OCEAN CANADA

Dedicated to building resilient and sustainable oceans on all Canadian coasts and to supporting coastal communities as they respond to rapid and uncertain environmental changes.

2016/2017 PARTNERSHIP UPDATE

April 1, 2016 to March 31, 2017

OceanCanada **is generously supported by a Social Sciences and Humanities Research Council (SSHRC) Partnership Grant**

Social Sciences and Humanities Research Council of Canada

Conseil de recherches en sciences humaines du Canada

Canada

INTRODUCTION AND BACKGROUND

This is the third annual update of the *OceanCanada* Partnership (OCP), a 6-year research project funded by the Social Sciences and Humanities Research Council (SSHRC) of Canada. *OceanCanada* is analyzing social, cultural, economic and environmental knowledge about the Arctic, Atlantic and Pacific. We are taking stock of current knowledge of Canada's coastal-ocean regions, including threats to and challenges and opportunities for effective stewardship of our oceans. We are building scenarios of possible futures for our coastal-ocean regions, and creating a national dialogue to build a shared vision for the future. We have six Working Groups (WGs): Atlantic, Arctic, Pacific, Knowledge Mobilization (KM), National Data and Integrated Scenarios (NDIS), and Law and Policy. The WGs are now linked by three Cross-Cutting Themes (CCTs): Access to Resources, Changing Oceans, and Governance. These foster communication between our members and address the overarching issue of ocean health and community well-being in all three regions. Currently we have 20 formal partners (initially 15); 95 members (initially 56), and a target of supporting 40 highly qualified personnel (HQP) by the end of the Partnership in 2020.

We are on track to achieve our milestones, *i.e.*: (i) take stock of existing social ecological data and trends of indicators of Canadian oceans; (ii) create and populate a database; (iii) identify and conduct regional case studies; and (iv) define and assign social-economic and ecological values to plausible scenarios for the future well-being of oceans and communities that depend upon them. Our data analysis shows that there is a preponderance of biological studies of Canada's coastal regions, and a concomitant dearth of socio-economic work thereon, so we are conducting research on social and economic aspects of our coastal regions to help fill this lacuna. We have also developed policy recommendations to assist the federal government in creating management structures in support of ocean and coastal community sustainability. Our research indicates that closing the high seas to fishing will not only increase marine biodiversity but also fisheries revenues in Canada, and that improved management will help protect fisheries from the impacts of climate change and ocean acidification, thus increasing both ecological and human resilience.

OVERVIEW OF WORKING GROUP ACTIVITIES FOR 2016/2017

National Working Groups

National Data and Integrated Scenarios

The National Data and Integrated Scenarios Working Group (NDIS) has taken stock of the available datasets on Canada's three oceans and developed the first version of the OCP database, as well as a global database of aboriginal fisheries and an innovative fuzzy logic algorithm to synthesize available data (both quantitative and qualitative) to assess the status and trends of Canadian oceans. We have identified indicators and are extracting relevant data to assess the status of Canada's three oceans in relation to the Aichi Targets on the conservation of biodiversity. In addition, we have undertaken two literature reviews: one on the application of scenario analysis to study potential future states of Canada's oceans, and social, cultural and economic impacts on communities that depend on them; and the second on potential implications of marine pollutants for the health of coastal ecosystems and communities in Canada. We are developing national scale scenario storylines for Canadian ocean-related sectors, and adapting simulation models to make projections under climate change and ocean acidification. Moreover, in collaboration with DFO, we will contribute to the Arctic Monitoring and Assessment Program to assess the socio-economic impacts of ocean acidification in the Canadian Arctic. We led the writing of a policy paper suggesting actions for the Canadian government to take to support the sustainability of Canadian coastal communities and the oceans that support them. We are also working closely with the OceanCanada Cross Cutting Themes to study the ecological, economic, policy and legal implications of the increase in sea surface temperatures on several of Canada's transboundary management arrangements.

Law and Policy

The Law and Policy Working Group published an edited collection titled *Aquaculture law and policy: global, regional and national perspectives*. A workshop on Integrated Fisheries Management Planning was held in Halifax in May 2016, with participation from members of other WGs and partner organizations, and plans were developed for the next stage of this project. Student research on the IFMP project continued over the summer and has been reviewed. Three journal articles were completed and published, a further yearbook chapter was accepted for publication, and a number of presentations were delivered by faculty and students. We also began a new activity under fisheries law and governance: *Transboundary fisheries governance in an era of changing oceans*, and a cross-WG conference panel presentation and special journal edition are planned as part of this initiative.

Knowledge Mobilization

The Knowledge Mobilization Working Group is on track to develop participatory multi-media research projects in each of the three coastal regions of Canada. We continue to edit the *Beyond Climate* feature-length documentary which will be completed in 2017/18. One student film project involves working collaboratively with the Heiltsuk Nation in Bella Bella, BC on canoe gatherings, their contribution to cultural revitalization, and the associated benefits for social-ecological systems. Another student is developing a film on a participatory art project on ocean systems in the Arctic, specifically in Pangnirtung, Nunavut. We helped redesign and bring better functionality to the *OceanCanada* website, as well as established a more active and effective social media presence. In addition, we have produced OCP-branded video dispatches featuring project advisors, co-investigators, graduate students, and postdocs, and played an active role in helping to organize and facilitate the spring 2016 *OceanCanada* conference at UBC. Finally, the KM WG was instrumental in launching the *OceanCanada*-Vancouver Aquarium speaker series, *Charting a Sustainable Course: Exploring Canada's Fisheries*.

Regional Working Groups

Arctic

At Carleton University, we are completing the cross-atlas layer sharing, and making good progress on the SIKU Atlas layers, which will present data in new formats and schemas. The Genome Canada Project (Towards a Sustainable Fishery in the Arctic) atlas is using the Nunavut Coastal Research Inventory (NCRI) data model. The Nunavut Place Names Atlas has now been renamed the Inuit Places Atlas and the scope has increased to include other regions. The atlas structure has been set up and our partners at the Kitikmeot Heritage Society (KHS) will be reaching out to other Inuit Peoples in the Circumpolar Arctic. The Clyde River Atlas is now up and running. Work is underway on several models, including NCRI integration and community plans to enhance the atlas with video and audio interviews from Elders.

At McMaster University, we participated in local-level social-ecological modelling, led by the Atlantic Working Group, and are moving to the Arctic implementation of the SES model-development strategy. Phase 1 of this initiative has been completed, and we are now transferring our knowledge of fine-scale local level relationships to articulation of an Arctic site. We are also collecting metadata on trans-regional ocean globalization and implications for social-ecological systems.

