MAPMATTERS
The Newsletter of the Marine Affairs Program, Dalhousie University
Marine Affairs PROGRAM
DALHOUSIE UNIVERSITY

CONGRATULATIONS MMM 2020-2021!

Best wishes to the **MMM Class of 2020-2021** from the MAP Community! We were happy to be back on campus to see you cross the stage to receive your degree. MAP is proud that you accomplished the MMM degree fully online. Learn about their research on page 2 of this issue, and the MAP Awards and Prizes.

Welcome to MMM 2021-2022!

MAP welcomed the MMM class of 2021-2022 on campus in September 2021. While masks and social distancing was required for the Fall and Winter terms, it was good to be back on campus and in the classroom. Check out the student profiles of the newest members of the MAP family.

MMM Class of 2021 Graduate Projects

Fadal Al-Ajdda	Safety in the Canadian Commercial Fishing Industry: Over a Decade on the Transportation Safety Board Watchlist, what has changed?
James Barclay	A Potential Tool to Support the Prioritization of Blue Carbon Ecosystems in Canada
Lisa Baxter	Evaluating Canada's single-use plastic (SUP) mitigation policies via brand audit and beach cleanup data
Lucas Bent	Charting Future Ocean Law And Policy Directions; Examining Canada's Tools for Marine Protection Through Two Pacific Coast Case Studies
Lisa Chen	Developing an Ocean Literacy Framework: Lesson from an Analysis of Ocean Week Canada
Tianna Clarke	The Canadian Maritime Sector's Perception of the International Maritime Organization's (IMOs) short-term measures for Greenhouse Gas (GHG) Emissions
Aaron Cogger	A Climate Change Vulnerability and Data Gap Assessment of Arctic Marine Species in the Tallurutiup Imanga National Marine Conservation Area
Jillian Conrad	Canada's Ocean Policy: Assessing enabling governance conditions for implementation of a national blue economy strategy
Katia Corral Quijada	Coastal and Marine Tourism in the Blue Economy: An Assessment of Strategies in Latin America and the Caribbean
Victoria Cullen	Exploring Perceptions of Commercial Fisher Representation in Management: A Case Study of the North Atlantic Right Whale UME, 2017-2021
Kaitlyn Curran	Humanizing Marine Spatial Planning: A Salutogenic Approach
Nidhi D'Costa	Understanding the impacts of anti-finning regulations on global shark mortality
Jaclyn Franceschini	How Decision-Making in Fisheries Management Contributes to Changes in the Fishery: A Case Study of North Atlantic Swordfish
Leah Fulton	Untangling the Problem of Abandoned, Lost, and Discarded Fishing Gear: Evaluating the Benefits of Side Scan Sonar as a Gear Detection Method
Franchesca Krysiak	Linking Human Impacts to Recent Declines in Coral Reef Fish Communities in the Bay Islands
Shuyi Li	Roles of Marine Affairs Programs in Preparing their Graduates to be Marine Affairs Professionals
David Marrack	Harbour Facilities and Marine Accessibility in British Columbia's Isolated and Coastal Communities
Martin Ostrega	Evaluating Spawning Aggregation Management as a Strategy for Conserving Bonefish (Albula Vulpes) in Cuba
Emma Snowdon	Multisectoral collaboration and the role of knowledge: assessment of the Apoqnmatulti'k Project as a knowledge mobilization catalyst
Stephen Tiller	Proposal for a Comprehensive Risk Framework for the Canadian Marine Shipping Industry: A Systematic Approach to Managing Transport Risks in Canadian Waters Based on an ISO 31000 Foundation

Sobey Fund for Oceans Scholarship Recipients 2021-2022

The Sobey Fund for Oceans Advisory Group is pleased to present the recipients of the Sobey Fund for Oceans Scholarships for 2021-2022.

Cailey Dyer, Master of Marine Management

Cailey is an avid learner and lover of all things policy. Cailey's interest in marine management stems from a co-op she had with the Canadian Coast Guard Arctic Region. While working on programs related to conservation, icebreaking, community relations and marine protected areas, she saw the benefit of including Indigenous knowledge and science in policy making. She is looking forward to bringing her experience to the MMM program and learning from her colleagues. Cailey graduated from the University of Ottawa with a Joint Honours in Public Administration and Political Science. Since graduating in December 2020, Cailey has worked on the COVID-19 task force at Health Canada, helping to develop testing policy across Canada. She is excited to bring a unique lens to the MMM program and learn from her peers.

