

CURRICULUM VITAE

Jonathan A. D. Fisher

Fisheries Research Scientist
Centre for Fisheries Ecosystems Research
Fisheries and Marine Institute of Memorial University of Newfoundland
P.O. Box 4920
St. John's, NL
A1C 5R3
Canada

E-mail: Jonathan.Fisher@mi.mun.ca
Phone: +1-709-778-0652
FAX: +1-709-778-0669

ACADEMIC APPOINTMENT

Fisheries Research Scientist (*August 2011—*). Centre for Fisheries Ecosystems Research, Fisheries and Marine Institute, Memorial University of Newfoundland, St. John's Newfoundland.

POSTDOCTORAL EXPERIENCE

Postdoctoral Fellow (*July 2007—August 2011*). Department of Biology, Queen's University, Kingston, Ontario and Ocean Sciences Division, Bedford Institute of Oceanography, Dartmouth, Nova Scotia.

EDUCATION

Ph.D., Department of Biology, University of Pennsylvania, Philadelphia, Pennsylvania, USA, August 2007.

Dissertation title: "Variation among dogwhelks (*Nucella lapillus*) modifies predator-prey interactions within intertidal assemblages." Research advisor: Dr. Peter S. Petraitis.

M.Sc., Department of Biology, Dalhousie University, Halifax, Nova Scotia, Canada, May 2003.

Thesis title: "Finfish community change in the Northwest Atlantic: responses to a long-term area closure on the Scotian Shelf and testing the generality of the abundance-distribution relationship." Research advisor: Dr. Kenneth T. Frank.

B.Sc. (Honours), Department of Biology, Queen's University, Kingston, Ontario, Canada, May 2000.

Thesis title: "Interpretation and analysis of marine larval fish otolith microstructures." Research advisor: Dr. William C. Leggett.

RESEARCH INTERESTS (ALPHABETICAL)

Biogeography; Body Size; Climate Change; Community Ecology; Conservation Biology; Fish Ecology; Fisheries Oceanography; Fish-Habitat Associations; Food Webs; History of Ecology; Human Impacts; Intertidal Ecology; Invertebrate Biology; Macroecology; Marine Monitoring Programs; Marine Protected Areas.

PUBLICATIONS

Frank, K.T., B. Petrie, J.A.D. Fisher, and W.C. Leggett. 2011. Transient dynamics of an altered large marine ecosystem. *Nature* doi:10.1038/nature10285

Fisher, J.A.D., K.T. Frank, V.E. Kostylev, N.L. Shackell, T. Horsman, and C. G. Hannah. 2011. Empirical validation of habitat template model predictions: spatial variations in marine fish diversity across the Scotian Shelf, Northwest Atlantic. *ICES Journal of Marine Science* doi:10.1093/icesjms/fsr147

Shackell, N.L., J.A.D. Fisher, K.T. Frank, and P. Lawton. 2011. Deterioration of spatial similarity among large-bodied fish assemblages in the Northwest Atlantic. *Ecological Applications* doi:10.1890/10-2093.1

Fisher, J.A.D., K.T. Frank, and W.C. Leggett. 2010. Breaking Bergmann's rule: truncation of Northwest Atlantic marine fish body sizes. *Ecology* 91:2499-2505.

Archambault, P., P. Snelgrove, J.A.D. Fisher, J.-M. Gagnon, D.J. Garbary, M. Harvey, E. Kenchington, V. Lesage, M. Levesque, C. Lovejoy, D. Mackas, C.W. McKindsey, J. Nelson, P. Pépin, L. Piché, and M. Poulin. 2010. From sea to sea: Canada's three oceans of biodiversity. *PLoS One* 5:e12182. doi:10.1371/journal.pone.0012182.

Fisher, J.A.D., K.T. Frank, and W.C. Leggett. 2010. Global variation in marine fish body size and its role in biodiversity-ecosystem functioning. *Marine Ecology Progress Series* 405:1-13.

Shackell, N.L., K.T. Frank, J.A.D. Fisher, W.C. Leggett, and B. Petrie. 2010. Decline in top predator body size and changing climate alter trophic structure in an oceanic ecosystem. *Proceedings of the Royal Society of London, Series B* 277:1353-1360.

Fisher, J.A.D. 2010. Parasite-like associations in rocky intertidal assemblages: implications for escalated gastropod defenses. *Marine Ecology Progress Series* 399:199-209.

