

ANTHONY T. CHARLES

Pew Fellow in Marine Conservation

Natural Resource Management: Sustainability, Resilience, Bioeconomics and Policy

Coastal & Ocean Management / Community-Based Management / Integrated Spatial Management

Finance, Information Systems & Management Science / Environmental Studies
Saint Mary's University, Halifax, Nova Scotia B3H3C3 Canada

Tel: (902) 420-5732 ; e-mail: tony.charles@smu.ca

EDUCATION

B.Sc. (1978) Honours degree, Carleton University (Ottawa); Governor General's Medal.

Ph.D. (1982) University of British Columbia (Vancouver); Natural Sciences and Engineering Research Council's 1967 Science Scholarship. Thesis Supervisor: Colin Clark.

EMPLOYMENT

1985- Professor of Management Science & Environmental Studies (Cross-Appointment), Saint Mary's University, Halifax, Nova Scotia (Assistant Professor, 1985-88; Associate Professor, 1988-94; Professor, 1994-).

2006 Visiting Scientist, Policy and Planning, Fisheries Department, Food and Agriculture Organization of the United Nations (FAO), Rome, Italy.

1982-85 Head Research Scientist, Salmon Stock Assessment, Fisheries Research Branch, Department of Fisheries and Oceans, Vancouver, British Columbia.

1978-82 Instructor, Department of Mathematics, University of British Columbia, Vancouver, British Columbia.

HONOURARY ACADEMIC POSITIONS

2002- Adjunct Professor, Marine Affairs Program, Dalhousie University, Halifax, Nova Scotia.

1986- Adjunct Professor, School for Resource and Environmental Studies, Dalhousie University, Halifax, Nova Scotia.

1991-92 Visiting Professor, Economic Sciences Research Institute, University of Costa Rica, San Jose, Costa Rica.

1988-92 Research Associate, Biology, Dalhousie University, Halifax, Nova Scotia.

PROFESSIONAL AWARDS AND APPOINTMENTS

International

Marine and Coastal Fisheries (American Fisheries Society journal), Subject Editor (2008-).

International Institute of Fisheries Economics and Trade, President-Elect / President (2006-2010).

Pew Fellowship in Marine Conservation, Pew Institute for Marine Science (2001-).

Fish and Fisheries (Blackwell Science journal), Editorial Board member (2000-2006).

International Advisory Council, University of British Columbia Fisheries Centre (2002-2006).

Resource Modeling Association – Past-President (2002-2003); President (2001-2002) and Member, Board of Directors (1988-1991).

Natural Resource Modeling – Associate Editor (1991-2004).

Fisheries Economics Newsletter – Canadian Correspondent (1985-2001).

Committee on Resource Policy Issues, Resource Modeling Association – Chair (1992-1999).

Socioeconomics Network, International Institute for Fisheries Economics and Trade – Co-Chair (1992-1997).

Organizational Memberships: International Institute for Fisheries Economics and Trade, International Society for Ecological Economics, International Association for the Study of the Commons, Resource Modeling Association.

National

Ocean Management Research Network – Director / Chair (2001-05), Board Member (2006-09).

Science Advisory Council, Canadian Department of Fisheries and Oceans – Member (2006-).

Chair, Steering Committee, Robin Rigby Trust (2008-).

Coastal Zone Canada Association – Member (2006-).

College of Reviewers, Canada Research Chairs Programme, Government of Canada (2001-).

Renewable Marine and Forest Resources Cluster Group, Environment & Sustainable Development Indicators Initiative, National Round Table on the Environment and the Economy (2001-2003).

Industrial Engineering Reallocation Committee, Natural Sciences and Engineering Research Council of Canada (2000-2002).

Research Management Committee, AquaNet Network of Centres of Excellence (2000-2002).

Oceans Institute of Canada – Board of Directors (1996-98); Member (1991-2002).

Industrial Engineering Grant Selection Committee, Natural Sciences and Engineering Research Council of Canada (NSERC) – Member (1996-1999) and Chairperson (1998-99).

Panel on Change and Canadian Marine Fisheries, Canadian Global Change Program, Royal Society of Canada (1996-1998).

Fisheries Resource Conservation Council – Ministerial Appointment (1993-1998).

Atlantic Canada

Panel of Expertise on Parks, Appointed by Minister of Natural Resources, Government of Nova Scotia (2009-).

Gulf of Maine Visionary Award, Gulf of Maine Council on the Marine Environment (2008).

Advisory Committee on the Sable Gully, Department of Fisheries and Oceans (2003-).

Fishermen and Scientists Research Society, Nova Scotia (1994-).

Environmental Studies Committee, Atlantic Provinces Council on the Sciences – Chair (2001-05), Member (1989-1991).

Fishery Advisory Committee, Atlantic Policy Congress of First Nations Chiefs (2000-2005).

Advisory Committee, Bay of Fundy Fisheries Council (1998-2004).

Research and Advisory Committee, Fundy Fixed Gear Council (1996-2004).

Indicators Working Group, *Rural Communities Impacting Policy* CURA Project, Dalhousie University and Coastal Communities Network – Chair (2001-2002) and Member (2001-2005).

Fisheries and Marine Core Group, Voluntary Planning Nova Scotia (1999-2001).

Steering Committee, *Social Research for Sustainable Fisheries* CURA project, St. Francis Xavier University (1999-2001).

Environment and Development Committee, Ecology Action Centre (Halifax, N.S.) – Member (1990-2001) and Chairperson (1994-1996).

Coastal Zone Management Committee, Nova Scotia Round Table on Environment and Economy (1996-1998).

PROFESSIONAL AND COMMUNITY SERVICE

Coordinator, “Fisheries and Coastal Lecture Series” (a series of public lectures and workshops presented to fishers, researchers and the public), Saint Mary’s University, Halifax (1987-).

Conference Organizer:

- Canadian Society for Ecological Economics – Halifax Conference (2007).
- Ocean Management Research Network, National Conferences: Ottawa (2002, 2003, 2005).
- World Conference on Natural Resource Modelling: Halifax (1988, 1999).
- International Workshop on Integrated Fish Farming: Wuxi, China (1994).

Journals for Which Referee Duties Performed:

Society and Natural Resources	Ecology and Society
Conservation Biology	Marine Resource Economics
Fish and Fisheries	International Journal of Global Environmental Issues
Ecological Economics	Scandinavian Journal of Economics
Ecology and Society	Bulletin of Mathematical Biology
Ecological Modeling	Canadian Journal of Fisheries and Aquatic Sciences
Land Economics	Journal of Environmental Economics and Management
Natural Resource Modeling	Canadian Journal of Administrative Sciences
Asian Fisheries Science	Mathematical Modelling
International Economic Review	Mathematical Biosciences
ICES Journal of Marine Science	American J. of Mathematical and Management Sciences

FISHERY AND MARINE MANAGEMENT EXPERIENCE: CANADA

Coastal CURA Community-University Research Alliance – Principal Investigator (2006-).

[This 5-year project studies and supports community involvement in local-level and large-scale integrated management initiatives relating to coastal and ocean management in the Maritimes.]

Ocean Management Research Network – Director and Board Chairperson (2001-2005), Board Member (2006-2009). [The OMRN is a Canadian network of researchers and research users with an interest in human uses of the oceans and the management of these uses. I served as the Director of the network, and in particular the activities of its National Secretariat, for its initial five years.]

Science Advisory Council, Fisheries and Oceans Canada – Member (2006-2009). [This body advises the Assistant Deputy Minister for Science, within Canada's Department of Fisheries and Oceans, on science policy, integration of governmental and academic science, and emerging directions for research on Canada's fisheries and marine environments.]

'Turning the Tide' – Director (2001-2006). [This project, funded by my Pew Fellowship in Marine Conservation, works with fishery organizations and First Nations in Canada's Maritimes region to support community-based fishery management and positive collaboration among native and non-native fishery participants, through organizational, research, outreach and educational activities.]

Environmental Studies Committee, Atlantic Provinces Council on the Sciences – Founder and Chair (2001-2005). [APICS has an institutional membership including all the region's universities and many government research centres. I was invited to establish this committee of APICS, with a mandate to support environmental and resource management education and student involvement.]

Bay of Fundy and First Nations Fisheries – Advisor: Fundy Fixed Gear Council (1996-2005), Bay of Fundy Fisheries Council (1998-2005), Atlantic Policy Congress of First Nations Chiefs (2000-2005). [Provided research support to inshore participants in fishery management planning.]

Renewable Marine and Forest Resources Cluster Group, Environment and Sustainable Development Indicators Initiative, National Round Table on the Environment and the Economy – Member (2001-2003). [Developed fisheries and marine indicators for incorporation in national accounts.]

Board of Directors and Management Committee, Oceans Institute of Canada – Member (1996-98). [Provided strategic and medium-term decision making for this independent NGO focusing on oceans and coastal management and policy.]

Fisheries Resource Conservation Council – Ministerial Appointment (and Chairperson, FRCC Management and Regulations Committee) (1993-1998). [The FRCC advises the Government of Canada on conservation requirements for Atlantic Canadian fisheries, reviewing implementation of resource management decisions and analysing the conservation impacts of conservation options.]

Standing Committee on Resource Policy Issues, Resource Modeling Association – Chairperson (1992-1999). [Developed an organizational information base to facilitate application of analytical methods to resource management decisions in government and the private sector.]

Fisheries Research Branch, Department of Fisheries and Oceans – Head Research Scientist, Salmon Stock Assessment Unit, Vancouver, B.C. (1982-85). [Establishment and management of a research unit providing scientific input for senior fishery managers and senior decision makers, analysing policy options for Pacific fisheries, and developing retrospective stock assessment methods.]

Canada-U.S. Salmon Treaty Negotiations – Canadian Technical Advisor, and Chairperson of the Canada-U.S. Coho Salmon Technical Committee (1983-1985). [Involved in drafting treaty language, and advising the Canadian Chief Negotiator on matters concerning coho salmon.]

FISHERY AND MARINE MANAGEMENT EXPERIENCE: INTERNATIONAL.

International Institute of Fisheries Economics and Trade, President-Elect / President (2006-2010).

Food and Agriculture Organization of the United Nations – Visiting Scientist, Rome, Italy (2006). [Participated in organizing and implementing Workshops on Ecosystem Approach to Fisheries, and on Marine Protected Areas and Fisheries Management, including background documents.]

“Integrated Coastal Zone Management Education in Cuba” CIDA Tier II project (1999-2004). [Developing, implementing and supporting interdisciplinary masters programs on coastal zone management in three Cuban universities.]

International Workshop on International Fisheries Instruments and Factors of Unsustainability and Overexploitation, Food and Agriculture Organization of the United Nations – Invited Participant, (1) Mauritius (2003), (2) Cambodia (2004).

