

IN THIS ISSUE

Graduate Projects	2
Sustainable Oceans Conference	3
Class of 2019 Awards and Prizes	4
MMM Class of 2021 Welcome	5
MMM Class of 2020 Update	6
Message From The Director	7
Congratulations Dr. Fanning	9
Publication Spotlight	10
Doctoral Student Updates	11
Alumni Spotlight	14
Faculty Updates	15
Alumni Updates	21



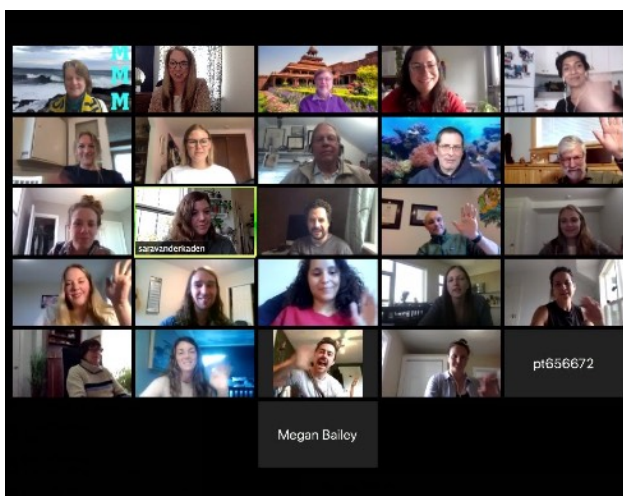
CONGRATS MMM CLASS OF 2019



This Spring we celebrated the graduation of the [MASTER OF MARINE MANAGEMENT \(MMM\) CLASS OF 2019](#) under unprecedented but optimistic circumstances. Unfortunately we could not gather to celebrate in person, but that did not diminish the pride and joy that we all felt in commemorating the class's amazing achievements. We are confident that that the future of the world's oceans are in the capable hands of this dedicated and knowledgeable group of marine managers. Good luck in your future endeavours!

Making Waves 2019

The MMM Class of 2019 students presented their Graduate Research Projects at the [13TH ANNUAL MAKING WAVES](#) event held on December 5th and 6th, 2019. This year's event, spanning the Arctic to the Caribbean, featured an exciting schedule of presentations that reflected students' diverse research topics. This supportive and engaging event marked the culmination of the hard work and passion demonstrated by the insightful projects completed by these students.



MMM CLASS OF 2019 GRADUATE PROJECTS

Follow the links below to learn more about the wide variety of research that has been conducted by MMM students over the past year:

NAME	PROJECT TITLE & LINK
Holly Amos	Exploring the Alignment of Human Health and Environmental Health in Canadian Fish and Seafood Policy
Breanna Bishop	Respecting ontology: Documenting Inuit knowledge of coastal oceanography in Nunatsiavut
Gillian Curren	Evaluating the integration of cumulative effects in the management of Canada's marine conservation areas
Nadia Dalili	The use and value of opportunistic sightings for cetacean conservation and management in Canada
Elissama De Oliveira Menezes	“Whose voices are not in the room?” Indigenous women’s participation in the Arctic climate crisis research
Reanne Harvey	Remotely Piloted Aircraft Systems: A tool to support coastal climate change adaptation in Nova Scotia
Sarah Hughes	A multi-stakeholder assessment on shipping risk governance: A case study on the proposed ban on the use and carriage of heavy fuel oil by ships in the Arctic
Paul Kraly	Media perspectives of salmon aquaculture over time in New Brunswick, Nova Scotia and Newfoundland
Hali Moreland	Information source and channel preference in marine policy development: A case study of the Nova Scotian Eastern Shore Islands Area of Interest consultation process
Samantha Renshaw	Monitoring elasmobranchs in marine protected areas: A Canadian case study of the Laurentian Channel
Lindsay Richardson-Deranger	Enhancing the Marine Protected Area (MPA) Process in the British Columbia Northern Shelf Bioregion MPA Network to Improve Indigenous Participation
Justin Schaible	Investigating the certifiability of Nunatsiavut's commercial fisheries: The case of the Marine Stewardship Council
Justin Trueman	Transparency and communication in Norwegian and Nova Scotian salmon aquaculture industries
Sara Vanderkaden	Certifications and traceability in the Nunavut seal market: Implications for Inuit rights
Emily VanInderstine	Ecotourism and marine protected areas: Case Study of perceptions of tourism operators in Nova Scotia
Priyanka Varkey	SUP Halifax: Identifying barriers to reducing single-use plastics in the Halifax Regional Municipality
Cassidy Walker	Exploring Ecosystems in Union Island: A Case Study for Ecosystem-based Management and Sustainable Livelihoods in Ashton Lagoon

SUSTAINABLE OCEANS CONFERENCE 2019

ONE OCEAN, INFINITE CONNECTIONS



THE [8TH ANNUAL SUSTAINABLE OCEANS CONFERENCE](#) took place at Dalhousie University on September 27th and 28th, 2019 with the theme *One Ocean, Infinite Connections*. Organized by MMM students and supported by the [SOBEY FUND FOR OCEANS](#), the conference aims to bring together diverse knowledge groups in order to showcase the abundance of ways that people are connected to the ocean. The opportunity for students to present their research and the discussions that were generated in the process were invaluable for all involved.

The activities were kicked off on Friday evening with a panel discussion on the topic of *Reconciling different interests in Atlantic Canada's marine and coastal resources*, which is of particular importance given the growing number of anthropogenic and environmental pressures facing Atlantic Canada. Panelists included Rachel Bailey (Mayor, Town of Lunenburg), Colin Sproul (President, Fundy Inshore Fishermen's Association), Ramon Filgueira (MAP Assistant Professor), and Sigrid Kuehnemund (VP of Ocean Conservation, WWF Canada). The panel was moderated by Dr. Megan Bailey, MAP Associate Professor and Canada Research Chair in Integrated Ocean and Coastal Governance.

Saturday featured a full day of student oral and poster presentations, followed by a keynote speech by Dr. Emma McKinley, Research Fellow at Cardiff University and Chair of the [MARINE SOCIAL SCIENCES NETWORK](#). Dr. McKinley's talk, "One Ocean, Infinite Connections: Connecting People and the Sea," discussed how human connections play a significant and impactful role in the future of our oceans.

Congratulations to the MMM students for organizing such a successful and thought-provoking event, and thank you very much to all who attended or supported the conference in any way!