Pacific

This year, the Pacific Working Group has made steady progress with ongoing projects which are starting to yield results, presentations and publications. Our approach has been to support projects and case studies that advance *OceanCanada* themes. We supported three new projects in 2016/2017, and others are continuing. Combined, these projects illustrate the diversity of perspectives and topics related to the oceans in BC, and provide a richness of case studies for future *OceanCanada*-wide integrative activities. We are exploring opportunities for linking with the three Cross-Cutting Themes and facilitating more integrative thinking at larger scales. More specifically, we did preliminary work to organize an Access Cross-Cutting Theme workshop for June 2017. Our research activities have been in the following areas:

- **marine community support for conservation;**
- **effects of sea otter reestablishment on the ecosystem in communities on the west coast of Vancouver Island;**
- **loss, recovery and stewardship of eulachon on the central Pacific coast of BC;**
- **local benefits from seafood value chains in BC coastal communities;**
- **ecological indicators, expert perceptions, and local observations;**
- **assessing changes in rockfish size and distribution for conservation strategies;**
- **moving from assessment to action on adaptive capacity.**

Atlantic

Our graduate students and postdoctoral researchers have been active on several fronts related to regional assessment activities, including undertaking field research in Newfoundland in a study of the shrimp fishery, a project on marine spatial planning in the Atlantic region, and fieldwork involving community perspectives on MPAs and community wellbeing. Our bowtie analysis of cumulative effects in the Northumberland Strait has been completed, and we continue to assess the precision and accuracy of the Community Aquatic Monitoring Program (CAMP) in describing littoral nekton assemblages of estuaries within the southern Gulf of St. Lawrence. Our partner, Friends of Port Mouton Bay, is working on a Nitrogen Loading Model paper with a focus on developing a model framework for estimating nitrogen loading from background sources and coastal fish-farm aquaculture. Eelgrass monitoring in Port Mouton Bay has also continued under the protocols of SeaGrassNET, a Global Sea Grass Monitoring Network, co-sponsored by the Southern Gulf of St. Lawrence Coalition on Sustainability.

We are making progress on the development of local scenarios for the community of Port Mouton, Nova Scotia. We are also examining the extent to which Nova Scotia coastal communities are engaging in future planning, and continue to undertake a systematic review of coastal community climate change adaptation.

We hosted a Governance Cross-Cutting Theme meeting in at the University of Waterloo in November 2016 to chart a path forward. Subsequently, we convened a workshop in March 2017 on rapid coastal change and governance at University of Waterloo. Graduate students and postdoctoral researchers have developed an expert survey regarding the governance of Canada's oceans along with several webinars.

Cross Cutting Themes (CCTs)

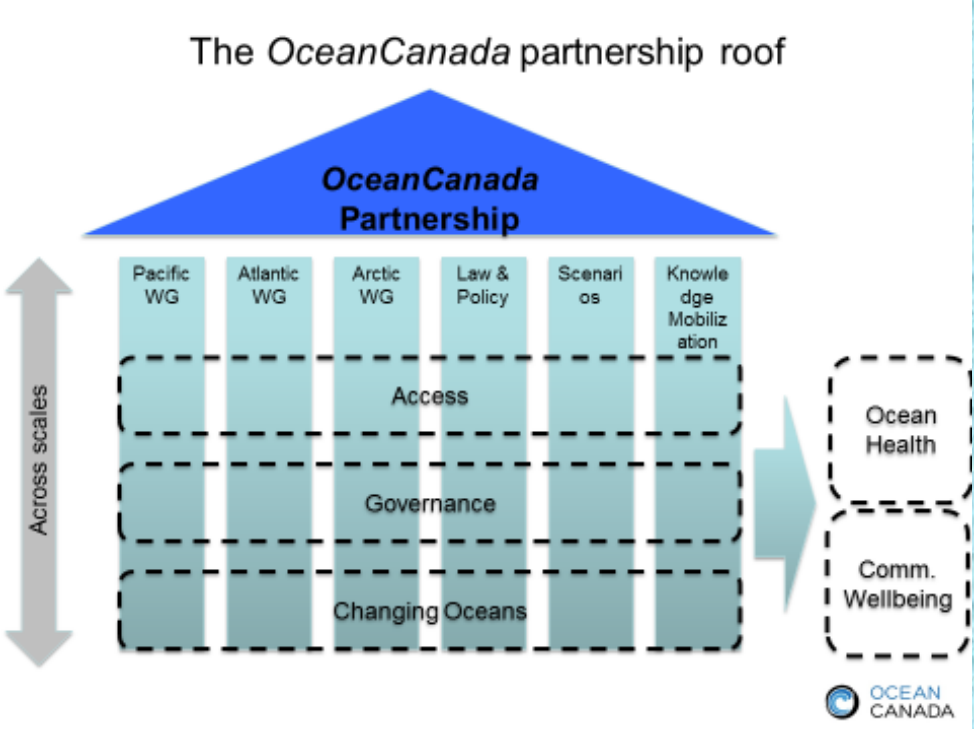
One of the most important research and governance developments that came out of our May 2016 conference was the creation of *OceanCanada* Cross-Cutting Themes (CCTs). We agreed on the following three themes:

- **Access to Resources**
- **Changing Oceans**
- **Governance**

The integrative and cross-cutting nature of these themes is visually captured in the *OceanCanada* Partnership roof diagram below. The goal is to cut across scales and WGs within the context of the wellbeing of communities and the health of our oceans.

Structure for Cross-Cutting Themes

Each Cross-cutting theme (CCT) has a coordinator who works with the *OceanCanada* Director to develop integrative projects and draw in people and resources from across the *OceanCanada* membership to execute identified projects. Together with the Director, theme coordinators inspire, stimulate, and motivate *OceanCanada* members to actively engage in cross-cutting and integrative work that meets the goals of *OceanCanada*.



So far, the following projects have been generated from this integration initiative:

Access to Resources

- **In collaboration with researchers from the three regions (Pacific, Atlantic, Arctic), we are describing, analyzing, and thus moving forward the access imperative in Canadian fisheries using case studies to ascertain how access to marine resources and ocean spaces impacts community well-being. The group will be holding a workshop on the topic from June 8 to 9, 2017 at UBC.**

Changing Oceans

- This involves a series of interrelated research projects that includes *OceanCanada* members from across all WGs. These are: (i) quantification of contributions of coastal habitats and resources to current and past community well-being; (ii) changes in ocean and socio-economic drivers in Canada under global change; (iii) effects of changing oceans on coastal habitats and resources; (iv) socio-economic, policy and governance responses to changing habitats and resources; (v) future of coastal community well-being under global change.
- Reconstructing Historical Baselines for Arctic Ocean Change is a project that NDIS, Law and Policy, Atlantic and Pacific WGs are working on that will develop conceptual models to explore high-level health and ocean health linkages.

Governance

- This involves taking stock of fisheries governance systems to assess strengths and weaknesses, through: (i) compiling success stories of governance systems in Canada to address what types of governance structures exist; (ii) reviewing examples of adaptive governance and their contributions to well-being.
- Northern Knowledge Integration for Resilient Management is a project with Arctic and NDIS WGs, and partner Department of Fisheries and Oceans, that seeks to generate inputs into NDIS scenarios and models in the context of governance.
- In Transboundary Fisheries Management in Changing North Atlantic and Pacific Oceans: Taking Stock, Future Scenarios, we are working on highlighting the changing distributions and abundances of transboundary fish stocks in the North Atlantic and Pacific and exploring how selected bilateral and regional fisheries management arrangements are faring in addressing the changing maritime conditions and mobilities. We will be running an *OceanCanada* Panel Session at the 2017 MARE Conference where this work will be presented. Papers from this work will be published in a special issue of *Ecology and Society*.

In addition, we are planning a workshop to be held in fall 2017 involving all three CCTs to:

1) develop a conceptual framework for an edited book;
2) synthesize current knowledge in terms of access, change, and governance;
3) further develop cross-cutting synthesis outputs linking cross-theme insights.

Theme Coordinators

Access to Resources: Megan Bailey (Dalhousie University) and Nathan Bennett (University of British Columbia); Changing Oceans: William Cheung (University of British Columbia); Governance: Carie Hoover (University of Manitoba) and Derek Armitage (University of Waterloo).

