

CURRICULUM VITAE

DR. DAVID B. PREIKSHOT FISHERIES/AQUATIC ECOSYSTEMS BIOLOGIST



EDUCATION:

- Ph.D. Resource Management and Environmental Science (Fisheries Science),
University of British Columbia, 2007.
Dissertation: The Influence of geographic scale, climate and trophic
dynamics upon north Pacific oceanic ecosystem models.
- M.Sc. Zoology, University of British Columbia, 2000.
Thesis: An interdisciplinary assessment of tropical small scale fisheries
using multivariate statistics.
- B.Sc. Oceanography and Biology, University of British Columbia, 1995.
Honours Thesis: Potential effects of greenhouse warming on stock
specific energy use of adult sockeye salmon, *Oncorhynchus nerka*, in the
Fraser River
- B.A. History and Political Science, Royal Military College of Canada, 1989.

PROFESSIONAL EXPERIENCE

Fisheries Science and Oceanography

Research as Principal Investigator

I have designed and managed computer-based ecosystem modelling projects to investigate long-term population changes in managed species with consideration given to the effects of both climate and fishing. These projects included:

- Puget Sound, for the Northwest Indian Fisheries Commission (2000-2001),
- Chesapeake Bay, for the National Oceanographic and Atmospheric Administration (2001),
- Strait of Georgia, for the Musqueam First Nation (2001),
- Coastal waters of British Columbia for the Eulachon Conservation Society (2002).

Research as Post Doctoral Fellow

I am presently engaged as an NSERC Visiting Fellow at the Pacific Biological Station (Department of Fisheries and Oceans). In this work I am examining ecosystem and climate issues driving changes in salmon populations in the Strait of Georgia and helping construct an ecosystem model of changes in fished and managed species in the Strait of Georgia.

I integrated time series data of phytoplankton, zooplankton and climate effects for use in a salmon population model (MALBEC) to study mechanisms changing salmon populations across the North Pacific for the Universities of Washington and British Columbia (2007-2008).

Research as Doctoral Candidate

Developing ecosystem models of Northeast Pacific ecosystems to examine how area scale effects climate and fisheries mechanisms driving long-term changes in managed species (2001-2007).

Research as Co-Investigator, Consultant and Advisor

I have been a consultant to many fisheries biology projects and provided professional advice to fisheries organisations on a variety of ecosystem settings and species:

- Development of ecosystem models of the Peace River before and after development of the proposed Site C dam with ESSA Technologies (2010),
- Collaboration with ESSA Technologies in providing advice to the Department of Fisheries and Oceans Central and Arctic Region on the development of ecosystem models and approaches to research (2009),
- constructing ecosystem models to establish management baselines for fisheries in the Chesapeake Bay, for the Chesapeake Research Consortium (2001 to 2005),
- prepared reports on management and research responses to deal with the effects of climate change on Pacific salmon in Canada and the incorporation of ecosystem modelling in adopting strategic approaches to salmon management and research (2007 to 2008),
- science advisor to the Pacific Fisheries Resource Conservation Council for workshops (2007 to 2008),
- aided Department of Fisheries and Oceans research staff in the construction of an ecosystem model of the Strait of Georgia (2008),
- scientific advice for marine ecosystem models of the Atlantic Ocean around Iceland (1999) and the Northeast Pacific Ocean (1999 to 2007), in various contracts undertaken at the Fisheries Centre, University of British Columbia,
- field technical support for sockeye salmon acoustic tagging in the Fraser River, Department of Fisheries and Oceans Salmon Enhancement Project (1994),
- sorting and identification of juvenile salmonids from trawl surveys in the Strait of Georgia for the Department of Fisheries and Oceans (2005) and beach seine surveys in the Cowichan Estuary (2009, 2010).

Teaching

In 2009, I taught Geog 456: Issues in Natural Resource Management at Vancouver Island university to 3rd and 4th year Undergraduate students. In 2008 to 2010, I have served as a guest lecturer in Dick Beamish's fisheries management course.