“Fisheries Management Planning”, Oceans Institute of Canada and Organization of Eastern Caribbean States – Coordinator (Canadian) (1997-98). [Implementation of fisheries management plans through stakeholder consultations in nine OECS member states.]

“Aquaculture Economics in Developing Countries”, Food and Agriculture Organization of the United Nations – Coordinator (1996-1997). [Production of regional assessments and annotated bibliographies of state of knowledge in aquaculture economics, by a global team of researchers.]

“Study on the State of Research in Marine Sciences”, a contractual report by Cartis Ltd. for the Costa Rican National Council for Research in Science and Technology – Principal Researcher (1994). [Production of a strategic assessment of marine science research in Costa Rica.]

“Genetic Diversity in Aquaculture: Programme for Economically and Socially Sustainable Conservation and Development”, a project funded by the International Development Research Centre of Canada – Principal Investigator (Economic Research) and Financial Manager (1993-96). [Examined the biological, economic and social aspects of genetic improvement and biodiversity conservation in aquaculture, for China, Thailand, Indonesia and the Philippines.]

“Medium Term Planning Process for Research Programming”, International Centre for Living Aquatic Resources Management (ICLARM), Manila, Philippines – Consultant (1992). [Assessed the research agenda for this lead international fisheries organization.]

Visiting Researcher, Economic Sciences Research Institute, University of Costa Rica; Fisheries Management Section, Faculty of Biological Sciences, National University, Costa Rica (1991-92).

“Global Fisheries Socioeconomics Survey Project”, a project funded by the International Development Research Centre of Canada – Coordinator (1991-1993). [Assembled and analysed research studies on fisheries and aquaculture socio-economics in developing nations worldwide.]

“Fishery Management and Development: A Policy and Strategic Assessment”, International Centre for Ocean Development – Consultant (1991). [Preparation of a draft fishery policy.]

“Chinese Integrated Fish Farming”, International Development Research Centre of Canada (1989-1994). [Analysis of fish farm data, institutional capacity-building & technical training.]

Lecturer, Training Programme for the Management and Conservation of Marine Resources, International Oceans Institute, Halifax (annually, 1987-).

TEACHING AND UNIVERSITY SERVICE

Creation and Teaching of the following Environment and Natural Resource Courses:

ENVS4450 Natural Resource Management (also listed as Geography GEOG4424)
ENVS4460 Methods of Environmental and Natural Resource Analysis (also GEOG4444)
ECON3361 Fisheries Economics
ECON6611 Sustainable Resource Management
MGSC6690 Management Science of Natural Resources
ACST3302 Fishery Crisis: Past, Present and Future

Teaching of the following Environment and Natural Resource Courses:

ENVS2300 Environmental Science
ENVS4440 Environmental Policy
ENVS4499 Seminar in Environmental Science
ECON3362 Economics of Natural Resources and Environmental Management
MARA5021 Fisheries Management (Marine Affairs / Env'l Studies, Dalhousie University)
BIOL5846 Topics in Fisheries Management (Biology, Dalhousie University)

Other Courses:

ECON3322 Current Economic Problems: Canada and the World
MGSC1205 Quantitative Methods for Commerce I: Finite Mathematics
MGSC1206 Quantitative Methods for Commerce II: Calculus/Probability
MGSC1207 Introductory Statistics for Commerce
SMBA506 Introductory Decision Analysis I: Statistics
SMBA507 Introductory Decision Analysis II: Operations Research
MGSC402 Operations Research Methods and Application
SMBA690 Operations Research Methods and Applications

Memberships on University Boards and Committees (Saint Mary's University):

- Board of Governors (2007-).
- University Senate (2000-2002; 2007-).
- Faculty of Graduate Studies and Research, Executive (2002-).
- University Sustainability Committee (2007-).
- Senate Committee on Sustainability (2009-).
- Environmental Studies Executive Committee (1996-).
- Atlantic Canada Studies Program Committee (1986-).
- International Development Studies Program Committee (1986-2002, 2005-).
- Panel of Full Professors, University Review Committee (2000-2003).
- Search Committee, Ph.D. Program Director, Faculty of Commerce (2003).
- Board of Directors, International Education Centre (1990-93).
- Review Committee, Computer Science & Business Administration Joint Degree (1986).
- Senate Research Committee (1985-88).
- Research Chair (1987-88), Chairperson (1988-89) and Board member (1989-91, 1999-2003), Gorsebrook Research Institute for Atlantic Canada Studies.

RESEARCH GRANTS (SINCE 1990)

Natural Sciences and Engineering Research Council of Canada, Discovery Grant: “Fishery, Coastal and Ocean Management: Integrated Systems Approaches for Sustainability and Resilience” (\$237,500: 2009-2014).

Social Sciences and Humanities Research Council of Canada , Community-University Research Alliance: “Community-based Governance of Coastal Resources: Social, Economic and Policy Linkages in the Canadian Maritimes” (\$990,000: 2006-2011).

Fisheries and Oceans Canada, and Social Sciences and Humanities Research Council of Canada, Ocean Management National Research Network, Co-Investigator (\$1,000,000: 2006-2008).

Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Decision Support for Fisheries and Ocean Management: Systems Approaches, Integrated Models and Sustainability Indicators” (\$135,000: 2004-2009).

Fisheries and Oceans Canada, and Social Sciences and Humanities Research Council of Canada, Ocean Management National Research Network, Principal Investigator (\$526,500: 2001-2005).

Pew Charitable Trusts, Pew Fellowship in Marine Conservation (\$225,000: 2001-2004).

Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Sustainability Assessment in Natural Resource Systems” (\$135,000: 2000-2004).

Social Sciences and Humanities Research Council of Canada, Research Development Initiative, “Developing an interdisciplinary participatory research methodology to further community-based resource management” (with F. Berkes, J. Kearney and M. Wiber, \$104,000: 2000-2003).

Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Strategic Planning for Sustainable Development in Fisheries and Aquaculture” (\$92,000: 1996-2000).

Royal Society of Canada, Canadian Global Change Program, Grant to Support Participation on “Panel on Change and Canadian Marine Fisheries” (\$4,000: 1996-97).

Social Sciences and Humanities Research Council of Canada, Strategic Research Grant: “Fisheries, Uncertainty, and the Precautionary Approach to Resource Management” (with G.R. Munro and others, \$80,000: 1996-1999).

International Development Research Centre of Canada: “Sustainability Indicators for Aquatic Resource Systems” (\$3,500: 1995-96).

International Development Research Centre of Canada: “Genetic Diversity in Aquaculture: Programme for Economically and Socially Sustainable Conservation and Development” (with R. Doyle, Z. Basiao and J. Leith, \$400,000: 1993-1996).

Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Integrated Bio-Socio-Economic Modelling of Fisheries and Aquaculture Industries” (\$84,000: 1992-1996).

International Development Research Centre of Canada: Coordinator, “Global Fisheries Socioeconomics Project” (\$10,000: 1991-1993).

International Development Research Centre of Canada: “Chinese Integrated Fish Farming” (\$60,000: 1989-1995).

Department of Fisheries and Oceans Research Grants: “Fisheries and Aquaculture in Atlantic Canada: Bioeconomic Models & Policy Analysis” (\$12,000: 1990-91).

CONTRACTUAL RESEARCH

Canadian Department of Fisheries and Oceans: “Social, Economic and Cultural Overview and Assessment for Ocean Management” (2007). [Led a team to produce a review of major global experiences in assessing coastal and marine areas, from the perspective of human dimensions, with the aim of creating the knowledge basis required for ocean management initiatives.]

Organisation for Economic Co-operation and Development (OECD): Keynote Paper and Presentation on “The Human Dimension of Fisheries Adjustment: Overview of Key Issues and Policy Challenges” for the Expert meeting on the Human Side of Fisheries Adjustment, Paris, France (2006).

Organisation for Economic Co-operation and Development (OECD): “The Social Effects of Subsidies to the OECD Fisheries Sector: A Scoping Paper on Key Issues and Analytical Directions” (2003).

Food and Agriculture Organization of the United Nations (FAO): “Use Rights” chapter in Fishery Manager’s Guidebook (1999-2001). [Member of an international team selected by FAO to develop a handbook oriented to fishery managers, particularly in developing countries.]

Food and Agriculture Organization of the United Nations (FAO): “Aquaculture Economics in Developing Countries” (1996-1997). [Coordinator of a project to produce regional assessments and annotated bibliographies of the state of knowledge in aquaculture economics.]

Costa Rican National Council for Research in Science and Technology (CONICIT): “Study on the State of Research in Marine Sciences” (1994). [Principal researcher, strategic assessment of marine science research throughout Costa Rica.]

Canadian Department of Fisheries and Oceans: “Analysis of Fixed versus Re-randomized Stations in a Groundfish Trawl Survey” (1991). [Supervision of research on the efficiency of sampling methods for fishery trawl surveys.]

International Centre for Ocean Development: “Fishery Management and Development: A Policy and Strategic Assessment” (1991). [Assessment of programming in fisheries management and development, and preparation of a draft fishery programming policy.]

Canadian Department of Fisheries and Oceans: “Fishery Law Enforcement: Applications of Economic Analysis and Operations Research Models” (1990). [Compilation of available research on the economics and operational analysis of law enforcement in fisheries.]

GTA Fisheries Consultants: “Economic Analysis of Inshore Atlantic Groundfish Fleets” (1987-1988). [Statistical analysis of aggregate fisher cost and earnings data.]

POST-GRADUATE FELLOWS AND VISITING FACULTY/RESEARCHERS

Alfredo Ortega, Ph.D. Angel Herrera, Ph.D.	Visiting Researchers (2007). Collaborative research: interactions among multiple ocean uses...Mexico, Costa Rica and Canada.
Silvia Salas, Ph.D.	Post-doctoral Fellow (2000-2001). Research topic: Bioeconomic Models of Lobster Fisheries in Canada and Mexico.
Xiongzi Xue, Ph.D.	Post-doctoral Fellow (1999-2000). Research topic: Comparative Analysis of Coastal Zone Management in China and Canada.
D. Rajasenani, Ph.D.	Shastri Scholar (1996). Employment: Department of Applied Economics, Cochin University of Science and Technology, India.
Carsten Lynge Jensen	Visiting Researcher (1995). Danish Institute of Fisheries Economics Research, Esbjerg, Denmark.
Chiwen Yang, Ph.D.	Post-doctoral Fellow (1990-1992). Employment: financial analyst, New York, USA.
Trevor Kenchington, Ph.D.	Post-doctoral Fellow (1988-1990). Employment: fishery consultant, Gadus Associates, Halifax, Nova Scotia.
Moustapha Deme, M.S.	International Centre for Ocean Development, Trainee (1989). Employment: Centre de Recherches Oceanographiques, Senegal.