Conference Co-Chairs: Breanna Bishop, Sara Vanderkaden, and Priyanka Varkey

MMM CLASS OF 2019 AWARDS AND PRIZES

Marine Affairs Gold Award

The **MMM GOLD AWARD**, honouring a student's academic performance and their ability to take on the role of the honest broker, was presented to **SARA VANDERKADEN** this year. The MMM's open-minded, pragmatic, and fact-based approach was helpful throughout her graduate work, internship, and now as an employee at NEXUS Coastal Resource Management.



Marine Affairs Millennium Prizes

The **MILLENNIUM PRIZE FOR MARINE SCIENCE AND TECHNOLOGY** was awarded to **GILLIAN CURREN**. The communication skills Gillian developed in the science and technology course were helpful for developing her ability to communicate scientific information to stakeholders. This skill was useful during her internship at Fisheries and Oceans Canada in Nanaimo, BC and for writing her graduate report, as well as for her continuing work at the interface between science, policy, and management.



SARAH HUGHES was awarded the **MILLENNIUM PRIZE**

INTERDISCIPLINARIAN OF THE YEAR. While Sarah's background in journalism and as a creative non-fiction writer focused mainly on issues of food security, Sarah honed her skillset throughout the program to include scientific, policy, and academic writing. Sarah's graduate project focused on shipping risk governance in the Arctic, and she is currently using her writing talents as a policy officer for Transport Canada.



BREANNA BISHOP was recognized for her work in **MARINE POLICY (CONTEMPORARY ISSUES IN OCEAN AND COASTAL MANAGEMENT)**. The Marine Policy course was particularly helpful for broadening Breanna's perspective and continuing to nurture her interests in the environment and knowledge transfer. Through the course, Breanna was also able to set up the research for her graduate project, which investigated the institutional barriers faced in including Inuit knowledge within policy.



JUSTIN SCHAIBLE received this year's **MILLENNIUM PRIZE FOR MARINE MANAGEMENT**. Justin was interested in understanding the disconnect between different methodologies and their real-world applications. The Coastal Zone Management course helped Justin to understand the relationships between different marine management sectors. He utilized this understanding in his internship with the Department of Fisheries and Oceans, during which he interviewed community-based fisheries management boards across the province, an experience that became integral to his graduate project.



WELCOME TO THE MMM CLASS OF 2021



[THE MARINE AFFAIRS PROGRAM](#) WARMLY WELCOMES [THE MMM CLASS OF 2021](#).

Despite the challenge of online learning, 22 students joined the MAP Community in September. The students are located across Canada, as well as from Bangladesh, China and Mexico. Learning online is one thing, juggling time zones with group work is another. The annual MAP Orientation, Working Together Workshop, and Welcoming Reception were held online. We look forward to working with the students over the next 16 months on their marine management journey.

SOBEY FUND FOR OCEAN SCHOLARS 2020-2021

The [SOBEY FUND FOR OCEANS](#) (SFO) scholarship is based on a generous and innovative gift from the Donald R. Sobeys Foundation that provides support for the development of a conservation legacy for oceans, specifically through the funding of scholarships and work placements, in collaboration with WWF-Canada and Dal's Marine Affairs Program. [ANNUAL SCHOLARSHIPS](#) are awarded to new graduate students of Dalhousie University to support their studies and help inspire innovative multi-disciplinary approaches for creating healthy oceans and sustainable economies. The recipients of the 2020-2021 SFO Scholarships are:

MMM Class of 2021

Fadal Al-Ajdaa

James Barclay

Lisa Baxter

Luc Bent

Lisa Chen

Tianna Clarke

Aaron Cogger

Jillian Conrad

Katia Corral Quijada

Victoria Cullen

Kaitlyn Curran

Nidhi D'Costa

Jackie Franceschini

Leah Fulton

Francheska Krysiak

Shuyi Li

David Marrack

Caitlin Menzies

Andrea Olea Rivera

Martin Ostrega

Emma Snowdon

Stephen Tiller



LISA BAXTER has a background in Molecular Biology and Genetics, and she hopes to use these skills in her research into effective management strategies for implementing unconventional conservation methods. She intends to work to identify key components of productive interdisciplinary and multi-institutional coral reef management by using the Great Barrier Reef as a case study.

VICTORIA CULLEN is pursuing research in sustainable inshore fisheries management, and she hopes to learn about management tools that can integrate the knowledge and preferences of fisheries stakeholders into the decision-making process. This integration can allow managers to arrive at practical, effective management solutions that support the sustainability of the fisheries resource as well as the resilience and well-being of coastal communities.



The SFO scholarship will allow **MARTIN OSTREGA** to learn about fisheries management and conduct his research into understanding and identifying fish spawning aggregations and lack of protection in the Caribbean. Martin's objective is to help Caribbean industries, organizations, and communities recognize this significant issue by providing a framework to protect fish aggregation sites.

MMM CLASS OF 2020 UPDATES

IN MARCH, [THE MMM CLASS OF 2020](#) WAS THROWN INTO THE ONLINE LEARNING WORLD, and managed to complete the Winter term remotely. Some students chose to move to their home provinces/countries while trying to secure internship placements. We are proud of the way the students were able to manage this difficult time, undertake internships, conduct graduate project research, and plan the [SUSTAINABLE OCEANS 2020 CONFERENCE](#) (more details of which will be featured in the next issue of MAP Matters).



Mark your calendars for the annual Making Waves Graduate Project presentations (December 10 & 11, 2020). The variety of research conducted includes climate management strategies, social acceptability of aquaculture, small-scale fisheries traceability, marine protected areas development, impact of plastics on Atlantic leatherback turtles, migratory seabirds, sustainable marine fisheries development, ecosystem-based approach to species recovery, marine non-indigenous species, saltmarsh ecosystems, shipping risk in the Arctic, decision making for improved ocean management, integrated multi-trophic aquaculture, ocean literacy, and shoreline protection.

MESSAGE FROM THE DIRECTOR, JERRY BANNISTER

GREETINGS FROM THE MARINE AFFAIRS COMMUNITY. What a year. As I said in my remarks at the recent Sustainable Oceans conference, it seems like both yesterday and a lifetime ago since we hosted the conference in 2019. Over the past year, the Marine Affairs Program has experienced dramatic changes, marked by arrivals and departures, as we responded to the dramatic events of 2020. When I became Acting Director in 2019, I had no idea what we would face in the coming year, but I am so proud of our students, staff, and faculty for all their work and perseverance in facing the challenges of the COVID-19 pandemic.