2016/2017 *OCEANCANADA* RESEARCH COMMITTEE

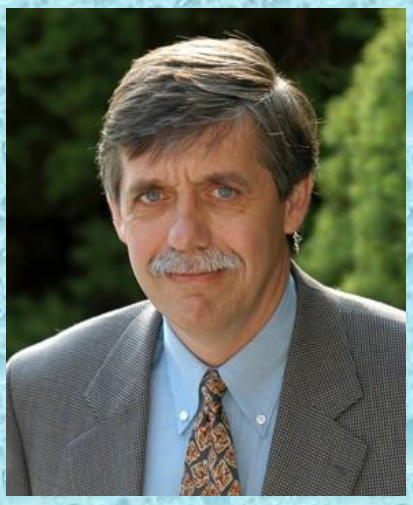
Dr. U. Rashid Sumaila, Project Director and National Data and Integrated Scenarios Working Group Co-Lead

Dr.Sumaila is Professor and Director, Fisheries Economics Research Unit and the *OceanCanada* Partnership at the University of British Columbia. He specializes in bioeconomics, marine ecosystem valuation and the analysis of global issues such as fisheries subsidies, illegal fishing, climate change and oil spills. Sumaila has authored over 215 journal articles, including in *Science*, *Nature* and the *Journal of Environmental Economics and Management*. He is winner of the 2017 Benchley Oceans Award in Science, the 2016 UBC Killam Research Prize, the 2013 American Fisheries Society Excellence in Public Outreach Award, the 2009 Stanford Leopold Leadership Fellowship and the 2008 Pew Marine Fellowship. Sumaila was named a Hokkaido University Ambassador in 2016. He has given talks at the UN Rio+20, the WTO, the White House, the Canadian Parliament, the African Union, the British House of Lords and the St. James Palace on the invitation of Prince Charles. His research has generated a great deal of interest, and has been cited by, among others, *The Economist*, *The Boston Globe*, *New York Times*, *The Globe and Mail*, *The Wall Street Journal* and *Vancouver Sun*.

Dr. William Cheung, National Data and Integrated Scenarios Working Group Co-Lead Changing Oceans CCT Lead

Dr. Cheung is Associate Professor at the UBC Institute for the Oceans and Fisheries, head of the Changing Ocean Research Unit (CORU) and co-Director of the Nippon Foundation-UBC Nereus Program. He has published more than 100 articles on the vulnerability and responses of marine ecosystems and fisheries to climate change, fishing and other human stressors, and studies the scope, options and effectiveness for mitigation and adaptation to these impacts. Specifically, he develops empirical and numerical simulation models to examine the impacts of climate change on marine biodiversity and fisheries, globally and in various regional seas. Dr. Cheung's research group hosts a large quantity of data on gridded observed (past and current) and projected (future) ocean environmental, biodiversity and fisheries data particularly in the context of global change studies.

Phillip Saunders, Law and Policy Working Group Co-Lead



Dalhousie University Schulich School of Law Associate Professor Phillip M. Saunders, Q.C., is cross-appointed to the School for Resource and Environmental Studies and is a Research Fellow at the Centre for Foreign Policy Studies. He is a Member of the Nova Scotia Bar. His teaching and research interests are in international marine and environmental law, maritime boundary delimitation, tort law, judicial remedies and international fisheries law. Professor Saunders was formerly with the International Centre for Ocean Development as Senior Policy Advisor and as Field Representative, South Pacific. He was Dean of Law at Dalhousie from 2005 to 2010.

Dr. David VanderZwaag, Law and Policy Working Group Co-Lead

Dr. VanderZwaag is Professor of Law and holds the Canada Research Chair (Tier 1) in Ocean Law and Governance at the Marine and Environmental Law Institute, Dalhousie University. He teaches international environmental law and is past Co-director of Dalhousie's interdisciplinary Marine Affairs Program (1986-1991). He serves as Associate Director of the Marine and Environmental Law Institute. He is currently a member of the IUCN's World Commission on Environmental Law (WCEL) and Co-chair of the WCEL's Specialist Group on Oceans, Coasts and Coral Reefs. He is a co-founder of the Australian-Canadian Oceans Research Network (ACORN) and has extensive research and lecturing experience in South and Southeast Asia, the South Pacific, Europe, and the Caribbean. He is an elected member of the International Council of Environmental Law, and serves on the editorial boards of various journals including *Ocean and Coastal Management*, *Marine Policy*, *Ocean Yearbook* and the *Yearbook of Polar Law*. Dr. VanderZwaag has authored over 150 papers in the marine and environmental law field. His most recent book publications are: *Aquaculture Law and Policy: Global, Regional and National Perspectives* (edited with N. Bankes and I. Dahl; Edward Elgar, 2017), *Routledge Handbook of National and Regional Ocean Policies* (edited with B. Cicin-Sain and M. Balgos; Routledge, 2015); *Polar Oceans Governance in an Era of Environmental Change* (edited with T. Stephens; Edward Elgar, 2014); *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (edited with D. A. Russell; Martinus Nijhoff, 2010); *Towards Principled Oceans Governance: Australian and Canadian Approaches and Challenges* (edited with D.R. Rothwell; Routledge, 2006); and *Aquaculture Law and Policy: Towards Principled Access and Operations* (edited with G. Chao; Routledge, 2006). His educational background includes PhD (1994, University of Wales, Cardiff), LL.M. (1982, Dalhousie Law School), J.D. (1980, University of Arkansas Law School), M.Div. (1974, Princeton Theological Seminary), and B.A. (1971, Calvin College).

Dr. Ian Mauro, Knowledge Mobilization Working Group Co-Lead

Dr. Mauro is Associate Professor in the Department of Geography at the University of Winnipeg. He is a community-based researcher and filmmaker and has pioneered the development of multi-media methodologies for the social sciences. He uses participatory video to collect, communicate and conserve local and indigenous knowledge, an approach that allows people who live on the land to tell their own stories, in their own language, and within the landscapes where their knowledge has been generated.

Eric Solomon, Knowledge Mobilization Working Group Co-Lead

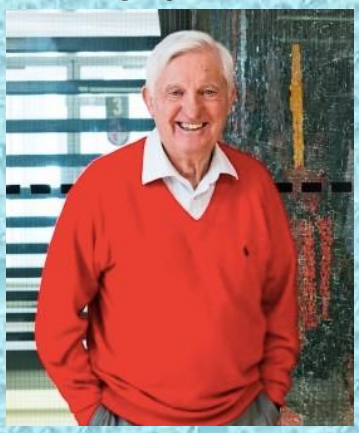
Eric Solomon has more than 16 years of experience working in the field of science and environmental education and communication with museums, science centres and public aquariums in the U.S. and Canada. He has dedicated much of his career toward improving communication of complex science and environmental issues to public audiences. After serving nearly five years as the Vancouver Aquarium's Vice President of Conservation, Research and Education, his focus is now on development and implementation of integrated approaches to advancing the aquarium's mission and strategic priorities. One significant priority is creating greater public awareness of, and engagement in, the important issues facing Canada's north. Mr. Solomon holds a Bachelor's in Psychology, a Master's degree in Marine Ecology, and has done advanced graduate studies in Science Education.

Dr. Nancy Doubleday, Arctic Working Group Co-Lead

Dr. Doubleday is Hope Chair in Peace and Health at McMaster University. She has expertise in ecological sciences, holds an LLB from Osgoode Hall, was called to the Bar of Ontario in 1982, and is a member of the Law Society of Canada. As a lawyer she has contributed to development of international and domestic law embracing human rights, health and the environment. Her experience includes establishing conservation easements, environmental impact assessment, and development of co-management under comprehensive claims; amending the Canadian Constitution; contributing to the establishment of the Northern Contaminants Program; linking Inuit interests to the international Arctic Monitoring and Assessment Program; and participating in the University Consortium in Support of the Secretariat for the Convention on Biodiversity. She participated in the Working Group on Indigenous Peoples (Geneva), the Conferences of the Parties to the International Union for the Conservation of Nature and Natural Resources (Costa Rica, Ottawa), the International Whaling Commission (New Zealand, USA), the Finnish Initiative leading to the Arctic Environmental Protection Strategy, and the Arctic Council. She works at the interface of human rights and social justice, resilience and health to develop new strategies for peace and health, good governance and knowledge integration. She completed an International Polar Year research project addressing impacts of a changing tree line to better understand change and adaptive capacity in social-cultural-ecological systems, and chairs the Cold Region Environments Commission of the International Geographical Union.