SUPERVISION / EXAMINATION OF GRADUATE STUDENTS

- Lisette Muaror-Wilson, Interdisciplinary Ph.D. (In Progress).
Dalhousie University (Supervisor).
“Social-Ecological Systems: Assessing Risks and Enhancing Resilience in the Context of Community-Scale Coastal Management”
- Kate Bigney, Interdisciplinary Ph.D. (In Progress).
Dalhousie University (Supervisor).
“Interactions and Linkages of Community-Based Management and Ecosystem-Based Management for Fisheries and other Coastal Resources”
- Tiffanie Rainville, Master of Environmental Studies (In Progress).
Dalhousie University (Supervisor).
“Impacts of Climate Change and Water Resource Variability on Coastal Communities in Ecuador”
- Rachel Long, Master of Applied Science (In Progress).
Saint Mary’s University (Supervisor).
“Ecosystem-Based Management Applied to Small-Scale Fisheries in Canada”
- Caitlin Dix, Master of Arts – International Development Studies (In Progress).
Saint Mary's University (Supervisor).
“Interactions of Climate Change and Development Initiatives in Small Island Developing States, with an Application to Tuvalu”

- Melina Puley, Master of Environmental Studies (In Progress).
Dalhousie University (Supervisor).
Topic in Development
- Minerva Arce, Interdisciplinary Ph.D. (2007).
Dalhousie University (Supervisor).
“Livelihoods, Aquatic Resources and Non-Monetary Values of Local Natural Resources in Mexico’s Lowland Maya Area”
- Lisette Muaror-Wilson, Master of Marine Management (2007).
Marine Affairs Program, Dalhousie University (Supervisor).
“Community-Scale Coastal Social-Ecological Systems”
- Carolyn Hedley, Master of Environmental Studies (2006).
School for Resource & Environmental Studies, Dalhousie University (Thesis Committee).
“An Assessment of the Eastern Scotian Shelf Integrated Management Initiative”
- Jorge Angulo, Ph.D. (2005).
Interdisciplinary Studies, Dalhousie University (Thesis Committee)
“Marine Protected Area Development in Cuba”
- Laura Loucks, Ph.D. (2005).
Resource and Environmental Management, Simon Fraser University (Thesis Committee)
“The Evolution of the Area 19 Snow Crab Co-Management Agreement: Understanding the Interrelationship Between Transaction Costs, Credible Commitment & Collective Action”
- Kate Bigney, Master of Environmental Studies (2005).
School for Resource & Environmental Studies, Dalhousie University (Thesis Committee).
“Community-Based Quota Management of the Scotia-Fundy Groundfish Fishery”
- Pramod Ganapathiraju, Master of Marine Management (2005).
Marine Affairs Program, Dalhousie University (Supervisor).
“The Trawl Fishery of India’s Northeast Coast: An Analysis of catches, seasonal changes and ecological impacts”
- Merlina Andalecio, Ph.D. (2004).
Department of Biology, Dalhousie University (Thesis Committee).
“Assessment of Fishery Management Systems in Selected Bay Areas in the Philippines”
- Angel Herrera, Ph.D. (2004).
Northwest Center for Biological Research (CIBNor, Mexico). (Thesis Committee)
“Environmental Indicators for Sustainable Development of the Tourism Industry in La Paz and Los Cabos, Baja California Sur: Comparison and Recommendations”
- Gina Funicelli, M.B.A. (2004).
Faculty of Commerce, Saint Mary’s University (Supervisor).
“Innovation in the Fisheries Industry: How Will Acadian Communities in Southwest Nova Scotia Plan Their Future?”

- Peter Hayes, M.A. (2004).
International Development Studies, Saint Mary's University. (Thesis Committee)
“Participatory Micro-Integration of Vulnerable Coastal Communities into Climate Change Adaptation Strategies for Sustainable Livelihoods: A Case Study of Dominica”
- Kofi Ankamah, Master of Marine Management (2004).
Marine Affairs Program, Dalhousie University (Supervisor).
“Modern Approaches to Fisheries Monitoring, Control and Surveillance: An Assessment of their Relevance to Developing Countries”
- Lucia Fanning, Ph.D. (2003).
Interdisciplinary Studies, Dalhousie University (Thesis Committee)
“Influence Analysis of Policy Network Actors on Decisions Affecting Ocean Use and Space in Atlantic Canada”
- Tavis Potts, Ph.D. (2003).
University of Tasmania (External Examiner).
“Sustainability Indicators in Marine Capture Fisheries”.
- Jennifer Hatt, Master of Atlantic Canada Studies (2002).
Saint Mary’s University (Supervisor).
“On the Shoreline of Success: A Grower-Centred Examination into Definitions of and Impacts on Success in Aquaculture Ventures in Nova Scotia”.
- Heather Boyd, Master of Environmental Studies (2002).
School for Resource & Environmental Studies, Dalhousie University (Supervisor).
“Fisheries Indicators: Development and Evaluation of Indicators to Monitor Fisheries Sustainability at the Community Level”.
- Erin Breen, Master of Marine Management (2002).
Marine Affairs Program, Dalhousie University (Supervisor).
“A Brief Exploration of Community Priorities in Three Newfoundland Fishing Communities and their Relationship with Indicators to Monitor Fisheries Sustainability”.
- Pierre Clement, Master of Marine Management (2001).
Marine Affairs Program, Dalhousie University (Supervisor).
“The Role of Scientific Advice in the Management of Salmon Mariculture Development in Southwest new Brunswick”
- Bertrand LeGallic, Ph.D. (2001).
Universite de Bretagne Occidentale, Brest, France (External Examiner).
“Bioeconomic Modelling and Sustainable Management of a Complex System of Common Renewable Resources. Application to the Case of English Channel Fisheries”.
- Carolyn Moore, Master of Environmental Studies (2001).
School for Resource & Environmental Studies, Dalhousie University (External Examiner).
“The Application of an Environmental Management Strategy to Fisheries: A Case Study of the Fishery of the Chippewas of Nawash First Nation”.
- Tara Barnable, Master of Environmental Studies (1999).
School for Resource & Environmental Studies, Dalhousie University (Supervisor).
“Use Rights & ‘Community’ Management: Case Studies of a Scotia-Fundy Experiment”.

- Jennifer Graham, Master of Environmental Studies (1998).
School for Resource & Environmental Studies, Dalhousie University (Thesis Committee)
“Making Links: Participation in Community Fisheries Management in Nova Scotia and the Philippines”.
- Laura Ferriera, Master of Marine Management (1998).
Marine Affairs Program, Dalhousie University (Supervisor).
“Economic Analysis of the Shrimp Trawl Fisheries of Trinidad”.
- Clarrie MacKinnon, Master of Marine Management (1997).
Marine Affairs Program, Dalhousie University (Supervisor).
“The Northwest Atlantic Fisheries Organization: An Objective, Internal View”.
- Andre Kong, Master of Marine Management (1997).
Marine Affairs Program, Dalhousie University (Supervisor).
“A Critical Review of the Jamaica Conch Management Plan: Management Recommendations for the Artisanal Conch Fishery”.
- Michael Honeth, Master of Marine Management (1997).
Marine Affairs Program, Dalhousie University (Supervisor).
“Individual Transferable Quotas: Nova Scotian Fishing Communities in a Closed Ocean”.
- Blair Richards, M.B.A. (1997).
Faculty of Commerce, Saint Mary’s University (Supervisor).
“Halterm Gatehouse Research Project”.
- Aggrey Ambali, Ph.D. (1996).
Biology, Dalhousie University (Thesis Committee).
“The Relationship Between Domestication and Genetic Diversity of Tilapias in Malawi”.
- Maureen Connolly, M.B.A. (1996).
Faculty of Commerce, Saint Mary’s University (Supervisor).
“A Survey-Based Analysis of Nova Scotian Fishermen Investment Behaviour”.
- Sean McDonnell, M.D.E. (1996).
Economics, Dalhousie University (Thesis Committee).
“An Integrated Bioeconomic Analysis of Atlantic Salmon Aquaculture”.
- Ian Joyce, Ph.D. (1996).
Interdisciplinary, Simon Fraser University (External Examiner).
“Fisheries of the Cuban Insular Shelf: Culture History and Revolutionary Performance”.
- Narendra Jain, M. Applied Science (1994).
Industrial Engineering, Technical University of Nova Scotia (Thesis Committee).
“A Multi-Scenario Decision Model for the Engineering Economics of Capital Intensive Projects”.
- Cherdsak Virapat, Ph.D. (1993).
Biology, Dalhousie University (Thesis Committee).
“Bionomics of Fish Stocking in Two Thai Reservoirs: Biological, Management and Development Perspectives”.
- Hisafumi Kusuda, Ph.D. (1993).
Economics, University of British Columbia (External Examiner).

“Individual Transferable Fishery Quotas Under Uncertainty”.

Veronika Brzeski, M.Sc. (1993).

Biology, Dalhousie University (External Examiner).

“Artisanal Broodstock Improvement in Indonesian Aquaculture: An On-the-Farm Experiment in Genetics”.

Mary Gregory, M.A. (1992).

Economics, Dalhousie University (Thesis Committee).

“The Structure of Property Rights and Fisheries Management Options”.

Christopher Wright, Ph.D. (1991).

Interdisciplinary, Simon Fraser University (External Examiner).

“A Systems Approach to Fisheries Management”.

Rohkmin Dahuri, Ph.D. (1991).

Resource and Environmental Studies, Dalhousie University (Thesis Committee).

“Optimization Model of Coastal Resource Utilization: The Nature and Role of Sustainable Development in East Kalimantan Coastal Zone”.

Richard McGarvey, Ph.D. (1991).

Biology, Dalhousie University (Thesis Committee).

“The Dynamics of the Georges Bank Scallop Fishery”.

Olu Olojede, Master of Environmental Studies (1991).

Resource and Environmental Studies, Dalhousie University (Thesis Committee).

“Fisheries and Joint Ventures in West Africa: Sustainable Economic Development”.

Chiwen Yang, Ph.D. (1990).

Biology, Dalhousie University (Supervisor). “Description and Prediction of Multispecies Dynamics: A Transition Probability Approach”.

Harvey Millar, Ph.D. (1990).

Industrial Engineering, Technical University of Nova Scotia (Thesis Committee).

“A Hierarchical Production Planning Approach for Integrated Fishing Firms Under an Enterprise Allocation System”.

Derek Wallace, M.B.A. (1990).

Saint Mary’s University (Supervisor).

“Economic Value of the Nova Scotia Recreational Salmon Fishery”.

Lolita Villareal, Master of Development Economics (1988).

Economics, Dalhousie University (Supervisory Committee).

“The Philippines in the International Shrimp Market: 1970-1985”.

Scott Flewelling, M.B.A. (1987).

Saint Mary’s University (Supervisory Committee). “Determining the Economic Feasibility of Operating a Salmon Farm in Nova Scotia”.