Fisher, J.A.D., K.T. Frank, and W.C. Leggett. 2010. Dynamic macroecology on ecological time-scales. *Global Ecology and Biogeography* 19:1-15.

Fisher, J.A.D., E.C. Rihle, H. Liu, and P.S. Petraitis. 2009. An intertidal snail shows a dramatic size increase over the past century. *Proceedings of the National Academy of Sciences of the USA*. 106:5209-5212.

Fisher, J.A.D., K.T. Frank, B. Petrie, W.C. Leggett, and N.L. Shackell. 2008. Temporal dynamics within a contemporary latitudinal diversity gradient. *Ecology Letters* 11:883-897.

Fisher, J.A.D. 2008. Using polyclonal antibodies to detect predation by dogwhelks *Nucella lapillus* (L.). *Journal of Experimental Marine Biology and Ecology* 361:28-35.

Fisher, J.A.D. 2005. Exploring ecology's attic: overlooked ideas on intertidal food webs. *Bulletin of the Ecological Society of America* 86(3):145-151.

Fisher, J.A.D. and K.T. Frank. 2004. Abundance-distribution relationships and the conservation of exploited marine fishes. *Marine Ecology Progress Series* 279:201-213.

Fisher, J.A.D. and K.T. Frank. 2002. Changes in finfish community structure associated with an offshore fishery closed area on the Scotian Shelf. *Marine Ecology Progress Series* 240:249-265.

OTHER PUBLICATIONS (BOOK REVIEW, BOOK CHAPTERS)

Fisher, J.A.D. and K.T. Frank. 2008. Book Review: Allee Effects in Ecology and Conservation. *Limnology and Oceanography Bulletin* 17:120-121.

Petratis, P.S., J.A.D. Fisher, and S.R. Dudgeon. 2008. Ecosystems: Rocky intertidal. Pages 3107-3113 in S.E. Jørgensen, and B.D. Fath (editors). *Encyclopedia of Ecology*. Elsevier Publishers, Oxford, U.K.

Fisher, J.A.D. and K.T. Frank. 2005. Canadian Case Studies: closed areas on the Scotian Shelf. Pages 51-57 in M.E. Petruny-Parker, K.M. Castro, M.L. Schwartz, L.G. Skrobe, and B. Somers (editors). *Proceedings of the New England Workshops on Marine Protected Areas*. Rhode Island Sea Grant, Narragansett, Rhode Island.

Fisher, J.A.D. 2004. The Emerald and Western Banks closed area community: changing patterns and their comparison. Pages 211-223 in J. B. Shipley, editor. *Aquatic Protected Areas as Fisheries Management Tools*. American Fisheries Society Symposium 42, Bethesda, Maryland.

PRESENTATIONS

Fisher, J.A.D. 2011. Quantifying marine fish connectivity on the Scotian Shelf: results from four decades of ecosystem monitoring. American Society of Limnology and Oceanography Aquatic Sciences Meeting, San Juan, PR.

Fisher, J.A.D. 2011. Are thermally sensitive slope water fishes climate change canaries? Responses to the North Atlantic Oscillation. Canadian Conference for Fisheries Research, Toronto, ON.

