

Resume

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Al Cass
Pacific Biological Station
Fisheries and Oceans, Canada
Nanaimo, BC
V9R 6N7
Phone: 250 756 7142
Email: alan.cass@pac.dfo-mpo.gc.ca

Not Relevant

Education

Bachelor of Science (Zoology), University of British Columbia.
Master of Science (Environment and Management), Royal Roads University.

Employment record

2002-2010

Head, Centre of Science Advice (CSA) - Pacific Chair, Pacific Scientific Advice Review Committee (PSARC)

These duties have resulted in extensive experience and influence in the DFO science peer-review and science advisory process. Duties have included:

- Providing science advice to senior management, regional and national resource managers on aquatic resource management issues.
- Liaising with the Canadian Stock Assessment Secretariat and other RAP Coordinators to ensure the range of regional science advisory functions are consistent with national policies and principles.
- Planning/coordinating SAGE compliant peer-review processes including advisory meetings and workshops. This has included coordinating and developing meeting agendas, ensuring inclusive, balanced and objective external participation, selection of competent reviewers for working papers, chairing meetings and developing meeting advisory products (i.e. Proceedings, Science Advisory Reports).
- Interacting with DFO Sector managers to identify the range of regional and national priorities for science advice in support of resource/habitat management.
- Interacting with a variety of external client groups including all sectors of the fishing industry, First Nations and environmental groups, Provincial representatives and non-government funding agencies.
- Managing the CSA office, personnel (biologists and administrative staff) and financial resources associated with the peer-review process.

- Modernizing the Pacific science advisory function to achieve:
 - A fully SAGE compliant process with full participatory rights for all internal and external participants.
 - An increased emphasis on high priority issues with broad implications for conservation and sustainability.
 - A re-formulated Regional Management Executive Committee (RMEC) to identify high priority science advisory issues.
 - A risk-based decision framework for prioritizing requests for science advice.

Salmon Assessment and Freshwater Ecosystems Division (SAFE)

Duties:

- Advising SAFE, regional DFO management, the Canada-US Treaty process, external client groups and the public on policy and scientific issues related to the conservation and management of Pacific salmon and other freshwater species.
- Prepared briefing notes and correspondence to clarify issues for senior Departmental staff and provides scientific and technical advice to managers, stakeholders and international agencies to help develop research goals and to elaborate on observations/experimental programs.
- Prepared press releases describing Departmental projects and research findings in ways that will be noticed and understood by the general public, thereby heightening public awareness of Departmental objectives and activities.
- Leading a multi-agency, high priority Late Run Fraser River sockeye science initiative in 2002-2003 to test hypotheses related to early river entry and associated high in-river mortality prior to spawning.
- Conceiving the science-based modeling framework for managing Fraser River Sockeye (a.k.a. The Fraser River Sockeye Spawning Initiative (FRSSI)). The FRSSI model was adopted by FAM as the technical basis for implementing harvest control rules for the management of Fraser River sockeye. This resulted in a multi-sector, stakeholder-driven process and agreement on a 4-year strategy for harvesting Fraser River sockeye.
- Conceiving and championing the DFO-Simon Fraser University collaborative Management Strategy Evaluation (MSE) process for Fraser River sockeye. This has resulted in a workshop process to engage internal and external client groups to develop a conceptual MSE model for the next-generation management process for Fraser sockeye.
- Regional lead in the development of the Fraser River sockeye Resource Assessment Framework. This will be the decision framework for prioritizing assessment activities for Fraser River sockeye stock assessment. This will also serve as the template for assessment frameworks for other species and stocks of Pacific salmon.
- Proponent of multiple, high priority funding proposals for improved stock assessment capacity for salmon in Pacific Region.
- Participating in domestic and international workshops/conferences/symposia on population dynamics, policy evaluations and governance models. For example,

- Improving fishery management: melding science and governance – University of Washington (proceedings published May 2005)
- Genetic Stock Identification and mixed-stock assessment for stocks managed under the auspices of the Canada-US Pacific Salmon Treaty – Portland Oregon (May 2007) – steering committee member/participant.
- Workshop on population dynamics of cyclic Fraser River sockeye and implications for management – University of British Columbia February 2006
- Prepared peer-reviewed stock assessments and provide biological recommendations and scientific advice applicable to the conservation and management of salmon.
- Program planning and development.