From 1995 to 2005 I provided theoretical and applied instruction to graduate and undergraduate students at the University of British Columbia, in biology and marine ecology courses:

- Biostatistics,
- Invertebrate Anatomy,
- Vertebrate Anatomy,
- Field Research Techniques in Limnology and Oceanography,
- The Use of Ecopath With Ecosim to Model Aquatic Ecosystems.

Writing and Presentation of Research

Edited and peer-reviewed scientific articles for publications such as:

- Progress In Oceanography,
- Lowell-Wakefield Symposia Proceedings,
- Journal of Fish Biology,
- The Chapman and Hall Fish and Fisheries Series.

Wrote and published research papers for peer reviewed journals, government and private research reports and contributed chapters in textbooks to be used for undergraduate and graduate course instruction (see publications list for complete references).

Presented research, as lead author, at academic conferences:

- Oral Presentation: 'On the development of an Ecopath with Ecosim model of the Strait of Georgia at the Pacific Biological Station', Washington- British Columbia Chapter, American Fisheries Society Annual General Meeting, Nanaimo, March 2-4, 2010.
- Oral presentation: 'On the use of both unconventional and traditional time series data in constructing dynamic models of a marine ecosystem', Ecopath 25 years: conference and workshops, Vancouver BC, August/September 2009.
- Oral presentation: 'Comparisons of modeled climate and lower trophic level time series for the North Pacific from 1950 to 2002', The North Pacific Marine Science Organisation (PICES) 16th Annual Meeting The changing North Pacific: Previous patterns, future projections, and ecosystem impacts, Victoria BC, October/November 2007.
- Oral presentation: 'Climate impacts on productivity in salmon habitat domains across the North Pacific', The American Fisheries Society North Pacific International Chapter Annual General Meeting Session on Supporting Long-term, Large-scale Pacific Salmon Conservation with MALBEC, Tacoma, June 2007
- Oral presentation: 'Climate and fisheries effects upon biomass dynamics of North Pacific Ecosystem Models', The Canadian Climate Impacts and Adaptation Research Network Conference on Climate and Fisheries: Impacts, Uncertainty and Responses of Fishing Communities, Victoria BC, October 2005,

- Oral Presentation: 'Climate and fisheries effects upon ecosystem dynamics of the Strait of Georgia compared to larger Northeast Pacific ecosystems', The Puget Sound Georgia Basin Research Conference, Seattle, March 2005,
- Poster presentation: 'An examination of ecosystem dynamics across different spatial scales reflected by climate and fisheries effects in North Pacific Oceanic ecosystems', Quantitative Ecosystem Indicators for Fisheries Management, Paris, March/April 2004,
- Oral presentation: 'A Dynamic ecosystem model of South Puget Sound', The Fifth Puget Sound Research Conference, Seattle, February 2001,
- Poster Presentation: 'Back to the future': a method employing ecosystem modelling to maximise the sustainable benefits from fisheries', The Lowell-Wakefield International Symposium on Fisheries and Ecosystems, Anchorage, September 1998,
- Oral presentation: 'An interdisciplinary evaluation of the status and health of African lake fisheries using a rapid appraisal technique', The Fisheries Society of the British Isles Symposium on Tropical Fish Biology, University of Southampton, July 1998,
- Oral presentation: 'Multivariate interdisciplinary assessment of small-scale tropical fisheries', The Lowell-Wakefield International Symposium on Fishery Stock Assessment Models for the 21st Century, Anchorage Alaska, October 1997,

Management and Leadership

Appointed as Fisheries Centre Project Development Officer, while an M.Sc. student, and tasked to seek out funding opportunities and co-ordinate the preparation of multi-faculty-member proposals.

Elected as a Senator for the University of British Columbia during 1994/1995 and appointed as a member of:

- Appeals Committee on Academic Standing to hear and dispose of appeals by students from decisions of faculties on matters of academic standing,
- The Curriculum Committee to consider proposals from faculties for programs of study and degrees.