- Fisher, J.A.D. 2010. Spatial dynamics of Northwest Atlantic predator-prey interactions. American Society of Limnology and Oceanography and American Geophysical Union Ocean Sciences Meeting 2010, Portland, OR.
- Fisher, J.A.D. 2009. Resource monitoring programs for marine finfish and invertebrates: challenges to informing ecosystem-based management. Gulf of Maine Symposium, Regional Association for Research on the Gulf of Maine, St. Andrews, NB. (*Invited*).
- Fisher, J.A.D. 2009. Dynamic macroecology: the influences of fisheries and climate. Department of Natural Resource Sciences, McGill University, Montreal, QC. (*Invited*).
- Fisher, J.A.D. 2009. Global patterns in marine fish body sizes and the ‘tropicalization’ of Northwest Atlantic large marine ecosystems. Second international ‘Sizemic’ workshop: “Body size and ecosystem dynamics: implications for conservation and management of natural resources,” Strömstad, Sweden. (www.sizemic.org)
- Fisher, J.A.D. 2009. Climate forcing: marine fish responses. NOAA, NMFS, Maine Sea Grant Workshop: Investigation of Nearshore Migration of Atlantic Salmon in the Gulf of Maine Region, Portland, ME. (*Invited. Presentations will be made available via http://www.seagrant.umaine.edu/program/nmfs_salmon.htm*).
- Fisher, J.A.D. 2008. Shifted baselines in a model organism: a common marine snail shows a dramatic size increase over the past century. Department of Biology Seminar Series, Dalhousie University, Halifax, NS. (*Invited*).
- Fisher, J.A.D. 2008. North Atlantic oscillation variability influences latitudinal trends in marine fish species richness. American Fisheries Society 138th Annual Meeting, Ottawa, ON. (*Invited. Symposium: Sensitivity of Fish and Fisheries to Climate Change*).
- Fisher, J.A.D. 2008. North Atlantic oscillation variability influences latitudinal trends in marine fish species richness. American Society for Limnology and Oceanography Annual Meeting, St. John’s, NL. (*Symposium: Basin-scale Effects of Climate Change on North Atlantic Marine Ecosystems*).
- Fisher, J.A.D. 2008. North Atlantic oscillation variability influences latitudinal trends in marine fish species richness. Harvest Fisheries Seminar Series, Bedford Institute of Oceanography, Dartmouth, NS.
- Fisher, J.A.D. 2008. Interannual climate variability influences gradients of marine fish diversity. Atlantic Provinces Council for the Sciences Environmental Studies Conference, St. Francis Xavier University, Antigonish, NS. (*Invited. Keynote Presenter*).
- Fisher, J.A.D. 2008. North Atlantic oscillation variability influences latitudinal trends in marine fish species richness. Canadian Conference for Fisheries Research, Halifax, NS.

- Fisher, J.A.D. 2007. Parasitic worms in gastropod shells facilitate predation by alien crabs in Maine. The Academy of Natural Sciences of Philadelphia Research Seminar Series, Philadelphia, PA. (*Invited*).
- Fisher, J.A.D. 2006. Immunological analyses of geographic variation in dogwhelk (*Nucella lapillus*) predation around the Gulf of Maine. 7th International Temperate Reefs Symposium, Santa Barbara, CA.
- Fisher, J.A.D. 2006. Discovery and rediscovery in the intertidal. Ecological Society of America's 91st Annual Meeting, Memphis, TN. (*Invited. Symposium: Upstarts and Icons in Ecology. Symposium reviewed by Aaron M. Ellison: 'What makes an ecological icon?' Bulletin of the Ecological Society of America 87:380-386, via <www.esajournals.org/toc/ebul/87/4>*).
- Fisher, J.A.D. 2006. Observations and immunological analyses of dogwhelk (*Nucella lapillus*) predation on mussels (*Mytilus edulis*) and barnacles (*Semibalanus balanoides*). Benthic Ecology Meeting, Québec City, QC.
- Fisher, J.A.D. 2004. Large spatial-scale and long temporal-scale patterns of *Mytilus edulis* recruitment on rocky shores in Maine. Benthic Ecology Meeting, Mobile, AL.
- Fisher, J.A.D. 2003. Closed areas on the Scotian Shelf: Canadian research findings. Sea Grant Marine Protected Area Workshops (*Invited presentations at the University of Rhode Island, University of Connecticut and University of New Hampshire. Fisheries Educational Workshop Project site: <http://seagrant.gso.uri.edu/reg_fish/edworkshops/index.html>*).
- Fisher, J.A.D. 2003. Abundance-distribution relationships for finfish species on the Scotian Shelf. Penn-Princeton-Rutgers Ecology and Evolution Student Meeting, Philadelphia, PA.
- Fisher, J.A.D. 2003. Changes in finfish community structure associated with an offshore fishery closed area on the Scotian Shelf. American Fisheries Society 133rd Annual Meeting Québec City, QC. (*Invited. Highlighted Symposium: Aquatic Protected Areas*).
- Fisher, J.A.D. 2002. Changes in finfish community structure associated with an offshore fishery closed area on the Scotian Shelf. Harvest Fisheries Seminar Series, Bedford Institute of Oceanography, Dartmouth, NS.
- Fisher, J.A.D. 2002. Changes in finfish community structure associated with an offshore fishery closed area on the Scotian Shelf. Canadian Conference for Fisheries Research, Vancouver, BC.
- Fisher, J.A.D. 2000. Analysis of marine larval fish otolith microstructures. Department of Marine Ecology, University of Århus, Denmark.