Our academic year started with the arrival of Dr. Wilf Swartz, who joined the Marine Affairs Program as part of a long-term partnership with the Nippon Foundation Ocean Nexus Center at the University of Washington's EarthLab. This is a new interdisciplinary research group that studies changes, responses, and solutions to societal issues that emerge in relationship with the oceans. Research at Dalhousie will be led by Megan Bailey and Wilf Swartz, as well as Sherry Pictou from the Schulich School of Law. Over the past year, Wilf has made important contributions to the MAP community, serving on committees, supervising students, and supporting internships.

The highlights of our Fall 2019 term were, as always, the Sustainable Oceans conference and the Making Waves student symposium. Many thanks to the MMM class of 2018-2019 for such an amazing job of organizing and delivering an outstanding event! From the opening Friday reception to the closing panel, the conference represented the best of the Marine Affairs Program, and we're so grateful to the students who dedicated so much time and effort. I'm happy to report that Dr. Emma McKinley, the wonderful keynote speaker from Cardiff University, will be joining us again later this academic year as part of our upcoming speaker series. November 2019 saw the arrival of Megan Bailey's son, Liam Carter Henry, and the Marine Affairs community congratulates Megan and her family, and sends her best wishes for her maternity leave. The year



2019 rounded out with our annual Making Waves student presentations. The event was well-attended and showcased the breadth of our MMM program, as the students addressed a remarkably diverse range of current topics and interdisciplinary approaches.

Like everyone else, we thought that 2020 would be like any other year. We moved through the stages of the MMM program, as the students submitted their graduate project proposals. We were delighted to see Megan Bailey proceed successfully through the tenure and promotion process and then renewal of her Canada Research Chair. Claudio Aporta, who was on sabbatical leave, sent us regular updates from Argentina. While we worried about initial reports about the



Dingle Tower

coronavirus, no one thought it would significantly impact our research or our university programs. I can still vividly recall the day in March when we met in Faculty Council, where we discussed contingency plans in case the pandemic eventually hit Canada. Within less than a week, all our offices were closed, and we moved quickly to online teaching for the remainder of the term. As Acting Director, I was incredibly impressed by how well the students and faculty responded to the crisis. With expert leadership from Becky Field, we successfully managed the transition to an online program and we continued the annual process of recruitment, admissions, and outreach. At the start of the crisis, I doubted whether we could continue with our normal internship program for the MMM students. Over the course of the spring, however, the students managed to secure placements, and the program continued successfully with the cooperation of our partners in the public, voluntary, and private sectors. This success is a testimony to the strong relationships that MAP has forged over the past thirty years.

Spring 2020 brought more changes to the Marine Affairs community. Upon the recommendation of

the staff and faculty, I was appointed Director for 2020-2023. My appointment will be split 50-50 between FASS and Science, and I am delighted to continue my longstanding commitment to the Marine Affairs Program. I am grateful to Chris Moore, Dean of Science, for his strong support. In June 2020, the Marine Affairs Community bid a fond farewell to Lucia Fanning, who has been a pillar of MAP for a generation. Lucia's retirement is discussed in a separate article in this newsletter, but I would like to say, as Director, how grateful we are for her strong leadership over the years. Without Lucia, the Marine Affairs Program would not be what it is today. In July 2020, we were thrilled to announce that Lucia has been appointed Professor Emeritus, in recognition of her outstanding career.

In September 2020 we were delighted to welcome our new class of MMM students. Although our orientation and related events were all online, our tradition of welcoming the new cohort continued successfully. Many thanks to Liz Wilson for all her work in helping our faculty transition to online teaching and for her help with the orientation activities. Our incoming class of MMM students represents a diverse range of backgrounds and interests, and they are already impressing their instructors with their abilities and passion. Despite all the challenges of 2020, I am happy to report that Marine Affairs remains as vibrant as ever.

“I had no idea what we would face in the coming year, but I am so proud of our students, staff, and faculty for all their work and perseverance in facing the challenges of the COVID-19 pandemic.”

CONGRATULATIONS DR. LUCIA FANNING

PROFESSOR EMERITUS



THE MARINE AFFAIRS PROGRAM IS DELIGHTED TO ANNOUNCE that Lucia Fanning has been appointed Professor Emeritus, following her retirement from Dalhousie University, effective June 2020. Lucia excelled at teaching, mentoring, and supervising, and she is recognized internationally as a researcher and global expert in marine affairs. Lucia has not only taught and supervised a generation of students but also changed the way we discuss and research maritime and coastal studies in Canada. She is one of those rare professors who creates fields as much as shapes them. Typically, we tend to think of high-performing researchers as separate from administrators and teachers; however, Lucia has demonstrated that a single professor can, in fact, fulfill her core administrative and teaching responsibilities while also creating and maintaining a world-class research profile. Her career demonstrates that international research success

does not need to come at the cost of teaching, administration, or collegiality.

Without Lucia, the Marine Affairs Program simply would not exist as it does today. When she took over as Director in 2007, MAP was at a critical juncture. As part of the Faculty of Management, it was performing well but functioning below its full potential. Exhibiting tremendous leadership as Director, Lucia led the successful effort to move Marine Affairs to the Faculty of Science and to establish it as a vibrant hub of ocean and coastal studies. In leading this transformation, Lucia worked tirelessly to sustain and grow the Master of Marine Management program and to add to its resources. As a result of her efforts from 2007 to 2014, she helped to create new faculty positions, including a Canada Research Chair, and to launch the Marine Affairs Program into a new era of expansion and collaboration. Under her leadership, the program expanded into new areas,

including extensive doctoral and postdoctoral training, winning major research awards as it grew.