James Duncan, M.B.A. (1986).

Saint Mary’s University (Supervisor). “Economic Evaluation of Reforestation Methods: A Cost/Success Model with a Black Spruce Case Study”.

PUBLICATIONS

M. Wiber, M.A. Rudd, E. Pinkerton, A. Charles and A. Bull. "Coastal Management Challenges from a Community Perspective: The Problem of 'Stealth Privatization' in a Canadian Fishery". *Marine Policy* 34:598–605 (2010).

M. Wiber, A. Charles, K. Bigney, D. Curtis, L. Wilson, R. Angus, J. Kearney, M. Landry, M. Recchia, H. Saulnier & C. White, "Integrated Management: A Coastal Community Perspective", *Horizons* (2010).

A. Charles. "Distributional Impacts of Marine Protected Areas: A Spatial Bioeconomic Analysis". *Natural Resource Modeling* (2010).

A. Charles. "Rights-Based Fisheries Management: The Role of Use Rights in Managing Access and Harvesting". p.253-282 in: *A Fishery Manager's Guidebook* (K.L. Cochrane & S.M. Garcia, eds.). Wiley-Blackwell, Oxford, UK (2009).

A. Charles and L. Wilson. "Human Dimensions of Marine Protected Areas". *ICES Journal of Marine Science* 66:6-15 (2009).

A. Charles, C. Burbidge, H. Boyd and A. Lavers. *Fisheries and the Marine Environment in Nova Scotia: Searching for Sustainability and Resilience*. GPI Atlantic, Nova Scotia, Canada (2009).

A. Charles and C. De Young, "Benefits and Costs of Implementing the Ecosystem Approach to Fisheries". In: *The Ecosystem Approach to Fisheries* (G. Bianchi and H.R. Skjoldal, editors). CAB International (2009).

C. De Young and A. Charles, "Creating Incentives for the Ecosystem Approach to Fisheries Management: A Portfolio of Approaches". In: *The Ecosystem Approach to Fisheries* (G. Bianchi and H.R. Skjoldal, editors). CAB International (2009).

P. McConney and A. Charles. "Managing Small-Scale Fisheries: Moving Towards People-Centred Perspectives". *Handbook of Marine Fisheries Conservation and Management* (R.Q. Grafton, R. Hilborn, D. Squires, M. Tait & M. Williams, editors). Oxford University Press (to appear, 2009).

S. Salas, R. Chuenpagdee, J.C. Seijo, and A. Charles. *Coastal Fisheries of Latin America and the Caribbean*. Food and Agriculture Organisation of the United Nations (to appear, 2009).

M. Arce-Ibarra and A. Charles. "Non-management of Natural Resources: Inland Fisheries in the Mayan Zone, Quintana Roo, México". *Human Ecology* 36:853-860 (2008).

M. Wiber, A. Charles, J. Kearney and F. Berkes. "Enhancing community empowerment through participatory fisheries research". *Marine Policy* 33:172-179 (2008).

A.M. Arce-Ibarra and A. Charles. "Inland Fisheries of the Mayan Zone in Quintana Roo, Mexico: Using a Combined Approach to Fishery Assessment for Data-sparse Fisheries". *Fisheries Research* 91:151-159 (2008).

S.M. Garcia and A. Charles. "Fishery Systems and Linkages: Implications for Science and Governance". *Ocean and Coastal Management* 51:505-527 (2008).

D. Armitage, R. Plummer, F. Berkes, R. Arthur, A. Charles, I. Davidson-Hunt, A. Diduck, N. Doubleday, D. Johnson, M. Marschke, P. McConney, E. Pinkerton, and L. Wollenberg. "Adaptive co-management for social-ecological complexity", *Frontiers in Ecology and the Environment* 7(2): 95–102 (2009).

J. Mathias, B. Ayles, S. Blakney, A. Charles, H. Fast and P. Irniq. "Arctic Change and Coastal Communities: Overview of the Coastal Zone Canada Conference, Tuktoyaktuk, August 2006". *Arctic* 61, Suppl 1: iii-xi (2008).

C. De Young, A. Charles, and A. Hjort. *Human Dimensions of the Ecosystem Approach to Fisheries: An Overview of Context, Concepts, Tools and Methods*. Fisheries Technical Paper No. 489. Food and Agriculture Organization of the United Nations, Rome Italy. 152p. (2008).

A. Charles. "The Right Form of Rights". *SAMUDRA Report* 51: 4-6 (2008).

A. Charles. "Robust Management, Risk and the Ecosystem Approach to Fisheries". *ICES CM Documents* 2008/O:05. International Council for the Exploration of the Sea (2008).

A. Charles, "Turning the Tide: Toward Community-Based Fishery Management in Canada's Maritimes", p.569-573 in *American Fisheries Society Symposium 49 (Proceedings of the 4th World Fisheries Congress)*. American Fisheries Society, Bethesda, USA. (2008).

M. Wiber, F. Berkes, A. Charles and J. Kearney. "A Participatory Approach to Identifying Research Needs for Community-Based Fishery Management", p.587-594 in *American Fisheries Society Symposium 49 (Proceedings of the 4th World Fisheries Congress)*. American Fisheries Society, Bethesda, USA. (2008).

A. Charles, "Adaptive Co-Management for Resilient Resource Systems: Some Ingredients and the Implications of their Absence". In: *Adaptive Co-Management* (D. Armitage, F. Berkes and N. Doubleday, editors). UBC Press. Vancouver, Canada. (2007).

S.M. Garcia and A. Charles, "Fishery Systems and Linkages: From Clockwork to Soft Watches" *ICES Journal of Marine Science* 64:580-587 (2007).

J. Kearney, F. Berkes, A. Charles, E. Pinkerton and M. Wiber. "The Role of Participatory Governance and Community-Based Management in Integrated Coastal and Ocean Management in Canada". *Coastal Management* 35:79-104 (2007).

A. Charles, S. Salas, R. Chuenpagdee and J.C. Seijo, "Preface to Special Issue: Evaluation and Management of Coastal Fisheries in Latin America and the Caribbean", *Fisheries Research* 87:1–4 (2007).

S. Salas, R. Chuenpagdee, J.C. Seijo and A. Charles, "Challenges in the Assessment and Management of Small-scale Fisheries in Latin America and the Caribbean", *Fisheries Research* 87: 5–16 (2007).

S. Salas, R. Chuenpagdee, J.C. Seijo and A. Charles, "Special Issue: Evaluation and Management of Coastal Fisheries in Latin America and the Caribbean", *Fisheries Research* 87(1) (2007).

A. Charles, A. Bull, J. Kearney and C. Milley, "Community-Based Fisheries in the Canadian Maritimes". p.274-301 in *Fisheries Management: Progress toward Sustainability* (T. McClanahan and J.C. Castilla, editors). Blackwell Publishing, Oxford, UK (2007).

U.R. Sumaila, A. Charles and G. Sylvia (Editors), "Topical Problems in Fisheries Economics". Special Issue of *Marine Resource Economics*, Volume 21(4) (2007).

U.R. Sumaila, A. Charles, and G. Sylvia, "Topical Problems in Fisheries Economics: An Introduction". *Marine Resource Economics* 21:337-340 (2007).

S. Salas and A. Charles, "Are small-scale fishers profit maximizers?: Exploring fishing performance of small-scale fishers and factors determining catch rates". p.117-124 in: *Proceedings of the 60th Gulf and Caribbean Fisheries Institute*, November 5-9, 2007, Punta Cana, Dominican Republic. (2007).

A. Charles and J. Sanders, "Issues Arising on the Interface of MPAs and Fisheries Management". p.301-332 in *Report and documentation of the Expert Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations. Rome, 12-14 June 2006*. (FAO). FAO Fisheries Report. No. 825. Food and Agriculture Organization of the United Nations, Rome Italy. 332 pp. (2007).

A. Charles, "The Human Dimension of Fisheries Adjustment: An Overview of Key Issues and Policy Challenges". Keynote Paper, *Expert Meeting on the Human Side of Fisheries Adjustment. 19 October 2006. Paris, France*. Published as Chapter 1 in (OECD, editor) *Structural Change in Fisheries: Dealing with the Human Dimension*. Organisation for Economic Co-operation and Development. Paris, France (2007).

A. Charles, M. Winterbottom, L. Wilson and S. Mills, "*Social, Economic and Cultural Overview and Assessment for Ocean Management*". Report Prepared for Oceans Directorate, Oceans and Habitat Sector, Canadian Department of Fisheries and Oceans (2007).

A. Charles. "Linking Natural Capital and Physical Capital: A Review of Renewable Resource Investment Models". In: *Essays in Fisheries Economics and Management: A Festschrift in Honour of Gordon Munro* (T. Bjørndal, D.V. Gordon, R. Arnason and R. Sumaila, editors). Blackwell Publishing, Oxford, UK (2007).

H. Boyd and A. Charles, "Creating Community-Based Indicators to Monitor Sustainability of Local Fisheries", *Ocean and Coastal Management* 49:237-258 (2006).

A. Charles, "Community Fishery Rights: Issues, Approaches and Atlantic Canadian Case Studies". In: *Proceedings of the Thirteenth Biennial Conference of the International Institute of Fisheries Economics & Trade, July 11-14, 2006, Portsmouth, UK: Rebuilding Fisheries in an Uncertain Environment*. Compiled by Ann L. Shriver. International Institute of Fisheries Economics & Trade, Corvallis, Oregon, USA. CD ROM. ISBN 0-9763432-3-1 (2006).

C. De Young and A. Charles, "*Creating Incentives for the Ecosystem Approach to Fisheries Management: A Portfolio of Approaches for Consideration in the Benguela Current Large Marine*

Ecosystem". Prepared for the 3rd Regional Workshop of BCLME EAF Project, Cape Town, 30 October to 3 November 2006. Food and Agriculture Organization of the United Nations. Rome, Italy (2006).

C. De Young, A. Charles and A. Hjort, "*Background Document on Social, Economic and Institutional Considerations of Applying the Ecosystem Approach to Fisheries*" prepared for the FAO Expert Consultation on Economic, Social and Institutional Considerations of Applying the Ecosystem Approach to Fisheries Management, 6-9 June 2006. Rome Italy. Food and Agriculture Organization of the United Nations. Rome, Italy (2006).

J. Graham with A. Charles and A. Bull. *Community Fisheries Management Handbook*. A publication of Turning the Tide: Communities Managing Fisheries Together. Published by the Gorsebrook Research Institute, Saint Mary's University, Halifax, Canada (2006).

A. Charles, "*Subsidies in Fisheries: An Analysis of Social Impacts within an Integrated Sustainable Development Framework*". AGR/FI(2004)6. OECD. Published with the title "Social Impacts of Government Financial Support of Fisheries" as Chapter 7 in (OECD, editor) *Financial Support to Fisheries: Implications for Sustainable Development*. Organization for Economic Co-operation and Development, Paris France (2006).

