

# 4<sup>th</sup> World Conference on Marine Biodiversity WCMB 2018

**NOTE: This program will not be updated. Please refer to the mobile app for all changes to the official program.**



May 13-16, 2018

Palais des congrès de Montréal

Canada

# WELCOME LETTER

Welcome to the World Conference on Marine Biodiversity! It is a pleasure to host this 4<sup>th</sup> edition in Canada. The WCMB has become a major focal assembly for sharing research outcomes, management and policy issues, and for discussions of the role of biodiversity and biodiversity conservation in sustaining ocean ecosystems.

Following on from the *Life in a Changing Ocean* theme of the 3<sup>rd</sup> WCMB, the 4<sup>th</sup> WCMB theme – ***Connecting with the living ocean*** – is underlining the need to replace our current exploitation relationship with the ocean's living resources, with a sustainable connection based on scientific knowledge. Two years before the end of the United Nations Decade on Biodiversity 2011–2020 (Resolution 65/161), this theme is particularly topical. We hope this theme will provide an opportunity to discuss progress towards the Strategic Plan for Biodiversity 2011-2020 and its 20 Aichi Biodiversity Targets.

WCMB continues to evolve and at this meeting we have trialled a new initiative: a mentoring program. This unique and dynamic program aimed at connecting early-career scientists with senior scientists to exchange ideas, collaborate and even identify research priorities for the next decade of marine biodiversity sciences.

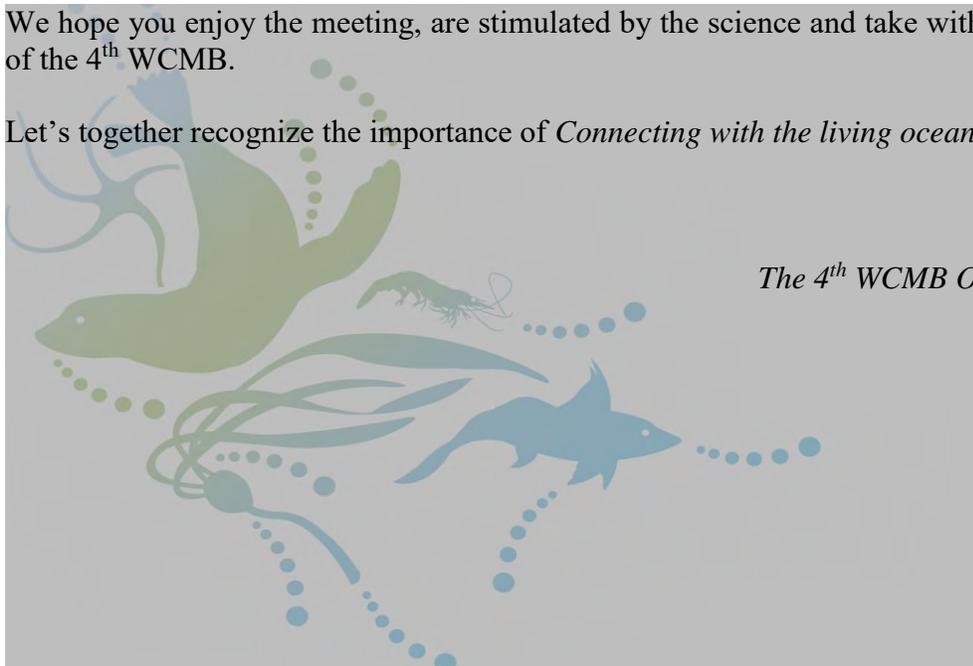
We are also proud to inaugurate the Carlo Heip Award in recognition of Carlo Heip's leadership in marine biodiversity research and founding of the World Conference on Marine Biodiversity.

Connect with Montréal, a vibrant location for international convention delegates. From gastronomic delights for all tastes to a plethora of cultural and sports events, unique architectural styling covering 375 years of history and an exciting nightlife, Montreal invites you to make the most of your time with us.

We hope you enjoy the meeting, are stimulated by the science and take with you good memories of the 4<sup>th</sup> WCMB.

Let's together recognize the importance of *Connecting with the living ocean!*

*The 4<sup>th</sup> WCMB Organizing Committee*



# MINISTERIAL MESSAGE

## 4th World Conference on Marine Biodiversity

On behalf of the Government of Canada, it is my pleasure to welcome you to Montréal, Québec, for the 4<sup>th</sup> World Conference on Marine Biodiversity.

The health of our oceans is a priority for Canada. The marine environment and its intricate web of marine life offer a multitude of benefits, from fish populations that support productive and sustainable fisheries, to healthy coastal habitats that provide natural defences against erosion and storms, to micro-organisms that keep coastal waters clean and safe.

Canada is committed to the sustainable development of our ocean resources and ensuring that we remain good environmental stewards as our economic activities grow. Our \$1.5 billion Oceans Protection Plan is not only restoring sensitive coastal ecosystems, but also creating a world-leading marine safety system to better protect our waters, coasts and the people who use them.

Canada recognizes the value of science in supporting evidence-based decisions and is proud to contribute to this important meeting. As a signatory to the Convention on Biological Diversity, Canada is committed to protecting and conserving 10% of our marine and coastal territories by 2020. We are well on our way, having now protected 7.75% of our oceans. We recognize the importance of the UN Convention on the Law of the Sea as a framework for global oceans governance and we are committed to working closely with our international partners to tackle important global challenges such as climate change and illegal, unreported, and unregulated fishing.

The Government of Canada is honoured to host the G7 Leaders' Summit this year in Charlevoix, Quebec. Improving the health of the world's oceans is a key theme for our presidency, and we are proposing that the G7 work together to strengthen national efforts and international collaboration on ocean-related challenges.

During this conference you will have an opportunity to learn about the newest developments in your field, engage in stimulating debates, make new contacts, and foster new collaborations and research ideas.

I offer you my very best wishes for a productive conference!

Sincerely,

The Honourable Dominic LeBlanc, P.C., Q.C., M.P.  
Minister of Fisheries, Oceans and the Canadian Coast Guard



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# COMMITTEES

## Organizing Committee

Philippe Archambault (chair), Université Laval, Canada  
Jihyun Lee (co-chair), United Nations Environment Programme, Secretariat of the Convention on Biological Diversity  
Kim Juniper (co-chair), Ocean Networks Canada, University of Victoria, Canada  
Christopher Cameron, Université de Montréal, Canada  
Frédéric Guichard, McGill University, Canada  
Peter Lawton, Fisheries and Oceans Canada  
Anna Metaxas, Dalhousie University, Canada  
Pierre Pepin, Fisheries and Oceans Canada  
Paul Snelgrove, Memorial University, Canada  
Jean-Éric Tremblay, Université Laval, Canada  
Verena Tunnicliffe, University of Victoria, Canada  
Fred Whoriskey, Dalhousie University, Canada  
David Beauchesne, Université du Québec à Rimouski, Canada  
Elliot Dreujou, Université du Québec à Rimouski, Canada  
Cindy Grant, Université Laval, Canada

## Scientific Committee

Paul Snelgrove (chair), Network Director, NSERC Canadian Healthy Oceans Network  
Anna Metaxas (co-chair), Dalhousie University, Canada  
Peter Lawton (co-chair), Fisheries and Oceans Canada  
Linda Amaral Zettler, Josephine Bay Paul Center/Brown Geological Sciences, Marine Biological Laboratory, Woods Holes, USA  
Ward Appeltans, UNESCO-IOC, IODE/OBIS & GOOS, Belgium  
Philippe Archambault, Université Laval, Canada  
Mark J. Costello, President International Association of Biological Oceanography (IABO), Institute of Marine Science, University of Auckland, New Zealand  
Isabelle Côté, Simon Fraser University, Canada  
Roberto Danovaro, President, Stazione Zoologica Anton Dohrn di Napoli, Italy  
Evan Edinger, Memorial University, Canada  
Kristina M. Gjerde, Senior High Seas Policy Advisor, IUCN, Director, Wycliffe Management  
Jesica Goldsmit, Fisheries and Oceans Canada and Université Laval, Canada  
Patrick Halpin, Director of the Geospatial Ecology Program, Nicholas School of the Environment & Duke Marine Lab, Duke University, USA  
Cornelius Hammer, First Vice President of ICES and President of ICES in 2016-2018, Germany  
Kim Juniper, University of Victoria, Canada  
Linwood Pendleton, Director of the Marine Ecosystem Services Partnership, Ocean and Coastal Policy Program at Duke University's Nicholas Institute for environmental Policy Solutions and in August 2014 – International Chair of Excellence, AMURE, Institut Universitaire Européen de la Mer, France  
Ellen Kenchington, Bedford Institute, Fisheries and Oceans Canada

## **Scientific Committee (Continued)**

Christopher McKindsey, Institut Maurice Lamontagne, Fisheries and Oceans Canada  
David Obura, Director of CORDIO East Africa, Kenya  
Pierre Pepin, Fisheries and Oceans Canada  
Martin Solan, Co-convenor WCMB II, National Oceanography Centre, University of Southampton, UK  
Simon Thrush, Director of the Institute of marine Science, University of Auckland, New Zealand

## **Student Committee**

David Beauchesne, Université du Québec à Rimouski, Canada  
Elliot Dreujou, Université du Québec à Rimouski, Canada  
Charlotte Whitney, University of Victoria, Canada  
Tianna Peller, McGill University, Canada  
Kevin C. K. Ma, Université Laval, Canada  
Ryan Gasbarro, University of Victoria, Canada  
Emily Adamczyk, University of British Columbia, Canada  
Remi Daigle, Université Laval, Canada

## **Conference Secretariat**

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We would like to acknowledge and extend our gratitude for the significant contribution of Allison Barter (Canadian Healthy Oceans Network), Matthieu Huot (Université Laval), Kevin Ma (Université Laval), Christian Nozais (Université du Québec à Rimouski), and Brendal Townsend (Dalhousie University).

# USEFUL INFORMATION

## **Badges**

Delegates must wear their badge at all times in the Palais des congrès.

## **Floor Plans**

See pages 55 and 57.

## **Food Services**

Coffee breaks and lunches are held in the Exhibition, room 517CD. Coffee stations and food concessions are open for delegates.

## **Internet Access**

Free WiFi is available for the delegates at the Palais des congrès, sponsored by Parks Canada.

Wireless Network: WCMB2018

Access Code: BIOMARINE18

## **Mobile Phones and Devices**

Mobile phones must be switched off or muted in the session meeting rooms.

## **Registration Schedule**

Saturday, May 12 15:00 to 19:00

Sunday, May 13 7:30 to 18:00

Monday, May 14 8:00 to 18:00

Tuesday, May 15 8:00 to 18:00

Wednesday, May 16 8:00 to 18:00

## **Posters**

Posters are displayed throughout the conference dates in the Exhibition (517CD). See schedule and details on pages 58-62.

Poster set-up time is on Saturday, May 12 from 16:00 to 19:00, and on Sunday, May 13 from 8:30 and 16:00. Poster must be taken down between 15:00 and 19:00 on Wednesday, May 16.

## **Speaker Ready Room**

Saturday, May 12 15:00 – 19:00

Sunday, May 13 8:00 – 18:00

Monday, May 14 8:00 – 18:00

Tuesday, May 15 8:00 – 18:00

Wednesday, May 16 8:00 – 18:00

We ask all speakers to upload their files at least 3 hours before their presentation, ideally the morning prior or the afternoon of the day before. 30 minutes prior to the beginning of the session all presentation files will be transferred to the individual session rooms.



World Conference  
on Marine Biodiversity  
Montréal 2018

# MONTRÉAL 2018

## MAY 13-16

	SATURDAY MAY 12	SUNDAY MAY 13	MONDAY May 14	TUESDAY May 15	WEDNESDAY May 16
08:30					
09:00			8:30-10:00 Plenary session Keynote: Linwood Pendleton	8:30-10:00 Plenary session Keynote: Emma Johnston	8:30-10:00 Plenary session Keynote: Amanda Bates
09:30		9:30-10:30 Opening Ceremony			
10:00			Coffee break	Coffee break	Coffee break
10:30					
11:00		10:30-12:00 Topical sessions	10:30-12:00 Topical sessions	10:30-12:00 Topical sessions	10:30-12:00 Topical sessions
11:30					
12:00		12:00-13:30 Lunch	12:00-13:30 Lunch	12:00-13:30 Lunch	12:00-13:30 Lunch
12:30			Mentorship Presentations	Mentorship Presentations	Mentorship Presentations
13:00					
13:30		13:30-15:00 Topical sessions	13:30-15:00 Topical sessions	13:30-15:00 Topical sessions	13:30-15:00 Topical sessions
14:00					
14:30		Coffee break	Coffee break	Coffee break	Coffee break
15:00	15:00-19:00 Registration	15:30-17:00 Topical sessions	15:30-17:00 / Topical sessions	15:30-17:00 / Topical sessions	15:30-17:00 Final plenary session
15:30					
16:00		17:00-19:00 Welcome Reception	17:00-19:00	17:00-18:00 Posters and Exhibition	Closing / Student Awards / 5th WCMB Announcement
16:30					
17:00		Posters and Exhibition	Posters and Exhibition		
17:30					
18:00					
18:30					
19:00				Carlo Heip Award Ceremony	
19:30					
20:00				18:30 Food trucks available onsite	
20:30				19:30 Award ceremony Keynote: Carlos Duarte	
21:00					
21:30					
22:00					
22:30					

# KEYNOTE ABSTRACTS

**MONDAY, MAY 14 – 8:30-10:00**

**Room: 517A**

## RETHINKING MARINE CONSERVATION SCIENCE IN THREE ACTS



Dr. Linwood Pendleton (Global Ocean Lead Scientist, World Wildlife Fund for Nature, Washington DC, United States), featuring Robert Hodge (pianist) and Anna Zivian (scientist-poet-conservationist)

Marine conservation science has made great strides in the last few decades, but still we continue to lose marine species and habitat at unprecedented rates. Clearly, incremental advances in marine science will not be sufficient to meet the needs of ocean conservation in the new era of rapid global environmental change. Using philosophy, technology, music, dance, art, and poetry, we explore what's needed to achieve breakthroughs in marine conservation science and science communication. Act One focuses on the conservative roots of conservation science and why old school thinking can't keep up with real world change. Act Two examines what is holding us back and highlights new ways of measuring, analysing, visualizing, and modelling the ocean socio-ecosystem. Act Three wraps up by presenting out-of-the-box approaches to communicating science and celebrates recent discoveries from marine conservation scientists.

**TUESDAY, MAY 15 – 8:30-10:00**  
**Room: 517A**

**TIME, TIME, TIME: WHAT HAS BECOME OF YOU? HOW HUMANS ARE SPEEDING UP THE ECOLOGY OF NEARSHORE SYSTEMS AND WHAT IT MEANS FOR BIODIVERSITY**



Professor Emma Johnston (Dean of Science, University of New South Wales, Sydney, NSW, Australia)

Professor Johnston will discuss emerging evidence from our changing coasts. From the tropics to the poles, nearshore ecological systems are speeding up. Temperatures are increasing, physical disturbance rates increase, species transfer and introductions are more frequent and systems are increasingly organically enriched. Professor Johnston will discuss recent studies that may help us see into the future of biodiversity for our nearshore systems. She discusses how stressors interact and the development of new molecular and remote sensing tools for detecting structural and functional ecosystem change. Hear how she combines experimental ecology with the observational to inform our predictions of the constantly re-created fringe of the sea.