Dr. D. R. Fraser Taylor, Arctic Working Group Co-Lead

Dr. Taylor is Chancellor's Distinguished Research Professor of International Affairs, Geography and Environmental Studies and Director of the Geomatics and Cartographic Research Centre (GCRC) at Carleton University, and a Fellow of the Royal Society of Canada. In 2013, he received the Carl Mannerfelt Gold Medal from the International Cartographic Association, and in 2014 the Killam Prize in the Social Sciences. His main research interests are in the application of geospatial information management to the analysis of key socio-economic problems in national and international contexts and the presentation of results in innovative new cartographic forms. A member of the United Nations Expert Group on Global Geospatial Information Management, he introduced and continues to develop the new paradigm of cybercartography. His interests in cartography and international development issues are often inter-related, including development studies with special reference to Africa, China and Latin America; regional and rural development theory and practice; sustainable development and indigenous development strategies; and technology transfer in the field of geomatics. Current research includes the use of cybercartography to create a series of atlases with Inuit communities and organizations, such as the Inuit Siku (sea ice) Atlas and the Nunavut Coastal Research Inventory Atlas. He is also actively involved in the Belmont Forum Pan-Arctic Options Project.



Dr. Natalie Ban, Pacific Working Group Co-Lead

Dr. Ban is Assistant Professor in the School of Environmental Studies at the University of Victoria where she leads the Marine Ethnoecology Research group. Trained in geography (B.A. and M.A. in geography from McGill University), resource management and environmental studies (PhD from UBC Fisheries Centre), Dr. Ban draws upon many disciplines from natural and social sciences in her work. Through funding from both SSHRC and NSERC, as well as other granting agencies, her research interests span ethnoecology, conservation biology, marine spatial planning, conservation planning and implementation, and evaluation and mapping of cumulative impacts, mainly in marine and coastal systems. With over 60 peer-reviewed journal publications, Dr. Ban's current research focuses on identifying options for management and conservation of biodiversity while respecting people's needs and uses of resources. She served as a member of the science advisory committee of the Marine Planning Partnership, and is currently involved in the research management committee of the Marine Environmental Observation, Prediction and Response (MEOPAR) Network. She is an associate director of the Canadian Council on Ecological Areas (CCEA), and a member of Canadian Healthy Oceans Network (CHONe) II.

Dr. Nathan Bennett, Pacific Working Group Co-Lead
Access to Resources CCT Co-Lead

Dr. Bennett is currently cross-appointed as a Banting Postdoctoral Fellow at the University of Washington and a Liber Ero Postdoctoral Fellow at the University of British Columbia. As a broadly trained environmental social scientist, he chooses to primarily focus on research projects that interrogate various aspects of the complex relationship between the environment and human society with a solution-oriented lens. His research interests are broad – with projects focusing on such topics as marine protected area governance in Mexico, responses of fishing communities to environmental change in Thailand, indigenous community perspectives on conservation in Canada, marine conservation planning initiatives in North America, and the human dimensions of large-scale marine protected areas. He was a SSHRC Postdoctoral Fellow at UBC with Dr. Terre Satterfield and Dr. Kai Chan. For his doctoral research, supported by a Trudeau Scholarship and a SSHRC Joseph Armand Bombardier Canada Graduate Scholar Award, he worked with Dr. Phil Dearden as part of Project IMPAACT and the Marine Protected Areas Research Group at the University of Victoria. His dissertation focused on various aspects of the relationship between marine protected areas, climate change, and local livelihoods on the Andaman coast of Thailand. His Master's research with Dr. Harvey Lemelin at Lakehead University focused on the role of a Canadian national park in the social, cultural, political, and economic development of the Lutsel K'e Dene First Nation in the Northwest Territories, Canada. He was given the Canadian Association of Geographers Robin P. Armstrong Award for his thesis.

Dr. Derek Armitage, Atlantic Working Group Lead
Governance CCT Co-Lead

Dr. Armitage is Associate Professor in the School of Environment, Resources and Sustainability at the University of Waterloo, where he leads the Environmental Change and Governance Group. His research focuses on the human dimensions of environmental change and the formation of adaptive, multi-level governance systems. The problem of 'fit' is a central interest – how governance systems and institutions can better match the dynamics of biophysical systems, with a primary focus on coastal and ocean contexts. His publications have appeared in such journals *as Frontiers in Ecology and the Environment*, *Global Environmental Change*, *Ecology and Society*, and *International Journal of the Commons*. He is co-editor (with Fikret Berkes and Nancy Doubleday) of *Adaptive Co-Management: Collaboration, Learning and Multi-Level Governance* (UBC Press, 2007) and co-editor (with Ryan Plummer) of a volume on the relationship between adaptive capacity and environmental governance (Springer-Verlag, 2010). He has served as a consultant on a variety of projects for government agencies in Canada (Environment Canada, Fisheries and Oceans Canada, Ontario Ministry of Natural Resources, Alberta Environment), the Global Environmental Facility (World Bank), Asian Development Bank and Inter-American Development Bank. He is a Senior Fellow, Earth Systems Governance project, Adjunct Professor – Natural Resources Institute (University of Manitoba), and past Working Group Leader – Oceans Management Research Network (Canada). He serves as an editor for *Conservation Letters* and *Ecology and Society*.

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ADVISORY BOARD, MANAGEMENT COMMITTEE, AND RESEARCH COMMITTEE

The *OceanCanada* Advisory Board provides arm's length independent intellectual advice and support to OCP. It monitors the Partnership's progress, and provides guidance in such areas as attracting new funding, improving knowledge mobilization and extending the scope of OCP research. Board members currently are:

Rosemary Ommer (Chair), University of Victoria
Fikret Berkes, University of Manitoba
Herb Dhaliwal, Former Minister of Department of Fisheries and Oceans (DFO)
Christopher Harvey, MacKenzie Fujisawa LLP
Russ Jones, Haida Nation
Gordon Munro, University of British Columbia

***OceanCanada*'s Management Committee is comprised of the Project Director Rashid Sumaila, two Working Group leads (currently Derek Armitage and Phillip Saunders), Gordon Munro, and the Chair of the Advisory Board (*ex officio*). It monitors research progress, addresses challenges, plans collaborative initiatives, and reviews budgets.**

The *OceanCanada* Research Committee includes the Project Director and all Working Group leads and co-leads (see descriptions above), CCT coordinators, and a representative from the Department of Fisheries and Oceans. It provides the overall intellectual vision for our work as well as guidance on training and skills development of students, research assistants, and postdoctoral fellows.

Together, these committees provide direction to the Partnership, ensuring a dynamic approach to research, training, mentorship and knowledge mobilization across all activities. WG and CCT leads are responsible for group coordination and integrating Partnership activities.