"I am very excited to continue my studies in Marine Management at Dalhousie this fall and to do so with the support of the Sobey Fund for Oceans Scholarship. During my studies, I hope to bring my past experiences working in policy spaces to the Marine Management program and develop interdisciplinary ways to tackle complex challenges facing the marine management community. In particular, I am interested in examining best practices for developing marine protected areas in Canada's Arctic. Using Indigenous knowledge, science, and policy, the goal of my research is to discover how to best work with communities and incorporate local, on the ground knowledge, in what has historically been a science-led space."

Corie Rooyakkers, Master of Marine Management

Corie has always had an interest in pursuing a career that positively impacts the environment. She holds an Honours Bachelor of Science from the University of Guelph specializing in Biochemistry. Throughout her undergrad, she volunteered with the Marine and Freshwater Society, took marine-focused elective courses, and volunteered as a research assistant with Operation Wallacea in the summer of 2019 to assist their sea turtle and coral reef research in Akumal, Mexico. Corie had the opportunity to work for the Enforcement Branch of Environment and Climate Change Canada as a student and worked with them as an analyst for two years after graduating. Her time with the Enforcement Branch led her to develop a keen interest in legislation, enforcement, and compliance promotion.

During her career in the MMM program, Corie hopes to explore the gaps in legislation that is currently preventing Governments from effectively managing and protecting the marine environment.

"I am extremely grateful to be receiving the Sobey Fund for Oceans scholarship as I start my graduate studies at Dalhousie University in the Master of Marine Management program. I have an educational background in biochemistry and molecular biology, and a professional background in environmental enforcement. I have seen firsthand the common disconnect between science and policy, and the associated opportunity for improvement. I believe that one of the most successful methods to manage and protect the marine environment is through improved legislation. I am excited to explore this in my studies at Dalhousie University, to learn about the obstacles and suggested resolutions, and to use my multidisciplinary background to help support a path forward with the ultimate goal of protecting the marine environment."

Sobey Fund for Oceans Scholarship Recipients 2021-2022

Debra Sinarta, Master of Marine Management

Debra grew up in Vancouver, BC, where she built a strong connection to the ocean from exploring and learning by the coast. She recently graduated from the University of British Columbia (UBC) with a BSc Global Resource Systems, specializing in Conservation Biology. During undergrad, she had the opportunity to study the changes in distribution of canopy-forming kelp in Barkley Sound, and explore the social dimensions of conservation through assisting projects on the seahorse trade and socioeconomic impacts of bottom trawling. Following graduation, she filled science communication and education roles for local conservation groups, and developed her field and research skills working as a research assistant for the Wildlife Coexistence Lab at UBC.

Through the MMM program, Debra aims to study the effectiveness of marine protected areas in achieving ecological and social goals, hoping to enhance the integration of climate adaptive strategies and participation of local communities and Indigenous people.

“I am very grateful to receive the Sobey Fund for Oceans Scholarship to support my graduate studies in the Marine Affairs Program. My research will aim to assess the effectiveness of Marine Protected Areas in achieving ecological and social goals. I'm especially interested in studying climate change adaptation strategies and human well-being outcomes, which I hope will contribute practical adaptive management strategies through a multidisciplinary approach. I am also passionate about the role Indigenous governance and local stewardship plays in the planning and management of MPAs, and I hope to explore more effective ways to incorporate local stakeholders in this process.”

Hannah Solway, Master of Science, Biology

After graduating with a BSc with Honours in Marine Biology and a certificate in Environmental Impact Assessment, Hannah has decided to pursue an MSc. Hannah’s passion for Conservation springs from being brought up surrounded by nature in the forests of Northern Ontario, and travelling to the rainforests of Costa Rica, and the jungles of Mexico. Hannah is an experienced researcher and educator with diverse involvements, from studying how road salts affect freshwater ecology in Ontario, to studying the social structure of Icelandic long-finned pilot whales, and most recently, her Honours research project investigating the interactions between North Atlantic baleen whales and vessels. Hannah is looking forward to continuing this research, doing further inquiry into how we can determine where baleen whale vessel strikes and entanglement are most likely in the North Atlantic Ocean. Hannah’s goal is to implement this research into policy to help eliminate vessel strikes and entanglement, in order to better protect baleen whales.

“As I continue my education by pursuing an MSc, I look forward to applying my undergraduate knowledge and background in Conservation Biology to this degree. Throughout this degree, I will be continuing my undergraduate honours research, investigating the interactions between baleen whales, vessels, and entanglement in the North West Atlantic Ocean. Using Geographic Information Systems, statistical modelling, and various data sources, I will be researching where baleen whale vessel strikes and entanglement may be most likely, along with any other associated inquiries. I hope to use this research to help implement changes in marine management and policy to help better protect baleen whales in the North West Atlantic Ocean. I am very proud and honoured to have received the Sobey Fund For Oceans Scholarship, and look forward to all that I will achieve with this support.”