**TUESDAY, May 15 – 18:30-22:00**  
**Perspective room, Centre des sciences de Montréal**

## REBUILDING MARINE BIODIVERSITY IN A SHIFTING FUTURE OCEAN



Professor Carlos M. Duarte (Director of the Red Sea Research Center and Tarek Ahmed Juffalli Chair in Red Sea Ecology of King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia)

Statements that the Biosphere is now undergoing a Sixth Great Extinction, this time driven by human pressure, have been based on global species extinction rates 100 to 1000-fold greater than background. These are expected to continue or be aggravated further by habitat loss, pollution, biological invasions facilitated by human introductions, and climate change, among other human pressures. Yet, these extinction rates refer to land species, with the number of marine extinctions of land species accounting for only 2.6 % of the total extinction rate, largely due to hunting in the past (e.g. Stellar's cow, great Auk, etc.). Indeed, whereas the oceans are experiencing a similar warming rate as land, its 3-D, connectivity and continuity provide more opportunities for species to avoid extinction than species face on the more fragmented habitats on land. Yet, habitat loss has impacted on key marine habitats, such as seagrass, mangroves and coral reefs, where about half of the global habitat has been lost since World War II. We have, therefore, have an opportunity to avoid the 5th Great Extinction from penetrating the oceans, and to rebuild ocean biodiversity as to ensure a bright future for the oceans and, thereby, rebuild a healthy ocean capable of supplying the key resources humanity requires. Here I will outline the current status and decline of marine biodiversity and outline the solutions and actions require to rebuild biodiversity.

**WEDNESDAY, MAY 16 – 8:30-10:00**  
**Room: 517A**

**THREE “GRAND” CHALLENGES FOR PREDICTING MARINE BIODIVERSITY CHANGE IN THE ANTHROPOCENE ERA**



Dr. Amanda Bates (Research Associate Professor, Memorial University of Newfoundland, St. John’s NL, Canada)

Accurate and practical tools that link species and community dynamics across scales and taxa are required to predict biodiversity responses to on-going and future global change. Physiological models are increasingly incorporating complexity, linking individuals to populations. Yet a major challenge is to (1) predict biodiversity change within a real-world setting. Parameterizing model inputs for entire communities using mechanistic approaches must involve simplification, while conducting experiments with many marine species is impractical. At the same time, physical and biological data are expanding, with increased resolution in both space and time. These data provide a resource to develop predictive tools incorporating both environmental exposure and biological sensitivity. Even so, our oceans have already been reshaped by human activities. Thus a (2) lack of historical baselines and (3) dark data may be preventing how we conceptualize and manage trajectories of biodiversity change. Opportunities include trans-disciplinary exchanges of approaches for tackling scientific problems and data sharing, facilitated by global communication tools and collaborative networks.

# DETAILED CONFERENCE PROGRAM

## SUNDAY, MAY 13 – 9:30-10:30

### Opening Ceremony

Room: 517A

## SUNDAY, MAY 13 – 10:30-12:00

### Theme: Biodiversity discovery and prediction - Polar Frontiers, presented by Arctic Science Journal

Session Moderator: Dieter Piepenburg

Room: 518B

10:30	Saskia Brix	State of the Art in the IceAGE project: a climatic sensitive region under watch.
10:45	Steve Widdicombe	Benthic biodiversity along a temperate-polar gradient: Exploring consequences of climate change and sea ice loss.
11:00	Barbara Oleszczuk	Benthic biodiversity and food web structure in the European sector of the Arctic Ocean during spring time
11:15	Anni Mäkelä	Diversity and functioning of Arctic benthic macroinfaunal communities and their resilience to climate change mediated alterations in food supply
11:30	Mario H. Londono-Mesa	Diversity of Antarctic polychaetes

### Theme: Biodiversity discovery and prediction - Deep-sea Frontiers

Session Moderator: Samuel Bosch

Room: 518C

10:30	Sheryl Murdock	Compositional variability among community assemblages of a hydrothermal vent foundation species – from micro to macro
10:45	Craig McClain	Energy availability, metabolic niche dynamics, and connectivity alter assembly rules in deep-sea wood falls
11:00	Abbie Chapman	Functional diversity and biogeography using ‘sFDvent’ - the first global trait database for hydrothermal vent species
11:15	Nadine Le Bris	Observing transient functional processes at depth: a step forward in the monitoring of deep-sea ecosystem sensitivity to disturbance

### Theme: Climate change impacts on marine biodiversity

Session Moderator: Jessica Goldsmit

Room: 519B

10:30	Marina Dolbeth	The impact of the Paris Agreement 2°C rise target for global warming on estuarine benthic communities
10:45	Joanne Ellis	Climate change impacts and multiple stressor effects on coral reef ecosystems in the Red Sea
11:00	Conor Waldock	Using geographic relationships between abundance and temperature to predict performance change with warming in reef fish assemblages
11:15	Gil Rilov	Impact of bioinvasions and climate change on benthic biodiversity and ecosystem functions – Lessons from the fast-changing Levant reefs
11:30	Moritz Sonnewald	The Red Sea Biodiversity Project: Collection, understanding and preservation of the marine fauna of Saudi Arabia

## SUNDAY, MAY 13 – 10:30-12:00 (CONTINUED)

### Theme: Cumulative impacts of human activities

Session Moderator: Simon Thrush

Room: 524A

10:30	Eric Thiébaud	Changes in a benthic system exposed to multiple stressors: A 40 year time-series in the English Channel
10:45	Ana Jesus	Assessing the health of marine habitats in busy seas
11:00	Grace Murphy	Seagrass fish assemblage change across gradients of human impact in Atlantic Canada
11:15	Jillian Dunic	Cumulative impacts and global change in seagrass meadows: A quantitative review

### Theme: Ocean basin scale research: ATLAS, MERCES and SponGES

Session Moderator: Murray Roberts

Room: 524B

10:30	Karen Davison	Transatlantic cooperation within the Atlantic Ocean Research Alliance (AORA)
10:45	Paul Snelgrove	Overviews (continued)
11:00	Cristina Gambi	MERCES: Marine Ecosystem Restoration in Changing European Seas
11:15	Joana R Xavier	Deep-sea sponge grounds of the North Atlantic: State of the knowledge, recent advances and outlook
11:30	Georgios Kazanidis	Distribution of deep-sea sponges and the role of environmental variability in the Faroe-Shetland Sponge Belt Marine Protected Area
11:45	Alan Fox	Investigating the impact of larval dispersal strategies in the deep-sea: Understanding the contrasting genetic connectivity of the two main reef building species of cold water corals in the North Atlantic

### Theme: New technologies for biodiversity assessment

Session Moderator: Kim Juniper

Room: 524C

10:30	Joseph DiBattista	The development of eDNA metabarcoding to assess fish biodiversity in coastal ecosystems and integrating these data into marine monitoring programs
10:45	Anaïs Lacoursière-Roussel	eDNA metabarcoding as a new approach to evaluate large-scale coastal biodiversity change
11:00	Ni Kadek Dita Cahyani	Metabarcoding on Autonomous Reef Monitoring Structures (ARMS): A standardized method for monitoring Indonesian marine diversity in the 'omics era
11:15	Nicole Fahner	Experimental design considerations for assessing marine biodiversity using environmental DNA
11:30	Mariagrazia Graziano	Biodiversity and Protected Areas Management Programme – the role of the geospatial information for Marine Protected Areas
11:45	Christos Arvanitidis	Research Infrastructures offer capacity to address scientific questions never attempted before: Are all taxa equal?

**SUNDAY, MAY 13 – 12:00-13:30**

**Lunch Break**

**(Exhibition, Posters)**

Room: 517CD

**Mentoring Program Workshops\***

Theme 1: Room 518A

Theme 2: Room 518B

Theme 3: Room 518C

Theme 4: Room 519A

Theme 5: Room 519B

Theme 6: Room 524A

Theme 8: Room 524B

\* Workshops are only open to Mentoring Program participants.

**SUNDAY, MAY 13 – 13:30-15:00**

**Theme: Marine policy and stewardship**

Session Moderator: Kristina Gjerde

Room: 518A

13:30	Matthew Frost	From marine climate change impacts to marine legislation: lessons from the science-policy interface
13:45	Karen Webb	Risk, politics, and science: a new approach to UK marine biodiversity monitoring
14:00	Pierre Beaufile	New tool to enhance marine mammal protection at the Saguenay - St. Lawrence Marine Park
14:15	Valérie Thool	Foreign investment law and the protection marine biodiversity: Reconciling two different worlds
14:30	Maja Vinde Folkersen	The economic value of the deep sea: A systematic review and meta-analysis

**Theme: Biodiversity discovery and prediction - Polar Frontiers, presented by Arctic Science Journal**

Session Moderator: Dieter Piepenburg

Room: 518B

13:30	Astrid Tempestini	Genetic diversity across the Arctic waters: Examples from pelagic crustaceans
13:45	Aude Boivin-Rioux	Phytoplankton functional types are changing in the North Water Polynya
14:00	Gérald Darnis	Is the shallow Kitikmeot a marine zoogeographic barrier within the Canadian Arctic Archipelago?
14:15	Dieter Piepenburg	Arctic benthic diversity research with PANABIO: Scale, sharing, and modelling
14:30	Maria Kavanaugh	Monitoring and predicting Arctic marine biodiversity across dynamic seascapes

## SUNDAY, MAY 13 – 13:30-15:00 (CONTINUED)

### **Theme: Biodiversity discovery and prediction - Deep-sea Frontiers**

Session Moderator: Samuel Bosch

Room: 518C

13:30	Patricia Ramey-Balci	Biodiversity in soft-sediments of mud volcanoes in the eastern Mediterranean Sea
13:45	Pauline Chauvet	Characterization of factors regulating megafaunal community dynamics and biodiversity in Barkley canyon, Canada
14:00	Vonda Wareham Hayes	Cold-water soft corals as hosts for juvenile ophiuroids
14:15	Neus Companyà-Llovet	Macroinfaunal communities and food webs from Barkley methane hydrates (British Columbia): The role of food patchiness in space and time
14:30	Anna Jażdżewska	Integrative taxonomy in marine biodiversity recognition — The deep-sea amphipod case study
14:45	Javier Cristobo	Sleeping with my enemy: Insights into the symbiotic relationship between the carnivorous sponge <i>Chondrocladia robertballardi</i> and the annelid <i>Neopolynoe africana</i>

### **Theme: Biodiversity discovery and prediction - Tropical Frontiers**

Session Moderator: Eduardo Klein

Room: 519A

13:30	Beginer Subhan	Phylogeography of <i>Clavularia inflata</i> (Soft Coral: Stolonifera) in coral triangle area
13:45	Ronaldo Christofolletti	Intertidal rocky shore biodiversity in the subtropical southwest Atlantic: Disentangling the influence of natural and anthropogenic drivers
14:00	João Cúrdia	Unraveling biodiversity patterns in soft-sediments of the highly saline and warm Red Sea
14:15	Daniel Pech	Soft bottom benthic diversity trends from the Yucatán continental Shelf-Gulf of Mexico: From 10 to 200 m depth.
14:30	Karla Jaramillo	Specialized metabolites as biomarkers in Zoantharian taxonomy, a case study in the Tropical Eastern Pacific.

### **Theme: Climate change impacts on marine biodiversity**

Session Moderator: Jessica Goldsmit

Room: 519B

13:30	Arnaud Auber	How could functional redundancy of the North Sea fish community change during the 21st century?
13:45	Matthew McLean	A functional inversion of marine ecosystems related to climate oscillations and warming
14:00	Christopher Lynam	Fishing for food in a warm and acidic ocean requires adaptive management targets
14:15	Heather Hunt	Cobble-filled bio-collectors: a tool for detecting changes in biodiversity in a difficult-to-sample habitat
14:30	Stephanie Allen	The response of North Atlantic phytoplankton composition and size structure to the copepod community and environmental pressures

**SUNDAY, MAY 13 – 13:30-15:00 (CONTINUED)**

**Theme: Cumulative impacts of human activities**

Session Moderator: Simon Thrush

Room: 524A

13:30	Danielle Denley	Climate change intensifies negative impacts of an invasive bryozoan on kelp bed ecosystems in the northwest Atlantic
13:45	David Beauchesne	Meta-networks - using network theory to structure and evaluate cumulative impacts
14:00	Julie Carrière	Implementation of an environmental observatory in the Sept-Îles industrial port zone
14:15	Elliot Dreujou	Marine benthic communities and anthropogenic activities in Sept-Iles (Canada): A peaceful coexistence?
14:30	Gert Van Hoey	Assessing the impact degree and areal degradation extent of the benthic ecosystem caused by different human activities

**Theme: Ocean basin scale research: ATLAS, MERCES and SponGES**

Session Moderator: Roberto Danovaro

Room: 524B

13:30	Anthony Grehan	MERCES: State of degradation and recovery potential of six key European marine habitats
13:45	Jana Verdura	Drastic effects of climate change on Mediterranean forests
14:00	Emma Cebrian	Regional environmental history drive the tolerance of marine macroalgae forests to future warning
14:15	Francisco Javier Murillo	Effects of Bottom-Contact Fishing on Benthic Biodiversity
14:30	Marina Carreiro-Silva	The Azores deep marine ecosystem: An open window into North Atlantic deep-sea environments

**Theme: New technologies for biodiversity assessment**

Session Moderator: Kim Juniper

Room: 524C

13:30	Xavier Mouy	Acoustic estimation of the biodiversity of fish and invertebrates
13:45	Alex Nunes	Innovative management of accelerometry, inertial, acoustic, and satellite data using netCDF and Postgres
14:00	Marc Skinner	Eelgrass remote sensing triple-threat – assessment of simultaneously collected satellite, LiDAR, and sonar data.”
14:15	Francis Letendre	The mechanics of oil droplet capture by filter feeding animals in the marine environment: theory, observations, and petrochemical dispersants

**SUNDAY, MAY 13 – 15:00-15:30**

**Coffee Break  
(Exhibition, Posters)**

Room: 517CD

**SUNDAY, MAY 13 – 15:30-17:00**

**Theme: Marine policy and stewardship**

Session Moderator: Lucie Beaulieu

Room: 518A

15:30	Lisa Speer	Conserving marine biodiversity in the ocean beyond national jurisdiction; whither half the planet?
15:45	Seth Sykora-Bodie	Collaborative Governance in the Southern Oceans: The Ross Sea MPA
16:00	Natalie Ban	Indigenous governance and conservation of marine ecosystems
16:15	Liberty Espectato	Evaluating stakeholders' perception on the impact of the closed season policy for sardines in Visayan Sea, Philippines using gender lens
16:30	Harold Monteclaro	Gender perceptions in the management of the tuna industry in General Santos City, Philippines

**Theme: Biodiversity discovery and prediction - Polar Frontiers, presented by Arctic Science Journal**

Session Moderator: Frithjof Kuepper

Room: 518B

15:30	Claire Goodwin	Sponges of the Southern Ocean: How can we close this gap in our Antarctic Biodiversity knowledge?
15:45	Curtis Dinn	Expanding known sponge (Porifera) species diversity in the Eastern Canadian Arctic
16:00	Chantal Vis	Marine baseline study in Ukkusiksalik National Park, Nunavut
16:15	Frithjof Christian Küpper	Exploration of Arctic and Antarctic seaweed biodiversity in the context of polar climate change
16:30	Ignacio Garrido	Macrofaunal diversity gradients in Antarctic rocky benthic communities: Effects of glaciers and depth

**Theme: Biodiversity discovery and prediction - Deep-sea Frontiers**

Session Moderator: Angelika Brandt

Room: 518C

15:30	Tina Molodtsova	Sponge and coral communities of potential mineral resources in the deep-sea: an overview
15:45	Telmo Morato	Utility of habitat suitability modelling tools for evaluating changes in VME distribution under future climate scenarios
16:00	Ursula Witte	The variable influence of dispersant on oil degradation at low temperatures in the deep ocean
16:15	Lisa Levin	Looking forward into the deep: The confluence of climate change, global change and biodiversity in the deep sea

