



ANNUAL SCIENTIFIC MEETING

June 20-22, 2017

PROGRAM

Montreal, Quebec

Agenda

All sessions held at Le Westin, Montreal.

Tuesday, June 20 - Grande Place, 8th floor

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| 5:00-7:00 | Evening Reception with Researchers and Partners HQP Poster Competition Sponsored by exactEarth Ltd. |
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Wednesday, June 21

All Sessions in Fortifications Room (9th floor) unless otherwise noted

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| 8:00-9:00 | Registration and Breakfast (Grande Place, 8 th floor) |
| 8:30-9:00 | Keynote: Michel Boulianne, Marine Safety and Security, Transport Canada |
| 9:00-9:30 | Opening Remarks: Doug Wallace, Ron Pelot and Stefan Leslie |
| 9:30-10:30 | Shipping Risk Panel: Ron Pelot (Chair), Christopher Taggart, Rosaline Canessa, Casey Hilliard, Stephanie Chang, Peter Dorcas |
| 10:30-11:00 | Morning Break |
| 11:00-12:00 | Arctic Shipping Cluster Panel: Jackie Dawson (Chair), Randy Scharien, Andrea Scott, Pascale Bourbonnais, Alec Casey, Jenna Joyce, and Annika Ogilvie |
| 12:00-1:00 | Lunch (Grande Place, 8 th floor) Keynote: Marine Technology Trends 2030 Bud Streeter, President of Lloyd's Register Canada |
| 1:00-2:00 | Partnered Call Panel: Stefan Leslie (Chair), Peter Dorcas (exactEarth Ltd.), Miles Joliffe (Clear Seas), Alexa Reedman (MEOPAR), TBD (CIOOS) |
| 2:00-2:30 | New Year of Polar Prediction (YOPP) Presentations: Brent Else (Chair), David Atkinson, CJ Mundy, Philippe Tortell, Bruno Tremblay |
| 2:30-3:00 | Afternoon Break |
| 3:00-4:00 | Different Ships, Different Science: Doug Wallace (Chair), Bruno Nolet, Tim Brownlow, Karyn Suchy, David Atkinson, Brian Staples |
| 4:00-4:15 | Poster Winners Announced |

Agenda

Thursday, June 22

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|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 8:00-9:00 | Breakfast (Grande Place, 8 th floor) | | |
| 9:00-10:15 | How to Succeed With MEOPAR Calls for Proposals: Doug Wallace (Chair), Ron Pelot, Stefan Leslie (Fortifications Room, 9 th floor) | | |
| 10:15-10:45 | Morning Break (9 th floor) | | |
| 10:45-11:15 | Cores Panel: Doug Wallace (Chair), Stephanie Chang, Dany Dumont, Brad deYoung (Fortifications Room, 9 th floor) | | |
| 11:15-12:15 | Response Core (McGill Room, 8 th floor) | Prediction Core (Beaver Hall, 8 th floor) | Observation Core (Ste. Helene, 8 th floor) |
| 12:15-1:15 | Lunch (Grande Place, 8 th floor) Keynote: Knowledge Transfer: Insights from European Marine and Maritime Research Georgia Bayliss-Brown, AquaTT (Fortifications Room, 9 th floor) | | |
| 1:15-1:45 | Development and Applications of Numerical Models Jinyu Sheng (McGill Room, 8 th floor) | Change Monitoring and Visualization of Dynamic Coastlines and Coastal Dune Systems Adam Fenech (Beaver Hall, 8 th floor) | Spatial Analysis of Marine Tourism Pierre-Louis Tetu (Ste. Helene, 8 th floor) |
| 1:45-2:15 | Canada’s First Nations/Coastal Communities Phil Loring & Adam Fenech (McGill Room, 8 th floor) | Ocean Models: The Benefits and Consequences of Diversity (Beaver Hall, 8 th floor) | Making Ecosystem Science Matter Roxane Maranger (Ste. Helene, 8 th floor) |
| 2:15-2:45 | Being Human and a Researcher at the Same Time Stefan Leslie (McGill Room, 8 th floor) | Capturing and Modeling Spatial Data on Small Vessels Rosaline Canessa (Beaver Hall, 8 th floor) | Resilient-C Online Platform as a Shared Resource Jackie Yip (Ste. Helene, 8 th floor) |
| 2:45-3:15 | Afternoon Break (Grande Place, 8 th floor) | | |
| 3:15-3:45 | What Role Should Citizens Play in Studying Canada’s Oceans? Jay Cullen (McGill Room, 8 th floor) | Practical Tips for Managing Data Mike Smit (Beaver Hall, 8 th floor) | |
| 3:45-4:15 | Wrap Up: Doug Wallace, Ron Pelot and Core Leads (Fortifications Room, 9 th floor) | | |