Working collaboratively with colleagues across the university community, Lucia has been a pioneer in interdisciplinary research and teaching. Her international reputation as a world leader in maritime and coastal studies is based on not only the exceptional quality of her work but also her passionate commitment to breaking down the institutional barriers between disciplines and faculties. These and many other successful initiatives all grew out of Lucia's strong leadership, first as Director and later as a mentor of the new faculty members hired over the past decade. As anyone who knows Lucia will attest, she is unfailingly generous and committed to her colleagues, her students, and the broader

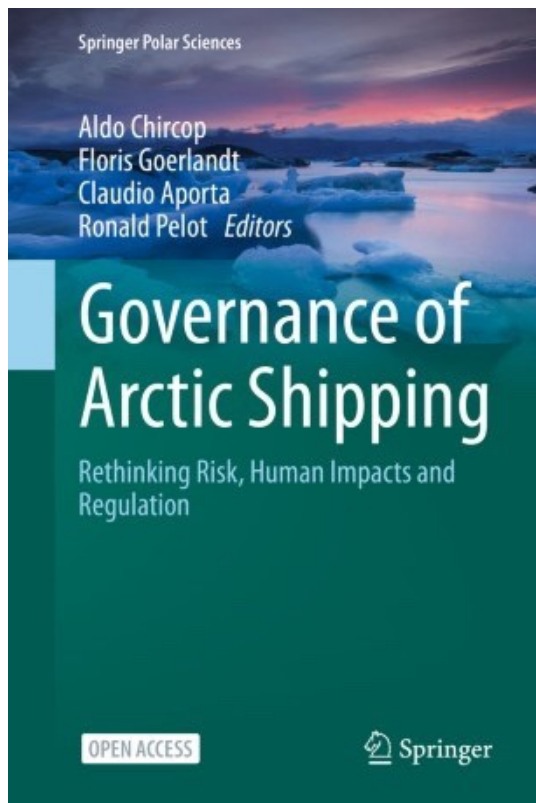
university community. Lucia represents the best of our profession: congratulations from the Marine Affairs family!



Lucia Fanning on one of her many travels (Vietnam, 2008)

PUBLICATION SPOTLIGHT

[GOVERNANCE OF ARCTIC SHIPPING: RETHINKING RISK, HUMAN IMPACTS AND REGULATION.](#) Aldo Chircop, Floris Goerlandt, Claudio Aporta, Ronald Pelot (eds.), Springer (2020).



[THIS OPEN ACCESS BOOK](#) is a result of the Dalhousie-led research project *Safe Navigation and Environment Protection*, supported by a grant from the Ocean Frontier Institute's the Canada First Research Excellent Fund (CFREF). The book focuses on Arctic shipping and investigates how ocean change and anthropogenic impacts affect our understanding of risk, policy, management and regulation for safe navigation, environment protection, conflict management between ocean uses, and protection of Indigenous peoples' interests. A rapidly changing Arctic as a result of climate change and ice loss is rendering the North more accessible, providing new opportunities while producing impacts on the Arctic. The book explores ideas for enhanced governance of Arctic shipping through risk-based planning, marine spatial planning and scaling up shipping standards for safety, environment protection and public health. Contributors to the book include Claudio Aporta, MAP Associate Professor; associated Dalhousie faculty members Aldo Chircop, Ronald Pelot, Floris Goerlandt; and MMM alum Leah Beveridge, Breanna Bishop, Olivia Choi, Drummond Fraser, Joseph Loot and Weishan Wang.

DOCTORAL STUDENT UPDATES

Breanna Bishop



After completing the MMM program in 2019, I started the Interdisciplinary PhD program in September 2020. My research explores how Labrador Inuit describe indicators of oceanographic and climatological variables, including seasonality and change, and the underlying ontological approach to the generation and application of such knowledge. I hope to identify where western scientific approaches to oceanographic and climatological phenomena can align with Inuit knowledge to generate locally relevant information for climate change planning in Nunatsiavut. While still settling into the program, I'm looking forward to presenting a talk - "Bridging knowledge systems to support oceanographic research in Nunatsiavut" - at ArcticNet in December.

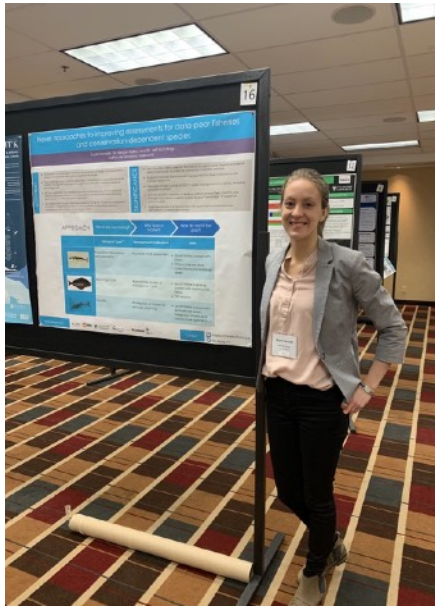
Rachael Cadman

I am in the second year of the Interdisciplinary PhD program, studying the role of Inuit Knowledge in fisheries governance, as well as

how to create inclusive and just coastal environmental management. My work is based in Nunatsiavut, Labrador, in partnership with Inuit fisheries managers. This time last year, I was returning from Nain, Nunatsiavut, where I had spent a couple of months helping to conduct analysis for a participatory mapping project run by the Nunatsiavut Government. While I haven't been able to do much traveling since then, I have participated in some conferences and webinars. For instance, I spoke about my ongoing research at the ArcticNet Annual Scientific Meeting 2019 and the International Marine Conservation Congress 2020. In May, a paper from my master's research was published in *Marine Policy*. This was my first peer-reviewed publication, so it was a big moment for me! In the next few months, I will be finishing my comprehensive exams, running workshops based on the participatory mapping project, and beginning work on a project helping research partners in Nunatsiavut's commercial fisheries envision the future of their industry. For updates on how this research progresses, follow me on Twitter: @rachael_cadman.



Kayla Hamelin



The goal of my research is to identify opportunities to integrate novel data sources and multiple knowledge types to enhance fisheries science in Atlantic Canada. Atlantic mackerel stock is of particular interest, since it has been listed in the “Critical” zone by Fisheries and Oceans Canada (DFO), indicating that it needs to be rebuilt. I spent a lot of time this summer conducting exploratory field work on fishing wharfs around Nova Scotia to learn more about where, when, why, and how folks fish for Atlantic mackerel in the province. In the coming years, I look forward to pursuing a dedicated study on catch and effort in the mackerel fishery, in addition to launching projects on information use in DFO science advisory reports and stakeholder perspectives on wild Atlantic salmon conservation. Stay tuned! This year, I was proud to successfully complete my Admission to Candidacy exam, during the peak of the COVID-19 lockdown no less. I also had the pleasure of presenting a poster at the Canadian Conference for Fisheries Research in January, as well as remotely attending the International Marine Conservation Congress and American Fisheries Society Annual Meeting to learn more about current research in my field. As a side project, I was thrilled to be invited to

collaborate with the Canadian Ocean Literacy Coalition on a research paper on ocean literacy in Atlantic Canada – coming soon to an education research journal near you!