## SUNDAY, MAY 13 – 15:30-17:00 (CONTINUED)

### Theme: Biodiversity discovery and prediction - Tropical Frontiers

Session Moderator: Eduardo Klein

Room: 519A

15:30	Diede Maas	Evolution-mediated priority effects shape divergence of mussels in insular environments
15:45	Claire Goll�ty	Mangrove as habitat provider for macrofauna community: Abiotic versus biotic forcings
16:00	Frederic Sinniger	Overlapping coral diversity between shallow and mesophotic ecosystems: Perspectives on the Deep Reef Refugia Hypothesis in the North-West Pacific
16:15	Susana Carvalho	Exploring the unknown: Biodiversity patterns of Red Sea cryptic fauna across multiple spatial scales
16:30	James Reimer	Utilization of eDNA metabarcoding to assess coral reef health in Okinawa, Japan

### Theme: Climate change impacts on marine biodiversity

Session Moderator: Piero Calosi

Room: 519B

15:30	Diana Madeira	Molecular Biodiversity under Ocean Warming: Proteomics and Fitness Data Provide Clues for a Better Understanding of Thermal Tolerance in Fish
15:45	Coleen Suckling	Metabolic responses of two species of brachyuran crustaceans to multiple-stressors
16:00	Coleen Suckling	A slow growing perspective on multi-generational responses to future change.
16:15	Susan G. Heaslip	Predicted climate driven shift in distribution of loggerhead sea turtles in Canadian waters

### Theme: Cumulative impacts of human activities

Session Moderator: Joanne Ellis

Room: 524A

15:30	Clement Garcia	Predicting changes in the biologically-mediated seabed processes in response to chronic trawling disturbance
15:45	Dario Fiorentino	Multiscale spatial distribution of macrofauna response to fishery pressure
16:00	Nathan Grant	Species specific behavioural responses of glass sponges to suspended sediments
16:15	Simon Thrush	Detecting the potential for tipping points in marine sediments

**SUNDAY, MAY 13 – 15:30-17:00 (CONTINUED)**

**Theme: Ocean basin scale research: ATLAS, MERCES and SponGES**

Session Moderator: Ellen Kenchington

Room: 524B

15:30	Emyr 'Martyn' Roberts	Oceanographic setting and short-timescale environmental variability sustains an Arctic seamount sponge ground?
15:45	Lea-Anne Henry	Vulnerable marine ecosystems at the Tropic Seamount in the High Seas (NE Atlantic)
16:00	Ellen Kenchington	Biodiversity of epibenthic megafauna associated with sponge grounds formed by the glass sponge <i>Vazella pourtalesi</i> in Emerald Basin, Nova Scotia, Canada
16:15	Francisca C Carvalho	Rock sponges from the deep North Atlantic: diversity, distribution and evolution
16:30	Martina Milanese	Restoring Biodiversity in the Mediterranean Coralligenous: The MERCES Project

**Theme: Big vs smart data in ocean observation: Making the most of what's available**

Session Moderator: Mathieu Cusson

Room: 524C

15:30	Nicolas Bailly	FishBase, SeaLifeBase, WoRMS in a cooperative framework: Towards an integrated network of marine biodiversity information systems for people and environment
15:45	Filippo Ferrario	Adding the “where” to the “who and what”. Considering the seascape can help the study of biodiversity and ecosystem functioning.
16:00	Lauren V. Weatherdon	Tracking shifting baselines on known marine and coastal habitat extents globally
16:15	Samuel Bosch	Fit for purpose? Identifying and resolving quality issues with marine biodiversity datasets in R
16:30	Miriam Brandt	Metabarcoding on the deep seafloor: Optimizing multigene approaches and sampling methods for large scale biodiversity assessments.
16:45	Adriana E. Radulovici	Integrating databases for molecular marine biodiversity assessments

**SUNDAY, MAY 13 – 17:00-19:00**

**Welcome Reception**

**Poster Session, presented by Sentinelle Nord/Sentinel North and Polar Knowledge Canada**  
(see pages 58-59)

Room: 517CD (Exhibition)

**MONDAY, MAY 14 – 8:30-10:00**

**Plenary Session**

Room: 517A

8:30	Linwood Pendleton Keynote Speaker, featuring Robert Hodge (pianist), Anna Zivian (scientist-poet- conservationist)	Rethinking marine conservation science in three acts
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**MONDAY, MAY 14 – 10:00-10:30**

**Coffee Break**

**(Exhibition, Posters)**

Room: 517CD

**MONDAY, MAY 14 – 10:30-12:00**

**Theme: Ecologically & biologically significant areas**

Session Moderator: Peter Lawton

Room: 518A

10:30	Nadine Wells	Experiences in identifying, describing and modifying Ecologically and Biologically Significant Areas in Canada
10:45	Jose H Muelbert	Characterizing ecologically significant areas to evaluate marine conservation efforts in the South Brazilian Continental Shelf
11:00	Cherisse Du Preez	Working towards Canada's largest MPA: Assessing the diverse EBSAs within the Pacific offshore
11:15	Travis Aten	Gaps in sectoral cooperation to protect high seas biodiversity: Case Studies from the Northwest Atlantic
11:30	Paul Somerfield	Solutions for ecosystem-level protection of oceans under climate change

**Theme: Biodiversity discovery and prediction - Polar Frontiers, presented by Arctic Science Journal**

Session Moderator: Evan Edinger

Room: 518B

10:30	Valérie Cypihot	Evaluating structure and functions of benthic coastal habitats in Churchill, Manitoba
10:45	Marie Pierrejean	Biogenic structures in the Arctic: An ecosystem functioning hotspot?
11:00	Katarzyna Grzelak	The impact of sea ice regime on meiobenthic structure and function north of Svalbard
11:15	Jacqueline Grebmeier	Time series trends in benthic macrofaunal populations and coincident environmental drivers in the Pacific Arctic

## MONDAY, MAY 14 – 10:30-12:00 (CONTINUED)

### **Theme: Biodiversity discovery and prediction - Deep-sea Frontiers**

Session Moderator: Angelika Brandt

Room: 518C

10:30	Hronn Egilsdottir	Comparing diversity of bivalves and gastropods north and south of the Greenland-Iceland-Faroe ridge
10:45	Torben Riehl	Abyssal biodiversity – new data and ideas about the evolutionary origins
11:00	Lidia Lins	Do physical barriers hamper dispersal in the deep sea?
11:15	Hanieh Saeedi	Latitudinal and bathymetrical species richness gradients and its driving factors in the NW Pacific

### **Theme: Climate change impacts on marine biodiversity**

Session Moderator: Piero Calosi

Room: 519B

10:30	Antoine Dispas	Non-indigenous species in Canadian Arctic ports: Establishing baseline biodiversity of mesozooplankton in view of increased shipping and global warming
10:45	Marta Ronowicz	Varying feedback of different taxa to warming fjord
11:00	Dan Smale	Rapid climate-driven changes in the structure and functioning of global kelp forest ecosystems
11:15	Pippa Moore	Climate driven shifts in habitat-forming kelp abundances may result in disruption of an important facilitation cascade, impacting local biodiversity patterns

### **Theme: Cumulative impacts of human activities**

Session Moderator: Judi Hewitt

Room: 524A

10:30	Judi Hewitt	Monitoring to detect tipping points in marine biodiversity
10:45	Sarah Dudas	Do anthropogenically modified habitats support the same biodiversity?
11:00	Luiz Fernando Loureiro Fernandes	Impact on the copepod community structure in a coastal region after a mining dam disaster in the Southwestern Atlantic Ocean
11:15	Dibyendu Rakshit	An approach to analyzing spatial patterns of planktonic protist (tintinnid) in marine ecosystems: Environmental drivers and indicator of ecosystem changes

### **Theme: Conservation strategies to protect species to ecosystems**

Session Moderator: Kristina Gjerde

Room: 524B

10:30	Georgina O'Farrill	Supporting sustainable trade in sharks in North America
10:45	Lance Morgan	The Global Ocean Refuge System (GLORES) to improve MPA quality and safeguard marine biodiversity
11:00	Linda Nowlan	Linking science and law: Minimum protection standards for Canada's marine protected areas
11:15	Ross Jameson	Establishing Marine Protected Areas To Protect Canada's Biodiversity: Successes, Challenges and Recommendations
11:30	Bill Wareham	Marine biodiversity conservation on Canada's Pacific Coast - what's working, what's needed in a changing ocean
11:45	Stephen Ban	From paper parks to real parks: Challenges in marine park governance

**MONDAY, MAY 14 – 10:30-12:00 (CONTINUED)**

**Theme: Ecological insights from beta-diversity**

Session Moderator: Pierre Legendre

Room: 524C

10:30	Lisette Victorero	Species replacement dominates megabenthos beta diversity in a remote seamount setting
10:45	Clifton Nunnally	Patch dynamics of beta diversity across multiple spatial scales in the deep Gulf of Mexico macrofauna communities
11:00	Neil Maginnis	Dispersal limitation and environment structure coral assemblages
11:15	Tim Spaanheden Dencker	Beta-diversity along Pacific and Atlantic latitudinal gradients – using traits and taxonomy to detect community heterogeneity and ecotones
11:30	Noémie Leduc	Assessing the efficiency of eDNA metabarcoding for documenting patterns of metazoan communities in the Arctic.
11:45	Ricardo Scrosati	Ecological determinants of intertidal recruitment and metacommunity structure on the Atlantic coast of Nova Scotia

**MONDAY, MAY 14 – 12:00-13:30**

**Lunch Break**

**(Exhibition, Posters)**

Room: 517CD

**Mentoring Program Panel Discussions and Presentations\***

Room: 517CD

12:00-12:30: Theme 1

12:30-13:00: Theme 2

13:00-13:30: Theme 3

\* Participation in panel discussions is reserved for Mentoring Program members; however, all conference delegates are welcome to attend.

**MONDAY, MAY 14 – 13:30-15:00**

**Theme: Ecologically & biologically significant areas**

Session Moderator: Peter Lawton

Room: 518A

13:30	Gavin Rishworth	Precambrian relics along South Africa’s coastline: Exploring the unique biota within living peritidal stromatolites
13:45	Stephanie Butera	Population dynamic between vulnerable coastal jaguars (panthera onca) and endangered green sea turtles (chelonina mydas) in Tortuguero National Park, Costa Rica.
14:00	Emily Rubidge	Mapping biodiversity hotspots for marine conservation planning in British Columbia, Canada
14:15	Irawan Asaad	Geographic prioritization of marine biodiversity conservation in the Coral Triangle

## MONDAY, MAY 14 – 13:30-15:00 (CONTINUED)

### **Theme: Sustained coastal and ocean observing systems**

Session Moderators: Patricia Miloslavich or Eduardo Klein

Room: 518C

13:30	Frank Muller-Karger	Implementation of biological Essential Ocean Variables in a globally coordinated, multidisciplinary observing system
13:45	Paul G. Thomson	Trends in the abundance of picophytoplankton due to changes in boundary currents and marine heat waves in Australian coastal waters from IMOS National Reference Stations
14:00	Stace Beaulieu	Developing a Marine Biodiversity Virtual Laboratory to address challenges in integrating and analyzing data for plankton diversity
14:15	Frederick Whoriskey	Use of electronic telemetry for the conservation of aquatic organisms: Examples from the Ocean Tracking Network
14:30	Jose Muelbert	Long-term changes in diversity in a subtropical estuary in southern Brazil.
14:45	Rick Stuart-Smith	Extending capacity to monitor the world's shallow marine biodiversity without sacrificing detail: Targeted participation citizen science

### **Theme: Biodiversity indicators**

Session Moderator: Henning von Nordheim

Room: 519A

13:30	Emma John	Sensitivity of global primary productivity to climate variability
13:45	Lucie Labbouz	Improving long-term coral reef monitoring in the Wider Caribbean region: Global Coral Reef Monitoring Network - Caribbean accomplishments
14:00	Oscar Bos	Biodiversity assessment of the greater North Sea
14:15	Alberto Serrano	Determining benthic habitats condition and impacts using a "typical" species composition indicator
14:30	Henrik Gislason	Macrobenthos biodiversity indicators and bottom trawling - individual density and species density revisited

### **Theme: Climate change impacts on marine biodiversity**

Session Moderator: Rémi Daigle

Room: 519B

13:30	Lisa Mertens	From a natural laboratory: Comparing genetic patterns and thermal tolerance characterises marine species response to climate change
13:45	Ridouan Bani	Marine Metapopulations: traits-dependent effects of heterogeneity in dispersal
14:00	Pierre Legendre	Temporal beta diversity partitioning
14:15	Gloria Massamba N'Siala	Rare vs common species' thermal niche: A test for the fate of marine benthic species in a warming ocean

## MONDAY, MAY 14 – 13:30-15:00 (CONTINUED)

### Theme: Cumulative impacts of human activities

Session Moderator: Joanne Ellis

Room: 524A

13:30	Stephanie Cimon	Site dependent effects of fragmentation and complexity on epifaunal communities within eelgrass beds
13:45	Francesca Rossi	Habitat degradation of an eelgrass bed variably affects epifaunal biodiversity
14:00	Lauren Yeager	Humans drive functional homogenization and weaken environmental control of reef fish faunas
14:15	Patricia Cardoso	Interactive effects of increased temperature, pCO <sub>2</sub> and synthetic progestin levonorgestrel on the fitness and breeding of the amphipod <i>Gammarus locusta</i>

### Theme: Conservation strategies to protect species to ecosystems

Session Moderator: Kit Kovacs

Room: 524B

13:30	Marco Andrello	Global mismatch between fishing dependency and larval supply from marine reserves
13:45	Sarah Friesen	A practical approach to incorporating potential connectivity of adult movement into marine protected area design with limited data
14:00	Arieanna Balbar	The use of connectivity in the design of networks of marine protected areas
14:15	Tianna Peller	Integrating ecosystem connectivity into the design of marine protected area networks
14:30	John Cristiani	Prioritizing seagrass meadows for biodiversity conservation based on landscape connectivity
14:45	Nicholas Jeffery	Integrating patterns of gene flow and least-cost pathways to evaluate corridors of connectivity in five marine species in the Northwest Atlantic

### Theme: Analytical approaches in marine biodiversity science

Session Moderator: Pierre Pepin

Room: 524C

13:30	Edlin Guerra-Castro	An alternative protocol to estimate sample size at different spatial scales in studies of ecological communities
13:45	Aaron Hartmann	Metabolomic diversity and diversification on tropical coral reefs
14:00	Shaun Wilkinson	Taxonomic identification of environmental DNA with informatic sequence classification trees
14:15	Alun Jones	Unstructured data for marine biodiversity monitoring: Temporal trends in the genus <i>Conus</i> from occupancy modelling

## MONDAY, MAY 14 – 15:00-15:30

### Coffee Break (Exhibition, Posters)

Room: 517CD

## MONDAY, MAY 14 – 15:30-17:00

### **Theme: Ecologically & biologically significant areas**

Session Moderator: Paul Somerfield

Room: 518A

15:30	Denisse Fierro Arcos	Fish assemblages in Galapagos mangroves: Comparing composition between bioregions
15:45	Callum Mireault	Environmental characterization of two biogenic habitat species in the coastal waters of New Brunswick, Canada
16:00	Lars-Henrik Larsen	Safeguarding marine biodiversity in Norway: Use of citizen science and scientific mapping in a marine sanctuary candidate area
16:15	Stephanie K. Archer	Improving monitoring by understanding the patterns and drivers of biodiversity on Canada's Glass Sponge Reefs
16:30	Joanna Strzelecki	Kimberley seabed biodiversity

### **Theme: Sustained coastal and ocean observing systems**

Session Moderators: Patricia Miloslavich or Eduardo Klein

Room: 518C

15:30	Nuno Simoes	BDMY Group: 10 years inventorying marine species diversity in remote coral reefs of the Campeche Bank, Yucatán, Gulf of Mexico
15:45	Lélis Carlos-Júnior	Assessing health status of corals at a tropical marginal reef site through bleaching and decadal change in population parameters
16:00	Hilmar Hinz	Sustaining long-term observations using citizen science to detect coral reef community changes in remote areas
16:15	Patricia Miloslavich	Roadmap for strengthening and coordinating global coral reef monitoring
16:30	Enrique Montes	Pole-to-Pole Marine Biodiversity Observation Network (MBON) of the Americas: Building a community
16:45	Sky Bristol	Integrating long term global biological datasets to assess status and trends in marine biodiversity