A.F. Herrera Ulloa, L.F. Beltran Morales, A. Charles and A. Ortega, "Medicion del Desarrollo Sustentable en Baja California Sur". in: *Desarrollo Sustentable: Mito o Realidad?* (L.F. Beltran Morales, J. Urciaga Garcia and A. Ortega Rubio, editors), Centro de Investigaciones Biologicas del Noroeste, La Paz, Mexico (2006).

A. Charles, "Toward Sustainable and Resilient Fisheries: A Fishery-System Approach to Overcoming the Factors of Unsustainability", p.221-233 in *Overcoming Factors of Unsustainability and Overexploitation in Fisheries: Selected Papers on Issues and Approaches. International Workshop on the Implementation of the International Fisheries Instruments and Factors of Unsustainability and Overexploitation in Fisheries. Siem Reap, Cambodia, 13-16 September 2004*. (J. Swan and D. Greboval, editors). FAO Fisheries Report. No.782. Food and Agriculture Organization of the United Nations, Rome Italy (2005).

A. Charles. "The Big Picture: A Fishery System Approach Links Fishery Management and Biodiversity". *Proceedings of the International Conference on Biodiversity: Science and Governance. Muséum National d'Histoire Naturelle, Paris, France* (2005). [Also in: *Proceedings of the Workshop on Biodiversity Challenges for Fishery Management. Conference on Biodiversity: Science and Governance*. IFREMER, Paris, France (2005) – available on the IFREMER website: www.ifremer.fr/gascogne/actualite/colloque/atelier-biodiversite/index.htm].

Cheunpagdee, R., A. Bundy, A. Charles, P. Christie, L. Fanning, P. Gonzalez, J. Huston, L. Liguori, D. Nandakumar, D. Ricard, M. Rudd, D. Pauly, S. Salas, J. Smith, R. Sumaila, M. Turnipseed, P. Tyedmers, D. Vanderzwaag and K. Zwanenburg. "Creating a Positive Future for Fisheries and Coastal Communities Worldwide". *Fisheries Centre Research Reports* 13(2):77-88. University of British Columbia, Vancouver, B.C., Canada (2005).

A. Charles, A. Evans, L. Grattan and A. Gill, "Canada's Coasts and Oceans: Identifying the Issues". Discussion Paper. Ocean Management Research Network, Ottawa, Canada (2005).

P. Copes and A. Charles. "Socioeconomics of Individual Transferable Quotas and Community-Based Fishery Management". *Agricultural and Resource Economics Review* 33:171-181 (2004).

M. Wiber, F. Berkes, A. Charles and J. Kearney. "Participatory Research Supporting Community-Based Fishery Management". *Marine Policy* 28:459-468 (2004).

X. Xue, H. Hong, and A. Charles, "Linking Integrated Coastal Management and Cumulative Impact Assessment: A Case Study of Xiamen, China". *Journal of Environmental Management* 71:271-283 (2004).

A. Charles, "Rights-Based Fishery Management: A Focus on Use Rights". p.3-5 in: *Who Gets the Fish? Proceedings of the New England Workshop on Rights-Based Fisheries Management Approaches*. M.E. Petruny-Parker, K.M. Castro, M.L. Schwartz, L.G. Skrobe and B. Somers (editors). Rhode Island Sea Grant, Narragansett, R.I. USA, 28pp (2004).

A. Charles, "Sustainability and Resilience in Natural Resource Systems: Policy Directions and Management Institutions". *Encyclopaedia of Life Support Systems (EOLSS)*. Developed under the auspices of the UNESCO. Eolss Publishers, Oxford, UK [www.eolss.net] (2004).

A. Charles, "Some Ideas Relating to Fishery Sustainability". p.295-297 in: *Report and Documentation of the International Workshop on the Implementation of International Fisheries Instruments and Factors of Unsustainability and Overexploitation in Fisheries. Mauritius 3-7 February 2003*. (J. Swan and D. Greboval, editors). FAO Fisheries Report. No.700. Food and Agriculture Organization of the United Nations, Rome Italy (2004).

J. Hatt and A. Charles. "Assessing Success in Aquaculture from the Farmer Perspective: The Case of Nova Scotia". Environmental Studies Program, Saint Mary's University (Halifax, Nova Scotia, Canada). Available at: <http://husky1.smu.ca/~charles/>. (2004).

M. Haward, R. Dobell, A. Charles, E. Foster and T. Potts. "Fisheries and Oceans Governance in Australia and Canada: From Sectoral Management to Integration?" *Dalhousie Law Journal* 26:5-45 (2003).

Á.F. Herrera-Ulloa, A. Charles, S.E. Lluch-Cota, H. Ramírez-Aguirre, S. Hernández-Vázquez, and A. Ortega-Rubio, "A regional-scale sustainable development index: The case of Baja California Sur, México." *International Journal of Sustainable Development and World Ecology* 10:353-360 (2003).

Ocean Management Research Network, "A Retrospective Review of the OMRN's 2002 National Conference – Canada's Oceans: Research, Management and the Human Dimension", Ocean Management Research Network, Halifax, N.S. (2003). [available at www.omrn-rrgo.ca]

Ocean Management Research Network, "OMRN Strategic and Action Plan (2003-2007)", Ocean Management Research Network, Halifax, N.S. (2003). [available at www.omrn-rrgo.ca]

A. Charles, H. Boyd, A. Lavers, and C. Benjamin, “*The Nova Scotia GPI Fisheries and Marine Environment Accounts: A Preliminary Set of Ecological, Socioeconomic and Institutional Indicators for Nova Scotia’s Fisheries and Marine Environment*”. GPI Atlantic, Tantallon NS Canada (2002).

A. Charles, “Use Rights and Responsible Fisheries: Limiting Access and Harvesting through Rights-based Management” In: *A Fishery Manager’s Guidebook. Management Measures and their Application*. (Cochrane, K., editor) FAO Fisheries Technical Paper, No. 424, Food and Agriculture Organization of the United Nations, Rome Italy, 231p. (2002).

A. Charles, “The Precautionary Approach and ‘Burden of Proof’ Challenges in Fishery Management”. *Bulletin of Marine Science* 70(2):683-694 (2002).

U.R. Sumaila and A. Charles (Editors), “Economic Models of Marine Protected Areas”. Special Issues of *Natural Resource Modeling*, Volume 15(3&4) (2002).

U.R. Sumaila and A. Charles, “Economic Models of Marine Protected Areas: An Introduction”. *Natural Resource Modeling* 15(3):261-272 (2002).

A. Charles, “*Sustainable Fishery Systems*”, Blackwell Science, Oxford UK, 384p. (2001).

A. Charles, “Use Rights in Fishery Systems”. In: *Microbehavior and Macroresults: Proceedings of the Tenth Biennial Conference of the International Institute of Fisheries Economics and Trade, July 10-14, 2000, Corvallis, Oregon, USA*. Edited by Richard S. Johnston and compiled by Ann L. Shriver. International Institute of Fisheries Economics and Trade (IIFET), Corvallis, OR, U.S.A. CD-ROM. ISBN: 0-9763432-2-3 (2001).

A. Charles and C. Milley, “Mi’kmaq Fisheries in Atlantic Canada: Traditions, Legal Decisions and Community Management”. Paper prepared for the conference *People and the Sea: Maritime Research in the Social Sciences: An Agenda for the 21st Century*. University of Amsterdam and SISWO (Netherlands Institute for the Social Sciences), Amsterdam, The Netherlands (2001).

D. Whitmarsh and A. Charles, “The State of Fisheries Economics: The 10th Biennial Conference of International Institute of Fisheries Economics and Trade”. *Fish & Fisheries* 2:170-171 (2001).

A. Charles and J. Leith, “*Social and Economic Approaches to Biodiversity Conservation: An Annotated Bibliography with Emphasis on Aquaculture*”, International Development Research Centre, Ottawa Canada, 135p. (1999).

de Young, B., R. M. Peterman, A. R. Dobell, E. Pinkerton, Y. Breton, A. Charles, M. J. Fogarty, G. R. Munro, C. Taggart. “*Canadian Marine Fisheries in a Changing and Uncertain World*”, Canadian Special Publication of Fisheries and Aquatic Sciences No. 129, 199p. (1999).

A. Charles, R.L. Mazany and M.L. Cross, “The Economic of Illegal Fishing: A Behavioral Model”, *Marine Resource Economics* 14:95-110 (1999).

A. Charles, “Fisheries in Transition”, in: *Ocean Yearbook 13*. E.M. Borgese, A. Chircop, M. McConnell and J.R. Morgan (editors), University of Chicago Press (1998).

A. Charles, “Property Rights and Use Rights in Fisheries”, in: *Proceedings, 8th Conference of the*

International Institute for Fisheries Economics and Trade, Morocco (1998).

L. Loucks, A. Charles and M. Butler (Editors), “*Managing Our Fisheries, Managing Ourselves*”, Gorsebrook Research Institute, Halifax, Nova Scotia (1998).

A. Charles, “Beyond the Status Quo: Re-thinking Fishery Management” in: *Re-inventing Fisheries Management*. T. Pitcher, D. Pauly and P. Hart (editors), Kluwer (1998).

A. Charles, “Living with Uncertainty in Fisheries: Analytical Methods, Management Priorities and the Canadian Groundfishery Experience”, *Fisheries Research* 37: 37-50 (1998).

A. Charles, “The path to sustainable fisheries”, p.201-213 in: *Peace in the Oceans: Ocean Governance and the Agenda for Peace: The Proceedings of Pacem in Maribus XXIII, Costa Rica, 3-7 December 1995*. E. Mann Borgese (editor). Intergovernmental Oceanographic Commission Technical Series 47. UNESCO. Paris France (1997).

A. Charles, “*Sustainability Indicators: An annotated bibliography with emphasis on fishery systems, coastal zones and watersheds*”, Strategy for International Fisheries Research, Ottawa, Canada (1997).

A. Charles, “*Sustainable coastal fisheries: Policy directions for improved resource management*”, Manuscript prepared for the Independent World Commission on the Oceans, Geneva Switzerland (1997).

J.A. Mathias, A. Charles and B. Hu, “*Integrated Fish Farming*”, CRC Press, New York (1997).

H. Chen, A. Charles and B. Hu, “Chinese Integrated Fish Farming”, in: *Integrated Fish Farming*. J.A. Mathias, A. Charles and B. Hu (editors). CRC Press, New York (1997).