Served, for six years, as an officer in the Royal Canadian Navy and was charged with the leadership of personnel in high stress ship-board and land-based situations. Leadership roles included:

- Squadron Training Officer (Royal Military College),
- Flight Proctor (Royal Roads Military College),

- Squadron Commander (Second Language Training Course),
- Squadron Sports Officer (Royal Military College),
- Officer of the Watch at sea,
- Officer of the Day in harbour.

Successfully completed all phases of training through military career. Courses completed included:

- Basic Officer Training,
- French Language Education,
- Management of Ship Fire and Flood Damage Control,
- Navigation Watch Officer for Minesweepers,
- Harbour Watch Officer for Minesweepers and Destroyers,
- Small Boat Coxswain.

OTHER RELEVANT EXPERIENCE AND INFORMATION

Volunteer Service

Served as a volunteer member and participated in several environmental and community oriented groups including:

- Cowichan Stewardship Roundtable,
- Municipality of North Cowichan Environmental Advisory Committee,
- Duncan/North Cowichan Community Policing,
- Canadian Coast Guard Auxiliary Mill Bay Marine Rescue Society,
- Vancouver Aquarium.

I have functional ability in both written and oral French.

Professional References

Dr. R.J. Beamish Beamish, Pacific Biological Station, 3190 Hammond Bay Road, Nanaimo, BC, V9T 6N7.

Phone: 250 756 7029

E-mail: richard.beamish@pac.dfo-mpo.gc.ca

Dr. V. Christensen, Assoc. Professor, University of British Columbia Fisheries Centre, 2202 Main Mall (Aquatic Ecosystem Research Laboratory), Vancouver, BC, V6T 1Z4.

Phone: 604 822 5751

E-mail: v.christensen@fisheries.ubc.ca

Dr. D. Pauly, Professor, University of British Columbia Fisheries Centre, 2202 Main Mall (Aquatic Ecosystem Research Laboratory), Vancouver, BC, V6T 1Z4.

Phone: 604 822 1201

E-mail: d.pauly@fisheries.ubc.ca

PUBLICATIONS:

- Alder, J., T. Pitcher, D. Preikshot, K. Kaschner, and B. Ferris. 2000. How good is good?: a rapid appraisal technique for evaluation of the sustainability status of fisheries in the north Atlantic. In D. Pauly and T. Pitcher (eds.) *Methods for assessing the impact of fisheries on marine ecosystems of the north Atlantic*. Fisheries Centre Research Reports 8(2): pp. 136-182.
- Beamish, R.J., K.L. Lange, C.M. Neville, R.M. Sweeting, T.D. Beacham and D. Preikshot. 2010. Late ocean entry of sea-type sockeye salmon from the Harrison River in the Fraser River drainage results in improved productivity. NPAFC Doc. 1283: 30 pp. (Available at www.npafc.org).
- Beamish, R.J., R.M. Sweeting, K.L. Lange, D.J. Noakes, D. Preikshot and C.M. Neville. 2010. Early marine survival of coho salmon in the Strait of Georgia: declines to very low levels. *Mar. Coast. Fish: Dynam. Manage. Ecosys. Sci.* 2: 424–439.
- Beamish, R.J., R.M. Sweeting, C.N. Neville, K.L. Lange, T.D. Beacham, and D. Preikshot. In press. Wild chinook salmon survive better than hatchery salmon in a period of poor production. *Environmental Biology of Fishes - Ecological Interactions Special Issue*.
- Bonfil, R., G. Munro, U. R. Sumaila, H. Valtysson, M. Wright, T. Pitcher, D. Preikshot, N. Haggan, and D. Pauly. 1998. Impacts of distant water fleets: an ecological, economic, and social assessment. In: *The footprint of distant water fleets on world fisheries*. Endangered Seas Campaign, WWF International, Godalming, UK: pp. 9-111.
- Christensen, V., A. Beattie, C. Buchanan, H. Ma, S.J.D. Martell, R.J. Latour, D. Preikshot, M. B. Sigrist, J.H. Uphoff, C.J. Walters, R.J. Wood, and H. Townsend. 2009. *Fisheries Ecosystem Model of the Chesapeake Bay: Methodology, Parameterization, and Model Explanation*. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-F/SPO- 106, 146 p.