Message from the MAP Director

Greetings from the Marine Affairs community. Despite all the challenges of working through the pandemic, I'm happy to report that the Marine Affairs Program is thriving. This summer saw two convocations: the first in June, for the class of 2022, the second in July for the MMM students who missed an in-person ceremony due to public health restrictions. After the disruptions in 2020-2021, this year our MMM students were able to resume in-person summer internships with their host institutions. We're looking forward to welcoming the new cohort of MMM students, who will bring an exciting breadth of interests and backgrounds.

The 2022-2023 academic year will see several changes to our staffing and faculty. Claudio Aporta has started a new position at World Maritime University, and we wish him all the best in his academic appointment in Sweden. Ramón Filgueira is on sabbatical leave, which will include an extended stay at the Institute of Marine Research in Norway, and Megan Bailey is returning to teaching after her sabbatical. Hannah Harrison has joined us as an Assistant Professor and will teach several core MARA courses, including "Contemporary Issues," parts I & II. Wilf Swartz will continue as an Associate Professor and Deputy Director of the Nippon Foundation Ocean Nexus Program.

Among our Adjunct faculty, we're happy to welcome back Hugh Williamson, who will teach "Politics and the Sea"; Sue Molloy, who will teach "Marine Management Skills Development" as well as "Marine Science and Technology"; and Maxine Westhead, who will teach "Marine Protected Areas." We're thrilled that Max will continue as our Professional-in-Residence for a second academic year, and we're extremely grateful to Fisheries and Oceans Canada for their strong support. Finally, we're excited to welcome Jamie Snook (Executive Director of the Torngat Wildlife, Plants, and Fisheries Secretariat), who will teach "Community Based Co-Management."

As we transition to the new academic year, we look forward to seeing everyone at the upcoming *Sustainable Ocean* conference. Through the annual student conference and scholarship programs, the *Sobey Fund for Oceans* continues to support innovative scholarship by the next generation of leaders in oceans research. Through all the changes and challenges of the past year, Becky Field continues to keep everything together. On behalf of everyone at Marine Affairs, I want to thank Becky for all her hard work, dedication, and support.

We hope you enjoy reading about the accomplishments of our faculty, students, and staff, who represent the best of our university and our community. For more information and updates, follow us **@DalMarAffairs.**

Jerry Bannister, MAP Director

Sustainable Oceans Conference

The Sustainable Ocean Conference is a free public event that brings together a wide audience with the goal to highlight current marine research and to address the range of issues affecting our ocean. This annual conference is supported by the Sobey Fund for Oceans and is organized by the students of the Marine Affairs Program at Dalhousie University. It is the only student-led conference of its kind in Atlantic Canada.

Sustainable Ocean Conference 2022 will focus on the theme “Dive Deeper” which explores the complex topics of ocean conservation and sustainability by navigating below the surface of current marine issues. The conference centers around three sub-themes: the North, early career scientists, and protected areas. To achieve diversity through depth, the conference will bring together experts from a variety of fields including marine protected areas, sustainable seafood, Indigenous communities, and Arctic researchers. The conference schedule is now available.

Over two days, the Sustainable Ocean Conference 2022 will dive deeper into these topics. A panel discussion focused on marine protected areas will take place on Friday, September 23rd. It will be followed by a keynote address, student oral and poster presentations, a community organization fair, and much more on Saturday, September 24th.

The keynote address will be delivered by Dr. Shari Fox and Kunuk Inutiq. Dr. Fox is a geographer and research scientist with a background in both physical and social sciences. For 25 years, she has been dedicated to working on projects that pertain to Inuit knowledge and support Inuit leadership in research. She was a co-founding member of Ittaq in 2005 and has worked with Inuit on many local to international-scale projects across the Arctic. Kunuk Inutiq previously served as the Director of self-government at Nunavut Tunngavik Inc. (NTI), studying self-government for Nunavut. Before that, she was the Chief Negotiator for the Qikiqtani Inuit Association for the Tallurutiup Imanga National Marine Conservation Area’s Inuit Impact and Benefit Agreement.

This year, the Sustainable Ocean Conference will be taking place in person at Dalhousie University with an option for attendees to join virtually. To stay up to date on conference details, activities, and register for the event, visit the Sustainable Ocean Conference website (https://www.sustoceans.com).