A. Charles, “Fisheries management in Atlantic Canada”, *Ocean and Coastal Management* 35:101-119 (1997).

A. Charles, R.F. Agbayani, E.C. Agbayani, M. Agüero, E.T. Belleza, E. Gonzalez, B. Stomal and J.Y. Weigel, “*Aquaculture Economics in Developing Countries: Regional Assessments and an Annotated Bibliography*”, FAO Fisheries Circular No.213, Food and Agriculture Organization of the United Nations, Rome Italy (1997).

R.E. Townsend and A. Charles, “User rights in fishing”, in: *Northwest Atlantic Groundfish: Perspectives on a Fishery Collapse*. J.G. Boreman, B.S. Nakashima, J.A. Wilson and R.L. Kendall (editors). American Fisheries Society, Bethesda Maryland (1997).

A. Charles, C. Amaratunga, T. Amaratunga and A.F. Herrera U., “*Marine and Coastal Research in Costa Rica: Current State and Policies for the Future*”, Publicaciones UNA, Heredia, Costa Rica, 81p. (1996, in Spanish).

A. Charles, “Sustainability assessment and bio-socio-economic analysis: Tools for integrated coastal development”, p.115-125 in: *Philippine Coastal Resources Under Stress*. M.A. Juinio-Meñez and G. Newkirk (editors), Coastal Resources Research Network, Halifax, Canada, and Marine Science Institute, Quezon City, Philippines (1995).

H. Chen, B. Hu, and A. Charles, "Chinese integrated fish farming: A comparative bioeconomic analysis", *Aquaculture Research* 26:81-94 (1995).

A. Charles, "Fishery science: The study of fishery systems", *Aquatic Living Resources* 8:233-239 (1995).

A. Charles, "The Atlantic Canadian groundfishery: Roots of a collapse", *Dalhousie Law Journal* 18:65-83 (1995).

A. Charles, "*Sustainability assessment for fishery systems*", Working Paper FMS#07-95, Saint Mary's University, Halifax, Canada (1995).

A. Charles, "Towards sustainability: The fishery experience", *Ecological Economics* 11:201-211 (1994).

J.E. Padilla and A. Charles, "Bioeconomic modeling and the management of capture and culture fisheries", *Naga: The ICLARM Quarterly* 17:18-20 (1994).

A. Charles, T.R. Brainerd, A. Bermudez, H.M. Montalvo and R.S. Pomeroy, "*Fisheries Socio-economics in the Developing World: Regional Assessments and an Annotated Bibliography*", International Development Research Centre, Ottawa Canada, 163p. (1994).

A. Charles and J. Catanzano, "Resource valuation and conflict", p.1159-1162 in: *Proceedings of the 6th Conference of the International Institute for Fisheries Economics and Trade*. M. Antona, J. Catanzano, J.G. Sutinen (editors), IIFET/ORSTOM, Paris, France (1994).

A. Charles, R.L. Mazany and M.L. Cross, "Fisheries regulation and the incentives to overfish", p.873-880 in: *Proceedings of the 6th Conference of the International Institute for Fisheries Economics and Trade*. M. Antona, J. Catanzano, J.G. Sutinen (editors), IIFET/ORSTOM, Paris, France (1994).

A. Charles and A. Herrera, "Development and diversification: Sustainability strategies for a Costa Rican fishing cooperative", p.1315-1324 in: *Proceedings of the 6th Conference of the International Institute for Fisheries Economics and Trade*. M. Antona, J. Catanzano, J.G. Sutinen (editors), IIFET/ORSTOM, Paris, France (1994).

A. Charles (Editor), "*Fishery Enforcement: Economic Analysis and Operational Models*", Oceans Institute of Canada, Halifax, 74p. (1993).

A. Charles, "Economic research in small-scale fisheries: Information needs and analytical techniques", *Bulletin of the Special Interest Group on Traditional Management and Knowledge of Marine Systems* (South Pacific Commission, New Caledonia) 2:11-14 (1993).

A. Charles, "*Sustainable development of the oceans: A commentary on Agenda 21*", prepared for the Forum on Oceans and the United Nations Conference on Environment and Development, Dalhousie University and the International Development Research Centre, Halifax Canada (1993).

A. Charles, "Fishery conflicts: A unified framework", *Marine Policy*, 16(5):379-393 (1992).

A. Charles, "Canadian fisheries: Paradigms and policy", p.3-26 in: *Canadian Ocean Law and Policy*. D. VanderZwaag (editor), Butterworths, Markham (1992).

A. Charles, "Sustainability lessons from the fishery sector", p.151-173 in: *Sustainable Development and Economic Policies in Latin America*. Olman Segura (editor), Universidad Nacional, Heredia, Costa Rica (1992) (Spanish).

A. Charles, "Uncertainty and information in fishery management models: A Bayesian updating algorithm", *American Journal of Mathematical and Management Sciences* 12:191-225 (1992).

S.S. Coffen and A. Charles, "Production economics of shellfish aquaculture in Atlantic Canada: A preliminary analysis", *Aquaculture and Fisheries Management* 22:193-202 (1991).

A. Charles, "Small-scale fisheries in North America: Research perspectives", p.157-184 in: *Research and Small-Scale Fisheries*. J.R. Durand, J. Lemoalle and J. Weber (editors), ORSTOM, Paris France (1991).

A. Charles, "Bio-socio-economic dynamics and multidisciplinary models in small-scale fisheries research", p.603-608 in: *Research and Small-Scale Fisheries*. J.R. Durand, J. Lemoalle and J. Weber (editors), ORSTOM, Paris France (1991).

A. Charles, "*Fisheries Management and Development: A Policy and Strategic Assessment*", International Centre for Ocean Development, Halifax, Canada, 99p. (1991).

A. Charles and C. Yang, "A decision support model for coastal fishery planning: Optimal capacity expansion and harvest management", p.71-88 in: *Operations Research & Management in Fishing*. A.J.M. Guimaraes Rodrigues (editor), Kluwer Academic Publishers (1990).

A. Charles and C. Yang, "A strategic planning model for fisheries development", *Fisheries Research* 10:287-307 (1990).

A. Charles, M.L. Cross, and R.L. Mazany, "Fisheries regulation and investment behaviour: A conceptual framework and its relevance to the Nova Scotia fishing industry", p.622-640 in: *Proceedings of the Fourth Conference of the International Institute of Fisheries Economics and Trade*. Esbjerg, Denmark (1990).

A. Charles, Review of: "Co-operative Management of Local Fisheries: New Directions for Improved Management and Community Development" *Canadian Public Policy* 16:111-12 (1990).

M. Bradfield, A. Charles, G. MacDonald, M. MacDonald and R. Williams (Editors), "*Economic Democracy in Atlantic Canada: Proceedings of a Conference on Popular Participation and Development*", Gorsebrook Research Institute, Halifax, 43p. (1990).

A. Charles, "Bio-socio-economic fishery models: labour dynamics and multiobjective management", *Canadian Journal of Fisheries and Aquatic Sciences* 46:1313-1322 (1989).

A. Charles and G.N. White (Editors), "*Natural Resource Modelling and Analysis*", Centre for Resource Systems Analysis, Halifax, 310p. (1989).

A. Charles, Book Review of "Taking Risks: The Management of Uncertainty", *Canadian Journal*

of Operational Research and Information Processing (INFOR) 27:122-125 (1989).

A. Charles, "Fishery Socioeconomics: A survey", *Land Economics* 64:276-295 (1988).

A. Charles, "In-season fishery management: A Bayesian model", *Natural Resource Modeling* 2:599-629 (1988).

A. Charles, "Investment in natural resource industries: Applications of operations research methods", p.303-317 in: *Strategic Planning in Energy and Natural Resources*. B. Lev, J. Bloom, A. Gleit, F. Murphy and C. Shoemaker (editors), North-Holland (1987).

A. Charles, "Cost/benefit Analysis and Fish Finding Technology", unpublished manuscript, prepared for: Seminar on Fish Finding Technology, Technical University of Nova Scotia, Halifax, Canada (1987).

A. Charles, "Coastal state fishery development: Foreign fleets and optimal investment dynamics", *Journal of Development Economics* 24: 331-358 (1986).

A. Charles, "Coastal fisheries, investment planning and the role of foreign fleets: An economic analysis", p.205-216 in: *Proceedings of the International Conference on Fisheries*. GERMA (editors), Rimouski, Canada, (1986).

A. Charles, "Nonlinear costs and optimal fleet capacity in deterministic and stochastic fisheries", *Mathematical Biosciences* 73:271-299 (1985).

A. Charles, and G.R. Munro, "Irreversible investment and optimal fisheries management: A stochastic analysis", *Marine Resources Economics* 1:247-264 (1985).

C.W. Clark, A. Charles, J.R. Beddington and M. Mangel, "Optimal capacity decisions in a developing fishery", *Marine Resource Economics* 2:25-53 (1985).

A. Charles and W.J. Reed, "A bioeconomic analysis of sequential fisheries: Competition, coexistence and optimal harvest allocation between inshore and offshore fleets", *Canadian Journal of Fisheries and Aquatic Sciences* 42:952-962 (1985).

C.W. Clark, G.R. Munro and A. Charles, "Fisheries, dynamics and uncertainty", p.99-120 in: *Progress in Natural Resource Economics*. A. Scott & P. Neher (eds), Oxford Univ. Press (1985).

A. Charles and M.A. Henderson, "Chum salmon stock reconstructions for 1970-1982. Part I: Queen Charlotte Islands, North Coast and Central Coast, British Columbia", Canadian Manuscript Report of Fisheries and Aquatic Sciences, No. 1814 (1985).

A. Charles, "Escapement estimation: From an economics perspective", p.251-258 in: *Proceedings of the Workshop on Stream Indexing for Salmon Escapement Estimation*. P.E.K. Symons and M. Waldichuk (editors), Canadian Technical Report of Fisheries and Aquatic Sciences No. 1326 (1984).

P.J. Starr, A. Charles and M.A. Henderson, "Reconstruction of British Columbia sockeye salmon stocks: 1970-1982", Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 1780 (1984).

M.A. Henderson and A. Charles, “*Reconstruction of British Columbia pink salmon stocks: 1970-1982. Part I: Queen Charlotte Islands, North Coast and Central Coast*”, Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 1785 (1984).

A. Charles, “Optimal fisheries investment: Comparative dynamics for a deterministic seasonal fishery”, *Canadian Journal of Fisheries and Aquatic Sciences* 40:2069-2079 (1983).

A. Charles, “Optimal fisheries investment under uncertainty”, *Canadian Journal of Fisheries and Aquatic Sciences* 40:2080-2091 (1983).

A. Charles, “Effects of parameter uncertainty and Bayesian updating on fisheries investment”, p.36-40 in: *Mathematical Models of Renewable Resources II: Proceedings of the Second Pacific Coast Conference on Mathematical Models of Renewable Resources*. R. Lamberson (editor), Humboldt State University Mathematical Modeling Group, Arcata USA (1983).