### **Theme: Biodiversity indicators**

Session Moderator: Henning von Nordheim

Room: 519A

15:30	Ewa Siwicka	How good are species at multitasking if we disturb them? Multifunctionality and ecosystem services in the benthic ecosystems of New Zealand.
15:45	Loubna Boutahar	The use of benthic macroinvertebrates to evaluate the environmental quality of Oualidia lagoon, Morocco
16:00	P. Laxmilatha	Integrative taxonomy reveals that all the phenotype variations are not underpinned by genome in Conidae (Gastropoda, Mollusca)
16:15	Natleen Govender	Genetic diversity of the mysid <i>Mesopodopsis africana</i> along the KwaZulu-Natal coast, South Africa using microsatellite markers
16:30	Andy Davies	Unravelling the 'virtual' ecology of the last great wilderness on earth
16:45	Lyne Morissette	Assessing the trophic role of sharks in models and marine ecosystems

## MONDAY, MAY 14 – 15:30-17:00 (CONTINUED)

### **Theme: Approaches to integrated assessments for fisheries & ecosystem**

Session Moderator: Nils Hammer

Room: 524A

15:30	Valerie Allain	Ecosystem approach to monitoring pelagic fisheries in the western and central Pacific Ocean
15:45	Charlotte Moritz	Signatures of the collapse and incipient recovery of an overexploited marine ecosystem.
16:00	Nabeel Alikunhi	Trap fisheries in Saudi Arabian Red Sea: Stock, bycatch and ecosystem impact assessments
16:15	Maria Lourdes Palomares	Building bridges between biodiversity information systems and ecosystem simulation models
16:30	Jessika Woroniak	Trends in Global Fishing Effort (1950-2014): The impact of small-scale fisheries

### **Theme: Conservation strategies to protect species to ecosystems**

Session Moderator: Ellen Kenchington

Room: 524B

15:30	Vanessa Arranz-Martinez	Connectivity among marine communities: A multi-species approach using New Zealand coastal species
15:45	Marilia Bueno	Colonization of new habitats is affected by age and lifestyle in amphipods
16:00	Déborah Benkort	Modelled emergent productivity areas on dominant krill species depending on their physiology and swimming behaviour in Gulf of St. Lawrence
16:15	Beatrice Proudfoot	Beyond representativity: Integrating benthoscape structure, connectivity and representativity into marine protected area design
16:30	Myriam Lacharite	Monitoring biodiversity in offshore marine protected areas: A habitat mapping approach
16:45	Sabine Jessen	Protecting Canada's Sea of Glass: Using science and policy to protect Canada's ancient and unique glass sponge reefs

### **Theme: Reconciling observations in space & time**

Session Moderators: Elise Lacoste and/or Anaïs Lacousière-Roussel

Room: 524C

15:30	Aurélie Foveau	10 years of monitoring in the context of the EU Water Framework Directive (English Channel and Atlantic water bodies)
15:45	Jorge Cortés	BioMar-ACG: A successful partnership to explore marine biodiversity
16:00	Matthew Whalen	The 2017 Hakai-MarineGEO BioBlitz: A new gold standard approach to inventorying and understanding marine biodiversity
16:15	Donna Gibbs	Cataloguing and monitoring changes in Arctic marine biodiversity through scuba diving

## MONDAY, MAY 14 – 15:30-17:30

### Theme: State of the Arctic Marine Biodiversity Report

Session Moderators: Sara Logan

Room: 518B

15:30	Sara Logan	Introduction to the State of the Arctic Marine Biodiversity Report (SAMBR) and summary findings
15:45	Haakon Hop	Sea ice biota: Excerpts from the State of the Arctic Marine Biodiversity Report by the Sea Ice Biota Expert Network/CBMP
16:00	Russell R. Hopcroft	Plankton Expert Network: Findings and recommendations from the Circumpolar Biodiversity Monitoring Program's State of the Arctic Marine Biodiversity Report
16:15	Virginie Roy	Benthos Expert Network: Findings and recommendations from the Circumpolar Biodiversity Monitoring Program's State of the Arctic Marine Biodiversity Report (SAMBR)
16:30	Kevin J. Hedges	Fishes Expert Network: Findings and recommendations from the Circumpolar Biodiversity Monitoring Program's State of the Arctic Marine Biodiversity Report
16:45	Grant Gilchrist	Seabird Expert Network (CBird): Findings and recommendations from the Circumpolar Biodiversity Monitoring Program's State of the Arctic Marine Biodiversity Report
17:00	Kit M. Kovacs	Circumpolar Biodiversity Monitoring Program's State of the Arctic Marine Biodiversity Report - Findings and recommendations regarding marine mammals

### Theme: Deep-Ocean Stewardship Initiative

Session Moderator: Elva Escobar

Room: 519B

15:30	Torsten Thiele	Innovative finance to deliver adequate marine biodiversity knowledge for high seas and deep ocean governance beyond national jurisdiction
15:45	Steven Auscavitch	What is being protected in the Phoenix Islands Protected Area? Conserving deep-sea biodiversity, habitat, and cultural resources in the remote Pacific Ocean
16:00	Kristina Gjerde	Mining the deep sea: The multiple roles of science, economics and international law
16:15	Amber Cobley	Deep-sea mining: Developments in regulations and environmental management issues in the Area.
16:30	Elisabetta Menini	Marine Genetic Resources in Area Beyond National Jurisdiction (ABNJ): Policy review and analysis of area-based tools in relation to Bioprospecting
16:45	Sabine Zajderman	Marine genetic resources, the Nagoya Protocol and the Law of the Sea

## MONDAY, MAY 14 – 17:00-19:00

### Poster Session, presented by Sentinelle Nord/Sentinel North and Polar Knowledge Canada

(see pages 59-61)

Room: 517CD (Exhibition)

**TUESDAY, MAY 15 – 8:30-10:00**

**Plenary Session**

Room: 517A

8:30	Emma Johnston Keynote Speaker	Time, Time, Time: what has become of you? How humans are speeding up the ecology of nearshore systems and what it means for biodiversity
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**TUESDAY, MAY 15 – 8:30-10:00**

**Coffee Break**

**(Exhibition, Posters)**

Room: 517CD

**TUESDAY, MAY 15 – 10:30-12:00**

**Theme: Biodiversity & ecosystem function in the real world**

Session Moderator: Lyne Morrisette

Room: 518B

10:30	Alf Norkko	Quantifying the role of benthic fauna for coastal nutrient cycling: a cross-system comparison of real-world B-EF relationships
10:45	J. Emmett Duffy	Ocean Bitemap: A global, collaborative analysis linking biodiversity and marine predation intensity using standardized methods
11:00	Aurore Maureaud	Understanding the existence and shape of the biodiversity-ecosystem functioning using large-scale observational data across marine ecosystems
11:15	Jonathan Lefcheck	High species richness enhances cover of a critical coastal habitat: Insight and mechanisms from 30 years of monitoring in Chesapeake Bay
11:30	Marta Gluchowska	Taxonomical and functional diversity in zooplankton communities from boreal to arctic waters

**Theme: Ecological traits & ecosystem function**

Session Moderator: Jasmin Godbold

Room: 518C

10:30	Rebecca Gladstone-Gallagher	Linking functional redundancy to spatio-temporal variability in communities: Multiple scales of biological organisation confer resilience
10:45	Aurélien Boyé	Drivers of polychaetes functional $\alpha$ - and $\beta$ -diversity at regional scale: Disentangling the role of biogenic habitats and environmental variability
11:00	Rachel Hale	Role of spatial and temporal heterogeneity in moderating temperate shelf sea carbon and macronutrient stocks
11:15	Lise Bacouillard	Long-term changes in the species and functional diversity of a fine sand macrobenthic community in the English Channel
11:30	Lauren Sutton	A comparison in benthic functional diversity of two Alaskan Arctic shelf systems

**TUESDAY, MAY 15 – 10:30-12:00 (CONTINUED)**

**Theme: Invasions & the Anthropocene 'natural'**

Session Moderator: Gil Rilov

Room: 519A

10:30	Jean-Philippe Pezy	Non-native species: A biodiversity increase
10:45	Jesica Goldsmit	What and where? Identifying high-risk aquatic invasive species and hotspots of suitable habitat in the Arctic
11:00	Anthony Sardain	A changing world: The emerging global shipping network, climate change, and the future of biological invasions
11:15	Paul Czechowski	Advancing global monitoring of ship borne invasive species through streamlined metabarcoding

**Theme: Plastic marine debris in the Anthropocene**

Session Moderator: Chris Cameron

Room: 519B

10:30	Julian von Borries	A novel, highly efficient method for the separation of plastic particles in sediments of aquatic environments
10:45	Lauren M. Howell	Are Arctic zooplankton ingesting microplastics?
11:00	Xiaoxia Sun	Retention of microplastics in zooplankton from the East China Sea
11:15	Kevin Mindiola	Spatial distribution, volume and abundance of small plastic debris on inter and sub-tidal sandy environments of Galapagos Islands (Ecuador)

**Theme: High tech systems for marine conservation strategies**

Session Moderator: Christos Arvanitidis

Room: 524C

10:30	Rachel Przeslawski	Applying geoscience to biodiversity monitoring: Case studies from an Australian marine park
10:45	Francis Juanes	The use of visual and acoustic sensors for early detection of invasions
11:00	Olivia Caretti	Using passive acoustics for long-term, continuous measurements of fish biodiversity in estuarine systems
11:15	Kayelyn Simmons	Evaluating the efficacy of Florida Keys management zones: Integrating underwater soundscapes & photogrammetric surveys to characterize reef fish biodiversity and habitat complexity
11:30	John Moloney	Mitigation strategies for marine mammals during Dublin Port's Alexandria Basin Redevelopment Project, using a novel real-time acoustic monitoring system
11:45	Ulrike Pfreundt	How to harness Blockchain technology for marine conservation

**TUESDAY, MAY 15 – 12:00-13:30**

**Lunch Break**

**(Exhibition, Posters)**

Room: 517CD

**TUESDAY, MAY 15 – 12:00-13:30 (CONTINUED)**

**Mentoring Program Panel Discussions and Presentations\***

Room: 517CD

12:00-12:30: Theme 4

12:30-13:00: Theme 5

13:00-13:30: Theme 6

\* Participation in panel discussions is reserved for Mentoring Program members; however, all conference delegates are welcome to attend.

**TUESDAY, MAY 15 – 13:30-15:00**

**Theme: Biodiversity restoration strategies for conservation**

Session Moderator: Cristina Gambi

Room: 518A

13:30	Cristina Gambi	Restoration actions in marine ecosystems: a global analysis
13:45	J. Anne Shaffer	Nearshore functional diversity shifts from large-scale dam removals
14:00	Emily Higgins	Colonization of sessile benthic invertebrates on tropical artificial reefs
14:15	Teri O'Meara	Mussels versus mud: Using mussels to restore ecosystem function across turbidity gradients
14:30	Alice E Lown	Seasonal and density dependent associations between the European flat oyster and estuarine biodiversity in the Southern North sea
14:45	Henning von Nordheim	Native oyster restoration in the German Bight, North Sea: Oyster beds and reefs and its biodiversity

**Theme: Biodiversity & ecosystem function in the real world**

Session Moderator: Adriana Radulovici

Room: 518B

13:30	Peter Schmidmayer	The role of habitat-forming species on intertidal communities across a gradient of multiple environmental stressors
13:45	Johanna Gammal	Environmental context mediates biodiversity-ecosystem functioning relationships in coastal soft-sediment habitats
14:00	Tarn Drylie	Does calcium carbonate alter the functional resilience of coastal sediments to eutrophication-induced acidification?
14:15	Rénauld Belley	Roles of biodiversity and environment in seafloor ecosystem functioning
14:30	Conrad Pilditch	Macrofaunal functional diversity provides resilience to nutrient enrichment in coastal sediments

## TUESDAY, MAY 15 – 13:30-15:00 (CONTINUED)

### Theme: Ecological traits & ecosystem function

Session Moderator: Jasmin Godbold

Room: 518C

13:30	Renate Degen	The Arctic Traits Database
13:45	Olivier Gauthier	Biological traits for benthic community ecology: Impact of trait definition and coding.
14:00	Thomas Trott	Traits matter: When rarity means more than abundance to functional diversity
14:15	Esther Beukhof	Using ecological traits of marine fish to detect responses to environmental change: Which traits to choose?
14:30	Maria Włodarska-Kowalczyk	Is trophic diversity decoupled from taxonomic and functional diversity? Isotope niche traits in Arctic benthic consumers

### Theme: Invasions & the Anthropocene 'natural'

Session Moderator: Gil Rilov

Room: 519A

13:30	Heather Hawk	Beta-diversity and the spread of invasive species: Determining relevant spatial scales for measuring the impact of harbors on nearshore biodiversity
13:45	Tasman Crowe	Optimising regimes of multiple stressors to control invasive tunicates <i>Didemnum vexillum</i>
14:00	Jan Steger	Lessepsian invaders reshape soft substrate assemblages on the Israeli Mediterranean shelf
14:15	Paolo G. Albano	Historical ecology of the invasion of the bivalve <i>Anadara transversa</i> in the northern Adriatic Sea

### Theme: Plastic marine debris in the Anthropocene

Session Moderator: Chris Cameron

Room: 519B

13:30	Ruth Barnich	Microplastic adhering to marine invertebrates - First observations and discussion of potential effects
13:45	Suchana Chavanich	Plastic marine debris in the upper Gulf of Thailand: Impact and management
14:00	Jessica Merrett	Are beach amphipods “hopping mad” about butts on beaches in Sydney?
14:15	Kaisar Akhir	Sustainable Nusantara: Managing Marine Plastic Debris for Sustainable Tourism in the ‘New Bali’ of Indonesia

## TUESDAY, MAY 15 – 13:30-15:00 (CONTINUED)

### **Theme: Approaches to integrated assessments for fisheries & ecosystem**

Session Moderator: Pierre Pepin

Room: 524A

13:30	Myriam Khalfallah	Making the most of what is available in data-poor countries: Catch Reconstruction, biodiversity and impacts of anthropogenic activities
13:45	Frank Muller-Karger	Patterns and drivers of Demersal Reef Fish biodiversity in the Florida Keys National Marine Sanctuary from 1999-2016
14:00	Song Sun	Ecosystem based fishery management
14:15	Nicolas Le Corre	Assessing connectivity patterns within Newfoundland and Labrador shrimp population
14:30	Paul Somerfield	Data, models and ecosystem services: The Marine Ecosystems Research Programme

### **Theme: Conservation strategies to protect species to ecosystems**

Session Moderator: Mark Costello

Room: 524B

13:30	Michael Melnychuk	Worldwide trends in abundance of fished species relative to fishery management objectives
13:45	Susanna Fuller	Building the SafetyNet: Recovering Atlantic Canada's fisheries in the context of climate change and an ecosystem approach
14:00	George Shillinger	Development of a dynamic management tool to aid in the bycatch reduction and recovery of the critically endangered Eastern Pacific leatherback turtle
14:15	Piero Calosi	Assisted Evolution as a tool to promote conservation in a changing ocean
14:30	Elena Couce	Benthic diversity in the North Sea: evidence for shifting baselines?