OCEANCANADA PARTNERS AND COLLABORATORS

OceanCanada **has established partnerships with a large number of universities, organizations and faculty members from across Canada, and has added four partners and one collaborator over the past year.**

OceanCanada **Partners**

ARCTIConnexion
Canadian Rivers Institute (new)
Carleton University
Dalhousie University
Ecotrust Canada
Fisheries and Oceans Canada
Friends of Port Mouton Bay
Living Oceans Society
McMaster University
Oceana Canada (new)
Saint Mary's University
Simon Fraser University
T. Buck Suzuki Environmental Foundation (new)
United Nations University Institute for Water, Environment and Health (new)
University of British Columbia
University of Victoria
University of Waterloo
University of Winnipeg
Vancouver Aquarium Marine Science Centre
World Wildlife Fund Canada

OceanCanada **Collaborators**

Claudio F. Aporta, Dalhousie University
Fikret Berkes, University of Manitoba
Kai Chan, University of British Columbia
Ratana Chuenpagdee, Memorial University of Newfoundland
Kevern Cochrane, Rhodes University
Herb Dhaliwal, Parliament of Canada
Sidney Fels, University of British Columbia (new)
Robyn Forrest, Fisheries and Oceans Canada
Sumeet Gulati, University of British Columbia
Christopher Harvey, MacKenzie Fujisawa LLP
Jeffrey Hutchings, Dalhousie University
Russ Jones, Council of the Haida Nation
Coleen Moloney, University of Cape Town
Gordon Munro, University of British Columbia
Grant D. Murray, Vancouver Island University
Rosemary E. Ommer, University of Victoria
Yoshitaka Ota, University of British Columbia
Ian Perry, Fisheries and Oceans Canada
Robert Stephenson, Fisheries and Oceans Canada
Trevor Swerdfager, Fisheries and Oceans Canada
Duncan Wilson, Port Metro Vancouver

SUMMARY OF *OCEANCANADA* ACTIVITIES 2016/2017

OCEANCANADA CORE AND RELATED PUBLICATIONS
(OCP members highlighted)

Core publications:

Alava JJ, Calle N. 2017. Pipelines imperil Canada's ecosystem. Science. 355(6321):140. http://science.sciencemag.org/content/355/6321/140.2

Alava JJ, Cheung WWL, Ross P, Sumaila UR. 2017. Climate change-contaminant interactions in marine food webs: towards a conceptual framework. Global Change Biology. doi: 10.1111/gcb.13667. https://www.ncbi.nlm.nih.gov/pubmed/28212462

Bailey M, Vestergaard N, Sumaila UR. 2017. Overcoming principal-agent problems to improve cooperative governance of internationally shared fisheries. In: Espinola-Arredondo A, Munoz-Garcia F, editors. The WSPC reference on natural resources and environmental policy in the era of global change. Singapore: World Scientific; p. 1-27. http://www.worldscientific.com/doi/abs/10.1142/9789813208155_0001

Bankes N, Dahl I, VanderZwaag DL, editors. 2016. Aquaculture Law and Policy: Global, Regional and National Perspectives. Cheltenham (UK): Edward Elgar. http://www.e-elgar.com/shop/aquaculture-law-and-policy

Bankes N, Dahl I, VanderZwaag DL. 2016. Introduction, Navigating multilevel governance in aquaculture. In: Bankes N, Dahl I, VanderZwaag DL, editors. Aquaculture law and policy: global, regional and national perspectives. Cheltenham (UK): Edward Elgar. p. 1-8. http://www.e-elgar.com/shop/aquaculture-law-and-policy

Bankes N, Dahl I, VanderZwaag DL. 2016. Conclusion, A summary of common themes. In: Bankes N, Dahl I, VanderZwaag DL, editors. Aquaculture law and policy: global, regional and national perspectives. Cheltenham (UK): Edward Elgar. p. 462-474. http://www.e-elgar.com/shop/aquaculture-law-and-policy

Bellmann C, Tipping A, Sumaila UR. 2016. Global trade in fish and fishery products: an overview. Marine Policy. 69:181-188. http://www.sciencedirect.com/science/article/pii/S0308597X15003899

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Working paper:
Andrews E, Armitage D. 2017. Adaptive governance of social-ecological regime shifts in coastal fishery systems: a case study of a potential regime shift in a shrimp fishery system in northern Newfoundland, Canada. *OceanCanada* Working Paper Series #2017-1; Vancouver, BC.
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PRESENTATIONS

2017

Ban NC. 2017. A social-ecological systems perspective of rapid change. Paper presented at: Coastal Watersheds in the Anthropocene: Understanding Rapid Change and Implication for People and Ecosystems; University of Waterloo, ON.

Ban NC, Cheung WWL, VanderZwaag DL, Ratana Cheunpadee. 2017. Coastal watersheds in the Anthropocene: understanding rapid change and implication for people and ecosystems. Facilitated panel discussion: OceanCanada Partnership – Governance and Wellbeing Cluster and The Water Institute; Waterloo, ON.

Cheung WWL. 2017. The future of Canadian fisheries under multiple human drivers. Paper presented at: Coastal Watersheds in the Anthropocene: Understanding Rapid Change and Implication for People and Ecosystems; University of Waterloo, ON.

Cheunpagdee R. 2017. A transdisciplinary perspective on change. Paper presented at: Coastal Watersheds in the Anthropocene: Understanding Rapid Change and Implication for People and Ecosystems; University of Waterloo, ON.

Cisneros-Montemayor AM, Munro GR, Sanjurjo E, Hernandez Trejo V, Sumaila UR. 2017. Strategies and rationale for fishery subsidy reform. Paper presented at: North American Association of Fisheries Economists Forum; La Paz, Mexico.

Schuhbauer A, Cisneros-Montemayor AM, Sumaila UR. 2017. Economic viability of small- compared to large-scale fisheries using Mexico as an example. Paper presented at: North American Association of Fisheries Economists Forum; La Paz, Mexico.

Steiner N, Azetsu-Scott K, Cheung WWL, Cisneros-Montemayor AM, Drost H, Hoover C, Miller L, Sumaila UR, Suprenand P, Sou T, Tai T, VanderZwaag D. 2017. Impacts of Arctic Ocean acidification and other climate change impacts on subsistence fisheries in the Beaufort Sea and Canadian Arctic archipelago. Paper presented at: Inuvik Fisheries Joint Management Board Meeting; Winnipeg, MB. Also presented at: 2016 Inuvialuit Game Council Meeting; Whitehorse, YT; and to: 2016 Arctic Monitoring and Assessment Programme Meeting and US National Oceanic and Atmospheric Administration Arctic Ocean Acidification Workshop; Helsinki, Finland.

Sumaila UR. 2017. Effective high seas management is necessary for the sustainability of the global ocean. Paper presented at: Fisheries Access Workshop at University of Washington School of Marine and Environmental Affairs; Seattle, WA.
Sumaila UR. 2017. Fisheries subsidies: why should you care about them? Paper presented at: North American Association of Fisheries Economists Forum; La Paz, Mexico.

Sumaila UR. 2017. Fishing in troubled waters: geopolitics and resource security. Member of session presentation at: 10th International Illegal Unreported and Unregulated Fishing Forum; London, UK.

Sumaila UR. 2017. Improve high seas fisheries management and increase economic, social and ecological benefits for our oceans. Paper presented at: Our Ocean Our Future. High Seas Alliance and Natural Resources Defense Council, Ocean Conference Preparatory Meeting Side Event; New York, NY.

Sumaila UR. 2017. Ways to ensure future for fisheries. Paper presented at: BC Young Fishermen's Gathering; Victoria, BC.

Sumaila UR. 2017. What is sustainability under the global warming? Paper presented at: Sustainability and Ecology Seminar Talks, Institute for International Collaboration, Hokkaido University; Sapporo, Japan.

