

Sean Charles Anderson

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Education

- Present Ph.D. Student, Simon Fraser University, Burnaby, Canada
Supervisors: Dr. Nicholas K. Dulvy and Dr. Andrew B. Cooper.
- 2010 M.Sc. Biology, Dalhousie University, Halifax, Canada
Thesis title: Trends, drivers, and ecosystem effects of expanding global invertebrate fisheries. Supervisor: Dr. Heike K. Lotze. ([PDF](#))
Governor General's Academic Gold Medal for the top-ranked Master's Natural Sciences and Engineering thesis at Dalhousie University in 2010
- 2004–07 B.Sc. (Hons.) Environmental Science, Dalhousie University, Halifax, Canada
Thesis title: How sustainable are emerging low-trophic level fisheries on the Scotian Shelf? Supervisors: Dr. Heike K. Lotze and Dr. Ransom A. Myers. ([PDF](#))
First Class Honours & Environmental Programmes Honour Society Medal
- 2001–03 B.Sc. Candidate (Hons.) Kinesiology, University of Waterloo, Waterloo, Canada
Transferred to Dalhousie University in 2004.

Publications

Peer-reviewed articles

- 2011 **Anderson, S.C.**, B.G. Farmer, F. Ferretti, A.L.S. Houde, and J.A. Hutchings. Correlates of vertebrate extinction risk in Canada. *BioScience*. 61(7): 538–549. [doi:10.1525/bio.2011.61.7.8](https://doi.org/10.1525/bio.2011.61.7.8).
- 2011 **Anderson, S.C.**, J. Mills Flemming, R. Watson, H.K. Lotze. Serial exploitation of global sea cucumber fisheries. *Fish and Fisheries*. 12(3): 317–339. [doi:10.1111/j.1467-2979.2010.00397.x](https://doi.org/10.1111/j.1467-2979.2010.00397.x). [Featured in Science](#) on January 14 2011.
- 2011 Boudreau, S.A., **S.C. Anderson**, B. Worm. Top-down interactions and temperature control of snow crab abundance in the northwest Atlantic. *Marine Ecology Progress Series*. 429: 169–183. [doi:10.3354/meps09081](https://doi.org/10.3354/meps09081).
- 2011 **Anderson, S.C.**, J. Mills Flemming, R. Watson, H.K. Lotze. Rapid global expansion of invertebrate fisheries: trends, drivers, and ecosystem effects. *PLoS ONE*. 6(3): e14735. [doi:10.1371/journal.pone.0014735](https://doi.org/10.1371/journal.pone.0014735).
- 2008 **Anderson, S.C.**, H.K. Lotze, and N.L. Shackell. Evaluating the knowledge base for expanding low-trophic-level fisheries in Atlantic Canada. *Can. J. Fish. Aquat.*

Sci. 65(12): 2553–2571. doi:10.1139/F08-156. Eighth most-read CJFAS article in 2008.

Manuscripts submitted or in review

2011 **Anderson, S.C.**, T.A. Branch, D. Ricard, H.K. Lotze. Assessing global marine fishery status with a revised dynamic catch-based method and stock-assessment reference points. In review at the ICES Journal of Marine Science.

Awards and fellowships/scholarships

2011 Governor General's Academic Gold Medal for the top-ranked Master's Natural Sciences and Engineering thesis at Dalhousie University in 2010

2011–14 Provost Prize of Distinction, Simon Fraser University

2011–14 Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship (Doctoral)

2007–10 Faculty Research Grant Scholarship, Dalhousie University

2007–09 Graduate Studies Scholarship, Dalhousie University

2007 Environmental Programmes Honour Society Medal, Dalhousie University

2001–03 Academic All-Canadian, University of Waterloo

2001–02 Dean's Entrance Scholarship, University of Waterloo

Invited talks and conference presentations

2010 **Anderson, S.C.** The rise of invertebrates, the fall of sea cucumbers, and the risk of maturing late. Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.

2009 **Anderson, S.C.**, J. Mills Flemming, R. Watson, H.K. Lotze. Ecosystem impacts of the global expansion of invertebrate fisheries. International Oceans Past II Conference *Multidisciplinary Perspectives on the History and Future of Marine Animal Populations*. Vancouver, BC, Canada.

2009 **Anderson, S.C.**, J. Mills Flemming, R. Watson, H.K. Lotze. Global invertebrate fisheries: trends and consequences. NCEAS (National Center for Ecological Analysis and Synthesis) Working Group *Finding Common Ground in Marine Conservation and Management*. Santa Barbara, CA, USA.