Keynotes

MICHEL BOULIANNE, Marine Safety and Security, Transport Canada

M. Boulianne a obtenu un diplôme en techniques maritimes de navigation de l'Institut maritime de Rimouski en 1982. De plus, il est titulaire d'un brevet de capacité canadien à titre de capitaine d'un navire au long cours depuis 1989.

M. Boulianne possède une vaste connaissance du milieu maritime et des pratiques, lois et règlements qui s'y rattachent. Il a occupé, de 1980 à 1988, différents postes comportant de plus en plus de responsabilités à titre d'officier sur différents types de navires de commerce. Il s'est joint à Transports Canada en 1988 en tant qu'inspecteur maritime principal. Par la suite, il a occupé plusieurs postes et fonctions, et participé à différents groupes de travail et comités : en relation avec la certification des marins, le transport sécuritaire des cargaisons, l'inspection des navires canadiens et étrangers, la protection de l'environnement et la sécurité de la navigation. Il a d'ailleurs occupé le poste de gestionnaire de la division cargaisons et prévention de la pollution de 2001 à 2008.

Il a ensuite été nommé le 21 août 2008 au poste de directeur à TC sécurité maritime Région du Québec et occupe le poste de directeur sécurité et sûreté maritime à TC Région du Québec depuis avril 2012. Également co-président depuis 2012 du comité de concertation navigation de l'entente Canada-Québec sur le plan d'action Saint-Laurent.

Mr. Boulianne graduated in maritime navigation techniques of the Marine Institute in Rimouski in 1982. In addition, he holds a Canadian certificate of competency as Master Mariner since 1989.

Mr. Boulianne has extensive knowledge of the maritime environment and practices, laws and regulations related to the marine sector. He served from 1980 to 1988 various positions with increasing responsibilities as an officer on various types of commercial vessels.

He joined Transport Canada in 1988 as Senior Marine Inspector. He has held various positions and functions, and participated in various working groups and committees related to the certification of seafarers, the safe carriage of cargo, inspection of Canadian and foreign ships, protection of the environment and navigation safety. He also served as manager of the cargo division and prevention of pollution from 2001 to 2008.

He was appointed to the position of "Marine Safety Director" for the Quebec Region August 21, 2008, a position that has been renamed "Director, Maritime Safety and Security" in April 2012. Since 2012 also co-president of the Navigation Coordination Committee of the Canada-Quebec agreement on the St. Lawrence Action Plan.

BUD STREETER, President, Lloyd's Register Canada

Bud Streeter is the Regional Naval Business and External Affairs Manager Americas Marine and Offshore and is also the President of Lloyd's Register Canada Limited. He had previously served as Marine Manager for the USA, Central America and the Caribbean and as President of Martec Ltd. (now LRATG), an affiliated Lloyd's Register entity which provides research and development consulting services world-wide, between July 2010 and June 2014. Bud joined Lloyd's Register in 2002 and has served in several capacities. He was a member of the Canadian Advisory Council on National Security from 2005 until 2009. He is presently a member of the Board of Directors of Clear Seas Society for the promotion of safe and sustainable shipping in Canada. Prior to joining Lloyd's Register, he was Director General Marine Safety for Transport Canada for five years, in which position he was the head of Canada's delegation to various Committees of the International Maritime Organization. From 1987 until 1996, he was a senior executive with a major ropax ferry operator in Atlantic Canada. He is a 1973 graduate of the Canadian Coast Guard College. His early career included service at sea, a period instructing at the Canadian Coast Guard College and several years as a Marine Safety Surveyor. He was the recipient of the inaugural award of the Medal of Excellence from the Canadian Institute of Marine Engineering in June 2013 for which he was cited for his commitment to marine safety and mentoring of young professionals in the industry.