VanderZwaag DL. 2017. Canadian ocean governance in the Anthropocene: legal laments and promises. Paper presented at: Coastal Watersheds in the Anthropocene: Understanding Rapid Change and Implication for People and Ecosystems; University of Waterloo, ON.

2016

Alava JJ. 2016. Exploring the impact of climate change on the bioaccumulation of chemical pollutants in a marine food web from the northeastern Pacific: a EwE model approach. Paper presented at: Institute for the Oceans and Fisheries Seminar Series (UBC); Vancouver, BC.

Andrews E. 2016. Using diverse stakeholder perspectives to predict and manage thresholds in Atlantic Canada marine systems. Paper presented at: Coastal Zone Canada; Toronto, ON.

Armitage D. 2016. Coasts and communities: collaboration, knowledge and rights. Paper presented at: Parks Canada – Gwaii Haanas Speaker Series; Skidegate, BC.

Armitage D. 2016. Governance, institutions and adaptive capacity. Poster presented at: OceanCanada Pacific Working Group Adaptive Capacity Workshop; Vancouver, BC.

Armitage D, Pittman J. 2016. Governance for marine conservation across the land-sea interface. Symposium organized at: International Marine Conservation Congress, St. Johns, NL.

Armitage D, Pittman J. 2016. Governance across the land-sea interface: insights from a systematic review. Paper presented at: International Marine Conservation Congress; St. Johns, NL.

Armitage D, Pittman J. 2016. A systematic review of governance at the land-sea interface and some implications for Canada's ocean research and policy. Paper presented at: Coastal Zone Canada Conference; Toronto, ON.

Arnold S, Young A, Nuyalia C, Hayes A, Taylor DRF. 2016. Geographic information and coastal zone management: an example from Nunavut. Paper presented at: Coastal Zone Canada Conference; Toronto, ON.

Ban NC. 2016. Applied conservation research. Plenary presentation at: Pacific Ecology and Evolution Conference; Bamfield, BC.

Ban NC. 2016. Applying empirical estimates of marine protected area effectiveness. Paper presented at: Annual Meeting of the Canadian Council on Ecological Areas; Saint John, NB.

Ban NC. 2016. Marine protected areas and indigenous rights. Paper presented at: Duke University, Beaufort Marine Laboratory; Durham, NC.

Ban NC, Frid A. 2016. Community-academic research partnerships to support MSP implementation: example from British Columbia, Canada. Paper presented at: International Marine Conservation Congress; St. Johns, NL.

Beattie H, Brown V, Brown F, Mauro I. 2016. Cultural revitalization, indigenous knowledge, and ecological sustainability: a collaborative videography research project. Paper presented at: Coastal Zone Canada; Toronto, ON.

Bennett N. 2016. Conservation social science: understanding and integrating human dimensions to improve local to global conservation policy and practice. Paper presented at: Institute for Resources, Environment and Sustainability (IRES) Seminar Series (UBC); Vancouver, BC.

Bennett N. 2016. Making real progress on marine protected areas in Canada. Paper presented at: All Party Ocean Caucus; Ottawa, ON.

Bennett N, Whitney C. 2016. Adaptive capacity: from assessment to action in social ecological systems. Paper presented at: Salish Sea Ecosystem Conference; Vancouver, BC.

Brodka JM, Narro Perez RA, Doubleday N. 2016. OceanCanada Partnership at McMaster University: an analysis of partnership metadata. Poster presented at: Water Initiative for the Future (WatIF) Graduate Student Conference, Queen's University: Kingston, ON.

Brueckner-Irwin I, Armitage D. 2016. Implications of marine protected areas on coastal community social-ecological wellbeing in the Bay of Fundy. Poster presented at: OceanCanada Conference; Vancouver, BC; and 11th Biennial BoFEP Science Workshop; Fredericton, NB.

Charles A. 2016. Fisheries bio-socio-economics. Paper presented at: Fisheries and Aquaculture Bioeconomics Symposium; Mérida, Mexico.

Doubleday N. 2016. Arctic Ocean sovereignty... and the sustainable development goals. Paper presented at: Coastal Futures; Resilience through Collaboration Conference, Coastal Zone Canada Association; Toronto, ON.

Eger S, Courtenay S. 2016. Facilitating the effective operationalization of scientific knowledge within decision-making in Canada. Poster presented at: *OceanCanada* Conference; Vancouver, BC; and McMaster Water Week Student Presentations; Hamilton, ON.

Engler C. 2016. Adaptive ecosystem approach for a changing ocean: challenges and obligations for transboundary fisheries management. Paper presented at: Governance of Changing Oceans Workshop, K.G. Jebsen Centre, University of Tromsø, and Schulich School of Law; Halifax, NS.

Engler C. 2016. Ecosystem approach and transboundary fisheries. Paper presented at: *OceanCanada* Conference; Vancouver, BC.

Engler C. 2016. Ecosystem approach in international fisheries law and policy. Paper presented at: Workshop on Integrated Fisheries Management, Marine and Environmental Law Institute, Dalhousie University; Halifax, NS.

Epstein G. 2016. Incentives, social networks and governance: theoretical perspectives on building stakeholder support for the adoption and implementation of integrated management. Paper presented at: Coastal Zone Canada Conference; Toronto, ON.

Epstein G. 2016. Management of forage fisheries. Poster presented at: *OceanCanada* Conference; Vancouver, BC.

Epstein G. 2016. Managing tradeoffs in fisheries and fisheries research. Paper presented at: Canadian Association of Geographers of Ontario Conference; Waterloo, ON.

Fuller S. 2016. Implementation with respect to species at risk. Paper presented at: Workshop on Integrated Fisheries Management, Marine and Environmental Law Institute, Dalhousie University; Halifax, NS.

Goulden M. 2016. The history of Pacific coast salmon management: the Pacific Coast Salmon Treaty. Paper presented at: Biology Graduate Students Seminar, Dalhousie University; Halifax, NS.

Hayes A. 2016. The Nunaliit Cybercartographic Atlas framework and its use by Inuit knowledge stewards. Paper presented at: Inuit Studies Conference; St. John's, NL.

Hayes A, Taylor DRF, Arnold S. 2016. Geographic information and coastal zone management: an example from Nunavut. Paper presented at: Coastal Zone Conference; Toronto, ON.

Ho E, Eger S, Courtenay S. 2016. A resilient watershed: applying an integrative and adaptive approach to a long-term management of the Muskoka Watershed. Poster presented at: Muskoka Summit on the Environment, 2016 Warming World Summit, Solutions for a Warming World; Bracebridge, ON.

Hoover C, Grandmaisson V, Paulic J, MacPhee S, Loseto L. 2016. Regional indicators for marine monitoring in the Inuvialuit Settlement Region. Poster presented at: Beluga Summit; Inuvik, NWT.

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Hoover C, Loseto L, MacPhee S, Hynes K, Simpson B, Wojciech W, Ostertag S, Pearce T. 2016. Ecosystem assessment in the Canadian Beaufort Sea: modelling past changes and developing future indicators. Poster presented at: *OceanCanada* Conference; Vancouver, BC.

Hoover C, MacMillan K, MacPhee S, Loseto L. 2016. Regional indicators for marine monitoring in the Inuvialuit Settlement Region. Paper presented at: ArcticNet Conference; Winnipeg, MB.

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Hoover C, MacPhee S, Walkusz W, Loseto L. 2016. Understanding the Beaufort Sea food web and changes over time. Poster presented at: Beluga Summit; Inuvik, NWT.