INVITED PUBLIC LECTURE

Fisher, J.A.D. 2007. Form and function of *Nucella lapillus* (L.) from the Gulf of Maine. Presentation to the Philadelphia Shell Club, Philadelphia, PA.

SUPPORTED RESEARCH AND CONSULTING

Department of Fisheries and Oceans Canada (Bedford Institute of Oceanography, Dartmouth, Nova Scotia)—International Governance Strategy Science Program. “Predictive model for mapping vulnerable benthic ecosystems in the Northwest Atlantic”. In collaboration with Kenneth T. Frank (PI), Valdimir E. Kostylev, Nancy L. Shackell, and Tracy Horsman. \$46700 for FY 2010-2011.

Department of Fisheries and Oceans Canada (Bedford Institute of Oceanography, Dartmouth, Nova Scotia)—International Governance Strategy Science Program. “Verification of habitat template approach for detecting Vulnerable Benthic Ecosystems in the NAFO convention area.” In collaboration with Vladimir E. Kostylev (PI), Kenneth T. Frank, Nancy L. Shackell, and Tracy Horsman. \$85000 for FY 2009-2010.

Department of Fisheries and Oceans Canada (Maruice-Lamontagne Institute, Mont-Joli, Québec)—Supplied laboratory materials, methods, and demonstrated immunological detection of marine mussels in invasive Caprellid amphipod gut contents. \$1150 contract for assistance during Summer 2006.

University of Maine’s Ira C. Darling Marine Center—‘Addison E. Verrill Visiting Graduate Student Award.’ Awarded \$2494 in facility use and lodging during July-August 2006.

University of Pennsylvania, Department of Biology—‘Binns/Williams Fund for Research in Ecology and Evolution.’ Awarded \$750 in May 2006 to support experiments at the Darling Marine Center.

University of Pennsylvania, Department of Biology—‘Binns/Williams Fund for Research in Ecology and Evolution.’ Awarded \$1400 in May 2005 to pursue intertidal field work.

University of Pennsylvania, Department of Biology—‘Binns/Williams Fund for Research in Ecology and Evolution.’ Awarded \$1500 in May 2004 to develop and test antibodies specific to mussels and barnacles for studies of *Nucella lapillus* predation.

AWARDS

‘School of Arts and Sciences Dissertation Fellowship 2006-2007.’ Awarded \$18000 by the University of Pennsylvania’s Associate Dean for Graduate Studies to support recipients in their final year of study towards Ph.D. completion.

‘Warren Ewens Travel Award.’ Established by the faculty of the University of Pennsylvania’s Biology Department in 2006 to fund a graduate student’s travel in honor of Dr. Ewens’

retirement. Awarded \$750 in support to present at the 91st Annual Meeting of the Ecological Society of America.

TEACHING EXPERIENCE

University of Pennsylvania—7 semesters, including:

- Head teaching assistant and guest lecturer for “Humans and Their Environments” (Biol 140/440/ and Coll 003.002 for the College of General Studies).
- Teaching assistant for “The Molecular Biology of Life” (Biol 121).
- Head teaching assistant for “The Form and Function of Living Systems” (Biol 122).
- Teaching assistant for “Introductory Biology” (Biol 101, Biol 102 and Biol 102 for the College of General Studies).

Dalhousie University—4 semesters, including:

- Teaching assistant for “Principles of Biology, Part I” (Bio 1010).
- Teaching assistant for “Principles of Biology, Part II” (Bio 1011).

PROFESSIONAL AFFILIATIONS AND SERVICE

Member:

- American Fisheries Society
- American Society of Limnology and Oceanography
- Ecological Society of America
- International Council for the Exploration of the Seas (ICES) Working Group on the Northwest Atlantic Regional Seas (2010-)
- ICES Study Group on Designing Marine Protected Area (MPA) Networks in a Changing Climate (2010-)

Review Editor:

Marine Ecology Progress Series, since 2007.

Journal Reviewer:

Aquatic Biology, Biology Letters, Canadian Journal of Fisheries and Aquatic Sciences, Conservation Biology, Ecography, Ecological Applications, Ecology, Fisheries Research, Global Change Biology, Global Ecology and Biogeography, ICES Journal of Marine Science, Journal of Applied Ecology, Journal of Ecology, Journal of Fish Biology, Marine Biology, Marine Ecology Progress Series, Oikos, PLoS One, Proceedings of the National Academy of Sciences of the USA.