GEORGIA BAYLISS-BROWN, AquaTT

Georgia Bayliss-Brown BSc MSc is Senior Knowledge Transfer Officer at AquaTT (www.aquatt.ie), a Dublin-based SME recognized as a leader in scientific knowledge transfer and dissemination. Having spent over ten years as an international science project manager, she is academically trained as a physical oceanographer and also spent several years advising the UK Government on the impacts of climate change on the marine environment. Whilst in her various science-to-stakeholder roles, Georgia developed a passion for impact creation through knowledge transfer, mobilization and brokerage. She is now a recognized specialist in knowledge transfer and impact measurement for the marine and maritime sector in Europe, spending the majority of her time working on the COLUMBUS project (www.columbusproject.eu).

Panels

Shipping Risk Panel

Ron Pelot (MEOPAR), Casey Hilliard (Dalhousie University), Rosaline Canessa (University of Victoria), Chris Taggart (Dalhousie University), Stephanie Chang (University of British Columbia), Peter Dorcas (exactEarth)

Shipping traffic unavoidably produces risks to the environment in which it operates, and the vessels themselves are prone to incidents. One key research activity to address such risks is to gather data on shipping activities and impacts, and create models that can help understand these phenomena to improve risk mitigation strategies. Based on comprehensive information on vessel movements and characteristics provided by exactEarth's Satellite-AIS data (Automatic Identification System), MEOPAR is investigating several topics regarding shipping risk, including oil spills, illegal fishing, shipping noise, whale/ship collisions, and the implications of shipping disruptions. These topics are recognized internationally and nationally as pressing issues, with many initiatives underway through Transport Canada, Fisheries and Oceans, the Canadian Coast Guard, and others. Furthermore, the rich, massive S-AIS database itself is amenable to advanced data mining techniques to yield efficient ways of managing the data efficiently and discovering patterns in the traffic characteristics. This panel will describe the aforementioned research thrusts, and outline how MEOPAR plays a role in coordinating and promoting work in this area.

Arctic Shipping Cluster Panel

Jackie Dawson (University of Ottawa), Andrea Scott (University of Waterloo), Randy Scharien (University of Victoria), Alec Casey (York University), Annika Ogilvie (University of Ottawa), Jenna Joyce (University of Ottawa)

Shipping in the Arctic presents many challenges related to the operating environment, the remoteness, impacts for Northern communities, and the need for innovative and unique governance of a rapidly changing environment. MEOPAR is investigating several aspects of this complex, interdisciplinary subject. This panel brings together investigators and HQP from four different MEOPAR projects that are all examining an interdisciplinary aspect of the interaction between ships and ice in the Canadian Arctic. Sea ice reduction as a result of climate change is having significant implications for the marine transportation sector across Arctic Canada, which in turn presents opportunities and risks to remote and predominantly Inuit communities in the region. As other Arctic nations and non-Arctic nations alike are preparing for the region's increased accessibility to lucrative natural resources and potential new northern trade routes it is vital that research continue to be undertaken to understand; 1) changing ice dynamics in the region; the implications of sea ice change for ship operations; the management and policy needs for effective shipping governance; and to enable more accurate forecasting of dangerous ice conditions.

Partnered Call Panel

Stefan Leslie (MEOPAR), Peter Dorcas (exactEarth), Miles Jolliffe (Clear Seas), Alexa Reedman (MEOPAR), TBD (CIOOS)

MEOPAR was renewed for another five years of funding as of April 1, 2017. An integral part of the MEOPAR proposal was "partnered calls for research". These calls would involve contributions not only from MEOPAR, but other key Network partners. Four calls were proposed, each falling within a different "challenge area" of the new MEOPAR strategy. This fall, two of these calls will be released as components of the large September Call for Proposals (CFP). The first is the "Safe Shipping Call" that Clear Seas Centre for Responsible Marine Shipping and exactEarth Ltd will contribute funds toward. The second is the "Canadian Integrated Ocean Observing System" or CIOOS. This call will be partnered closely with DFO's initiative to establish an integrated ocean observing system for Canada, similar to the American IOOS. Lastly, MEOPAR has acquired a third component from Emergency Management British Columbia (EMBC), after renewal. Representatives from Clear Seas, exactEarth and MEOPAR will present.

New Year of Polar Prediction (YOPP) Presentations

Brent Else (University of Calgary), David Atkinson (University of Victoria), CJ Mundy (University of Manitoba), Philippe Tortell (University of British Columbia), Bruno Tremblay (McGill University)

MEOPAR, together with Polar Knowledge Canada (POLAR) and the Arctic Research Foundation (ARF) released a partnered Call for Proposals (CFP) in December 2016 focusing on a Canadian contribution to the Year of Polar Prediction (YOPP). This initiative was MEOPAR's second partnered call, and the first of its Cycle II. Five projects were selected for funding. Each project will have five minutes to give an overview of their planned work.