Hoover C, MacPhee S, Walkusz W, Pitcher T, Loseto L, Pakhomov E. 2016. Impacts of fisheries and climate change on polar marine ecosystems: comparing the Beaufort Sea shelf with the Antarctic peninsula marine ecosystem using ecopath with ecosim models. Paper presented at: New Challenges in a Changing Ocean, ICES/PICES 6th Zooplankton Production Symposium; Bergen, Norway.

Jacob AL, Ban NC, Cripps K, Darimont CT, Silver JM, Wood SA. 2016. Managing shellfish aquaculture and nature-based tourism in BC's Great Bear Sea. Paper presented at: International Marine Conservation Congress; St. Johns, NL.

Mauro I. 2016. Fishing with our hands: visualizing commercial and traditional activities in Pangnirtung's char fishery. Paper presented at: ArcticNet; Winnipeg, MB.

Mauro I, Romanow J, Wuttunee W, Bullock R. 2016. Indigenous communication in the digital world: economic realities and challenges. Panel organized at: Canadian Council for Aboriginal Business Research and University of Winnipeg; Winnipeg, MB.

Milko H. 2016. Identifying best practices in fisheries monitoring and stewardship training for First Nations Youth. Presented at: at *OceanCanada* Conference; Vancouver, BC.

Milko H, Pinkerton E. 2016. Dilemmas in First Nations' monitoring of LNG developments on the Skeena River Watershed. Paper presented at: Salish Sea Ecosystem Conference; Vancouver, BC. Also presented at: Society of Applied Anthropology Conference, Vancouver, BC.

Newell S, Doubleday N. 2016. Applying current ethical frameworks when conducting research in the Arctic. Paper presented at: ArcticNet ASM; Winnipeg, MB.

Newell S, Doubleday N. 2016. The ethics of conducting research in the Arctic. Paper presented at: Spring Water Forum; Hamilton, ON. Also presented at: Pegasus Conference; Toronto, ON; and *OceanCanada* Conference; Vancouver, BC.

Pringle, K. 2016. Creating space for water to speak. Poster presented at: McMaster Spring Peace Symposium; Hamilton, ON.

Pringle K, Doubleday N. 2016. Community needed in protecting the oceans: re-examining land-water-ocean transfers. Poster presented at: McMaster Spring Water Forum and Water Week @ McMaster; Hamilton, ON. Also presented at: *OceanCanada* Conference; Vancouver, BC. Also paper presented at: Pegasus Conference; Toronto, ON.

Saunders P. 2016. Canadian fisheries law and policy: implementation of sustainability principles. Paper presented at: Governance of Changing Oceans Workshop, K.G. Jebsen Centre, University of Tromsø, and Schulich School of Law; Halifax, NS.

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Saunders P. 2016. Implementation of sustainability principles in Canadian fisheries law and policy. Paper presented at: Workshop on Integrated Fisheries Management, Marine and Environmental Law Institute, Dalhousie University; Halifax, NS.

Saunders P. 2016. Renewable energy projects and spatial tenure in the offshore. Paper presented at: Offshore Renewable Energy Governance Panel, EU Centre of Excellence, Dalhousie University; Halifax, NS.

Saunders P. 2016. The role of adjudication in settlement of maritime disputes: issues arising from the South China Sea arbitration. Paper presented at: 4th East Asia Maritime Security Forum; Nanjing, China.

Saunders P. 2016. UNCLOS zones and maritime boundary delimitation: overview of legal principles. Paper presented at: China- ASEAN Training Course; Hainan, China.

Scassa T, Taylor DRF, Hayes A. 2016. A legal framework for the collection and sharing of traditional knowledge of indigenous northern communities. Paper presented at: 9th Polar Law Symposium; Akureyri, Iceland.

Stamnes N, Cormier R, Armitage D, Courtenay S. 2016. Application of ISO 31000 risk management standard and ISO 31010 bowtie analysis to link environmental monitoring to governance for the estuaries of the Northumberland Strait, Canada. Poster presented at: Coastal Zone Canada Conference; Toronto ON.

Stamnes N, Cormier R, Armitage D, Courtenay S. 2016. A policy risk analysis: linking environmental monitoring with decisionmaking. Poster presented at: *OceanCanada* Conference; Vancouver, BC; and Water Week, McMaster University, Hamilton, ON.

Steiner N. 2016. Climate change impacts on Arctic marine ecosystems. Paper presented at: Climate Change Seminar Series, University of Victoria: Victoria, BC.

Steiner N, Azetsu-Scott K, Cheung WWL, Cisneros-Montemayor AM, Drost H, Hoover C, Miller L, Sumaila UR, Suprenand P, Sou T, Tai T. 2016. Linking climate change effects on marine ecosystems to socio-economic impacts in the Canadian Arctic: AMAP-*OceanCanada* Case Study. Paper presented at: Beaufort Sea Ocean Canada Conference, Vancouver, BC.

Steiner N, Sou T, Christian J, Swart N, Lee W, Riche O. 2016. Regional climate modelling of the Arctic Ocean ecosystem: linking to local scales. Paper presented at: Canadian Meteorological and Oceanographic Society Conference; Fredericton, NB.

Stephenson R. 2016. Assessment of Gaps – Law, Policy and Implementation. Paper presented at: Workshop on Integrated Fisheries Management, Marine and Environmental Law Institute, Dalhousie University; Halifax, NS.

Sumaila UR. 2016. Biodiversity, resilience and sustainability. Paper presented at: 3rd Science for Biodiversity Forum. Mainstreaming biodiversity for well-being: contributions from science; Cancún, Mexico.

Sumaila UR. 2016. Participation at: Public forum hosted by Terry Beech, Member of Parliament for Burnaby North-Seymour and members of Pacific Caucus on the proposed Trans Mountain Expansion project and an evidence-based discussion on Canada's energy future; Burnaby, BC.

Sumaila UR. 2016. A simple application of bioeconomics to fisheries subsidies. Paper presented at: Fisheries and Aquaculture Bioeconomics Symposium; Mérida, Mexico.

Sumaila UR. 2016. Climate change impacts on the economics and management of world fisheries. Paper presented at: Asia-Pacific Economic Cooperation (APEC) Climate Symposium, Smart Climate Information and Accountable Action: Achieving Sustainable Food Security in a Changing World; Piura, Peru.

Sumaila UR. 2016. How is climate change likely to impact the systems that sustain fisheries? Paper presented at: Environment and Oceanic Affairs of the Ministry of Foreign Affairs of Chile and the National Geographic Society. Is the Paris Agreement Good News for the Ocean? Washington, DC.

Taylor DRF. 2016. Creating a cybercartographic atlas of the Bering Strait for pan-Arctic options. Paper presented by Peter Pulsifer on behalf of DRF Taylor at: Belmont Forum; Paris, France.

Taylor DRF. 2016. Creating the Cybercartographic atlas of the Arctic Ocean. Paper presented at: Coastal Zone Canada Conference; Toronto, ON.

VanderZwaag DL. 2016. Canada and the protection of marine species at risk: paper promises, paltry progressions. Paper presented at: International Marine Conservation Congress; St. John's, NL.

VanderZwaag DL. 2016. Canadian fisheries management: moving from legal laggard to legislative leader. Paper presented at: Oceana Canada Science Symposium; Ottawa, ON.

VanderZwaag DL. 2016. International law and marine biodiversity conservation: tangled currents, foggy future. Paper presented at: China-ASEAN Training Course; Hainan, China.