Faculty Updates

Dr. Ramon Filgueira

Aquaculture research is shifting in multiple ways, primarily due to climate change but also due to new technologies and priorities. The unprecedented environmental conditions triggered by climate change are pushing coastal ecosystems to new scenarios that we do not fully understand. Motivated by this lack of knowledge, we are working on gathering information on the effects of low oxygen and marine heatwaves on the behaviour, physiology, and molecular responses of marine bivalves. Low oxygen and extreme temperatures are two of the most relevant drivers of estuarine functioning, impacting how energy flows through food webs and also aquaculture production. We are studying their effects using controlled laboratory experiments and field experiments, providing avenues to test specific hypotheses but also exploring responses under natural conditions, which are challenging to reproduce in the laboratory. The ultimate goal of this research is to fill gaps to construct ecosystem models that allow us to make management decisions regarding aquaculture intensity and production.

Novel technologies, ranging from hardware to software, are revolutionizing aquaculture management. The application of the Internet of Things to aquaculture has provided a stream of data that can be used to manage aquaculture sites and improve animal husbandry practices. However, operationalizing its use requires further multidisciplinary research involving engineers, computer scientists, and oceanographers, among others. We are working at that interface in a new project involving the Faculty of Science, the Faculty of Computer Sciences, and some of the most relevant aquaculture players in Atlantic Canada, Cooke Aquaculture, We'koqma'q Fisheries, and InnovaSea. The project is oriented toward using artificial intelligence to help the industry make decisions to improve management practices and fish welfare.

Sustainable aquaculture requires a full analysis of the social-ecological system, and consequently, our research spams beyond the natural sciences. We focus on exploring holistic management practices that integrate the environment, economy, and society. We approach these questions by gathering information from key stakeholders and the public, ultimately exploring the drivers of their opinions and perceptions. This approach recognizes the relevance of local settings on opinions, which is crucial for effective management. In general, our holistic approach to sustainable aquaculture embracing natural and social sciences aims to implement the ecosystem approach to aquaculture.

Dr. Wilf Swartz

My approach to research is shaped by two events from the spring of 2011: the failed Doha Round negotiations for international regulations on fisheries subsidies at the World Trade Organization and the wide-spread devastation of Japan's northeast coast in the aftermath of the Great East Japan Earthquake. At the time, I was deeply engaged with the negotiations as a member of the WTO secretariat, observing delegates from the member states debate over the effects of subsidies on fish stocks. Over the course of six intensive months, it became frustratingly apparent that academic research rarely influenced the trajectory of the negotiations, not necessarily because of lack of understanding, but because our research was failing to answer the questions that this debate demanded and the solutions that we prescribed were disconnected from the political realities. For our work to be useful, they must be embedded in the specific contexts of the issue. Later that year, I found myself in Kesennuma, a fishing town on the Pacific coast of Japan that serves as one of the major ports for Japan's tuna fleets. Six months since the earthquake and the scars of the tsunami still visible all around, it was there that I realized the real implications of the policies we advocate. Overcapacity and excess fishing efforts that we, as fisheries economists, discuss in abstract, were now jobs and lives of people that I saw face to face.

My current work focuses on understanding the role of public policies in shaping the economic security of people in coastal communities. Over the ten years since my first visit to northern Japan, I return to these communities whenever I can to witness the painfully slow progress of recovery and how the events of 2011 and government response are still defining the fisheries in the region. Now, as we emerge from the pandemic, it is crucial to examine how will the events and policies of the past two years affect the economic situations of coastal communities going forward? In collaboration with public policy colleagues, my work aims to link economic assessments with policy analyses in a way that explicitly supports decision making. In the past six months, we used real-time market data to examine how wholesale prices responded to public health measures (Amos et al 2022) and are assessing the outcomes of emergency interventions. Beyond the question of economic security, we bring a similar approach to the issues around labour practices (Swartz et al. 2021), roles of ocean science (Singh et al. 2021) and ocean diplomacy (Cisneros-Montemayor et al 2021, Sinan et al. 2021, Davis et al 2021).

Amos et al. https://onlinelibrary.wiley.com/doi/abs/10.1111/faf.12665

Swartz et al. https://www.pnas.org/content/118/19/e2100341118.short

Singh et al. https://www.pnas.org/content/118/5/e2100205118.short

Cisneros-Montemayor et al. https://www.nature.com/articles/s41586-021-03327-3

Davis et al. https://doi.org/10.3389/fmars.2022.831868

Sinan et al. https://www.sciencedirect.com/science/article/pii/S0308597X21003924

Dr. Claudio Aporta

I am writing this MAP newsletter update from Malmo, Sweden, where I am holding the post of Canadian Chair, Marine Environmental Protection, at the World Maritime University (WMU). WMU was funded in 1983 by the International Maritime Organization (IMO). At WMU, I will be teaching courses related to governance and sustainability. The student group come from management positions in developing countries. As a cultural anthropologist, I look at management and governance issues from a social science perspective. My research is to look at how local/indigenous knowledge is brought into marine planning initiatives and processes. For instance, how to properly and respectfully incorporate observational/experiential/oral knowledge in marine spatial planning, or in co-governance arrangements. My research projects now are connected to the impacts of marine shipping in the Canadian Arctic (as a head of a working group in the CFREF-funded "Module N" (Maritime Risk and Safety), and as one of the leads in Working Group 1 of the CFREF-funded project BEcoME (Benthic Ecosystem Mapping & Engagement). Working in both the Atlantic and Arctic coasts is giving me some insights of the differences and similarities, challenges and opportunities that the engagement of communities in ocean governance presents in different contexts in Canada. My position at WMU is giving me a chance to look beyond Canada, expanding my interests to the global south.