Different Ships, Different Science

Doug Wallace (MEOPAR), Bruno Nolet (Lloyd's Register), Tim Brownlow (Atlantic Towing Ltd.), Brian Staples (DRDC), Karyn Suchy (University of Victoria), David Atkinson (University of Victoria)

Canada has the world's longest coastline, including large ocean spaces which are sparsely populated and located far from research centres. This implies that Canada must be especially efficient and creative in marine data collection for monitoring, assessment and forecasting purposes. One potential approach is to install measurement systems on seagoing platforms that transit through Canadian waters and along Canada's coastline for purposes other than science. This discussion session will explore the use of non-research vessels for the support of scientific measurement of the marine environment. The panelists will give examples of surface water and atmospheric data collection on "volunteer observing ships" as well as discuss the use of non-specialized commercial and military vessels for multidisciplinary scientific research. Industry viewpoints on the opportunities and constraints on use of such vessels for scientific research will be presented.

How to Succeed With MEOPAR Calls for Proposals

Doug Wallace (MEOPAR), Ron Pelot (MEOPAR), Stefan Leslie (MEOPAR)

MEOPAR's second Cycle began on April 1, 2017. This panel discussion will give an overview of the Cycle II strategy and important considerations when applying for MEOPAR funding in the future. MEOPAR's new strategy focuses on four challenge areas. Further, in the second Cycle, MEOPAR has adopted a new thematic structure, focusing on two research themes corresponding to two main categories of "pressures": environmental change and human activity. The presentation will highlight tips for success with applications in order that the Network attains success in achieving strategic objectives.

Cores Panel

Doug Wallace (MEOPAR), Brad deYoung (Memorial University; Observation Core), Dany Dumont (UQAR; Prediction Core), Stephanie Chang (University of British Columbia; Response Core)

MEOPAR research projects are supported by the activities of three cores: the Observation, Prediction and Response Cores. The Cores are the main mechanism through which MEOPAR takes advantage of the NCE program's long-term perspective to research support. This, almost uniquely for academic research, allows for maintenance and sharing of key expertise, instrumentation and knowledge transfer activities that are of general relevance to MEOPAR projects as well as closely-related activities outside the Network. This panel discussion will give a short overview of each of MEOPAR's Cores. Following the panel discussion, there will be a breakout room for each Core to go more in-depth on their Cycle II functions and plans.

Topical Sessions

Development and Applications of Numerical Models

Jinyu Sheng (Dalhousie University)

This session will discuss recent progress in the development and applications of various numerical models for simulating physical and biogeochemical processes for Canadian waters, with a special focus on physical oceanographic conditions over coastal and shelf waters of the northwest Atlantic (NWA) Ocean. Applications of the semi-prognostic method and spectral method to eliminate systematic drift in ocean circulation models will be discussed. Numerical studies of interactions between currents, surface gravity waves and sea ice will be presented. Discussion will also be given on applications of simulated 3D ocean currents in examining how distributions and migration of marine animals such as American eels and Atlantic salmon are affected by physical oceanographic conditions over the NWA.

Change Monitoring and Visualization of Dynamic Coastlines and Coastal Dune Systems Using Small Unmanned Aerial Systems (sUAS) and Gaming Software

Adam Fenech (University of Prince Edward Island)

Coastal erosion is a growing concern of residents and government as high water levels and wave action wear away the fragile

sedimentary rock that composes beaches, dunes, and sandstone cliffs. Data can be captured using a small Unmanned Aerial Systems (sUAS) coupled with ground control points (GCP) measured using a network based RTK-GPS to generate highly accurate photogrammetrically derived orthomosaics and digital surface models (DSM). On Prince Edward Island, a total of 63 study sites were established along all major coastal stretches during the 2016 field season with the majority of study sites characterized as sandstone cliffs followed by dunes and beaches. Data was collected at five (3 cliff, 2 dune) study sites during both the 2015 and 2016 field seasons, and methods were developed to quantify and visualize annual changes. Orthomosaics were used to identify the cliff top edge at cliff study sites with the resulting lines compared in a GIS to analyse differences at regular intervals. At two dune study sites, points were created along regularly spaced transects to visualize profile changes. Points were sampled against 2015 and 2016 DSM to obtain elevations and create dune profiles. Profile changes show a shifting of sediment within the study sites. Volumetric changes were also calculated at the dune study sites. Methods developed provide a proof of concept for using sUAS to quantify and visualize coastal change. A similar approach could be taken to assess the impact of a particular storm. sUAS surveys can be conducted at study sites to track yearly changes and variations.