A. Charles, “The role of randomness in renewable resources: Optimal fisheries investment under uncertainty”, p.40-44 in: *Mathematical Models of Renewable Resources: Proceedings of the First Pacific Coast Conference on Mathematical Models of Renewable Resources*. R. Lamberson (editor), Humboldt State University Mathematical Modeling Group, Arcata USA (1982).

M. Margolick, A. Charles and J.F. Helliwell, “*The Value of Information to Electricity Investment Planners*”, University of British Columbia Programme in Natural Resource Economics, Resource Paper #70 (1981).

M. Margolick and A. Charles, “*Future electricity requirements in B.C.: A Comparison of Forecasts Made by B.C. Hydro and the B.C. Ministry of Energy, Mines and Petroleum Resources*”, Society Promoting Environmental Conservation, Vancouver, Canada (1980).

INVITED CONFERENCE PRESENTATIONS

2009. “Integrated Bio-Socio-Economic Analysis and Advice for Fishery Management: A Reflection”, ICES Annual Science Conference 2009, Berlin Germany.

2009. “Property Rights in Fisheries: Whose Ocean is it Anyway?”, Property Rights Dialogue Session, Ocean Management Research Network 2009 Conference, Ottawa Canada.

2007. “Human Dimensions of Marine Protected Areas”, European Symposium on Marine Protected Areas, Murcia, Spain.

2007. “Adaptive Co-Management: Some Comments”, National Conference, Ocean Management Research Network, Ottawa, Ontario.

2006. “The Human Dimension of Fisheries Adjustment: An Overview of Key Issues and Policy Challenges”, Expert Meeting on the Human Side of Fisheries Adjustment, OECD. Paris, France.

2005. “Bioethics of the Sea: How do we responsibly manage and regulate fishery resources?”, Workshop on Bioethics of the Sea, Nordic Committee on Bioethics, Bergen, Norway.

2005. "The Big Picture: Fishery Management, Ocean Management and Biodiversity", Workshop on Biodiversity Challenges for Fisheries Management, International Conference on Biodiversity Science and Governance, Paris, France.
2004. "Policy and Management for Sustainable and Resilient Coastal Fisheries", COASTFISH Conference on Coastal Fisheries in Latin America and the Caribbean, Merida, Mexico.
2004. "Toward Sustainable and Resilient Fisheries: A Fishery-System Approach to Overcoming the Factors of Unsustainability", International Workshop on Factors of Unsustainability in Fisheries: Addressing Management Challenges, Siem Reap, Cambodia.
2004. "A Socioeconomic Analysis of Individual Transferable Quotas and Community-Based Fishery Management", 2004 Annual Meeting, Northeastern Agricultural and Resource Economics Association, Halifax, Nova Scotia.
2004. "Learning from Coastal Management to Improve Fisheries Management", Coastal Zone Canada 2004 Symposium on *Innovative Integration of Fisheries and Coastal Management*, St. John's, Newfoundland.
2003. "Climate Change and Fisheries: A Socioeconomic Perspective on Impacts and Adaptation", Workshop on Impact and Adaptation Responses of Fish and Fisheries to Climate Change, Canadian Climate Impacts and Adaptation Research Network (C-CIARN), Ottawa, Ontario.
2002. "Turning the Tide: Community Management of Fisheries and Coastal Resources", Aboriginal Policy Research Conference, Indian and Northern Affairs Canada, Ottawa Ontario.
2001. "Marine Conservation Challenges: The Human Angle", Conference of the Canadian Council on Ecological Areas, Charlottetown PEI.
2001. "Facilitating Community-Based Management in the Canadian Maritimes through Participatory Research: Defining the Research Issues" (with M. Wiber, J. Kearney, F. Berkes), *People and the Sea: Maritime Research in the Social Sciences: An Agenda for the 21st Century*. University of Amsterdam and SISWO (Netherlands Institute for the Social Sciences), Amsterdam.
2000. "Designing and Implementing Marine Protected Areas: Coping with Complexity", Marine Exclusion Zones in Europe: A Facilitated Multidisciplinary Conference, Southampton U.K.
2000. "Use Rights: Overview and Multi-Objective Analysis", Property Rights Session, 10th Conference of the International Institute for Fisheries Economics and Trade, Corvallis U.S.A.
1998. "Managing Ocean Resources for Sustainability: The Case of the Fishery", International Conference on the Economics of the Oceans, Lisbon Portugal.
1997. "Living with Uncertainty", Fisheries Management under Uncertainty Symposium: Objectives and Uncertainties in Fisheries Management with Emphasis on Three North Atlantic Ecosystems, Bergen, Norway.
1997. "Marine Conservation Areas", Workshop on Marine Conservation Areas for Newfoundland,

Summit of the Sea Conference, St. John's, Newfoundland.

1996. "Property Rights and Use Rights in Fisheries" (Commentary on Presentation by Francis T. Christy), 8th Conference, International Institute for Fisheries Economics and Trade", Marrakech, Morocco.

1995. "Bio-Socio-Economic Modelling of Management Options in Invertebrate Fisheries", North Pacific Symposium on Invertebrate Stock Assessment and Management, Department of Fisheries and Oceans, Nanaimo, Canada (1995).

1995. "People and Fish: Sustainable Development of Aquatic Ecosystems", Canadian Society of Zoologists, 1995 Meeting, Rimouski Quebec.

1995. "The Path to Sustainable Fisheries", XXIII Pacem in Maribus Conference, International Ocean Institute, Puntarenas, Costa Rica.

1995. Discussant, "Sustaining the Fisheries Resources: Implications for Industrial Structure and the Labor Market", Conference on Sustainable Development and the Labour Market, Canadian Employment Research Forum, Ottawa, Ontario.

1993. "From Fishing to Farming: Bio-Socio-Economic Models of Occupational Transformation", Fourth Annual Common Property Conference, Manila, Philippines.

1993. "Conflict in the Coastal Commons: Canada and Costa Rica", Fourth Annual Common Property Conference, Manila, Philippines.

1992. "Sustainable Development and Resource Analysis: Developing World Challenges", Fifth Interdisciplinary Conference on Natural Resource Modelling and Analysis, St. John's.

1991. "Aquaculture and Fishery Models: Applications in the Developing World", 10th Pacific Coast Conference on the Mathematical Modeling of Renewable Natural Resources, Resource Modeling Association, Arcata CA.

1991. "Sustainability Lessons from the Fishery Sector", International Conference on Economic Policies for Sustainable Development in Central America, San Jose, Costa Rica.

1989. "Small-Scale Fisheries in North America: Research Perspectives", Conference on Research in Small-Scale Fisheries, IFREMER/ORSTOM, Montpellier, France.

1988. "Bioeconomic Modelling in Fisheries and Aquaculture", International Workshop on Statistical Ecology and Its Application in Fisheries, Wuxi, China.

1987. "Fish, Capital and Information: A Bayesian Simulation Model", Canadian Operations Research Conference, Calgary, Alberta.

1982. "Fisheries, Dynamics and Uncertainty: Major Developments in the Economics of Fisheries Management", Programme in Natural Resource Economics Conference, University of British Columbia, Vancouver, British Columbia (with C.W. Clark and G.R. Munro).

1981. “Irreversible Investment and Optimal Fisheries Management: A Stochastic Analysis”, Workshop on Uncertainty and Fisheries Economics, University of Rhode Island, Providence R.I. (with G.R. Munro).

INVITED PRESENTATIONS: SEMINARS, WORKSHOP AND PUBLIC LECTURES

2009. “Catch Shares and Use Rights: Approaches & Issues”, Workshop on Managing for Socio-Economic Objectives in Catch Share Systems, Gulf of Maine Research Institute, Beverly MA US.

2009. “Human Dimensions of Marine Protected Areas”, Gully Advisory Committee, Fisheries and Oceans Canada, Bedford Institute of Oceanography, Dartmouth Canada.

2009. “Rights-Based Fishery Management”, Pew Fellows 2009 Annual Meeting, Pew Charitable Trusts, Portland Maine USA.

2006. “Benefits and Costs of Implementing the Ecosystem Approach to Fisheries”, Norwegian College of Fishery Science, University of Tromsø, Tromsø, Norway.

2006. “Benefits and Costs of Implementing the Ecosystem Approach to Fisheries”, University of Brest, Brest, France.

2006. “Ecosystem Approaches, MPAs, Fisheries and People”, Bedford Institute of Oceanography, Halifax, Canada.

2006. “People and Fish: Policy and Management for Sustainable Coastal Fisheries”, Fisheries Department, Food and Agriculture Organization of the United Nations. Rome, Italy.

2006. “Fishery Ecosystems and Ocean Space”, Fisheries Department, Food and Agriculture Organization of the United Nations. Rome, Italy.

2005. “Challenge and Change on Atlantic Coastlines: Communities, Fisheries and Managing Together”. MacNutt Memorial Lectures, University of New Brunswick, Saint John & Fredericton.

2004. “Success Stories in Saving the Seas”, Saint Mary’s University, Halifax Canada.

2004. “Past and Future Directions in Fishery Management”, AquaLink Workshop on Innovation and Outlook in Fisheries, Vancouver Canada.

2004. “Sustainability and Resilience in Resource Systems: Indicator Frameworks and Policy Directions”, (a) CINVESTAV, Merida, Mexico, and (b) EcoSur, Chetumal, Mexico.

2002. “Developing Indicators for Fisheries and Oceans Management”, Oceans Branch, Fisheries and Oceans Canada, Ottawa Canada.

2002. “Fisheries and Oceans Indicators”, Harvest Fisheries Seminar Series, Bedford Institute of Oceanography, Fisheries and Oceans Canada (Marine Fish Division / Invertebrate Division / Anadromous Fish Division), Dartmouth Canada.