Helen Packer

I have been a doctoral student at MAP since 2016, working with Dr. Megan Bailey. The focus of my research is Corporate Social Responsibility (CSR) in the seafood industry. More specifically, I have been interested in understanding what mid-chain seafood companies (processors, importers, brands) do to improve the environmental and social impacts of seafood production (focusing on wild capture fisheries). To do so, I looked at what are common CSR commitments and practices in the seafood sector and how stakeholders, especially NGOs, hold seafood companies accountable through social and market mechanisms. Two of my chapters have been published in *Sustainability* and *People & Nature*, and two more chapters are ready for submission. Luckily, when the pandemic hit I was already in the middle of writing my final dissertation, so my data collection was not affected. However, like others,



the isolation has been challenging and staying in touch with family and friends has been key in maintaining resilience. I am now in the final stages of my PhD and plan on defending in December 2020. Looking back, the PhD has been a journey and part of my life that I will never forget. It has helped me make new friends for life and learn so much, both about my topic and myself as a person. Overcoming these challenges would not have been possible without all the wonderful people I have met along the way, especially my lab mates, supervisor and everyone at MAP.

Megan Rector



The coastal environment provides many unique ecosystem services to people, and so I am interested in how human activities and the rules that govern them affect the provision of these ecosystem services. My research focuses particularly on eco-certification of Atlantic salmon aquaculture. My current projects include an analysis of the representation of ecosystem services in eco-certification schemes, as well as a systematic review of sustainability indicators in salmon aquaculture literature.

Laura Steeves



I completed my MMM in 2017, and since then I have been pursuing my PhD in biology at Dalhousie University, supervised by Dr. Ramón Filgueira. My research focuses on ecological interactions between bivalve species (mussels, oysters, and scallops) and marine environments. Bivalves are filter-feeders; by pumping water across their gills, they capture and eat organic material from the water column. Working with species commonly used in aquaculture, I am exploring feeding and digestive processes of different bivalve species. This research involves a combination of laboratory, field, and modelling experiments to explore these ecological interactions from a variety of perspectives. In the past two years, I have conducted fieldwork in Norway, Louisiana, and China. I presented the results from some of this work in New Orleans last year at the World Aquaculture Society conference, and it has also been published in the [MARINE ECOLOGY PROGRESS SERIES](#).

Weishan Wang

I am an Interdisciplinary PhD student, working under the supervision of Dr. Claudio Aporta. My doctoral studies will explore how Marine Spatial Planning (MSP) can be applied as a process and a platform to support Arctic shipping governance. In particular, I am interested in how the Inuit

conceptions of marine and coastal spaces could be integrated into ocean planning. This fall marks the beginning of my third year in the program and fifth year in MAP. I have completed my comprehensive examinations and moved to developing my research proposal. The pandemic has changed my research progress a lot! For example, the conferences I planned to attend in 2020 have been cancelled or moved online, and it has made it much more difficult for me to do field research in the north. Therefore, I will have to rethink and change my data collection methods. Fortunately everyone is trying to adapt to the new normal, and I am looking forward to conducting my research in more creative ways.



ALUMNI SPOTLIGHT: KHORSHED KHASTAGIR (MMM 2005)

WHEN KHORSHED KHASTAGIR RECEIVED A SCHOLARSHIP FROM THE MARINE SCHOLARSHIP PROGRAM OF THE CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA) to study Marine Affairs at Dal in 2004, he was on a very specific and important mission. While his background was in engineering, he had recently joined the Bangladesh civil service's Maritime Boundary Making Project, which was trying to codify the disputed and geographically complex oceanic boundaries that separated Bangladesh from its neighbours Myanmar and India. Khorshed was tasked with writing a report that would include the project's first budget, which



was to be completed after he finished the MMM degree. Throughout his studies and in writing his graduate project, Khorshed utilized the resources that he had access to at MAP to determine the options that Bangladesh could pursue next to resolve this dispute. The MMM also put him in contact with experts, particularly Professor David VanderZwaag, who gave him invaluable advice, especially regarding the project's legal complexities. After graduating with his MMM in 2005, Khorshed had developed the necessary skills and confidence to collaborate with specialists from around the world on this issue through commissioned studies and by networking at conferences. After this extensive research, and with the assistance of legal experts, the boundary dispute was settled by 2014. The MMM was a "lifetime opportunity" that armed him with the knowledge and confidence to be able to successfully meet every challenge that he faced throughout the completion of this project. Khorshed now works

at the Ministry of Foreign Affairs in Bangladesh. He was also recently appointed the President and Co-Chairperson of the newly formed [CANADA BANGLADESH ALUMNI ASSOCIATION](#), which supports students from Bangladesh who studied at universities in Canada and promotes cooperation and goodwill between the two countries. Khorshed has very fond memories of his time at MAP, which included being Secretary of the Marine Affairs society and going on trips throughout Nova Scotia. He hopes to visit again soon!