A quantitative risk assessment of Prince Edward Island's coastal residences (homes, cottages), safety and security infrastructure (roads, bridges, water treatment plants, hospitals, fire departments, etc.) and heritage (churches, graveyards, lighthouses, archaeological sites, parks, etc.) was conducted for every one meter of coastline by estimating the possible future coastlines for Prince Edward Island. Over 1000 residences (houses and cottages) and 17 lighthouses were shown to be vulnerable to coastal erosion. Such scientific results were significant but were threatened to sit on a shelf in a scientific report unless communicated sufficiently to the organizations and communities of Prince Edward Island. A geovisual interface, known as the Coastal Impacts Visualization Environment (CLIVE), was developed enabling citizens to interactively navigate and view a 3-dimensional (3D) virtual environment of the province of Prince Edward Island constructed from accurate historical spatial data and recent LiDAR surveys of topography. A public engagement tour was held across Prince Edward Island during the month of July 2014 at eight communities. This presentation will introduce the results of the coastal erosion study, the development of the CLIVE tool, and the results of a public consultation.

Spatial Analysis of Marine Tourism

Pierre-Louis Tetu (University of Ottawa)

Melting of sea ice in the Arctic has increased opportunities for marine tourism development in many parts of the region and notably in the Canadian Arctic (Johnston et al. 2017). In this perspective, a substantial decline in the extent of ice coverage has resulted in greater accessibility for all categories of ships, especially passenger vessels and pleasure crafts that have increased rapidly over the past decade; the number of pleasure craft and passenger vessels respectively quadrupled and doubled between 2007 and 2014 (Pizzolato et al. 2014). In reaction to this fast increase, the Canadian Coast Guard (CCG) began to address some of the deficiencies in Canada's Arctic shipping policy by launching the Northern Marine Transportation Corridors Initiative (NMTCI). This initiative aims to ensure that the appropriate maritime services and systems are in place to support safe navigation in the Arctic. Highly related to this initiative, is the need for guideline creation and monitoring for prioritized sites used by cruise operators and pleasure craft visitors. The purpose of the guidelines is to support visitation through information, controlled impacts, and to ensure visitation occurs within the existing governance framework. Environmental degradations increase stress on populations, create insecurity and erode collective identities (Graeger, 1996), and thus monitoring the environmental degradation linked to marine tourism represent a strong and potential national identity driver.

Canada's First Nations/Coastal Communities

Phil Loring (University of Saskatchewan)

Strong linkages among ecosystem health and human well-being are frequently identified in research on natural resource-dependent communities such as fishing communities. Likewise, human well-being is increasingly identified by managers, policymakers, scientists, and community-members as an important consideration in natural resource management and planning. A challenge to incorporating human well-being into these decision-making arenas, however, is that the linkages and feedbacks among social and environmental outcomes are not always apparent or straightforward. In this presentation, I bring insights from work in Haida Gwaii and the Gulf Islands region that seeks to elicit how people in coastal, and sometimes remote and vulnerable communities, define and understand the linkages among ecosystem health and human well-being. Why do people choose to live in these places? How do they define ecosystem health and human well-being? What criteria do they see as necessary for both to be achieved? Three themes in particular have emerged from this work: 1) relationships, as a basis for achieving ecosystem health and human well-being; 2) respect, as an ethical framework for attending to those relationships; and 3) healing, as the process by which people strengthen relationships within their communities, among their communities, and with terrestrial and marine ecosystems. I connect these themes with notions of risk and resilience, and

lay out some recommendations for how coastal risk assessment and planning ought to proceed to better engage the rich and invested connections that people have with these places.