Dr. Megan Bailey

Dr. Megan Bailey co-organized (along with Julian Idrobo) a plenary session for the 4th World Small-Scale Fisheries Congress held in St. Johns NFLD June 20-22. Their plenary was on the Future of Small-Scale Fisheries, and featured talks by Ken Paul (Wolastoqey Nation of New Brunswick), Momo Kochen (formally of NGOs Masyarakat dan Perikanan Indonesia and Future of Fish), Hekia Bodwitch (Nippon Nexus Centre Postdoctoral Fellow), and Rob Stephenson (DFO). Panelists were asked to reflect on their vision for the future of small-scale fisheries, and comment what would act as enables or barriers to realizing that vision. The session was captured via graphic recording by Ashton Rodenhiser from Mind's Eye Creative (image). Several MAP folks made the trip to St. John's, including new faculty members Dr. Wilf Swartz and Dr. Hannah Harrison, PDF Dr. Hekia Bodwitch (plenary speaker), PhD students Rachael Cadman and Kayla Hamelin, RA Holly Amos, MMM students Cailey Dryer and Dylan Seidler, and former MMM Jillian Conrad.

Panelists Momo Kochen makes fellow panelist Ken Paul and plenary co-organizer Megan Bailey laugh while discussing her vision for market-based governance and the future of small-scale fisheries (photo by Yinji Li)

Dr. Lucia Fanning

Coastal Restoration Nunavut Project

Coastal Restoration Nunavut (CRN) is a 5-year project aimed at identifying and mitigating the stressors impacting coastal fisheries, communities, and coastlines in Nunavut. Building capacity at the local level via targeted training and employment, documenting Inuit knowledge and supporting community-led ecological restoration and stewardship initiatives, CRN completed its work in June 2022. Led by Dr. Lucia Fanning, in partnership with the Fisheries and Sealing Division, Government of Nunavut, and funded by Fisheries and Oceans Canada, CRN drew on Inuit Qaujimajatuqangit (IQ) to document and address the health and condition of marine species and their habitats in Nunavut.

Despite travel restrictions arising from the Covid 19 pandemic, the CRN team traveled (physically and virtually) to twenty-three communities in the Territory to facilitate participatory mapping workshops and engagement sessions in collaboration with local Hunters and Trappers Associations (HTAs). This allowed the team to learn about the coastal restoration needs of each region and to support the development of community-led coastal restoration plans. These plans included physical rehabilitations to fix an urgent issue, support to enhance local stewardship initiatives, or conduct further research to understand the accelerated changes experienced by the many marine species living in Arctic waterways. Visit coastalnunavut.ca for more information.

FishWIKS (Fisheries Western and Indigenous Knowledge Systems) Project

This multi-year SSHRC Partnership grant project, led by Dr. Lucia Fanning officially concluded in 2019 but saw one of its doctoral students, Shelley Denny, graduate at the May Convocation in 2022. Another doctoral student, Saul Milne is scheduled to complete his degree this Fall.

Fish-WIKS research centered around understanding the extent to which different knowledge systems are incorporated into federal fisheries governance processes and addressing how the incorporation of such knowledge can lead to more effective decision-making at national, regional and local levels. Specifically, Shelley's research used a "two-eyed seeing" approach to assess the governance of Mi'kmaq Aboriginal and treaty fisheries in Nova Scotia and developed an alternative governance model aimed at improving the governance of these fisheries.

FishWIKS team members Dr. Lucia Fanning (extreme left) and postdoc, Stephanie Boudreau (extreme right) with Elder Albert Marshall and Chief Leroy Denny, Eskasoni First Nation.

Over the life of the project, FishWIKS supported a post-doctoral candidate, four Master's level and four doctoral students. Outputs from the project generated six theses, some 13 peer-reviewed articles, five major reports, 11 research summaries and numerous documents as well as two day-long policy fora, one aimed at the federal government and one at Indigenous leadership. Please see

Social Licence and Planning in Coastal Communities

Funded under the Ocean Frontier Institute, this five-year project focuses on the development of societally-endorsed sustainable cold-water aquaculture. The project, co-led by Dr. Lucia Fanning and Dr. Charles Mather (Memorial University) has a diverse and extensive team, including Dr. Barb Neis (Memorial University), Dr. Patricia Manuel (School of Planning), Dr. Bertrum MacDonald (School of Information Management), Dr. Ramon Filgueira (MAP) and Dr. Jon Grant (Oceanography).