### **Theme: A tribute to Dick Haedrich's lifetime contributions on ocean life, biodiversity and conservation (1)**

Session Moderators: Paul Snelgrove and Evan Edinger (convenors)

Room: 524C

13:30	Haedrich Family	A Greeting from the Haedrich Family
13:45	Verena Tunnicliffe	Predicting biodiversity hotspots at hydrothermal vents in the context of mining
14:00	Gilbert Rowe	Productivity controls macrofauna diversity in the deep northern Gulf of Mexico
14:15	Evan Edinger	Biodiversity, biogeography and conservation of cold-water corals and their associated biota in waters of Newfoundland, Labrador, and the Eastern Canadian Arctic.
14:30	Mathieu Cusson	Canada's Three Oceans of Seafloor Biodiversity: patterns, hotspots, and potential drivers
14:45	Krista Baker	Cephalopod diversity and abundance off Newfoundland and Labrador: Changing patterns and future research priorities

**TUESDAY, MAY 15 – 15:00-15:30**

**Coffee Break  
(Exhibition, Posters)**  
Room: 517CD

**TUESDAY, MAY 15 – 15:30-17:00**

**Theme: Biodiversity restoration strategies for conservation**  
Session Moderator: Cristina Gambi  
Room: 518A

15:30	Wing Yan Chan	Enhancing coral climate resilience via interspecific hybridization: fitness, microbial community composition and gene regulation of hybrid versus purebred acroporid corals
15:45	Minlee Yap	Coral reef restoration using sexual reproduction in North Sulawesi, Indonesia
16:00	Mark Botton	Horseshoe crabs as a flagship species for the conservation and restoration of estuarine, beach and mangrove Habitats
16:15	Kathleen MacGregor	Kelp bed restoration in the Gulf of Saint Lawrence: No easy task!

**Theme: Biodiversity & ecosystem function in the real world**  
Session Moderator: Lyne Morrisette  
Room: 518B

15:30	Charlotte Angove	Single versus joint effects of aquatic plants and filamentous drift algae on macroinvertebrate communities
15:45	Douglas Rasher	Biodiversity enhances herbivory on Caribbean coral reefs through multiple mechanisms
16:00	Jean-Claude Dauvin	High diversified benthic habitats in a tidal Mediterranean sub-tropical environment: the case of the Gulf of Gabès (Tunisia)
16:15	Henrike Andresen	Relating productivity patterns to functional diversity of North Sea macrofauna – knowledge increase by functional focus?
16:30	Kazuaki Tadokoro	Biodiversity and hot spot of diatom (bacillariophyceae) community in the western North Pacific Ocean

**Theme: Ecological traits & ecosystem function**  
Session Moderator: Ellen Kenchington  
Room: 518C

15:30	Clara F. Rodrigues	Active or not? What microbial assemblages say about pockmarks located at Estremadura Spur (NE Atlantic)
15:45	Phillip Turner	Contribution of rare taxa to the functional diversity of Manus Basin hydrothermal vents
16:00	Camilla Cassidy	Community context shapes intraspecific trait expression, variation and ecosystem function
16:15	Gert Van Hoey	Diversity and biological trait analysis of soft-bottom macrobenthic communities in the Belgian part of the North Sea

## TUESDAY, MAY 15 – 15:30-17:00 (CONTINUED)

### **Theme: Invasions & the Anthropocene 'natural'**

Session Moderator: Chris McKindsey

Room: 519A

15:30	Sarah Joy Bittick	Mechanisms of increased biomass accumulation and community impacts of a brown macroalga on a South Pacific coral reef
15:45	Isabelle M Cote	The sound of silence: Dual demographic impact of invasive lionfish on native Caribbean reef fishes
16:00	Hawis Madduppa	Revealing the outbreak of invasive species of sponge and ascidian on Indonesian coral reefs using genetic approach
16:15	Jorge Santamaría	A little can be enough. Native fish from the Western Mediterranean Sea can act as a control agent for the invasive alga <i>Caulerpa cylindracea</i>

### **Theme: Approaches to integrated assessments for fisheries & ecosystem**

Session Moderator: Pierre Pepin

Room: 524A

15:30	Ciaran McLaverty	The effect of trawling intensity on taxonomic and functional diversity in benthic communities: Does size matter?
15:45	Gert van Hoey	Integrative, regional assessment of bottom trawling impact on benthic habitats in the east Atlantic.
16:00	Élise Lacoste	Linking benthic diversity and ecosystem functioning in sediment enriched by different levels of mussel biodeposition
16:15	Hilmar Hinz	Benthic vulnerability to trawling and its consequences for ecosystem functions: A traits based approach
16:30	Aurore Raoux	Ecological network analysis with benthic indices to assess ecological and functional status of soft-bottom subtidal habitat in the English Channel

### **Theme: Conservation strategies to protect species to ecosystems**

Session Moderator: Mark Costello

Room: 524B

15:30	Lyne Morissette	The Great Whales Journey Project: Ocean conservation through whale research and education, from North to South
15:45	Dinusha Rasanjalee Menike Jayathilake	Mapping marine biomes of the world
16:00	Sarah de Mendonça	Incorporating spatial analyses into conservation and monitoring of deep-sea megafauna in Marine Protected Areas (MPAs)
16:15	Yidan Xu	Saving Endangered Bluefin Tuna from Extinction: The Efforts of CBCGDF
16:30	Danielle Giroux	Potential Benefits of Marine Protected Areas for Fisheries in Temperate Climate under Climate Change: The Case of Magdalen Islands, Québec
16:45	Nadia Ménard	Challenges and opportunities for cetacean habitat conservation in a marine protected area: lessons learned from the Saguenay–St. Lawrence Marine Park

## TUESDAY, MAY 15 – 15:30-17:30

**Theme: The Global Ocean Biodiversity Initiative**

Session Moderator: David Johnson

Room: 519B

15:30	David Johnson	The Global Ocean Biodiversity Initiative: Celebrating a decade of science for marine biodiversity conservation
15:45	Jihyun Lee	The Global Ocean Biodiversity Initiative
16:00	Henning von Nordheim	The Global Ocean Biodiversity Initiative
16:15	Lyle Glowka	The Global Ocean Biodiversity Initiative
16:30	Kristina Gjerde	The Global Ocean Biodiversity Initiative
16:45	Giuseppe Notarbartolo di Sciarra	Supporting marine conservation through the identification of Important Marine Mammal Areas (IMMAs).
17:00	Daniel Dunn	Towards a system to describe Migratory Connectivity in the Ocean (MiCO)
17:15	Cindy Van Dover	Connectivity and the design of networks of no-mine areas on the Mid-Atlantic Ridge

**Theme: A tribute to Dick Haedrich’s lifetime contributions on ocean life, biodiversity and conservation (2)**

Session Moderators: Paul Snelgrove and Evan Edinger (convenors)

Room: 524C

15:30	Patricia Gallagher	Linking science with sound policy and outreach for protection of marine biodiversity and conservation
15:45	Peter Lawton	An Odyssey through Canada’s first Biodiversity Discovery Corridor
16:00	Paul Snelgrove	Sustaining Marine Biodiversity in Canada and Globally: A Tribute to Dick Haedrich
16:15	Haedrich Family	Recollections by Colleagues, Family and Friends
16:30	Haedrich Family	Recollections by Colleagues, Family and Friends
16:45	Haedrich Family	Recollections by Colleagues, Family and Friends

## TUESDAY, MAY 15 – 17:00-18:00

**Poster Session, presented by Sentinelle Nord/Sentinel North and Polar Knowledge Canada (see pages 61-62)**

Room: 517CD (Exhibition)

## TUESDAY, MAY 15 – 18:30-22:00

**Carlo Heip Award Ceremony, presented by PeerJ**

Location: Perspective room, Centre des Sciences

18:30-20:00 Food trucks open

19:30-22:00 Ceremony, presentation, discussion

**WEDNESDAY, MAY 16 – 8:30-10:00**

**Plenary Session**

Room: 517A

8:30	Amanda Bates Keynote Speaker	Three “grand” challenges for predicting marine biodiversity change in the Anthropocene era
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**WEDNESDAY, MAY 16 – 10:00-10:30**

**Coffee Break**

**(Exhibition, Posters)**

Room: 517CD

**WEDNESDAY, MAY 16 – 10:30-12:00**

**Theme: Transcending the boundary between science & users/management**

Session Moderator: Nils Hammer

Room: 518A

10:30	Hannah Carr	Developing an ecologically-coherent and well-managed Marine Protected Area (MPA) network: Reflections and lessons learned from the UK
10:45	Laura Robson	Managing human impacts across diverse marine environments
11:00	Rémi M.Daigle	Using the Ocean Health Index for evidence-based management decision-making in Atlantic Canada
11:15	Lisa Setterington Jessica Mitchell	Applying scientific decision-making in meeting Canada’s marine conservation targets
11:30	Chantal Vis	Challenges to establishing effective marine monitoring of large, multi-use marine protected areas: Parks Canada’s National Marine Conservation Areas

**Theme: Integrative frameworks: Biogeography, macroecology, richness, and endemism**

Session Moderator: Phil Archambault

Room: 518B

10:30	Kolja Beisiegel	Diversity patterns of rocky reef assemblages in the Baltic Sea: Interferences between natural and anthropogenic drivers
10:45	Alexis Catalán	Interhemispheric consistency of scale-dependent spatial variation in the structure of intertidal rocky-shore communities
11:00	Christine Stortini	Island biogeography of perturbed marine ecosystems: Evaluating the utility of species-area and species accumulation curves as indicators of ecological change
11:15	Molly Timmers	Cryptofauna coral reef diversity across spatial and environmental gradients in the tropical Pacific

## WEDNESDAY, MAY 16 – 10:30-12:00 (CONTINUED)

### **Theme: Ecological traits & ecosystem function**

Session Moderator: Isabelle Coté

Room: 518C

10:30	Jasmin Godbold	Impacts of biotic and abiotic context on functional trait expression and ecosystem functioning in the marine benthos
10:45	Dana Clark	Multiple stressor effects in marine ecosystems: Responses of estuarine species and functions under stress
11:00	Grete E. Dinesen	Bottom trawling effects on marine macrobenthos: Changes in ecological functioning interpreted by a biological multiple traits approach
11:15	Camilla Gustafsson	Exploring the link between functional traits and primary production in diverse aquatic plant communities
11:30	Bérangère Péquin	Bloom timing explains succession of protistan functional community structure
11:45	Leena Virta	Variation in diatom community and trait composition in relation to environmental factors, macrofauna and macrovegetation in the Northern Baltic Sea

### **Theme: Invasions & the Anthropocene 'natural'**

Session Moderator: Chris McKindsey

Room: 519A

10:30	Graham Epstein	Assessing the ecological impact and management feasibility of the global marine invader <i>Undaria pinnatifida</i> ('Wakame')
10:45	Rosana Rocha	Monitoring biofouling communities: A bioinvasion study in Paranaguá Bay – South Brazil
11:00	Andreu Blanco	Effects of Marine Protected Areas on the invasive success of six macroalgae species
11:15	Paula Tummon Flynn	A marine protected area under attack: The role of an invasive crab in the decline of a unique seaweed-mussel association
11:30	Ola Mohamed Nour	The invasive crab <i>Hemigrapsus takanoi</i> and its potential impact Baltic Sea mussel populations.

### **Theme: Ecosystem stability & biodiversity in the Anthropocene**

Session Moderator: Emmett Duffy

Room: 519B

10:30	Romain Frelat	Does the community size distribution influence the diversity-stability relationship? Empirical evidence from fish communities across European seas.
10:45	Gert Van Hoey	Long-term natural trends in soft-bottom fauna based on 30 years biodiversity monitoring
11:00	Jason Kin Chung Yau	Recovery of molluscan community after the implementation of trawling ban in Hong Kong
11:15	Ryan Gasbarro	Assemblage breakdown under increasing stress: Lessons from hypoxic events in a coastal fjord
11:30	Stephen Landers	Kinorhynch diversity on the Louisiana continental shelf

## WEDNESDAY, MAY 16 – 10:30-12:00 (CONTINUED)

### Theme: From local to regional scales: Benthic ecosystem connectivity and resilience

Session Moderator: Gesche Winkler

Room: 524A

10:30	Iván Rodil	Quantifying ecosystem functioning at the scale of seascapes: linking habitat-specific biodiversity with oxygen dynamics using Aquatic Eddy Covariance
10:45	Guillaume Bridier	Contribution of trophic multimarker approach to study benthic food webs: Example from a high-arctic fjord (Young Sound, NE Greenland).
11:00	Ludovic Pascal	Parasitism of ecosystem engineer: Subtle effects with broad consequences
11:15	Gesche Winkler	Genetic diversity and phylogeography of the species complex <i>Astarte</i> spp. in the Arctic

### Theme: Blue biotechnology & marine genetic resources

Session Moderator: Kim Juniper

Room: 524B

10:30	Mark Johnson	Marine biodiscovery, is it a 'team science' or something more?
10:45	Claire Laguionie Marchais	A statistical and modeling technique to predict coral species bioactive compound production
11:00	Giovanna Cristina Varese	Marine Fungi: The missing tile in the Ocean Biodiversity mosaic
11:15	Irum Perveen	Red coloured compound isolated from a marine microbial population: Synergistic production between one bacterial and one fungal specie
11:30	Anju Antony	Arasin: A novel antimicrobial peptide from marine organisms retain anticancer activity and antibacterial activity against multidrug-resistant <i>Staphylococcus aureus</i>

### Theme: Role of systematics in understanding changing oceans

Session Moderator: Jean-Marc Gagnon

Room: 524C

10:30	Gustav Paulay	Mare incognita - how little we know about coastal biodiversity and how to change that
10:45	Angelika Brandt	Faunistic deep-sea investigations in the Northwest Pacific have increased faunal knowledge at the edge of the changing Arctic Ocean
11:00	Davin H. E. Setiamarga	Data-bases building for DNA barcoding analyses of shelled marine gastropods in Nada coastal area in Wakayama: A preliminary report
11:15	Satoko Nakashima	Phylogeography of the Japanese turban snails <i>Lunella coreensis</i> from the intertidal coasts around Kyushu Island, Japan, using the COI gene sequences

## WEDNESDAY, MAY 16 – 12:00-13:30

### Lunch Break

(Exhibition, Posters)

Room: 517CD

## WEDNESDAY, MAY 16 – 12:00-13:30 (CONTINUED)

### Mentoring Program Panel Discussions and Presentations\*

Room: 517CD

12:30-13:00: Theme 8

\* Participation in panel discussions is reserved for Mentoring Program members; however, all conference delegates are welcome to attend.