Adam Fenech (University of Prince Edward Island)

As the effects of climate change have been better understood, the potential danger of climate change affecting human health has become an area of concern for public health. Climate change can affect health directly, such as trauma from storms or heat waves, or indirectly, such as the spread of disease, or can exacerbate existing conditions, such as an increase in temperature with low air quality causing a much greater reaction in individuals with asthma. With climate change and new emerging health concerns, these health outcomes will be changing rapidly. In addition, managing these health risks will require not only increased emphasis on public health, but also interdisciplinary collaboration, to yield positive adaptations. Quantifying the risk (estimation of likelihood and consequence) of, and developing an adaptation plan for, climate change to Canada's First Nations is particularly important because of their inherent vulnerability. Lennox Island, a small island off the coast of Prince Edward Island and home to the Mi'kmaq Confederacy of PEI, given its size and location (maximum elevation is 8 metres above sea level and much of the island is less than 4 metres above sea level) is extremely vulnerable to coastal erosion, storm surges and sea level rise. This presentation will focus on the impacts of climate change on human health; and then turn to the case example of Lennox Island and how the First Nation community's health is being impacted.

Ocean Model Families: The Benefits and Consequences of Model Diversity

The ocean modelling community maintains and uses a wide range of model "families" that have emerged out from different research groups to tackle ocean-related questions with different angles. Major differences between these models include differences in model coordinate systems, numerical treatments of advection and mixing/diffusion, computational efficiency and their capacity for coupling to other systems (e.g. atmosphere, ocean wave, sea ice, biogeochemistry, higher trophic levels, etc.).

MEOPAR and its partners currently support a number of ocean modelling groups working with the following ocean model families: NEMO, ROMS, POM and FVCOM as well as variants thereof. Maintaining and using a variety of model codes are likely to have a number of advantages and disadvantages, yet these are infrequently discussed. There have been only a limited number of formal discussions or intercomparisons in the published literature. Whereas national operational agencies generally concentrate on support of one particular model code, the research community however embraces diversity! This topical session will briefly introduce the variety of ocean model families used by MEOPAR and its partners. Some of the pros, cons, consequences and implications of maintaining model code diversity will be discussed in a debate format.

What Role Should Citizens Play in Studying Canada's Oceans?

Jay Cullen (University of Victoria)

The number of research projects that engage with citizen scientists to participate in the collection, analysis and interpretation of oceanographic data is rapidly increasing. Professional scientists can find benefit in citizen science projects through the cost-effective expansion of observation time and space scales while the public, through their participation, can directly contribute to the study of issues they identify as most important. In addition, this direct engagement of citizens in the process and progress of research represents a significant opportunity for professional scientists to work to improve public science literacy. Among other factors, the expansion of citizen science projects has been facilitated by technological advancements that allow non-professional scientists to participate in projects with more ease and effectiveness. Social media plays an important role as well by making the public aware of science projects and serving as a vector to mobilize knowledge and disseminate the results of the research. However, the scientific community can remain skeptical as to the quality and objectivity of the results obtained through citizen scientist projects. For these and other reasons the availability of funding for citizen science projects through established agencies remains relatively limited. This topical session will take a closer look at some citizen science initiatives, highlight successes and pitfalls of public engagement and foment discussion on how to build cost-effective but scientifically sound projects that can directly contribute to addressing environmental problems facing Canadians.

Being Human and a Researcher at the Same Time

Stefan Leslie (MEOPAR)

For many, it is a daily or periodic challenge to be a successful researcher or HQP while balancing the responsibilities from the rest of life. Children, parents or other family members may need care; or maybe there are other responsibilities that restrict flexibility and must

be accommodated. MEOPAR wants to be an organization that actively supports its researchers and HQP. Many organizations make grand statements about balancing work and life or about respecting the fact that people have ordinary human obligations ... but then have no active support provided, and retain all the same inflexibilities and demands. This is a big issue and we cannot solve it on our own, but there's every reason for MEOPAR to play its part. MEOPAR wants to provide active support, and this will be an exploratory discussion about what practical measures MEOPAR can implement. What would be most useful for you, now and in the future? What organizations do this well, and what approaches should we replicate?

Capturing and Modeling Spatial Data on Small Vessels

Rosaline Canessa (University of Victoria)

It is widely accepted that marine vessel traffic is growing significantly and one of the consequences is increased risk to marine life, in particular cetaceans, due to, for example, marine pollution, ship strikes and noise. In this regard, much emphasis has been placed on large vessels, primarily because they are required to receive and transmit Automatic Identification System (AIS) data. AIS provides synoptic and real time data on vessel location, speed and class. However, smaller vessel types are not required to transmit AIS. Understanding the distribution and intensity of these smaller vessels is a particular challenge.