Committee membership:

Canada-US Fraser River Panel Technical Committee
 Regional Management Executive Committee
 Regional Stock Assessment Management Board
 Regional Science Executive Committee

1985-2002

Head, Assessment and Forecasting Program, Stock Assessment Division

Duties:

- Developed computer models for research/assessment of exploited Pacific salmon, specifically to:
 - Conduct stock assessments and evaluate the impacts of alternative harvest policies and management practices given uncertainty in population and fishery dynamics.
 - Conduct analysis to produce forecasts of stock abundance, timing and spatial distribution of Fraser River sockeye and pink salmon.
- Developed new assessment-related research projects and plans, co-ordinated and conducted research to create new scientific knowledge in the life history, population dynamics, distribution and biology, and harvest policies of fishery resources for a variety of clients.
- Authored and co-authored scientific papers and technical reports for publication in international refereed journals for dissemination to the general scientific community, industry, international agencies and others.
- Reviewed manuscripts produced by other scientists for international scientific journals, Departmental report series and scientific assessment committees to make recommendations on their suitability for publication, and comments on the adequacy of the scientific methodology and merits of the findings.
- Developed and provided project designs, new and applied survey designs and protocols, and analytical methodologies to external research partners. The information is used to conduct resource surveys and experimental fisheries to meet stock assessment requirements.

- Consulted with, advised, and exchanged information with, government, stakeholders, and universities on matters pertaining to data collection, data management and analysis, results of research projects and theories and methods used in assessment process on a formal or informal basis.
- Prepared correspondence for stakeholders, other federal departments, consultants, international agencies and the general public in response to inquiries on the status of exploited stocks, pre-season forecasts of abundance, distribution and migratory timing patterns, or current or proposed program activities.
- Developed work plans and schedules for use in carrying-out sampling, monitoring, and research programs.
- Member/chair of regional, national and international committees (PSARC Salmon Subcommittee, PSARC Fisheries and Oceanography Working Group; Fraser River Integrated Management Team; High Priority Precautionary Approach; Fraser River Panel Technical Committee).

Technical knowledge:

- Extensive technical knowledge of computer programming languages (i.e. S-plus, R, C++, Delphi, VB) and spreadsheets and databases (i.e. Excel and Access) for developing resource assessment models.
- Knowledge of the principles, theories, methods, techniques, and practices applicable to stock assessment, fisheries biology, risk analysis and forecasting methods. This knowledge is essential to conduct research/assessment and provide written reports and presentations of scientific advice to guide conservation and harvest policy decisions and planning by Departmental managers, industry and international agencies.
- Knowledge and understanding of oceanography, biology, behaviour, population ecology, fishing techniques and fishery characteristics to ensure that all available information is correctly interpreted, evaluated and incorporated into the stock assessment and management frameworks.
- Knowledge of mathematical and statistical methods, techniques and practices applied to exploratory data analysis and graphical analysis, graphical interpretation and presentation, and scientific interpretation. Knowledge is applied to the design and analysis of investigations into the biology of populations and their interactions with fisheries.
- Knowledge of the principles of project management, project development, and supervisory techniques and practices, to direct and manage research and monitoring projects.
- Knowledge of interpersonal skills, and negotiation and conflict resolution techniques, to work effectively with others, lead and motivate assessment and research project teams, negotiate resources, and resolve contractual and technical issues with contractors and stakeholders.
- Knowledge of logical and problem-solving techniques in order to address and resolve unusual /or particularly perplexing scientific and technical problems.

1977-1985

Research biologist:

**Department of Fisheries and Oceans, Canada,
Science Branch, Groundfish Section**

Duties:

- Participated in the collection and analysis of assessment baseline data for a variety of exploited marine species including lingcod, sablefish, dogfish and rockfish. This involved extensive fieldwork using SCUBA and offshore shipboard platforms.