- Chuenpagdee, R., L. Liguori, D. Preikshot and D. Pauly. 2006. A Public sentiment index for ecosystem management. *Ecosystems* 9: 463-473.
- Guénette, S. V. Christensen, C. Hoover, M.E. Lam, D. Preikshot, and D. Pauly. 2007. A synthesis of research activities at the Fisheries Centre on ecosystem-based fisheries modelling and assessment with emphasis on the Northern and Central Coast of BC. *Fish. Ctr. Res. Rept.* 15(1): 32 p.
- Ma, Hongguang, H. Townsend, M.B. Sigrist, V. Christensen, C. Walters, J. Buszowski, J. Korman, and D. Preikshot. 2009. Constructing Historical Long-Term Primary Production in the Chesapeake Bay for Use in Ecosystem-Based Fisheries Management Models. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-F/SPO-105, 51 p.
- Mantua, N.J., N.G. Taylor, G.T. Ruggerone, K.W. Myers, D. Preikshot, X. Augerot, N.D. Davis, B. Dorner, R. Hilborn, R.M. Peterman, P. Rand, D. Schindler, J. Stanford, R.V. Walker, and C.J. Walters. 2007. The salmon MALBEC project: a North Pacific-scale study to support salmon conservation planning. *NPAFC Doc.* 1060: 49 p.
- Norris, D.R., P. Arcese, D. Preikshot, and D.F. Bertram, and T.K. Kyser. 2007. Diet reconstruction and historic population dynamics in a threatened seabird. *J. Appl. Ecol.* 44: 875-884.
- Pauly, D. M.L.D. Palomares, R. Froese, P. Sa-a, M. Vakily, D. Preikshot, and S. Wallace. 2001. Fishing down Canadian aquatic food webs. *Can. J. Fish. Aquat. Sci.* 58: pp. 51-62.
- Pauly, D., T. Pitcher and D. Preikshot (Editors.) 1998. Back to the Future: Reconstructing the Strait of Georgia Ecosystem Fisheries Centre Research Reports, Vol. 6 (4). University of British Columbia Fisheries Centre, Vancouver: 99p.
- Pitcher, T. and D. Preikshot. 2001. RAPFISH: a rapid appraisal technique to evaluate the sustainability status of fisheries. *Fish. Res.* 49: 255-270.
- Pitcher, T., A. Bundy, D. Preikshot, T. Hutton, and D. Pauly. 1998. Measuring the unmeasurable: a multivariate and interdisciplinary method for rapid appraisal of the health of fisheries. In T. Pitcher and P. Hart (eds.). *Reinventing Fisheries Management*. Chapman and Hall, London: pp. 31-54.
- Pitcher, T.J., S. Mackinson, M. Vasconcellos, L. Nottestad and D. Preikshot. 1998. Rapid appraisal of the status of fisheries for small pelagics using multivariate, multidisciplinary ordination. In T.J. Quinn II, F. Funk, J. Heifetz, J.N. Ianelli, J.E. Powers, J.F. Schweigert, P.J. Sullivan, C.-I. Zhang (eds.). *Fishery Stock Assessment Models*. Alaska Sea Grant, Fairbanks: pp. 759-782.
- Preikshot, D. 2008. Computer modelling of marine ecosystems: applications to Pacific salmon management and research. Pacific Fisheries Resource Conservation Council, Vancouver, BC: 29 p.
- Preikshot, D. 2008. Climate effects on Pacific salmon in the ocean: creating a Canadian focus. Pacific Fisheries Resource Conservation Council, Vancouver, BC: 61 p.