In addition, we do not yet fully understand the spatial and temporal distribution of cetacean species and how they are using particular areas both in the presence and absence of vessels. Therefore, the risk to marine life, such as cetaceans, from small vessels is often difficult to estimate, and, at best, incomplete, presenting another challenge.

These challenges are particularly acute in the Salish Sea, which is highly utilised by several species of cetaceans including the endangered Southern Resident Killer Whales and is an area where recreational boating, fishing and ecotourism are important and widespread activities.

This presentation focuses on the challenges and opportunities for capturing spatial data on small non-AIS vessels and marine mammals.

Resilient-C Online Platform as a Shared Resource

Jackie Yip (University of British Columbia)

Coastal communities face many hazards, ranging from oil spills to coastal flooding and the longer-term threats of climate change. New information tools are needed to help communities find relevant tools and information to address these risks. The Resilient Coasts Canada (Resilient-C) online platform was developed to facilitate knowledge and resources sharing between coastal communities to support coastal hazard risk reduction (<https://resilientc.ubc.ca>). Launched in 2016, the platform uses an indicator approach to help a community identify others that share its hazard vulnerability characteristics, as well as learn about risk reduction activities that they are undertaking. Resilient-C currently focuses on coastal communities on the Salish Sea in British Columbia, and will be expanded to other coastal regions of Canada. It is one of the activities of the Response Core in MEOPAR's Cycle II. While the platform is launched and being used by a number of the target communities, it also has the potential to serve as a platform to share outcome, tools, and knowledge from other MEOPAR projects with communities. Conversely, other MEOPAR projects may also be able to help refine the platform through, for example, better data and information. Therefore this session aims to provide an opportunity to identify potential synergy between the Resilient-C project and others to gauge the feasibility of this kind of future collaboration. To facilitate this discussion, the presenter will showcase the functions and content of Resilient-C through a brief live-demo, highlighting some examples of areas in the platform where MEOPAR projects can contribute to or leverage.

Making ecosystem science matter: stakeholder-engaged research through co-design and integrated social-ecological synthesis

Roxane Maranger (Université de Montréal)

Despite huge efforts on the part of many large scientific programs, the timing from recognition of an environmental issue to an actionable solution is 25 years on average. Part of the problem is that ecosystem science – which is at the foundation of helping to resolve major environmental issues – is often undermined 1) by the promise of quick fixes through technology (regardless if they will work) and/or 2) limited by the ability of scientists be involved in a process that leads to actionable sustainable solutions. Furthermore, given the complexity of ecological sciences, scientists often lack the ability to deliver a clear message to serve collective conservation goals. In the current climate of the social innovation and open science movements, we suggest a process that combines both through a social-ecological innovation system called RéseauLab, which we are currently testing in the Laurentian region of Quebec. Although at the early stages, facilitated co-creation workshops have identified scientific knowledge product needs of several regional partners, while multi-disciplinary scientific synthesis is generating these products using the best available knowledge at the time. Knowledge

gaps are identified and the process is iterative, based on design principles. Regional social innovators are key to the process as they help identify the highest social-ecological leverage points to effect change, which streamlines actionable sustainable scientific solutions. We will provide a concrete example around water quality and biodiversity maintenance at the regional landscape scale, showing how this approach has the potential to accelerate sustainability while generating high quality fundamental research.

Practical Tips for Managing Data

Mike Smit (Dalhousie University)

Managing data is a growing focus for granting agencies, universities, and MEOPAR itself. In this session, MEOPAR researchers from across the network will share their best practices and tips for managing data: what has worked, what hasn't worked, and what they'd like to try next. We'll also talk briefly about what makes a good summary of a data management plan –a requirement for proposals in Cycle II.

Special Thanks

RECEPTION SPONSOR: EXACTEARTH LTD.



Join us for an informal reception to meet industry partners, MEOPAR researchers, and staff. (*Cash bar, one complementary drink will be provided*)

Where: Grande Place, 8th floor, Le Westin

When: **5:00-7:00 PM, Tuesday, June 20**

NETWORK FUNDING

Established in 2012, the Marine Environmental Observation Prediction and Response (MEOPAR) Network is supported by the Government of Canada through the federal Networks of Centres of Excellence Program.



Government of Canada
**Networks of Centres
of Excellence**

Gouvernement du Canada
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d'excellence**