FACULTY UPDATES

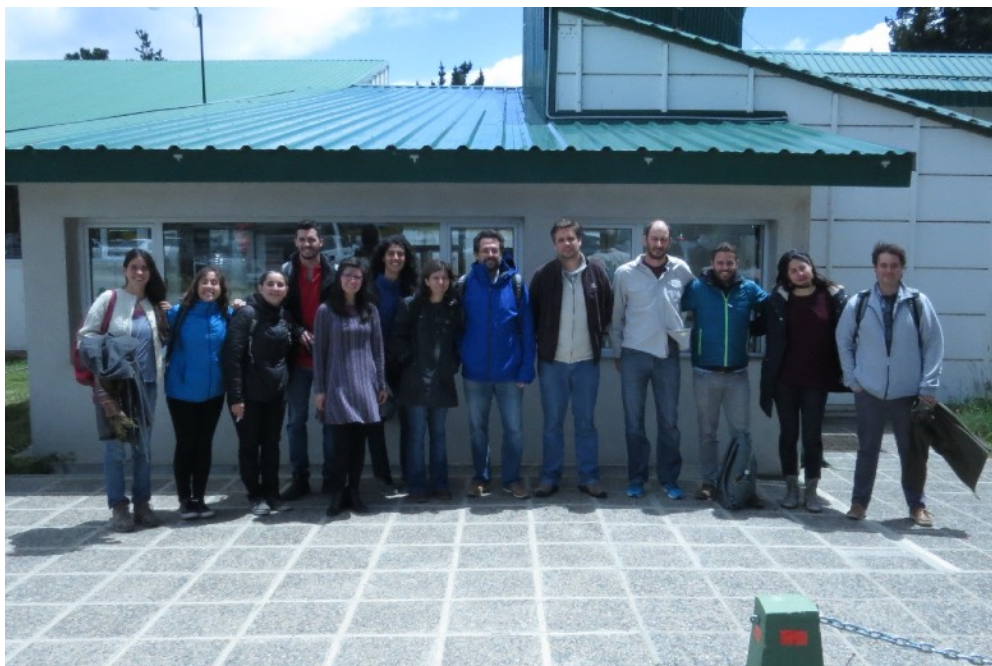
Claudio Aporta

AS A CULTURAL ANTHROPOLOGIST WITH A GEOGRAPHIC FOCUS ON THE ARCTIC, the major concern of my career has been understanding and documenting Inuit mobility. In particular, the main research questions I have been trying to address are connected to these broad topics: 1) What is the nature of the mobility networks that have allowed Inuit to travel by sled, boat and on foot since time immemorial? 2) What is the scope of the geographic knowledge of Inuit communities and what are the connections between local use and regional and pan-Arctic Inuit identities? And 3) What do Inuit mobility networks tell us about Inuit ontologies, and in particular about the connections between marine and terrestrial environments?

As an Argentinean who has worked in the Canadian Arctic for over 20 years, it was exciting to have the opportunity, during my 2019-2020 sabbatical, to collaborate with two well-known

Argentinean researchers on issues of mobility, comparing my studies of Inuit hunters with their expertise of pastoralists/herders' transhumance practices in the Patagonian Andes. The contrast of cultural groups (hunter gatherers and herders), geographies (north and south extremes of the Americas) and geophysical and ecological realities (Arctic tundra and ocean and Patagonian mountains) allowed us to explore an intriguing and potentially revealing comparison.

Part of my sabbatical was spent in Argentina. With help from a grant from Global Affairs Canada, I had the opportunity to collaborate with Ramiro Barberena (archaeologist from the Argentinean research institution CONICET, which is affiliated with the Universidad Nacional de Cuyo in Mendoza) and Marcos Easdale (agronomist from CONICET and INTA affiliated with IFAB (INTA-CONICET) in Bariloche). In November 2019, we co-taught a seminar on mobility, hosted at the National Institute of Agricultural Technology (INTA)



Dr. Aporta and students at the interdisciplinary seminar in Argentina

campus. It is located in the city of Bariloche, in the beautiful lake region of northwest Patagonia.

Eleven doctoral students from different parts of Argentina and one from Chile attended the weeklong seminar, which was shaped as an interdisciplinary project from the perspectives of anthropology, archaeology, biology and agronomy. We shared and explored case studies, methodologies, and theories, from network theory to participatory mapping, and we also compared (in very intriguing ways) the practices and knowledge of seminomadic peoples that live in marine and mountainous environments.

We hope that this is the beginning of a broader collaboration. Plans are underway to submit an application for a National Geography grant. In the meantime, the spirit of the seminar reminded me of the significance and richness of comprehensive interdisciplinary approaches: your mind suddenly awakens to new realms of knowledge, and novel and creative ways to look at your old research problems. As researchers, we feel that we are just scratching the surface of a complex and exciting topic.

Megan Bailey

I AM WRITING THIS MAP NEWSLETTER UPDATE FROM HOME – like many of you who are also probably reading it from home. But I would be at home with or without the current global pandemic. I am on parental leave, with Liam Carter Henry joining our family in November of 2019. Also joining the MAP family and my research group over the past year are Research Associate Dr Wilf Swartz, doctoral students Rachael Cadman and Kayla Hamelin, and postdoctoral researcher Dr Tu Nguyen, who just defended her PhD in May, 2020 (congratulations!).



Dr. Bailey, Dr. Moreira, Dr. Kourantidou, and doctoral student Cadman visited Nunatsiavut in August 2019

The past year of work has been exciting and diverse. Some projects are wrapping up, like the OceanCanada Partnership network led by Dr Rashid Sumaila at UBC. Together with Rashid, Dr Derek Armitage (University of Waterloo) and Dr William Cheung (UBC), we are editing a capstone book from the Partnership, which should be out in the first quarter of 2021. Other projects are just beginning, like the Ocean Frontier Institute-funded Sustainable Nunatsiavut Futures project and the Nippon Foundation-funded Ocean Nexus Program.

My work continues to centre around equity with regards to fisheries access and allocation, as well as around seafood sustainability as it relates to small-scale fisheries and global value chain governance. In the latter, I focus on two very different systems: internationally shared tuna stocks in the Indian Ocean, and domestically shared fisheries in Inuit Nunangat, specifically Nunavut and Nunatsiavut. The above-mentioned Sustainable Nunatsiavut Futures project moves some of this work to a more grounded approach, focusing on participatory and community-led



approaches to study the equity implications of historical and contemporary fisheries management decisions. In August of 2019, along with PhD student Cadman, postdoc Dr Melina Kourantidou, and visiting professor Dr Felipe Kern Moreira, I finally made it up to Nain, Nunatsiavut, in northern Labrador. Melina led a focus group with community members, and we listened to stories and concerns related to past fisheries collapses and current access inequities.

A recent highlight for me was joining the Small is Bountiful Oceans Day 2020 panel led by the Food and Agriculture Organization of the United Nations (FAO) & International Collective in Support of Fishworkers (ICSF). My work on the impact of seafood certifications and traceability on small scale fish harvesters was the reason I was added to the panel and asked specifically to speak about the role of value chains and trade on meeting the FAO Voluntary Guidelines for Securing Sustainable Small-scale Fisheries. My panel was only one of

MAP Matters

many, with several organizing groups hosting panels and webinars over a 24-hour period, allowing for participation from people across the globe depending on times zones.

One big highlight from 2019 was hosting the North American Association of Fisheries Economists Forum, which I jointly organized with Dr Tony Charles from Saint Mary's University. We welcomed over 150 fisheries economists and social scientists from 18 countries over a three day period in May. Organizing an international conference has definitely made me more cognizant of the work and commitment it takes to pull these events off, and I salute organizers everywhere who are currently dealing with postponed, canceled, or modified events during the current global health crisis.