- Preikshot, D. 2007. The Influence of geographic scale, climate and trophic dynamics upon north Pacific oceanic ecosystem models. (PhD thesis). University of British Columbia, Resource Management and Environmental Studies and the Fisheries Centre, Vancouver, 208 pp.
- Preikshot, D. 2005. Data sources and derivation of parameters for generalised northeast Pacific Ocean Ecopath with Ecosim models. In S. Gu  nette and V. Christensen (eds.) Food web models and data for studying fisheries and environmental impacts on eastern Pacific ecosystems. UBC Fisheries Centre Research Report 13(1): 179-206.
- Preikshot, D. 2002. Ecosystem influences on population changes in eulachon (*Thaleichthys pacificus*) and examinations of management strategies using an ecosystem model. Eulachon Conservation Society, Denman Island, Canada: 61 p.
- Preikshot, D. 2000. An interdisciplinary assessment of tropical small scale fisheries using multivariate statistics (M.Sc. thesis). University of British Columbia, Department of Zoology, Vancouver: 105 p.
- Preikshot, D. 1998. Reinventing the Formulation of Policy in Future Fisheries. In T. Pitcher and P. Hart (eds.). Reinventing Fisheries Management. Chapman and Hall, London: pp. 113-123.
- Preikshot, D. 1998. Using interdisciplinary data in fisheries science. In Pauly, D., T. Pitcher and D. Preikshot (eds.), Back to the Future: Reconstructing the Strait of Georgia Ecosystem Fisheries Centre Research Reports 6 (4): pp. 14-18.
- Preikshot, D. 1995. Potential effects of greenhouse warming on stock specific energy use of adult sockeye salmon, *Oncorhynchus nerka*, in the Fraser River. BSc. thesis, Department of Oceanography, University of British Columbia.
- Preikshot, D., R.J. Beamish, and R.M. Sweeting. 2010. Changes in the diet composition of juvenile sockeye salmon in the Strait of Georgia from the 1960s to the early 21st Century. NPAFC Doc. 1285. 17 pp.
- Preikshot, D. and A. Beattie. 2001. Fishing for answers: an analysis of ecosystem dynamics, trophic shifts, and salmonid population changes in South Puget Sound, WA, 1970-1999. Fisheries Centre Research Reports 9(6): 35 pp.
- Preikshot, D., R. Froese, and D. Pauly. 2000. The orders table. In R. Froese and D. Pauly (eds.) FishBase 2000: concepts, design and data sources. ICLARM, Los Ba  os, Laguna, Philippines: pp. 55-59. Available at www.fishbase.org/manual/orders.htm
- Preikshot, D., E. Nsiku, T. Pitcher, and D. Pauly. 1998. An interdisciplinary evaluation of the status and health of African lake fisheries using a rapid appraisal technique. J. Fish. Biol. 53 (A): 381-393.
- Preikshot, D. and D. Pauly. 2005. Chapter 11: Global fisheries and marine conservation: is coexistence possible? In E.A. Norse and L.B. Crowder (eds.) Marine conservation biology: the science of maintaining the sea's biodiversity. Island Press, Washington. 185-197.
- Preikshot, D. and D. Pauly. 1998. A multivariate interdisciplinary assessment of small scale tropical fisheries In. T.J. Quinn II, F. Funk, J. Heifetz, J.N. Ianelli, J.E. Powers, J.F. Schweigert, P.J. Sullivan, C.-I. Zhang (eds.). Fishery Stock Assessment Models. Alaska Sea Grant, Fairbanks: pp. 803-814.

Vasconcellos, M. and D. Preikshot (editors). 1998. Graduate student symposium on fish population dynamics and management. Fisheries Centre Research Reports, Vol. 6 (3). University of British Columbia Fisheries Centre, Vancouver: 40 p.