Divided into five sub-modules and with its emphasis on aquaculture, the team examined questions around social licence, occupational health and safety, aquaculture-community dynamics, finfish carrying capacity and marine spatial planning. A sampling of project outputs from each sub-module include research on stakeholder perceptions of aquaculture in Nova Scotia, Canada country profile of aquaculture occupational health and safety, Placentia Bay ocean debris survey, media perspectives of salmon aquaculture over time in New Brunswick, Nova Scotia and Newfoundland and a marine spatial planning framework for community-based aquaculture planning in Atlantic Canada. All outputs of the project, including theses and peer-reviewed and other documents can be found at coastalfutures.ca.

Faculty Announcements

We are delighted to announce that **Dr. Hannah Harrison** has joined the Marine Affairs Program as an Assistant Professor in July. Dr. Harrison's two-year appointment will include responsibility for core elements of our MMM program. She comes to Dalhousie after three years as the Science Director for the Coastal Routes project and postdoctoral scholar the University of Guelph.

Dr. Harrison is a human ecologist and qualitative specialist focused on human dimensions of coastal communities and commercial fisheries in Canada. Since coming to Canada, her interests have been in understanding the challenges and opportunities faced by Great Lakes commercial fishing communities, with a focus on coastal development and social-ecological sustainability of inland fisheries in the anthropocene. She values relational approaches to human dimensions research and is excited to join the MAP community.

Dr. Harrison grew up on traditional Dena'ina lands in Homer, Alaska where she developed a personal, and later professional, passion for marine environments, with a particular devotion to all things fisheries-related. She earned her PhD (Ecology and Natural Resource Management) as a Marie Sklodowska-Curie Actions scholar at the Norwegian University of Life Sciences, where she learned from the expertise of salmon fishers and conservationists. Dr. Harrison's training, research, and expertise fit extremely well with the Marine Affairs Program, and we are excited to welcome her to the Faculty of Science!

We are delighted to announce that **Dr. Wilf Swartz** will join the Marine Affairs Program as an Associate Professor in July. Dr. Swartz's five-year appointment will enhance our research capacity in key areas of oceans and fisheries studies. He is Deputy Director of the Nippon Foundation Ocean Nexus Program (oceannexus.uw.edu), a 10-year, $32.5 million collaboration between the Nippon Foundation and a network of international ocean research institutes.

Wilf grew up on both sides of the Pacific—Tokyo and Vancouver— before completing his BSc. in Biology with a Minor in Asian Studies at the University of British Columbia. After a brief foray into international relations (Fukuoka, Japan), Wilf returned to the Fisheries Centre at UBC to pursue graduate studies in resource management in 2002. His two-year MSc was followed by another academic hiatus, this time to spend three years in global finance (London, UK). Wilf completed his PhD in resource economics at UBC in 2012 and was with the Nippon Foundation Nereus Program, first as a research fellow (2012-14) and then as a program manager (2014-16, 2018-19) before joining the Marine Affairs Program in 2019 as a research associate. Wilf has also worked as a research officer for the World Trade Organization (Geneva, 2011) and as the Director of Environmental Policies at the Ocean Policy Research Institute (Tokyo, 2016-18).

Wilf's research focuses on the role of public policies in shaping the socioeconomic outcomes of commercial fisheries. His initial focus was on the role of seafood trade, particularly the evolution of Japan's international fish acquisition strategy in the late 20th Century, and on fisheries subsidies' impacts on sustainability. The latter research resulted in Wilf working for the World Trade Organization during its failed negotiations on the global rules on fisheries subsidies as a part of the Doha Round. His research at Dalhousie University's Marine Affairs Program will be centered around public policies for economic security and social safety nets in fishing communities from Atlantic Canada to the coasts of Japan.

Dalhousie University and Department of Fisheries and Oceans Canada announce Maxine Westhead as Inaugural Professional in Residence for the Marine Affairs Program

Maxine Westhead has always been conservation-minded and always wanted to help make change. After snorkeling in Hawaii in the 1980s, she fell in love with the marine environment and on the spot decided to become a marine biologist, deviating from her childhood dream of becoming a veterinarian.

After completing her B.Sc in Marine Biology at the University of Guelph, and MSc at Acadia University, she landed an internship with the Department of Fisheries and Oceans (DFO), which was just starting up after the passing of Canada's Oceans Act, at the Bedford Institute of Oceanography.