I will be returning full time to MAP in November 2020. Until then, I wish everyone well and I look forward to connecting with many of you in the near future.

Lucia Fanning

OVER THE PAST YEAR, AS IS CUSTOMARY FOR MAP FACULTY, my time has been split between teaching, research and outreach. From a teaching perspective, just as exciting as it was for the students coming into the program in September 2019, it was equally exciting for me to have the opportunity to get to know them “right off the bat”, coordinating and teaching the Project Management module of the “Tools” course (MARA 5004). At the other end of the time spectrum, I also had the opportunity to witness their growth one year later in my Integrated Coastal Zone Management course (MARA 5009)! Finally and possibly a surprise to some MAP alumni and friends, MAP is also teaching a year-long course on Marine Management to undergraduate students in the BSc. Ocean Sciences degree program

offered by the Oceanography department. This course is module based and is led by Dr. Ramon Filgueira, with me teaching two two-week modules on Marine Transportation and Indigenous Knowledge systems. With the pandemic, teaching the last class this Winter online was certainly a novel experience!

My research activities this year continued to have me travelling to different parts of the globe! Who wouldn't consider it a great opportunity to be working with the countries in the Wider Caribbean region on implementing regional ocean governance and then going straight to the Canadian Arctic to work with communities in Nunavut on their priorities for coastal restoration in their territory. Or going from Halifax to British Columbia and points in between as I wrapped up my pan-Canadian SSHRC Partnership grant focusing on a better understanding of how both western and indigenous knowledge systems can be used to improve fisheries governance in Canada

(for more information, see [FISHWIKS.CA](https://fishwiks.ca)). This culminated with sharing the knowledge acquired over six years with policy makers in Ottawa as well as with Indigenous decision makers and elders from across Canada.

Another research area that kept me busy was research on sustainable aquaculture, a major research project that I continue to have the pleasure of working with MAP professor, Dr. Ramon Filgueira, among others at Dalhousie and Memorial University. This project is looking at MAP Matters

understanding social acceptability/social licence factors for both finfish and shellfish aquaculture on both sides of the Atlantic and has already resulted in a number of MMM students conducting their research in this area. As if that was not enough travelling, I also headed to Doha, Qatar this year, conducting focus groups on what stakeholders' views were on implementing marine ecosystem-based management, especially given the dominance of the oil and gas sector there.

Lastly, I need to give a big thank you to the recently graduated MMM students – Gillian Cullen, Lindsay Richardson Deranger and Magena Warrior – who assisted with research funded by the

Canadian Healthy Ocean Network. Their work explored Indigenous involvement in processes for marine protected areas designation in Nova Scotia and British Columbia as well as looking at indicators used by managers across Canada when evaluating cumulative effects of marine conservation areas. If you would like more information on some

of the outputs of all of this research, please check out my the recent publications list on my [FACULTY PROFILE](#), as well as the MMM graduate projects on [DALSPACE](#).

While it is almost impossible to separate our teaching and research from outreach activities, like all of us at MAP, outreach is in our "DNA"! This year, in addition to the outreach that resulted from what has already been mentioned, I had the privilege of being involved in outreach activities



A picture generated by an artist while Dr. Fanning spoke at a FishWIKS outreach activity to Indigenous participants in Halifax.



Moments from Dr. Fanning's travels to Nunavut and the Northwest Territories

focusing on a variety of topics including climate impacts on fisheries and aquaculture at the UN-FAO and assessing different models for use in fisheries management and decision making in Norway. Overall, it has been a busy year, despite the pandemic!!

Ramon Filgueira

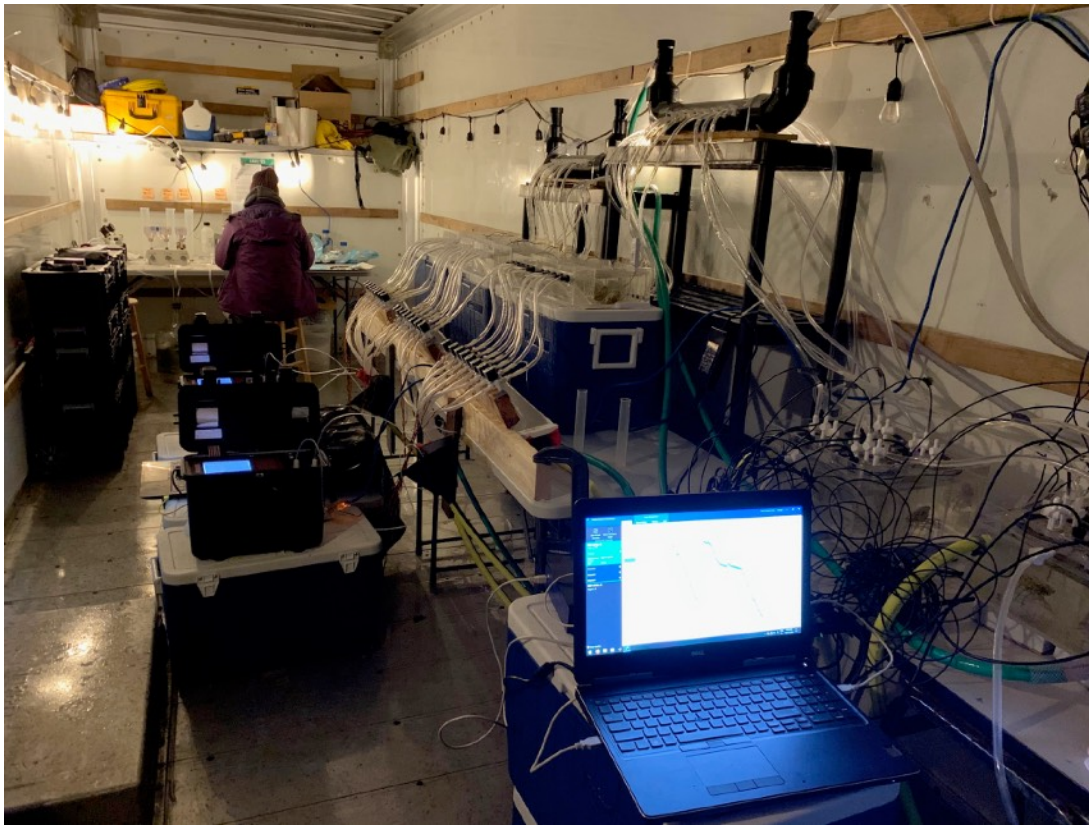
LAST YEAR WAS EXCITING IN MULTIPLE ASPECTS, including working with students, continuing research collaborations with existing colleagues, and developing novel relationships with new colleagues. Although international travel for conferences and projects is always interesting, I would say that most of the highlights of this year happened in Nova Scotia. One of the most interesting activities was the fieldwork that we

