp and Hooded Seals, Copenhagen.*
11. Roff, D. and W. D. Bowen. 1981. Analyses of harp seal population dynamics, 1967-1980. *NAFO SCR Doc.* 81/11/166. Serial No. N474.
10. Bowen, W. D. 1981. Further estimates of harp seal pup production between 1978 and 1980. *NAFO SCR Doc.* 81/11/152. Serial No. N453.
9. Bowen, W. D. and D. E. Sergeant. 1981. Mean age at sexual maturity and age-specific pregnancy rates of northwest Atlantic harp seals in 1980 and 1981. *NAFO SCR Doc.* 81/11/152. Serial No. N459
8. Bowen, W. D. 1981. Harp seals and their foods: How do they interact. *NAFO SCR Doc.* 81/11/154. Serial No. N461.
7. Roff, D. and W. D. Bowen. 1980. One, two, many: How many harp seals are there? *NAFO SCR Doc.* 80/11/161. Serial no. N248.

6. Doubleday, W. G. and W. D. Bowen. 1980. Inconsistencies in reading the age of harp seal teeth, their consequences, and a means of reducing resulting bias. NAFO SCR Doc. 80/11/160. Serial No. N247.
5. Bowen, W. D. and D. E. Sergeant. 1980. Estimates of harp seal pup production from mark-recapture. NAFO SCR Doc. 80/11/162. Serial No. N248.
4. Bowen, W. D. and G. H. Winters. 1979. On population size and sustainable yield in northwest Atlantic harp seals. NAFO SCR Doc. 79/11/12. Serial No. N023.
3. Bowen, W. D. and D. E. Sergeant. 1979. Research on the population biology of harp seals in 1979. NAFO SCR Doc. 79/11/3.
2. Bowen, W. D. 1979. Changes in harp seal reproductive parameters: Another look. NAFO SCR Doc. 79/11/1.
1. Bowen, W. D. 1979. A mark-recapture estimate to determine harp seal pup production on the Front in 1979. NAFO SCR Doc. 79/11/4.

#### **Manuscripts in Under Review:**

- Bowen, W. D. and Lidgard, D. Vertebrate predator control in terrestrial and aquatic ecosystems with particular focus on marine mammals. *Mammal Review*
- Bowen, W. D. and Iverson, S. J. Validation of hard part and quantitative fatty acid methods of estimating marine mammal diets: experimental evidence, sources of bias and uncertainty. *Mar. Mamm. Sci.*
- S Tucker, GB Stenson, WD Bowen and SJ Iverson. Fueling Phocids: divergent exploitation of primary energy sources and parallel ontogenetic diet switches among three species of sub-arctic seals
- Hammill, M. O., W. D. Bowen and B. Sjare. Status of harbour seals in Atlantic Canada. NAMMCO Special Publication.
- Benoît, H. P., D. P. Swain, W. D. Bowen, G. A. Breed, M. O. Hammill and V. Harvey Can predation by grey seals explain elevated natural mortality in three fish species in the southern Gulf of St. Lawrence? *ICES J. Mar. Sci.*
- Heaslip, S. G.**, M. C. James, S. J. Iverson, and W. D. Bowen. Giant turtles (*Dermochelys coriacea*) pursue giant jellyfish in temperate Canadian waters as revealed by animal-borne cameras. *PlosOne*.
- Lidgard, D. C.**, W. D. Bowen, D. J. Boness. Longitudinal changes in male physical traits and the implications for mating behaviour and success in a long-lived polygynous mammal, the grey seal. *Can. J. Zool.*

### Thesis Supervised:

- Blanchard, J. W. 2011. Inference on the diet composition of predators using fatty acid signatures: An application of Bayesian inference on linear mixing models. Ph.D. thesis. Dalhousie University, Halifax, N.S.
- Lang, S. 2009. The influence of reproductive experience on lactation performance in a capital breeding mammal: the grey seal (*Halichoerus grypus*). Ph.D. thesis. Dalhousie University, Halifax, N.S.
- Breed, G. 2008. State-space analyses indicate experience, prey availability, competition, and reproductive status drive foraging behaviour in a top marine predator. Ph.D. thesis. Dalhousie University, Halifax, N.S.
- Tucker, S. 2007. Defining sources of variation in diets of northern phocids using stable isotopes and quantitative fatty acid signature analysis. Ph.D. thesis. Dalhousie University, Halifax, N.S.
- Austin, D. 2004. Movement, diving and foraging success in a large, sexually dimorphic marine predator: Insights from telemetry. Ph.D. thesis. Dalhousie University, Halifax, N.S.
- Cooper, M. 2004. Fatty Acid Metabolism in Marine Carnivores: Implications for Quantitative Estimation of Predator Diets. Ph.D. thesis. Dalhousie University, Halifax, N.S.
- Beck, C. A. 2002. Sex differences in the foraging ecology of a size-dimorphic marine carnivore. Ph.D. thesis. Dalhousie University, Halifax, N.S.
- Schulz, T. 2001. The evolution of lactation strategies in pinnipeds: a phylogenetic analysis. M.Sc. Thesis, Dalhousie University, Halifax, N. S.
- Tully, D. 1999. Analysis of foraging behaviour of adult male harbour seals using animal-borne video data: effects of prey type on tactics and profitability. M.Sc. Thesis, Dalhousie University, Halifax, N. S.
- Mellish, J-A. 1999. Physiology of milk fat secretion and neonatal fat deposition during lactation in phocid seals. Ph.D. Thesis. Dalhousie University, Halifax, N. S.
- Ellis, S. 1998. Maternal effects on offspring traits from birth to weaning in the harbour seal. Ph.D. Thesis. Dalhousie University, Halifax, N. S.
- Muelbert, M. M. C. 1998. The influence of size at weaning on the transition to nutrition independence in the harbour seal: is bigger better? Ph.D. Thesis. Dalhousie University, Halifax, N. S.
- Coltman, D. W. 1996. Phenotype and mating success of male harbour seals (*Phoca vitulina*) at Sable Island, Nova Scotia. Ph.D. Thesis. Dalhousie University, Halifax, N.S.
- Walker, B. G. 1992. Mass changes and feeding behaviour of subadult and adult male harbour seals, *Phoca vitulina*, during the breeding season. M.Sc. Thesis, Dalhousie Univ.
- Muelbert, M. M. C. 1991. Weaning and post-weaning changes in body mass and body composition of harbour seal pups, *Phoca vitulina*, on Sable Island. M.Sc. Thesis, Dalhousie Univ.

- Glazebrook, K. 1991. The use of ultrasound and isotope dilution to estimate body composition and food intake in pregnant and non-pregnant captive harbour seals (*Phoca vitulina concolor*). M.Sc. Thesis, Dalhousie Univ.
- Ross, P. S. 1990. Immunocompetence of free-ranging harbour seal (*Phoca vitulina*) mothers and their pups over the course of lactation. M.Sc. Thesis, Dalhousie Univ.
- Benoit, D. 1989. Feeding ecology of the northwest Atlantic grey seal (*Halichoerus grypus*). M.Sc. Thesis, Dalhousie Univ.