## WEDNESDAY, MAY 16 – 13:30-15:00

### Theme: Transcending the boundary between science & users/management

Session Moderator: Nils Hammer

Room: 518A

13:30	Piers Dunstan	A marine values framework for East New Britain, PNG
13:45	Pierre Scemama	Expert consultation to prioritize issues in national ecosystem services assessment in France
14:00	Prideel Majiedt	Biodiversity science into policy: Lessons learnt from engagement with the South African Marine Mining Sector
14:15	Jessica Levy	Blending coral restoration science and practice: A novel approach to Acropora population enhancement.
14:30	Nichola Clark	Filling governance gaps: Institutional arrangements for a new, legally binding instrument on biodiversity in areas beyond national jurisdiction

### Theme: Integrative frameworks: Biogeography, macroecology, richness, and endemism

Session Moderator: Phil Archambault

Room: 518B

13:30	Mark Costello	Mapping marine species richness and endemism at global scales
13:45	Gail Ashton	Predation as a biological driver of the latitudinal diversity gradient
14:00	Brandon Genco	Biogeographical analysis of global deep-sea bottom habitats: Using an abiotic province scheme and metazoan occurrence databases
14:15	Skipton Woolley	Developing statistical model-based bioregions for the Indian Ocean
14:30	Radhouane Ben-Hamadou	Spatial and environmental drivers of biodiversity, ecology and biogeography of coral communities in SW of the Arabian/Persian Gulf

### Theme: Linking biodiversity, ecosystem function & ecosystem services

Session Moderator: Isabelle Coté

Room: 518C

13:30	Mari Joensuu	Interactions between biota and sediment resuspension in coastal areas of the Baltic Sea
13:45	Jenny Hillman	Habitat heterogeneity influences ecosystem processes in a marine intertidal soft-sediments
14:00	Emily Adamczyk	Identifying human impacts on eelgrass faunal biodiversity in British Columbia, Canada
14:15	David Cook	Classifying and valuing ecosystem services sourced from whales
14:30	Charlène Kermagoret	Exploring and comparing the effect of eutrophication on marine and coastal ecosystem service supply using state-and-transition models

## WEDNESDAY, MAY 16 – 13:30-15:00 (CONTINUED)

### **Theme: Marine biodiversity education & outreach**

Session Moderator: Anaïs Lacoursière-Roussel

Room: 519A

13:30	Anna Zivian	The role of subnational governments in addressing ocean health and diversity in a time of global change
13:45	Louise Hénault-Ethier	Lessons-learned from decades of marine biodiversity outreach in Canada: How to drive evidence based governmental decision making via public engagement
14:00	Ma Cecilia Colarina	Comparative analysis and regulatory gap analysis of laws on Marine Protected Area (MPA) and Marine Protected Area Network (MPAN) establishment and management
14:15	Simone S. Oigman-Pszczol	Ecorais Project: a socioenvironmental strategy for marine biodiversity conservation at a marginal coral reef site
14:30	Gonzalo Bravo	Dive into the ocean: Discovering the underwater world of your own city
14:45	Chantal Caron	Lost at sea... a contemporary dance tribute to ocean biodiversity

### **Theme: Ecosystem stability & biodiversity in the Anthropocene**

Session Moderator: Ivan Rodil

Room: 519B

13:30	Aislyn Keyes	Effects of mangrove deforestation on near-shore coral reefs
13:45	Edgardo Londoño-Cruz	Construction and destruction: The struggle to persist
14:00	Fernando Zapata	Fish diversity on coral habitats with contrasting architecture in the Tropical Eastern Pacific
14:15	Rebecca Milne	Changes in Passamaquoddy Bay zooplankton community structure over 50 years: Is biological diversity being protected?
14:30	Lyne Morissette	Risk and resilience in the great whales

### **Theme: From local to regional scales: Benthic ecosystem connectivity and resilience**

Session Moderator: Gesche Winkler

Room: 524A

13:30	Youenn Jézéquel	Acoustics as a tool in marine ecology to study the behavior of large temperate crustaceans
13:45	Inês Leal	Barnacle recruitment on contrasting thermal landscapes: Polar Greenland versus tropical Brazil
14:00	Justine Doré	Retrospective analysis of the ecological changes in the Laurentian ecosystem using sclerochronology
14:15	Pierre Poitevin	Sclerochronology in Saint-Pierre et Miquelon: From sub-hourly to multidecadal reconstruction
14:30	Ariane Aspirault	Impact of vessel noise on behavior of bivalve larvae and other zooplanktonic species

## WEDNESDAY, MAY 16 – 13:30-15:00 (CONTINUED)

### Theme: Blue biotechnology & marine genetic resources

Session Moderator: Kim Juniper

Room: 524B

13:30	Karen Mooney	Cultivation of <i>Saccharina latissima</i> for biogas production – is bigger always better?
13:45	Noer Kasanah	Diversity of Indonesian red seaweeds and their phycocolloid compounds
14:00	Lucie Beaulieu	Algal proteins: An opportunity for driving the development of new functional ingredients
14:15	Archana Chugh	Dual use of marine membrane active peptides : Drug delivery vehicles and therapeutics

### Theme: Integrative frameworks: Indicators & proxies for biodiversity

Session Moderator: Gert van Hoey

Room: 524C

13:30	Tim Edgell	Recovery of local marine biodiversity at an offshore dredge disposal site
13:45	Ivan Hernandez-Avila	Testing biogeographical hypotheses on a major marine frontier: The case of the Yucatan continental shelf
14:00	Francisco J. Ramos-Gallego	Multiscale fish diversity partition at a Mesoamerican barrier reef system portion: Relationship with habitat structure, spatial layout, and depth
14:15	Fernanda Casares	Health assessment of a marginal reef site in Southeastern Brazil: Integrating ecological indicators and anthropogenic pressures to guide management decisions
14:30	Alice Soccodato	Marine Environmental heterogeneity detected from the sky helps to estimate biodiversity hotspots across the food web.

## WEDNESDAY, MAY 16 – 15:00-15:30

### Coffee Break

(Exhibition, Posters)

Room: 517CD

## WEDNESDAY, MAY 16 – 15:30-17:00

### Final Plenary Session

Room: 517A

At the close of the conference, a panel of international experts will reflect on the event and myriad topics discussed throughout the conference in light of future priorities. Each panelist has chosen a topic related to the Aichi Biodiversity targets and contemplating the future of our oceans, paralleling our mentoring sessions. Each panelist will give a 5-minute thought piece on their perspective of the selected topic for the future of ocean biodiversity science followed by an open audience discussion.

**WEDNESDAY, MAY 16 – 15:30-17:00 (CONTINUED)**

**Final Plenary Session**

Room: 517A

**International Experts**

Sigrid Kuehnemund WWF Canada	Linking biodiversity to ecosystem function and services (resilience to climate change)
Gilles Seutin Parks Canada	Application of Biodiversity Knowledge
Murray Roberts The University of Edinburgh and ATLAS	Expanding to Ocean Basin-scale Assessment
Amanda Bates Memorial University of Newfoundland, Canada	Engaging Society in Biodiversity Conservation through Positives
Carlos M. Duarte Red Sea Research Center and Tarek Ahmed Juffalli Chair in Red Sea Ecology of King Abdullah University of Science Technology of the Kingdom of Saudi Arabia	The Ocean is Not Yet Broken: Engaging Society in Biodiversity Conservation through Positives
Verena Tunnicliffe University of Victoria, Canada	The more you look, the more you find: Biodiversity Discovery and Prediction
Peter Lawton Fisheries and Oceans Canada	Application of Biodiversity Knowledge
Remi Daigle Université Laval	Integrative frameworks

**WEDNESDAY, MAY 16 – 17:00-18:00**

**Closing Ceremony/Student Awards/5<sup>th</sup> WCMB Announcement**

Room: 517A

# THANK YOU TO OUR SPONSORS

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With the support of Fisheries and Oceans Canada,  
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The 4th WCMB acknowledges the support of the Center of Marine Biodiversity in the creation of the scientific program.

The 4th WCMB Committee acknowledges the support of Palais des congrès and Tourisme Montréal



## CHONE IS PLEASED TO SUPPORT WCMB 2018!

*A warm welcome from CHONE to all participants.  
We look forward to sharing our research with you!*

The NSERC Canadian Healthy Oceans Network (CHONE) is developing new conservation strategies for Canada's changing oceans by partnering Canadian university researchers and government scientists. CHONE's national network of partners, governance committees, researchers, and students contribute to the ongoing success of its strategic research program on sustainability strategies and cumulative impacts. This work helps Canada fulfill high-priority national and international commitments on sustainable oceans and advance Canada's new National Conservation Plan.

Major funding is provided by the Natural Sciences and Engineering Research Council of Canada (NSERC) in partnership with Fisheries and Oceans Canada (DFO) and other government agencies; INREST (representing the Port of Sept-Îles and City of Sept-Îles); and ENGOS.

Visit the CHONE II website to find out more about our research across Canada and to learn more about our researchers, students, and governance committee members.



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### POUR EN SAVOIR PLUS...

Pour plus d'information sur la recherche qui se déroule au campus de la SCREA, et à propos de POLAIRE, communiquez avec nous :



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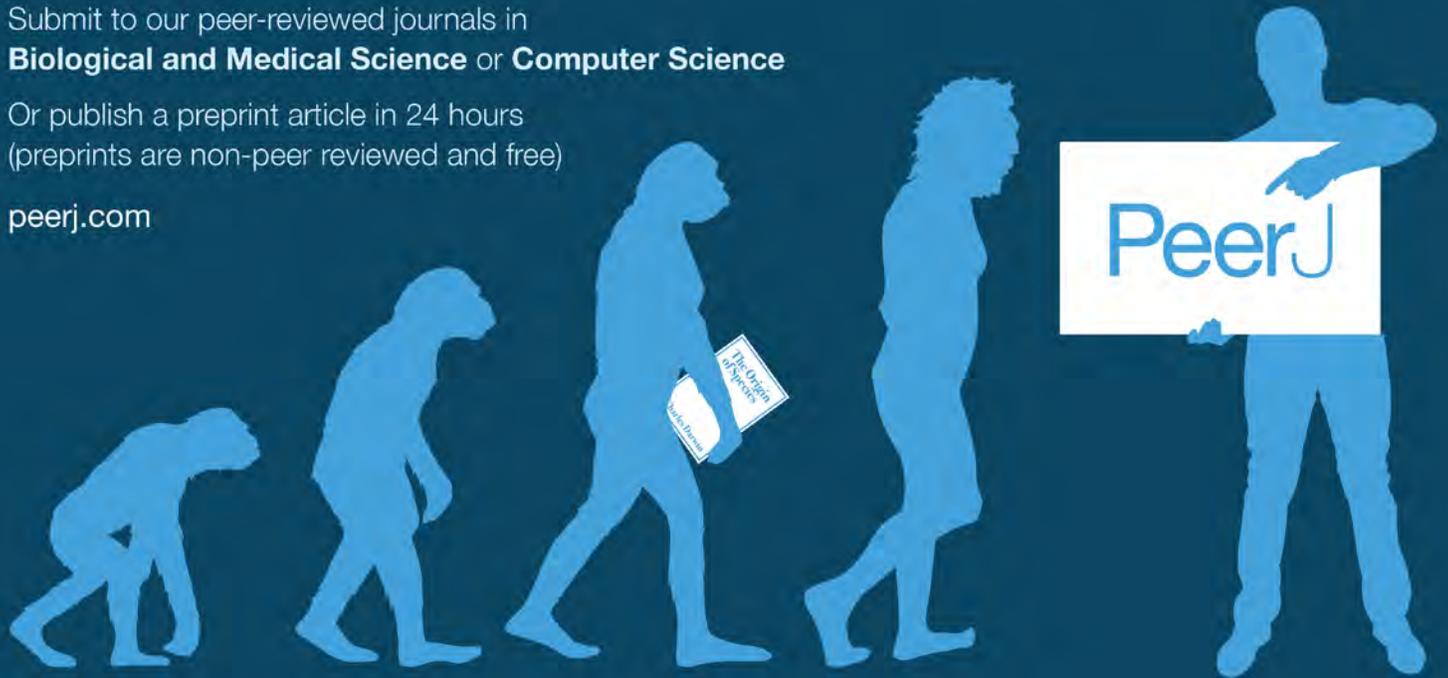
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# EXHIBITORS

## EXHIBITORS LIST Room: 517CD (Exhibition)

Sunday, May 13 8:30-19:00  
 Monday, May 14 10:00-19:00  
 Tuesday, May 15 10:00-18:00  
 Wednesday, May 16 10:00-15:30  
**See exhibition floor plan on page 56**

<b>Booth # 1</b>	<b>Project SponGES</b>	
<b>Description:</b> The EU-funded SponGES focuses on vulnerable Deep-sea Sponge Grounds Ecosystems of the North Atlantic, developing an integrated ecosystem-based approach to their preservation and sustainable use.		
<b>Contact Information:</b> Hans Tore Rapp +47 55 58 44 13 x79 <a href="mailto:info@deepseasponges.org">info@deepseasponges.org</a> <a href="http://www.deepseasponges.org">www.deepseasponges.org</a>		
<b>Booth # 2</b>	<b>Project MERCES</b>	
<b>Description:</b> The EU-funded MERCES (Marine Ecosystem Restoration in Changing European Seas) develops restoration approaches, studies their effects on ecosystem services, and considers legal, policy and governance implications.		
<b>Contact Information:</b> Roberto Danovaro +39 071 22 04 654 x331 <a href="mailto:merces@univnm.it">merces@univnm.it</a> <a href="http://www.merces-project.eu">www.merces-project.eu</a>		
<b>Booth # 3</b>	<b>Ocean Networks Canada</b>	
<b>Description:</b> Ocean Networks Canada monitors the west and east coasts of Canada and the Arctic to continuously deliver data in real-time for scientific research that supports informed decision-making about our future.		
<b>Contact Information:</b> Leslie Elliott +1 250 472-5357 <a href="mailto:elliottl@uvic.ca">elliottl@uvic.ca</a> <a href="http://www.oceannetworks.ca">www.oceannetworks.ca</a>		
<b>Booth # 4</b>	<b>Hydro Bios</b>	
<b>Description:</b> We are North American distributors for Hydro Bios and other manufacturers. Hydro Bios one of the world's leading manufacturers of smart sampling equipment Hydro-Bios offers solutions for all oceanographic and limnic environments. Whether the task is to sample water, plankton or sediments you can get a large variety of instruments. One of our specialties are plankton nets, from small and simple to the well-established, unique Multi Plankton Sampler MultiNet. Furthermore, we supply a wide range of water samplers, from Niskin bottles, Ruttner water sampler to advanced Carousel/Rosette systems in different sizes complete with CTD probe and other sensors. For sediment sampling we offer bottom samplers and single or multiple traps. Reliability and precision are our core intentions when developing and manufacturing our products.		
<b>Contact Information:</b> Nigel Newing +1 613 756-0101 <a href="mailto:info@enviro-analytical.com">info@enviro-analytical.com</a> <a href="http://www.hydrobios.de/">www.hydrobios.de/</a>		

**EXHIBITORS LIST (CONTINUED)**  
**Room: 517CD (Exhibition)**

<b>Booth # 5</b>	<b>Royal Society Publishing</b>	
<b>Description:</b> The Royal Society regularly publishes research on marine biodiversity and ocean ecosystems. Our journals offer rigorous peer review, open access, promotion via a dedicated press team and dissemination to a global audience. Come to booth 5 and find out what we've been publishing over the past 353 years.		
<b>Contact Information:</b>	Raminder Shergill <a href="mailto:raminder.shergill@royalsociety.org">raminder.shergill@royalsociety.org</a>	+44 20 7451 2694 <a href="http://www.royalsociety.org/journals/">www.royalsociety.org/journals/</a>
<b>Booth # 6</b>	<b>Frontiers in Marine Science</b>	
<b>Description:</b> Frontiers is a Swiss-based open-access publisher. We drive innovations and develop new technologies to make peer-review more efficient and transparent. Our mission is to increase the reach and impact of articles and their authors.		
<b>Contact Information:</b>	Nina Hall <a href="mailto:nina.hall@frontiersin.org">nina.hall@frontiersin.org</a>	+41 21 510 17 11 <a href="http://www.frontiersin.org/journals/marine-science">www.frontiersin.org/journals/marine-science</a>
<b>Booth # 7</b>	<b>Canadian Scientific Submersible Facility</b>	
<b>Description:</b> The Canadian Scientific Submersible Facility (CSSF) is a federally registered not-for-profit that provides subsea engineering and remotely operated vehicle (ROV) services. CSSF's ROPOS ROV is known as the world's most capable scientific submersible, due largely to the versatility, efficiency, skill, and professionalism of its operators. Over its 20+ year history, CSSF has helped academic institutions, government, non-profit, media, and private entities conduct ground-breaking research and exploration in every major ocean, worldwide. Globally, CSSF has enabled thousands of academic studies, the creation of marine protected areas, installed cabled ocean observatories, and contributed to the discovery of new species and environments.		
<b>Contact Information:</b>	Douglas Bancroft <a href="mailto:bancroft@ropos.com">bancroft@ropos.com</a>	+1 250 655-5096 <a href="http://www.ropos.com">www.ropos.com</a>
<b>Booth # 8</b>	<b>The Ocean Tracking Network</b>	
<b>Description:</b> The Ocean Tracking Network is a global aquatic animal tracking, data management and partnership platform headquartered at the Dalhousie University in Halifax, Nova Scotia, Canada.		
<b>Contact Information:</b>	Brendal Townsend <a href="mailto:brendal.townsend@dal.ca">brendal.townsend@dal.ca</a>	+1 902 494-4230 <a href="http://www.oceantrackingnetwork.org">www.oceantrackingnetwork.org</a>
<b>Booth # 9</b>	<b>SubC Imaging</b>	
<b>Description:</b> The SubC Imaging creates some of the most advanced underwater optical imaging systems in the world including state-of-the-art cameras, lights, lasers, and DVR Overlay solutions.		
<b>Contact Information:</b>	Ron Collier <a href="mailto:rtc@subcimaging.com">rtc@subcimaging.com</a>	+1 709 702-0395 <a href="http://www.subcimaging.com">www.subcimaging.com</a>