"Talk about being at the right place at the right time!", says Westhead. "Over the years, I took on various roles in marine conservation, marine protected areas, marine spatial planning, and species at risk. I also studied the mudflats of the Minas Basin and the impacts of physical disturbance through clam and baitworm harvesting for my Master's degree at Acadia University," she says.

Maxine Westhead joined the Marine Affairs Program in the Faculty of Science at Dalhousie in 2014 as a part-time lecturer to deliver the Marine Protected Areas course. She is an Adjunct Professor, who is currently teaching her ninth consecutive year. With both her research expertise, and her management level experience, Dalhousie University is delighted to announce her appointment as the first Professional in Residence. The role, which is a collaboration between Dalhousie and the Department of Fisheries and Oceans Canada, will support Master of Marine Management students in the development of professional and networking skills. Maxine will also lead research seminars, skills workshops, and individual consultations with graduate students.

"As an international leader in oceans research and partnerships, we are pleased to support this exciting initiative, which expands our resources for graduate students in the Faculty of Science and deepens our longstanding partnership with Fisheries and Oceans Canada," says Chuck Macdonald, Dean of the Faculty of Science. "We are thrilled to have her serve as a bridge between the academic and professional worlds in the realm of marine management."

Her role will primarily involve advising students through a professional lens. She will be meeting with them one on one to talk about career goals, their unique studies, and potential internships. She will also support the students in developing their professional networks by introducing them to the right people in their fields of interest.

"I've been proudly working with the Marine Affairs Program for almost a decade now and increasing my involvement with the program is an honor. My job with DFO and my role with Marine Affairs have been generally separate undertakings to date, so I'm happy to be able to formally bring them closer together," she says.

Maxine is currently the Section Head for Marine Planning in Fisheries and Oceans Canada's Maritimes Region. For ten years, she has led the Maritimes Region MPA Program and for the past three years has been leading the regional Marine Planning team which includes Marine Spatial Planning and Marine Environmental Quality.

"This is an excellent opportunity to continue and further develop the Department's strong relationship with Dalhousie University, which is a key source of future interns and employees," says DFO's Regional Director General, Doug Wentzell.

"As I age and get closer to the end of my career rather than the beginning, I feel the desire to give back. I'd like to end my career knowing that I've helped several students find their passion and get their foot in a door somewhere," says Westhead. "With environmental and oceans issues locally and globally still being so pressing and urgent, I also believe that the more people we have working on solutions, the better."

MAP is pleased to announce that Maxine will continue in this roll for the 2022-2023 academic year.

PhD Student Updates

Leah Beveridge

I completed the MMM program in 2013, and in 2016 started my Interdisciplinary Ph.D. under the supervision of Dr. Aldo Chircop and Dr. Claudio Aporta. I am partnering with the Inuvialuit Game Council to document Members' experiences working with the Government of Canada on marine safety and shipping issues over time, and to understand what insights can be drawn from those experiences to inform the decolonization of marine safety and shipping. Through all facets of life, including this research, I am practicing Two-Eyed Seeing. This includes incorporating the principles of personal accountability and reciprocity, which means that Inuvialuit should benefit from this research as much as I do. The intent is that the project will contribute to the Game Council's efforts to advance their priorities for marine safety and shipping, and will help the Government of Canada improve how they interact with Inuvialuit in support of decolonization and reconciliation.

Kayla Hamelin

I am in my third year of my PhD with Dr. Megan Bailey, investigating participatory approaches to fisheries science. This past year, I completed the first chapter of my thesis, which looks at different decision-making criteria cited by the Canadian Fisheries Act, and how some of these criteria are considered in science advising processes conducted by DFO. Next, I completed a field season working with recreational Atlantic mackerel anglers to collect socioeconomic information about this under-engaged stakeholder community and to explore some of the operational dimensions of this data-deficient fishery. It was a pleasure to spend time by the water and meet many interesting fishing folks. This work has become very important given recent closures of the commercial and bait fisheries for mackerel for conservation reasons – recreational and Indigenous harvesters will be the only ones catching this species moving forward! I was also thrilled to have MMM intern Kaitlyn Curran join the mackerel project, and in turn, I co-supervised her graduate project about human health considerations in marine spatial planning. I'm proud to say Kaitlyn just submitted this manuscript to Marine Policy! I'm now looking forward to planning my next research project focused on wild Atlantic salmon conservation. Stay tuned!