2009 **Anderson, S.C.**, H.K. Lotze, N.L. Shackell. Evaluating the knowledge base for expanding low-trophic level fisheries in Atlantic Canada. Harvest Fisheries Seminar Series. Bedford Institute of Oceanography, Fisheries and Oceans, Dartmouth, NS, Canada.

2008 **Anderson, S.C.**, H.K. Lotze, N.L. Shackell. Evaluating the knowledge base for expanding low-trophic level fisheries in Atlantic Canada. Departmental Seminar,

Biology Department, Dalhousie University, Canada.

Contract employment

- 2011–13 Database management and data analyses for the project *Global Shark Abundance Baselines* (Hopkins Marine Station, Stanford University, CA, United States) with F. Micheli, F. Ferretti, N.K. Dulvy, H.K. Lotze, and B. Worm.
- 2010 Assessment of Arctic surfclam on Banquereau Bank using industry collected data for Clearwater Seafoods, Bedford, NS, Canada.
- 2010 Modelling length-frequency distribution changes of Atlantic halibut for NAFO Divisions 4VWX5Z and 3NOP for Dr. K. Trzcinski, Population Ecology Division, Bedford Institute of Oceanography, Fisheries and Oceans, Dartmouth, NS, Canada.

Working groups and workshops

- 2011–13 NESCent (National Evolutionary Synthesis Center, Durham, NC) Working Group *Determinants of Extinction in Ancient and Modern Seas* led by Paul Harnik, Seth Finnegan, and Rowan Lockwood. ([URL](#))
- 2010 Atlantic Halibut Assessment Science Peer Review Meeting, Fisheries and Oceans, Dartmouth, NS, Canada.
- 2007–09 NCEAS (National Center for Ecological Analysis and Synthesis, Santa Barbara, CA) Distributed Graduate Seminar, in association with the Working Group *Finding Common Ground in Marine Conservation and Management* led by Ray Hilborn and Boris Worm. ([URL](#))
- 2008 Workshop on Canadian Science and Management Strategies for Sea Cucumber (*Cucumaria frondosa*), Fisheries and Oceans, Dartmouth, NS, Canada (work presented *in absentia*).
- 2007 Workshop on Canadian Science and Management Strategies for Atlantic Hagfish, Fisheries and Oceans, Dartmouth, NS, Canada. ([URL](#))

Selected courses and training

- Present Proficient in statistical analyses and data management using R, WinBUGS, Sweave, \LaTeX , Perl, PostgreSQL, Git.
- 2011 Presenting Data and Information, Edward Tufte, Seattle, WA, United States.
- 2010 State-Space Models for Ecologists, Dr. I. Jonsen, Department of Biology, Dalhousie University (audited).
- 2009 Technical Expertise in Stock Assessment: Model Fitting and Interpretation by Dr. C. Needle, chair of the International Council for the Exploration of the Sea working group on methods of fish stock assessment, Dalhousie University.

- 2008 Data Analysis, Dr. J. Mills Flemming, Department of Mathematics & Statistics, Dalhousie University (audited).
- 2007 Analysis of Biological Data, Dr. H. Whitehead, Department of Biology, Dalhousie University.

Teaching experience

- 2011 Multipanel plotting in R with base graphics. Earth2Ocean Research Group. ([notes](#), [slides](#)). Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.
- 2011 A brief introduction to R. Earth2Ocean Research Group. ([notes](#), [workshop code](#)). Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.
- 2011 Workshop on the R package plyr ([notes](#), [slides](#)). Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.
- 2007–08 Teaching Assistant, Organismal Biology and Ecology, Dalhousie University, two semesters (BIOL 1021).
- 2007–08 Teaching Assistant, Marine Mammology, Dalhousie University (BIOL 4060).

Reviews

- 2011 Reviewer for Ecology, Conservation Biology, Fish and Fisheries, International Journal of Tropical Biology and Conservation
- 2010 Reviewer for the Journal of Environmental Management
- 2009 Reviewer for SeaChoice (Canada's Seafood Guide)

References

Dr. Heike K. Lotze, Associate Professor, Canada Research Chair in Marine Renewable Resources, Dalhousie University, Department of Biology, Halifax, NS, Canada, B3H 4J1, 1-902-494-3406, hlotze@dal.ca

Dr. Nicholas K. Dulvy, Associate Professor, Canada Research Chair in Marine Biodiversity and Conservation, Simon Fraser University, Biological Sciences, Burnaby, BC, Canada, V5A 1S6, 1-778-782-4142, dulvy@sfu.ca

Dr. Andrew B. Cooper, Associate Professor, Simon Fraser University, School of Resource and Environmental Management, Burnaby, BC, Canada, V5A 1S6, 1-778-782-3954, andrew_cooper@sfu.ca