**EXHIBITORS LIST (CONTINUED)**  
**Room: 517CD (Exhibition)**

<b>Booth # 10</b>	<b>NIVA Inc.</b>	
<p><b>Description:</b> NIVA is a company that transforms complex information into messages that have an impact on the audiences that you need to reach. We specialize in transforming technical and scientific concepts into compelling, plain language communication tools. We develop dynamic strategies that get those tools to the right people. And we find ways to help subject-matter experts and decision makers meet on common ground. We are recognized leaders in our field, and passionate about using clear communication to bring value to your organization. Stop by our booth to talk to us about our wide-ranging experience communicating about ocean science, the blue economy, and marine biodiversity!</p>		
<p><b>Contact Information:</b> Anton Holland +1 613 737-6000  <a href="mailto:aholland@Niva.com">aholland@Niva.com</a> <a href="http://www.niva.com">www.niva.com</a></p>		
<b>Booth # 11</b>	<b>RQM / IFQM</b>	
<p><b>Description:</b> The Réseau Québec maritime (RQM) aims to position Quebec as a leading international intersectoral network for all issues related to the sustainable development of the maritime sector, while the France-Quebec Institute for scientific cooperation in support of the maritime sector (IFQM) federates the key maritime players in research, innovation and higher education from both sides of the Atlantic.</p>		
<p><b>Contact Information:</b> Sarah Granier +1 418 723-1986 x1045  <a href="mailto:sarah@granier@uqar.ca">sarah@granier@uqar.ca</a> <a href="http://www.ifqm.info">www.ifqm.info</a></p>		
<b>Booth # 12</b>	<b>Global Ocean Biodiversity Initiative (GOBI)</b>	
<p><b>Description:</b> The Convention on Biological Diversity (CBD) focuses on the conservation and sustainable use of biodiversity, and the fair and equitable sharing of benefits from the use of genetic resources. The Convention's work on marine biodiversity includes the coordination of a global scientific process to describe and map ecologically or biologically significant areas in the ocean (EBSAs). This process involves an enormous amount of scientific data and input from experts all over the world. The Global Ocean Biodiversity Initiative (GOBI) is an international partnership of organisations committed to advancing the scientific basis for the conservation and sustainable use of marine biodiversity. In particular, GOBI contributes expertise, knowledge and data to support CBD's efforts to describe EBSAs by assisting a range of organisations to use and develop data, tools and methodologies.</p>		
<p><b>Contact Information:</b> Vikki Gunn +44 1794 367797  <a href="mailto:secretariat@gobi.org">secretariat@gobi.org</a> <a href="http://www.gobi.org">www.gobi.org</a></p>		
<b>Booth # 13</b>	<b>Parks Canada</b>	
<p><b>Description:</b> Parks Canada manages an extensive system of protected natural and cultural heritage areas for the benefit, enjoyment and education of Canadians and the world.</p>		
<p><b>Contact Information:</b> Diane Blanchard +1 819 420-9171  <a href="mailto:Diane.Blanchard@pc.gc.ca">Diane.Blanchard@pc.gc.ca</a> <a href="http://www.pc.gc.ca">www.pc.gc.ca</a></p>		

**EXHIBITORS LIST (CONTINUED)**  
**Room: 517CD (Exhibition)**

<b>Booth # 14</b>	<b>Taylor &amp; Francis Group</b>	
<b>Description:</b> Taylor & Francis are one of the world's leading publisher of academic journals and books. Come to booth 14 to see the recent additions to our portfolio and meet members of our editorial team.		
<b>Contact Information:</b> Ashlynn Merrifield +44 20 7017 6000 <a href="mailto:enquiries@taylorandfrancis.com">enquiries@taylorandfrancis.com</a> <a href="http://www.taylorandfrancis.com">www.taylorandfrancis.com</a>		
<b>Booth # 15</b>	<b>Huntsman Marine Science Centre</b>	
<b>Description:</b> Huntsman Marine Science Centre is a not-for-profit research and education facility whose mission is inspiring stewardship through the engagement of the community in the discovery of the oceans. HMSC provides services to government, commercial and academic clients. Research facilities include the Atlantic Reference Centre, a marine research museum and biodiversity information facility which provides taxonomic identification services and expert advice; and the Aquatic Science department which offers services including broodstock, fish-health and toxicology research in its purpose-built husbandry facility. The Fundy Discovery Aquarium and the education department provide tailored education programmes to schools, universities and diverse public groups.		
<b>Contact Information:</b> James A. Smith +1 506 529-1200 <a href="mailto:huntsman@huntsmanmarine.ca">huntsman@huntsmanmarine.ca</a> <a href="http://www.huntsmanmarine.ca">http://www.huntsmanmarine.ca</a>		
<b>Booth # 16</b>	<b>Observatoire global du Saint-Laurent / St. Lawrence Global Observatory (OGSL)</b>	
<b>Description:</b> The St. Lawrence Global Observatory is an organization that provides integrated access to data and information from a network of partner organizations in support of the sustainable management of the St. Lawrence ecosystem.		
<b>Contact Information:</b> Anne-Sophie Ste-Marie +1 418 723-8372 x1194 <a href="mailto:stemariea@ogsl.ca">stemariea@ogsl.ca</a> <a href="http://www.ogsl.ca">www.ogsl.ca</a>		
<b>Booth # 17</b>	<b>Québec-Océan</b>	
<b>Description:</b> Québec-Océan brings together scientists and their partners involved in oceanographic research. Six Quebec universities, several ministries and non-governmental organisms collaborate to develop oceanography, including student training and knowledge transfer.		
<b>Contact Information:</b> Brigitte Robineau +1 418 656-5917 <a href="mailto:quebec-ocean@qo.ulaval.ca">quebec-ocean@qo.ulaval.ca</a> <a href="http://www.quebec-ocean.ulaval.ca">www.quebec-ocean.ulaval.ca</a>		
<b>Booth # 18</b>	<b>Alpha Mach</b>	
<b>Description:</b> Alpha Mach specializes in miniature and low cost archival tags used in fisheries and biology research. Our instruments offer the opportunity to economically tag a large number of animals or monitor rivers, lakes & tributaries. Our newest logger, the Weetag®, are RFID, implantable and have a large capacity memory.		
<b>Contact Information:</b> Uranian Valcéanu +1 450 446-3153 <a href="mailto:info@alphamach.com">info@alphamach.com</a> <a href="http://www.alphamach.com">www.alphamach.com</a>		

**EXHIBITORS LIST (CONTINUED)**  
**Room: 517CD (Exhibition)**

<b>Booth # 19</b>	<b>Fisheries and Oceans Canada</b>	
<b>Description:</b> Fisheries and Oceans Canada works with partners to support the conservation and protection of marine environments and aquatic biodiversity through habitat protection, solid science, and an ecosystem approach to ocean management.		
<b>Contact Information:</b>		
	Patrice Simon <a href="mailto:Tara.Donaghy@dfo-mpo.gc.ca">Tara.Donaghy@dfo-mpo.gc.ca</a>	+1 613 990-0019 <a href="http://www.dfo-mpo.gc.ca">www.dfo-mpo.gc.ca</a>
<b>Booth # 20</b>	<b>ROMOR Ocean Solutions</b>	
<b>Description:</b> ROMOR with more than 30 years as a Leading provider of geophysical, oceanographic, defense, security, autonomous, and ocean science instrumentation has become a key collaborator. Working with academic, public, private, and international organizations working as a top re-seller, consultant and logistics specialist. ROMOR continues to build its brand on customer satisfaction. Applications include time series measurements, underwater microscope, camera and lighting, acoustic monitoring, underwater positioning, autonomous gliders, current velocity and direction, marine survey.		
<b>Contact Information:</b>		
	Darrin Verge <a href="mailto:dverge@romor.ca">dverge@romor.ca</a>	+1 902 466-7000 <a href="http://www.romor.ca">www.romor.ca</a>

# FLOOR PLANS

## Palais des congrès de Montréal

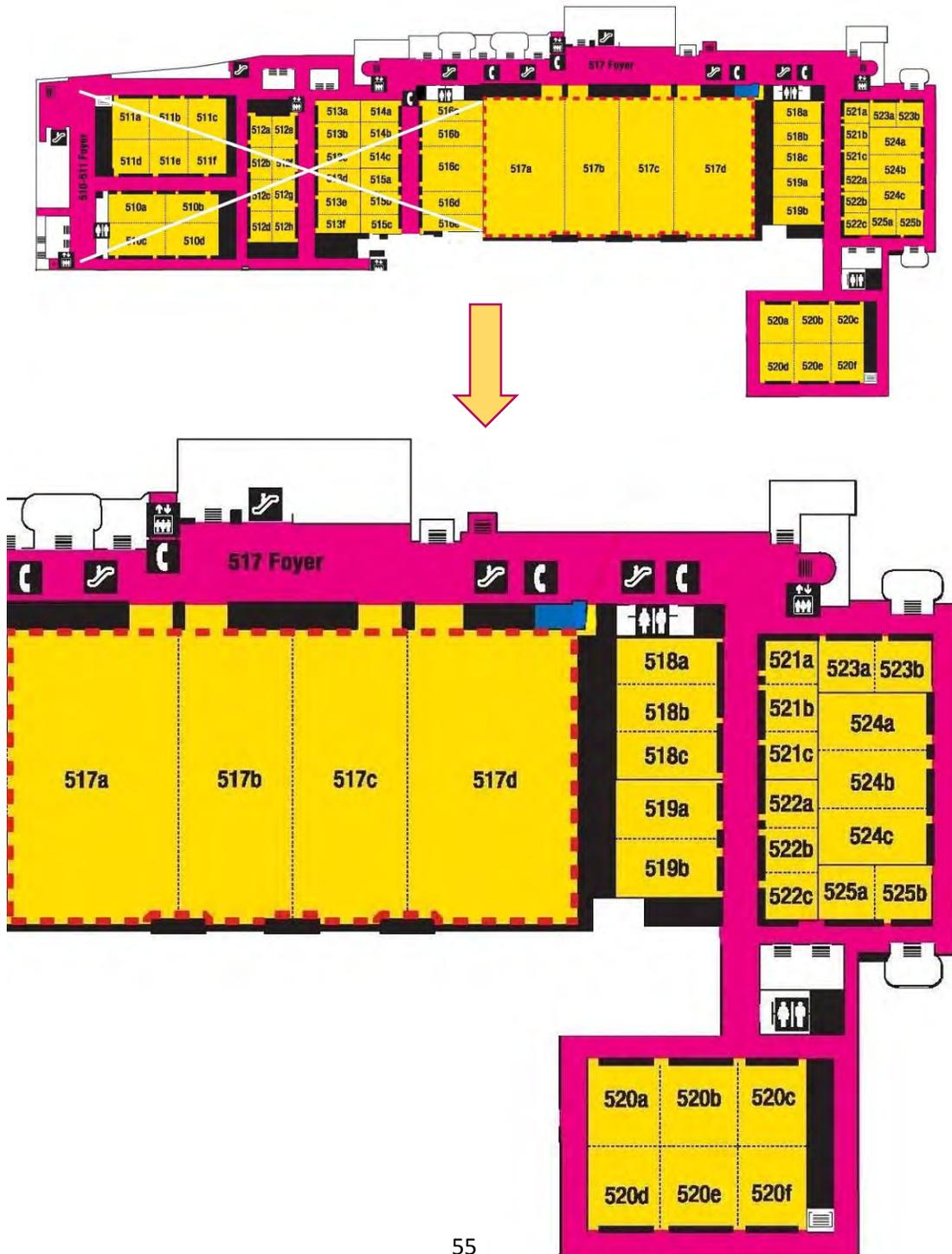
### Palais des congrès de Montréal

1001 Jean Paul Riopelle Pl

Montreal QC H2Z 1H5

Canada

<https://congresmtl.com/>



# FLOOR PLANS

## Exhibition and Posters

The exhibition takes place in rooms 517CD, level 5.

### Exhibition Hours

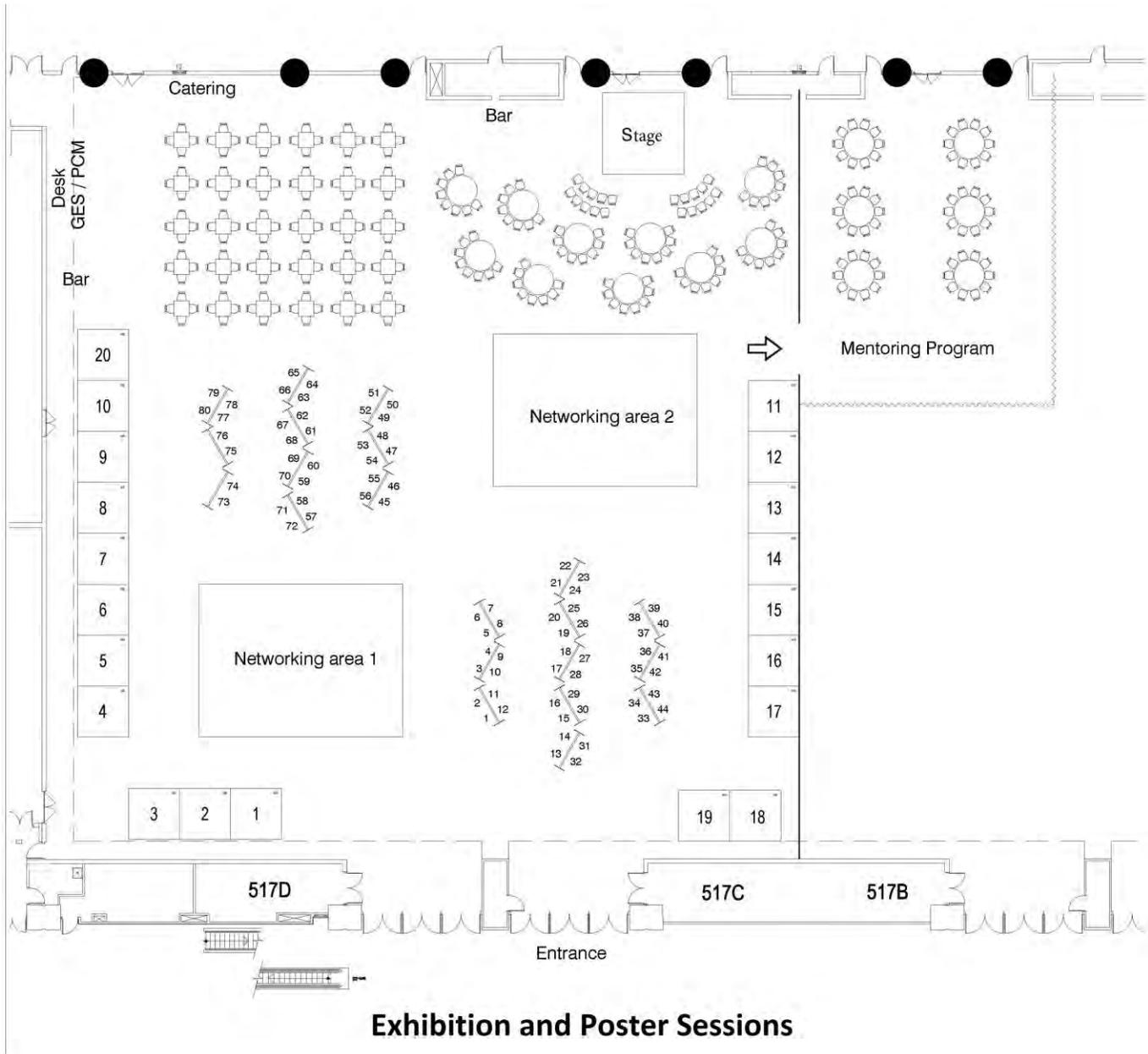
	<b>DATE</b>	<b>TIME</b>
	<b>Sunday, May 13</b>	<b>08:30 – 19:00</b>
	<b>Monday, May 14</b>	<b>10:00 – 19:00</b>
	<b>Tuesday, May 15</b>	<b>10:00 – 18:00</b>
	<b>Wednesday, May 16</b>	<b>10:00 – 15:30</b>

### Exhibition Activities

	<b>DATE</b>	<b>TIME</b>
<b>Welcome Reception &amp; Poster Session</b>	<b>Sunday, May 13</b>	<b>17:00 – 19:00</b>
<b>Poster Session</b>	<b>Monday, May 14</b>	<b>17:00 – 19:00</b>
<b>Poster Session</b>	<b>Tuesday, May 15</b>	<b>17:00 – 18:00</b>

# FLOOR PLANS

## Exhibition and Posters (Continued)



### Exhibition and Poster Sessions

## POSTER SESSIONS

Poster sessions will be held daily, each featuring specific themes and posters. During these sessions the authors will be beside their posters to answer questions and explain their work.