Rachael Cadman

My research takes place in Nunatsiavut, a land claim area in Inuit Nunangat. Since 2019, I've been working with Dr. Megan Bailey (Marine Affairs) and Dr. Jamie Snook (Torngat Wildlife, Plants and Fisheries Secretariat) to think about Inuit led futures for the commercial fishing industry. Since the last MMM update, I have completed my comprehensive exams and started conducting my research. I travelled to Makkovik in September, and Nain in November to speak with fishers and fisheries managers about how they see the industry today, and how Labrador Inuit identity and culture has been shaped by commercial fishing. More recently, in March of this year, I travelled to Happy Valley-Goose Bay to attend the annual Fisheries Workshop to share updates on my research and get feedback on the progress we have made. I am proud to work in partnership with important Labrador Inuit fisheries institutions to keep my work grounded and useful for the future of Nunatsiavut! Working in one of the most beautiful places on the planet also means I've had lots of opportunities for snow shoeing, fishing, and mountain climbing – who could ask for more?

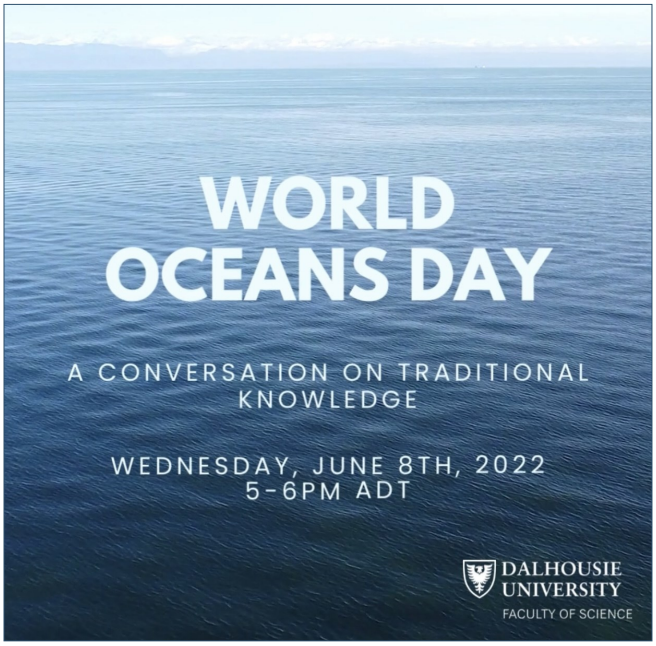
PhD Student Updates continued

Megan Rector

I am now in the 4th year of my interdisciplinary PhD working with Dr. Ramón Filgueira in the Marine Affairs Program and Dr. Jon Grant in the Department of Oceanography. My research focuses on the role of eco-certification in the salmon farming industry. I am exploring how eco-certification affects the sustainability of farming and social licence for aquaculture, and how eco-certification interacts with other forms of governance including corporate social responsibility (CSR) and regulation. Over the past year I completed data collection for my PhD project including surveying people living in British Columbia and Nova Scotia about their perceptions of salmon farming and eco-certification, and interviewing people who work in aquaculture about how spatial aspects of ecosystem management are or could be accounted for in aquaculture eco-certification. I presented results from some of this work at the World Aquaculture Society conference in San Diego, and some of this work was published in *Reviews in Aquaculture* and *Ecosystem Services*. I was also pleased to be part of the Faculty of Graduate Studies' 2021 OpenThink Initiative and shared some of my research through a series of blog posts as part of this program.

Weishan Wang

I am an Interdisciplinary PhD student, working under the supervision of Dr. Claudio Aporta. My doctoral studies focus on how Marine Spatial Planning (MSP) can be applied as a process and a platform to support Arctic shipping governance. My current projects include a review of the history of Arctic shipping and maritime regulations in Canada, an analysis of Inuit knowledge co-production in Arctic shipping governance, and a case study of applying MSP as a framework to facilitate the Northern Low Impact Shipping Corridors.
I have completed my proposal defense and moved to writing thesis. This year, I am proud to be included as part of Dalhousie's Openthinker Initiative. I hope that through this platform, more attention and understanding will be given to the application of MSP in Canada generally, and in Arctic shipping governance specifically.



The Faculty of Science celebrated World Ocean Day with a virtual panel. The panel members were:

- Cathy Martin, Director of Indigenous Community Engagement, Dalhousie
- Olivia Choi, Shipping and Marine Safety Project Manager, Council of Haida Nation and MMM 2018
- Lindsay Marshall, Advisor, Highland National Park
- Raven Stephens Elwell, Oceans Biologist, Fisheries and Oceans Canada, current MMM student
- Lydia Ross, Science Writer, Parks Canada and MMM 2018
- Alanna Syliboy, Mi'kmaw Knowledge and Community Engagement Manager, Mi'kmaw Conservation Group

The panelists spoke of the advances being made with incorporating traditional knowledge in ocean conservation and management.

The event is available for viewing at https://www.youtube.com/watch?v=5V1lNM7tREc

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