VanderZwaag DL. 2016. Marine species on the move in the northwest Atlantic: a sea of transboundary governance challenges. Paper presented at: Governance of Changing Oceans Workshop, K.G. Jebsen Centre, University of Tromsø, and Schulich School of Law; Halifax, NS. Also presented at Species on the Move Conference, Institute for Marine and Antarctic Studies (IMAS) and University of Tasmania; Hobart, Australia; at Coastal Zone Canada Conference, *OceanCanada* Panel; Toronto, ON; and *OceanCanada* Conference; Vancouver, BC.

VanderZwaag DL. 2016. Ocean acidification: a tangled and tepid international governance seascape. Paper presented at: World Environmental Law Congress, Biodiversity and Marine Ecosystems Session, Supreme Court of the State of Rio de Janeiro; Rio de Janeiro, Brazil.

VanderZwaag DL. 2016. The precautionary approach in international law and policy: beacon of hope, sea of confusion. Paper presented at: Workshop on Integrated Fisheries Management, Marine and Environmental Law Institute, Dalhousie University; Halifax, NS.

VanderZwaag DL. 2016. Renewable ocean energy and the international law and policy seascape: tangled currents. Paper presented at: Offshore Renewable Energy Governance Panel, EU Centre of Excellence, Dalhousie University; Halifax, NS.

Films and Filmed Interviews with *OceanCanada* Members
(http://www.oceancanada.org/videos/)

***Inuit Coastal Culture and Environment*, Documentary Video project (in-progress full feature film).**

***Beyond Climate* (BC), Documentary Video project (in-progress full feature film).**

***Tribal Canoe Journeys*, Documentary Video project (in-progress full feature film).**

***Beyond Climate* Trailer (2016, 3:03)**

***Final BC Tour* Film (2016, 27:37)**

***Qatuwas Tribal Canoe Journeys* (2016, 13:36)**

***Natalie Ban, Pacific Working Group Co-Lead* (2016, 01:53)**

***Rosemary Ommer, Advisory Board Chair* (2016, 01:45)**

WORKSHOPS AND MEETINGS

National Data and Integrated Scenarios (NDIS) Monthly Working Group meetings, 2016-2017.

Workshop, Coastal watersheds in the Anthropocene: understanding rapid change and implication for people and ecosystems. *OceanCanada* Governance and Wellbeing Cluster and The Water Institute, University of Waterloo, March 2, 2017 (live streamed).

Meeting with Roland Cormier (formerly Department of Fisheries and Oceans), Simon Courtenay (CWN/UWaterloo), Derek Armitage (UWaterloo) and Nicole Stamness (UWaterloo HQP) on bow-tie analysis of cumulative effects monitoring and policy for Northumberland Strait, January 2017.

United Nations University Institute for Water, Environment and Health (INWEH) – Joint Celebration of World Environment Day and World Oceans Day. "Enhancement of Windermere Basin in the City of Hamilton." June 8, 2016.

Field Course Peace Studies 4FC3 – Peace, Water and Health: Fostering Local and Global Engagement. Contributors: N. Doubleday, R. Narro, J. Brodka, N. Nagabhatla (UNU-INWEH), K. Cruikshank, L. Carbone Mascotto. May 28-June 4, 2016.

Research conversation with *OceanCanada* Partnership and R. Sumaila. Attendance: 8 faculty members, 5 students. May 11, 2016.

Workshop on Complex systems and change: Co-organizers: N. Doubleday and S. Ullal. Presenters: S. Newell, K. Pringle, L. Janes, B. Carbone Mascotto. Pegasus Conference on Peace, Sustainability and Health. Toronto, May 8, 2016.

MEDIA COVERAGE

2017

- February 27. Sustainable and healthy ocean ecosystems: putting our money where our mouths are. ***SDG Knowledge Hub.***
- February 3. Fish economist, Dr. Rashid Sumaila, wins "Academy Award of the Sea." ***The Ubyssey.***
- January 20. Trading for sustainable fisheries. ***IndraStra.***
- January 3. Food and jobs from fish hinge on Paris Agreement. ***Futurity.***

2016

- December 30. Paris warming limit will increase fish catches. ***Climate News Network.***
- December 22. Climate change could have devastating impact on global fisheries. ***CBC News.***
- December 22. International climate targets good for global fisheries: B.C. researchers. ***Canadian Press.***
- December 22. Study: Nova Scotia catches could be maintained if world abides by Paris climate agreement. ***Local Xpress.***
- December 22. World's fishing fleet to catch 25 billion fewer fish a year by 2100 unless more is done to stop climate change. ***Independent.***
- December 22. Global warming could cause fishing to decline by millions of tons each year, study says. ***San Diego Union-Tribune.***
- December 22. The Paris climate agreement could save commercial fishing. ***Gizmodo.***
- December 22. World's fishing fleet to catch 25 billion fewer fish a year by 2100 unless more is done to stop climate change. ***Independent.***
- December 22. Global warming could cause fishing to decline by millions of tons each year, study says. ***San Diego Union-Tribune.***
- December 22. The Paris climate agreement could save commercial fishing. ***Gizmodo.***
- December 13. A court case that could impact the Nova Scotia in-shore fishery. ***CBC-NS Information Morning.***
- November 16. Arctic haven for belugas becomes Canada's newest protected area. ***Globe and Mail.***
- October 26. Indigenous knowledge and cimate change. ***University of Winnipeg News Centre.***
- October 6. Global fisheries will lose $10B a year to climate change by 2050. ***Forbes.***
- September 22. Liu professor sets scene at 2016 Our Ocean Conference. ***Liu Institute for Global Issues.***
- September 12. Public forum on pipeline and energy strategy at SFU held by Terry Beech. ***The Peak.***
- September 12. I cambiamenti climatici causeranno forti perdite economiche al settore ittico. ***pesceinrete.***

- September 10. Outlook is dismal for B.C.'s wild salmon. *Vancouver Sun.*
- September 8. UBC report: climate change will decimate fisheries. *Global News.*
- September 8. Unchecked climate change could cost fisheries billions. *The Cordova Times.*
- September 6. Future fisheries can expect $10 billion revenue loss due to climate change. *Science Daily.*
- September 2. How to keep plenty of fish in the sea. *Halifax Metro.*
- August 30. High seas fisheries management could recoup losses due to climate change. *UBC News.*
- August 29. One of the world's biggest fisheries is on the verge of collapse. *National Geographic.*
- August 12. Warmer global ocean pushes fish to extremes. *Sport Fishing Magazine.*
- August 2. WWF-Canada warns that small fish are in big trouble. *World Wildlife Fund News.*
- July 19. 5 things about fishing in the South China Sea. *Wall Street Journal.*
- July 13. South China Sea ruling won't stop plundering of ecosystem, experts say. *Reuters.*
- July 1. Insurance industry unknowingly supports illegal fishing, UBC researchers say. *CBC News.*
- June 27. Obama urged to create world's largest marine reserve. *Saipan Tribune.*
- June 15. Nutrition: fall in fish catch threatens human health. *Nature.*
- June 15. Ten per cent of world could face malnutrition as fish stocks tumble. *Globe and Mail.*
- June 15. Why some coral reefs thrive as others die off. *CBC News.*
- June 15. One-fifth of the global population risks malnutrition as fish stocks decline. *Motherboard.*
- June 8. World Oceans Day. *Roundhouse Radio.*
- June 6. Rogue fishing vessels still able to secure insurance: study. *Jakarta Globe.*
- June 3. International treaty targeting illegal fishing takes effect. *Mongabay.*
- May 18. Fish subsidies must come to an end to save ocean stocks (op ed). *Live Science.*
- April 8. Sustainability of Canadian fisheries requires bold political leadership. *Policy Options.*
- April 8. First round of UN negotiations to regulate high seas fishing concludes. *Mongabay.*


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