carried out in Fall 2019 on Sober Island, close to Sheet Harbour. This work involved Takashi Sakamaki, a visiting professor from Tohoku University who is spending a year working with me, Luc Comeau, a research scientist from Fisheries and Oceans Canada, along with Laura Steeves and Keryn Winterburn, two students working with me at Dalhousie. The field work involved a significant amount of thinking due to the complex setup, but also because we were very ambitious and we ran the experiment for twenty four hours during five consecutive days. By the end of the week, we were exhausted but happy, and we felt that we were almost part of the community of Sheet Harbour. We became familiar with all the restaurants (not many) and we knew the hardware store like the back of our own hand. We are very grateful to Michelle and Trevor Munroe, owners of Sober Island Oysters Ltd, for their assistance and continuous support of our research.

Another highlight was the invitation to be part of the ICES Working Group on Social and Economic Dimensions of Aquaculture, co-chaired by Gesche Krause and Cornelia Kreiss. Lucia Fanning and Jon Grant, also from Dalhousie, are also members of this group. The group met in Halifax in May 2019, which allowed me to interact with new colleagues in areas far from my comfort zone. It was a unique opportunity for me to expand my research.

Talking about expanding my research, I have started a new collaboration with Luis Torgo in Computer Science at Dalhousie. I am also working

“In summary, an excellent year inside and outside Nova Scotia.”



The elaborate fieldwork setup on Sober Island

on a proposal about the use of Big Data for aquaculture management. The research will encompass the social and economic aspects as well as the role of big data for aquaculture management. It will also exemplify the complexity of aquaculture as it pertains the use of ocean resources by humans, and the need for multi- and inter-disciplinary research.

Outside of Nova Scotia, we had a successful field season in Norway. I joined my colleagues Øivind Strand and Tore Strohmeier, researchers at the Institute of Marine Research in Bergen, where I hold a professorship position, and Laura Steeves and Justin Truemans, students from Dalhousie, for a couple of weeks. Laura (MMM alumna and PhD candidate) and Justin (MMM candidate at that time) spent three months in Norway collecting data for their projects. I also joined Jenny Weitzman (MMM alumna and IPhD candidate) in Berlin to attend the annual conference organized by the European Aquaculture Society. Jenny presented

the progress of her research and took the opportunity to interview international experts.

In summary, an excellent year inside and outside Nova Scotia.



A moment from the ICES Working Group field trip

ALUMNI UPDATES

Alexa Goodman (MMM 2018)

ALEXA HAS BEEN CHOSEN AS [ONE OF CANADA'S TOP 25 ENVIRONMENTALISTS UNDER 25](#) by *The Starfish*

for her work reducing the use of plastic and single-use items by encouraging people to make low-waste changes in manageable steps. She is the founder and executive director of [STOP TRASHING IT](#), an international network of environmentalists



based in Halifax that hosts events and challenges to encourage waste reduction in everyday life.

Alexa's [RESEARCH AT MAP](#) focused on managing abandoned, lost, and discarded

lobster fishing gear in the Bay of Fundy, the most harmful type of marine debris. She is continuing to tackle this challenge as co-chair for the [FISHING GEAR COALITION OF ATLANTIC CANADA](#). More information about Alexa's work on the harmful impact of ghost fishing gear and what's being done about it can be found in the recent Dal News article that she co-wrote, ["HOW TO GET ABANDONED, LOST AND DISCARDED 'GHOST' FISHING](#)

[GEAR OUT OF THE OCEAN"](#) and in the [CBC ARTICLE](#) about the problem of ghost gear that she was interviewed for.

Kristal Ambrose (MMM 2018)

Kristal Ocean is the founder of the

[BAHAMAS PLASTIC MOVEMENT \(BPM\)](#), a

non-profit geared towards raising awareness and finding solutions to plastic pollution.

[KRISTAL AND HER WORK THROUGH BPM WERE RECENTLY FEATURED AS THE SUBJECT OF A SHORT DOCUMENTARY](#)

[CALLED "PLASTIC WARRIORS,"](#) directed by Lavado Stubbs, which has been shown at film festivals across the Caribbean this past year and was received with great acclaim. This follows [KRISTAL'S SUCCESS AT THE 3 MINUTE THESIS COMPETITION AT DALHOUSIE IN 2018](#), where she placed first overall and also took home the People's Choice Award.



Holly Amos (MMM 2019)

[HOLLY'S RESEARCH INTO SUSTAINABLE FOOD SYSTEMS HAS RECENTLY YIELDED IMPRESSIVE FRUIT](#) – her chapter, titled "Linking Small-Scale Fishing and Community Capitals," co-written with Dr. Megan Bailey, MAP Associate Professor, was published in the [ROUTLEDGE HANDBOOK OF SUSTAINABLE AND REGENERATIVE FOOD SYSTEMS](#), edited by Jessica Duncan, Michael Carolan, and Johannes S.C. Wiskerke (2020).

MAP MATTERS is published periodically by the Marine Affairs Program in cooperation with the Dalhousie University Faculty of Science.

Editor in Chief: Melissa Glass

Administrative Supervisor: Becky Field

MAP Director: Jerry Bannister

Stay Connected:

MARINE AFFAIRS PROGRAM

Dalhousie University Faculty of Science
1355 Oxford Street, Rm 805
8th Floor Life Sciences Centre (Biology)
Halifax, Nova Scotia, Canada B3H 4R2

<http://www.marineaffairsprogram.dal.ca/>

902-494-3555

marine.affairs@dal.ca

FOLLOW US ON SOCIAL MEDIA:

Twitter: @DalMarAffairs

Facebook: <https://www.facebook.com/dalmarineaffairs>

Visit alumni.dal.ca to update your contact information and stay connected with Dalhousie University.



DALHOUSIE UNIVERSITY