Publications

Primary publications:

- Beamish, R.J., J.T. Schnute, A.J. Cass, C.M. Neville, and R.M. Sweeting. 2004. The influence of climate on the stock and recruitment of pink and sockeye salmon from the Fraser River, British Columbia Canada. *Trans. Am. Fish. Soc.* 133:1396-1412.
- Cass, A.J. and R.J. Beamish. 1983. First evidence of the validity of the fin-ray method of age determination for marine fishes. *N. Am. J. Fish. Manage.* 3: 182-188.
- Cass, A.J., R.J. Beamish and G.A. McFarlane. 1990. Lingcod. *Can. J. Fish. Aquat. Sci. Spec. Publ.* 109. 40p.
- Cass, A.J. and B. Riddell. 1999. A life history model for assessing alternative management policies for depressed chinook salmon. *ICES J. Mar. Sci.* 56: 414-421.
- Cass, A. and B. Riddell. 1989. Stock Dynamics of major pink salmon stocks in British Columbia. *Proceedings of the Pacific Salmon International Symposium. TINRO. U.S.S.R.*
- Cass, A.J. and C.C. Wood. 1994. An evaluation of the compensatory fishing hypothesis as an explanation for population cycles in Fraser River sockeye salmon. *Can J. Fish. Aquat. Sci.* 51. 1839-1854.
- Chen, D.G., J.R. Irvine, and A.J. Cass. 2002. Incorporating Allee effects in fish stock-recruitment models and application for determining reference points. *Can. J. Fish. Aquat. Sci.* 242-249.
- Henderson, M.A. and A.J. Cass. 1991. Effects of smolt size on smolt-to-adult survival for Chilko Lake sockeye salmon. *Can. J. Fish. Aquat. Sci.* 48: 988-994.

- Schnute, J.T., A.J. Cass, and L.J. Richards. 2000. A Bayesian decision analysis to set escapement goals for Fraser River sockeye salmon. *Can. J. Fish. Aquat. Sci.* (in press).
- Schnute, J.T., L.J. Richards, and A.J. Cass. 1989. Fish growth: investigations based on a size-structured model. *Can. J. Fish. Aquat. Sci.* 46: 730-742.
- Schnute, J.T., L.J. Richards, and A.J. Cass. 1989. Fish survival and recruitment: investigations based on a size-structured model. *Can. J. Fish. Aquat. Sci.* 46: 743-769.

Other publications:

- Cass, A. M. Folkes, C. Parken, and C. Wood. 2006. Pre-season run size forecasts for Fraser River Sockeye for 2006. DFO Can. Sci. Advis. Sec. Res. Doc. 2006/060.
- Cass, A., M. Folkes, and G. Pestal. 2004. Methods for assessing harvest rules for Fraser River sockeye salmon. DFO Can. Sci. Advis. Sec. Res. Doc. 2004/025.
- Cass, A. 2002. Pre-season run size forecasts for Fraser River sockeye and pink salmon in 2003. DFO Can. Sci. Advis. Sec. Res. Doc. 2002/116.
- Cass, A. 2001. Pre-season run size forecasts for Fraser Sockeye and Pink Salmon in 2001. DFO Can. Sci. Advis. Sec. Res. Doc. 2001/063.
- Cass, A. 2000. Run size forecasts for Fraser River sockeye in 2000. DFO Can. Sci. Advis. Sec. Res. Doc. 2000/107.
- Cass, A.J. 1999. Run size forecasts for Fraser River sockeye and pink salmon in 1999. Canadian Stock Assessment Secretariat. Res. Doc. 99/129.
- Cass, A.J. 1998. Run size forecasts for Fraser River sockeye in 1998. Canadian Stock Assessment Secretariat. Res. Doc 98/44.
- Cass, A.J. 1989. Accuracy and precision in stock identification of Fraser River sockeye. PSARC Working Paper s89-22.
- Cass, A. and D. Blackbourn. 1996. Forecasts of Fraser River sockeye salmon for return year 1996. Pacific Stock Assessment Review Committee, Working Paper S96-1.
- Cass, A.J., D. Blackbourn, and Hume J. 1995. Forecasts of Fraser River sockeye and pink salmon for return year 1995 and preliminary sockeye forecasts for 1996. Pacific Stock Assessment Review Committee, Working Paper S94-20.
- Cass, A. and T. Whitehouse. 1993. An evaluation of enumeration methods

to estimate spawning escapements of Fraser River pink salmon. Pacific Stock Assessment Review Committee, Working Paper S93-4.

Cass, A., T. Whitehouse and T. Cone. 1995. Design and evaluation of mark-recapture experiments for estimating pink salmon spawning escapements to the Fraser River in 1993. Pacific Stock Assessment Review Committee, Working Paper S94-19.

DFO, 2006. Pre-season run size forecasts for Fraser River sockeye and pink salmon in 2007. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2006/043.

Joyce, M. and A. Cass. 1992. Assessment of Fraser River chum salmon. PSARC Working Paper S92-02.