2002. "Fishery Indicators: Conceptual Approaches and a Canadian Application", Imperial College, London U.K.
2000. "Uncertainty and Risk: Implications for Forecasting and Management", Climate Change and Adaptations Science Workshop, Department of Fisheries and Oceans, Halifax Canada.
2000. "Living with Uncertainty: The Precautionary Approach", Workshop on the Precautionary Approach, Department of Fisheries and Oceans, Halifax Canada.
1998. "Atlantic Canada's Groundfishery and the Fisheries Resource Conservation Council", Department of Biology, Dalhousie University, Halifax, N.S.
1997. "Sustainable Coastal Fisheries: Policy Directions for Improved Resource Management", Study Group on the Economic Uses of the Oceans, Independent World Commission on the Oceans, Lisbon, Portugal.
1995. "The Economics of Gear Technologies", Panel on Harvesting Technology, Coastal Communities Network, Cornwallis, N.S.
1995. "Fisheries Economics", Workshop of the Fishermen and Scientists Research Society, Antigonish, N.S.
1993. "Impacts of Uncertainty and Stochasticity on Industry Investment Strategies", Department of Industrial Engineering, Technical University of Nova Scotia, Halifax, N.S.
1993. "International Development Agencies and Their Response to UNCED", public lecture, Dartmouth Regional Library, Dartmouth, N.S.
1993. "Natural Resources and Sustainable Development: Micro Projects and Macro Environments", International Development Studies, Saint Mary's University, Halifax, N.S.
1993. "Crisis in the Atlantic Fishery", member of multidisciplinary panel, Department of Economics, Dalhousie University, Halifax, N.S.
1992. "Sustainable Development in Costa Rica", International Education Centre, Saint Mary's University, Halifax, N.S.
1991. "Environment and Economics", Symposium on Nova Scotia's Sustainable Development Strategy, Biology Department, Dalhousie University, Halifax, N.S.
1991. "The Canadian Atlantic Groundfish Fishery", Institute of Fisheries Analysis, Simon Fraser University, Burnaby, B.C.
1991. "Integrated Fish Farming in China", Aquaculture Program, Faculty of Biological Sciences, National University, Heredia, Costa Rica.
1990. "The Real World of Atlantic Fisheries: Interdisciplinary Perspectives", Department of Oceanography, Dalhousie University, Halifax, N.S.

1990. "Fish and Ships: Challenges to the Atlantic Fishery", Halifax Field Naturalists, Spring Lecture Programme, Halifax, N.S.

1990. "The Structure of the Fishing Industry", Training Programme for the Management and Conservation of Marine Resources, International Ocean Institute, Halifax, N.S.

1989. "Management of Coastal Fisheries", Coastal Zone Management graduate course, School for Resource and Environmental Studies, Dalhousie University, Halifax, N.S.

1988. "Fisheries Economics", Training Programme for the Management and Conservation of Marine Resources, International Ocean Institute, Halifax, N.S.

1987. "Fisheries Investment with Imperfect Information", Workshop on Using Bioeconomics in Setting Quotas, Department of Fisheries and Oceans CAFSAC Marine Environment and Ecosystems Subcommittee, Dartmouth, N.S.

1987. "Fisheries Economics", Training Programme for the Management and Conservation of Marine Resources, International Ocean Institute, Halifax.

1987. "Cost/Benefit Analysis in Fish Finding Technology", Seminar on Fish Finding Technology, Technical University of Nova Scotia, Halifax, N.S.

1987. "Fishery Development", International Development Studies program, Saint Mary's University, Halifax, N.S.

1986. "Fisheries Bioeconomics", Northwest Atlantic Fisheries Centre, Department of Fisheries and Oceans, St. John's, Newfoundland.

1986. "Fisheries Investment with Imperfect Information", Canadian Atlantic Fisheries Scientific Advisory Committee, Department of Fisheries and Oceans, Dartmouth, N.S.

1986. "Bioeconomics and Fisheries Modelling", Gulf Fisheries Centre, Department of Fisheries and Oceans, Moncton, New Brunswick.

1984. "Fishery Management Models", Peruvian Marine Institute, Callao, Peru.

1983. "An Economic Analysis of Inshore vs. Offshore Fisheries", Program in Natural Resource Economics, University of British Columbia, Vancouver, B.C.

CONFERENCE PRESENTATIONS (Contributed)

(For published conference papers, see under "Publications" above.)

2007. "Coastal and Ocean Management: Balancing Local and Large-Scale", National Conference, Ocean Management Research Network, Ottawa, Ontario (with Daniel Lane, Roland Cormier and Michael Chadwick).

2007. "Scaling the Boundaries Between Marine Protected Areas and Fisheries Management: A

Framework for Decision-Making”, Sixth International Conference, Science and Management of Protected Areas Association (with Jessica Sanders).

2007. “Creating Community-based Indicators to Monitor Sustainability: A Fisheries Case Study”, Conference of the Canadian Society for Ecological Economics, Halifax N.S. (with Heather Boyd).

2007. “Fishers' Performance and Relative Importance of Factors Determining Profitability in Small Scale Fisheries”, 2007 Forum, North American Association of Fisheries Economists, Mérida, México (with Silvia Salas).

2007. “Socioeconomic and Distributional Impacts of Fisheries Subsidies”, 2007 Forum, North American Association of Fisheries Economists, Mérida, México.

2007. “Community-Based Management and Community Fishery Rights”, 2007 Forum, North American Association of Fisheries Economists, Mérida, México.

2006. “Marine Protected Areas and Fisheries Management: A Framework for Decision-making”. Coastal Zone Canada 2006, Tuktoyaktuk, Northwest Territories.

2006. “Benefits and Costs of Implementing the Ecosystem Approach to Fisheries”, Bergen Conference on Implementing the Ecosystem Approach to Fisheries (September 2006), Bergen, Norway.

2006. “Community Fishery Rights: Issues, Approaches and Atlantic Canadian Case Studies”, 13th Biennial Conference, International Institute of Fisheries Economics and Trade, Portsmouth, UK.

2005. “Community Fishery Rights in Canada’s Atlantic Region”, Workshop on New Developments in Rights-Based Fisheries Management: Community Fishing Rights (August 2005), University of Southern Denmark, Esbjerg, Denmark.

2004. “Designing Integrated Indicator Systems: A Case Study of Nova Scotia Fishery and Marine Environment Accounts”, 8th Biennial Conference, International Society for Ecological Economics, Montreal, Quebec.

2004. “Turning the Tide: Community Management of Fisheries and Coastal Resources”, 4th World Fisheries Congress, Vancouver B.C.

2004. “Participatory Research Supporting Community-Based Fishery Management”, 4th World Fisheries Congress, Vancouver B.C.

2002. “Community-Based Fisheries Management”, Ocean Management Research Network National Conference, Ottawa, Ontario.

2001. “Distributional Impacts of Marine Protected Areas: A Bioeconomic Analysis”, World Conference on Natural Resource Modeling, Logan, Utah, USA.

2000. “Sustainability Indicators for Natural Resource Systems: An Integrated Framework and a Fishery Application”, EcoSummit 2000, Halifax, N.S.

1999. "Marine protected areas, uncertain stock structure and biodiversity conservation", World Conference on Natural Resource Modeling, Halifax, Nova Scotia.
1998. "Atlantic Canada's Fisheries Resource Conservation Council", Coastal Zone Canada, Victoria, B.C.
1998. "Coping with Uncertainty: Canada's Fisheries Resource Conservation Council", Symposium on Confronting Uncertainty in Evaluation & Implementation of Fishery Management Systems, International Council for the Exploration of the Sea (ICES), Cape Town, South Africa.
1996. "Beyond the Status Quo: Re-thinking Fishery Management", Symposium on Reinventing Fisheries Management, University of British Columbia, Vancouver, B.C.
1995. "A Predictive Model of Illegal Fishing", World Conference on Natural Resource Modelling, Pietermaritzburg, South Africa (with R.L. Mazany and M.L. Cross).
1994. "Sustainable Fisheries: People and Resources", American Fisheries Society 124th Annual Meeting, Halifax, N.S.
1994. "Bio-Socio-Economic Modelling and Sustainability Analysis", Seventh Interdisciplinary Conference on Natural Resource Modelling and Analysis, London, England.
1994. "Costa Rican Coastlines: Mangroves, Reefs, Fisheries and People", Coastal Zone Canada, Halifax, N.S.
1994. "Chinese Integrated Fish Farming: Estimation of Production Functions", International Workshop on Integrated Fish Farming, Wuxi, China (with H. Chen and B. Hu).
1993. "Bioeconomic Models of Fishery/Aquaculture Interactions", International Conference on Fisheries Economics, Bergen, Norway.
1992. "Of Mangroves, Coral Reefs and Sustainable Communities: Costa Rica's Common Property Fisheries", Third Annual Common Property Conference, Washington, D.C.
1990. "Sustainable Fisheries: Management Paradigms and Bio-Socio-Economic Models", (First) Conference on the Ecological Economics of Sustainability, Washington, D.C.
1990. "Natural Resource Investment Models", 3rd Interdisciplinary Conference on Natural Resource Modelling and Analysis, Cornell University, Ithaca, N.Y.
1989. "Fisheries Regulation and Investment Behaviour", Annual Meeting, Canadian Economics Association, Laval University, Quebec (with Leigh Mazany and Melvin Cross).
1989. "Behavioral Models of Illegal Fishing", 2nd Interdisciplinary Conference on Natural Resource Modelling and Analysis, Tallahassee, Florida.
1988. "Fisheries Regulation, Investment and Institutional Arrangements in Nova Scotia", Annual

Meeting, Canadian Economics Assoc., Windsor, Ontario (with Leigh Mazany & Melvin Cross).

1988. "Bioeconomic Models of Fishery Development", International Conference on Biomathematics, Xi'an, China.

1988. "Bio-Socio-Economic Resource Models: Labour Dynamics & Multiobjective Management", Interdisciplinary Conference on Natural Resource Modelling and Analysis, Halifax, N.S.

1988. "The Truncated Lognormal, Bayesian Updating and Optimal In-Season Fishery Management", Canadian Operations Research Society Conference.

1987. "Socioeconomic Fishery Models: The Role of Labour and Community Dynamics", Canadian Economics Association Meeting, Hamilton, Ontario.

1987. "A Bioeconomic Simulation Model of Fleet Dynamics and Fishery Development", Sixth Pacific Coast Resource Modelling Conference, Vancouver, B.C.

1987. "Adaptive Management of an Uncertain Natural Resource: An Optimization Model with Bayesian Updating", 1st International Conf. on Industrial & Applied Mathematics, Paris, France.

1986. "In-season Fisheries Management: A Bayesian Model", Fifth Pacific Coast Resource Modelling Conference, Newport, Oregon.

1986. "Fishery Development and Foreign Fleets: An Economic Optimization Model", Canadian Economics Association Meeting, Winnipeg, Manitoba.

1985. "Inshore vs. Offshore: Bioeconomic Analysis of Sequential Fisheries", Fourth Pacific Coast Resource Modelling Conference, San Louis Obispo, CA.

1985. "The Value of Information to Electricity Investment Planners", Atlantic Schools of Business Conference, Acadia University, Wolfville, N.S.

1984. "Computational and Numerical Methods in Renewable Resource Management", Society for Industrial and Applied Mathematics Meeting, University of Washington, Seattle WA.

1984. "Bayesian Fisheries: Investment and Management Strategies with Imperfect Information", Canadian Applied Mathematics Society, University of British Columbia, Vancouver, B.C.

1982. "A Stochastic Two-State Two-Control Model of Optimal Fisheries Investment", Society for Industrial and Applied Mathematics 30th Anniversary Meeting, Stanford Univ., Stanford CA.

1981. "Bioeconomic Fisheries Management", Western Regional Meetings, The Institute of Mathematical Statistics and Biometric Society, University of Victoria, Victoria, B.C.