All posters will be on display throughout the conference dates. Delegates are invited to visit posters during lunch and coffee breaks, as well as the evening poster sessions. A cash bar will be open during each poster session.

The poster sessions are sponsored by Sentinelle Nord/Sentinel North and Polar Knowledge Canada.

**SUNDAY, MAY 13 – 17:00-19:00**  
**Room: 517CD (Exhibition)**

**Theme: Biodiversity discovery & prediction**

Poster #		
13	Fiona Davidson	Species distribution modeling of deep sea sponges in the North Pacific Ocean
14	Marta Miatta	Biological and environmental drivers of deep-sea benthic ecosystem functioning in Canada's Laurentian Channel Area Of Interest (AOI)
15	Mizuho Namba	Multiscale variation in biomass of eelgrass, epiphyte and epifauna in eelgrass ( <i>Zostera marina</i> ) beds along eastern Hokkaido, Japan
16	Jesus Troncoso	A recount of species in a sandy bottom of an oceanic tropical island: Isla del Coco, Costa Rica
17	Bhavya Kachiprath	Bacterial communities in Krossfjorden, Arctic: An overview
18	Cindy Grant	Benthos from Baffin Bay Area: A photo catalogue
19	Laure de Montety	Characterization of epibenthic community structure in the Beaufort Sea area.
20	Paulina Brüning	Ecology and molecular approaches to understand the biology in soft corals inhabiting polar regions.
21	Lisa Treau De Coeli	Geometric morphometrics analysis: a complement to the revision of whelk taxonomy in the Arctic
22	Rachelle Dove	Thyasirid bivalves in Arctic and Subarctic regions of Eastern Canada
23	Fatma Dhifallah	Characterize abundance, richness and diversity of dinoflagellate communities in high risk ports of the Canadian Arctic
24	Bhavik Vakani	Diversity of true gastropod limpets of mainland coastal India
25	Akkur Raman	Nearshore benthic communities: Defining diversity under tropical settings, east coast of India
26	Anne Helene Tandberg	Norwegian Marine Amphipods
27	Junlong Zhang	Progress on Taxonomy Study of Deep-Sea Mollusca at IOCAS

**SUNDAY, MAY 13 – 17:00-19:00 (CONTINUED)**  
**Room: 517CD (Exhibition)**

**Theme: Biodiversity in a changing ocean**

Poster #		
45	Jean-Philippe Pezy	Chaetopterus variopedatus tubes, a stepping-stone habitat for introduced and tropical-temperate species in the English Channel
46	Hannah Omogoriola	Mangrove biodiversity, distribution and coverage area in Lagos Lagoon
47	Catherine Van Doorn	Lipid characterization of benthic organisms and walrus in climate change scenarios in the Nunavik Region of the Canadian Arctic.
48	Said Hashim	Macrobenthic distribution across the oxygen minimum zone in the northern Benguela upwelling system: Influence of hypoxia on macrobenthic distribution
49	Gustavo Yunda-Guarin	Food web structure of the epibenthic community at the sea ice edge in Baffin Bay, Canada
50	Marina Abas	Adaptive capacity of reef-associated fishes to Climate Change
51	Megan van der Bank	The Delicate Balance of Marine Protected Areas and Coastal Livelihoods: The Case of Dwesa-Cwebe MPA, South Africa
52	Joel Creed	An index to integrate stress due to anthropogenic pressures along the shoreline and case study of a tourist destination in Brazil
53	Charlotte Carrier-Belleau	Cumulative impacts of anthropogenic drivers on macrobenthic communities at a bay-scale: An experimental approach
54	Fanny Vermandele	Understanding the biological impacts of Global warming on marine biodiversity with a Russian doll perspective
55	Amanda E. Bates	Modelling how temperature influences biodiversity from cells to ecosystems

**MONDAY, MAY 14 – 17:00-19:00**  
**Room: 517CD (Exhibition)**

**Theme: Biodiversity tools & data**

Poster #		
1	Sébastien Villon	A deep learning algorithm for automatic identification of coral reef fish species on images
2	Geneviève Faille	Benthic imagery, a tool to discover the Gulf of St. Lawrence seafloor
3	Fabio Cabrera De Leo	From coastal temperate, high-arctic to deep-sea habitats: seafloor imagery and environmental monitoring using cabled observatories to track ecosystem function, biodiversity and benthic-pelagic coupling
4	Christine Adams	Double down: Maximizing the reuse value of deep-sea video data
5	Gabriel R. Freitas	Plankton biodiversity, community structure and the physical and chemical environment of Izu-Oshima, Japan: A high resolution and multidisciplinary observational approach.
6	Adriana Radulovici	Exon capture phylogenomics recovers closely related species of Chromodoris nudibranchs

**MONDAY, MAY 14 – 17:00-19:00 (CONTINUED)**  
**Room: 517CD (Exhibition)**

**Theme: Blue biotechnology & marine genetic resources**

Poster #		
28	Ariane Tremblay	Valorization of snow crab and American lobster cooking effluents for food bioproducts development
29	Farha Kabeer	Diversity and Extracellular Hydrolytic enzyme properties of marine bacteria isolated from Continental Slope of Eastern Arabian Sea
30	Lysis Sénéchal	Impact of seaweed addition on the dynamic microbial community in Camembert-type cheese during ripening
31	Rachel Durand	Simultaneous double cationic and anionic molecule separation from herring milt hydrolysate and impact on resulting fraction bioactivities

**Theme: Integrative frameworks to link environmental & biological drivers of biodiversity**

Poster #		
78	Diana Ugalde	Diversity of sponge-dwelling caridean shrimps from coral reefs of Southeastern Gulf of Mexico: scales of spatial variability and host specificity
79	Laurie Isabel	Assessing ecosystem health by the means of epibenthic indicators in Estuary and Gulf of St. Lawrence, Canada
80	Philippe-Olivier Dumais	Modelling of the diversity hotspots of benthic fauna based on the environmental drivers in the Kitikmeot area (Canadian Archipelago)

**Theme: Linking biodiversity to ecosystem function & services**

Poster #		
36	Kina Hayashi	Coexistence mechanism of six species anemonefish in Okinawa, southern Japan
37	Céline Houbin	Analyses of the links between species and functional diversity: the effects of methodological choices to assess functional diversity
38	Melisa Wong	Towards an understanding of relationships between benthic infaunal biodiversity and ecosystem functioning in seagrass beds of Atlantic Canada
39	Xiaoshou Liu	Biological trait analysis of marine nematodes in the southern Yellow Sea, China
40	Thamasak Yeemin	Assessing ecosystem services provided by coral communities in the Gulf of Thailand
41	Shawn Hinz	Internal thermal waves: A new paradigm for sediment morphodynamics in the coastal waters of Saint Pierre et Miquelon
42	Susana Enríquez	Identification of the key functional traits for the estimation of the differential contribution of reef calcifiers to carbonate budgets.
43	Benjamin Weigel	Trait-based predation selectivity offers insight into effects of changing prey communities
44	Hayley Lemoine	Metal ships, concrete modules, and rocky reefs: Quantifying how reef type influences fish communities

**MONDAY, MAY 14 – 17:00-19:00 (CONTINUED)**  
**Room: 517CD (Exhibition)**

**Theme: Ocean basin scale research**

Poster #		
67	Alberto Serrano	Species Distribution Models for sea pen corals in the Flemish Cap and Flemish Pass Area (Northwest Atlantic Ocean)
68	Alba Vergés	Vulnerability of marine forests to temperature and UV radiation: Effects on the recruits
69	Ellen Kenchington	Trait-based approach on deep-sea corals in the high-seas of the Flemish Cap and Flemish Pass (northwest Atlantic)
70	Pilar Rios	Biodiversity of Latrunculiidae (Porifera) in the north Atlantic

**TUESDAY, MAY 15 – 17:00-18:00**  
**Room: 517CD (Exhibition)**

**Theme: Application of biodiversity knowledge**

Poster #		
34	Caroline Longtin	Canada: Reaching our Marine Conservation Targets
35	Ana Rotter	How to efficiently explore and exploit the biodiversity of marine organisms?

**Theme: Marine biodiversity in the Anthropocene**

Poster #		
7	Zahra Alsaffar	The Red Sea seagrass jigsaw – how habitat fragmentation affects the functioning and structure of bacterial and macroinvertebrate benthic communities
8	Brygida Wawrzyniak-Wydrowska	Has <i>Dreissena polymorpha</i> , an older immigrant in a coastal Baltic lagoon, responded to appearance of a new non-indigenous dreissenid?
9	Manomi Sarasan	Algicolous endophytes: Diversity hotspots of mycobiota
10	Julia Kobelt	Recovery of a keystone herbivore in the Florida Keys and effects on coral reef biodiversity
11	Voranop Viyakarn	Assessment of feeding-behavior interactions between the introduced Pacific white shrimp <i>Litopenaeus vannamei</i> (Boone, 1931), (Penaeidae) and native shrimps plus a crab species in Thailand
12	Pedro Quijon	Native and invasive predators in a scenario of habitat and trophic complexity: Exploring predatory infauna in contrasting shoreline habitats

**TUESDAY, MAY 15 – 17:00-18:00 (CONTINUED)**  
**Room: 517CD (Exhibition)**

**Theme: Ocean deep-sea research and management**

Poster #		
71	Corinna Favaro	Improved estimates of fishing pressure and risk to deep sea benthic ecosystems
72	Marion Boulard	Benthic fauna distribution over different seamounts in the Mozambique Channel, from towed camera data

**Theme: Strategies for conservation of marine biodiversity**

Poster #		
57	Abigail Engleman	Designing structures that optimize recruitment: Coral restoration using innovative 3D technology
58	Katie Gale	Supporting development of a marine protected area network in British Columbia
59	Jackson Chu	Drivers of temporal beta diversity in a seasonally hypoxic ocean basin
60	Vivianne Solís-Weiss	Biodiversity associated to the sponges and algae of the sculptures of the Underwater Museum of Art (“MUSA”), Cancún, Mexico.
62	Ryan McEliece Shawn Hinz	Evaluation of nearshore water quality assessment using UAV Multispectral Imagery
63	Maria Angélica Haddad	Biofouling incrusting invertebrate’s diversity and bioinvasion in the Brazilian estuarine region of the Lagamar, a World Natural Heritage (UNESCO, 1999)
65	Eulogio Soto	Benthic polychaetes biodiversity at Chilean Patagonia: High diversity of Syllidae, Nereididae and Polynoidae from biological substrates
66	Paola Fajardo	Achieving mangrove ecosystems conservation and sustainable use in Mexico through Management Units for Wildlife Conservation within and beyond Protected Areas

**Theme: The human element**

Poster #		
73	Jennifer Otoadese	Developing talent, designing engagement: Marine education and outreach for the Red Sea
74	Brett Favaro	Innovation in graduate training: A skills-focused graduate program in fisheries science
75	José Alberto Monárrez	Members of the productive chain as a vital element of marine public policies: Bottom up model
76	Gerardo Rodríguez Quiroz	Natural protected areas and artisanal fishermen
77	Isidro Luis Rodríguez-Franco	Governance in the conservation of the protected area of flora and fauna Islas Golfo de California

# CARLO HEIP AWARD

TUESDAY, MAY 15 – 18:30-22:00

## The Carlo Heip International Award for Outstanding Accomplishments in Marine Biodiversity Science

The Carlo Heip International Award for outstanding accomplishments in marine biodiversity science was inaugurated in recognition of Carlo Heip's leadership in marine biodiversity research and founding of the 'World Conference on Marine Biodiversity'.

The Carlo Heip Award Ceremony is sponsored by PeerJ.

### About Carlo Heip



[Carlo Heip](#) (1945) studied Biology at Ghent University, where he founded the marine biology research group after he graduated. In 1987, he was appointed director of the Delta Institute in Yerseke, which was incorporated into the Netherlands Institute for Ecology (NIOO) as the Centre for Estuarine and Marine Ecology (CEME) in 1992 and has been a division of NIOZ since 2012. In 2006, Carlo Heip was appointed general director at NIOZ on Texel. He retired in 2011. After that, he stayed on as an advisor at NIOZ and he became the general editor of the [Journal of Sea Research](#). His first research project involved population dynamics, ecology and the ecotoxicology of benthic life. Later, his focus shifted to the link between biodiversity and the functioning of ecosystems.

Carlo Heip has over 150 articles to his name and he has edited several books. He was a source of inspiration for many national and international initiatives in the field of marine research. He played an important part in promoting European research into land-ocean interaction, and into ecological processes in estuaries, in particular. He was responsible for numerous EU projects.

## The Carlo Heip International Award for Outstanding Accomplishments in Marine Biodiversity Science (Continued)

The most important of these EU projects was MARBEF (Marine Biodiversity and Ecosystem Functioning), in which taxonomists and ecologists worked together on a European scale to strengthen our understanding of marine biodiversity and ecosystem function and support the protection of marine biodiversity. This project made a significant contribution to worldwide initiatives to better describe and understand the importance and variety of organisms in the sea.

Carlo Heip was an eminent scientist and a committed intellectual who as a researcher contributed to the better preservation of the marine environment. He was a director and organiser with vision and leadership. We will remember him as a warm and dedicated person.

### 1<sup>st</sup> Carlo Heip Award Recipient



Prof. Carlos M. Duarte, Director of the Red Sea Research Center and Tarek Ahmed Juffalli Chair in Red Sea Ecology of King Abdullah University of Science Technology of the Kingdom of Saudi Arabia has been elected the first recipient of the Carlo Heip Award. He is a world-wide leading authority on seagrasses and has published on all aspects of seagrass ecology, from population biology to genetics, from depth and geographical distribution patterns to their role in biogeochemical cycles, and from conservation strategies to their sensitivity to climate change. His pioneering work on seagrasses and other vegetated systems eventually led – in collaboration with different UN agencies – to the development of “blue carbon” strategies, which has provided a strong impetus to the conservation of vegetated coastal ecosystems.

Carlos may be the most versatile aquatic ecologist of his generation: he works from the tropics to polar ecosystems, from macrophytes to microbes, from coastal systems to open ocean gyres using all types of approaches. His research is characterized by independence, creativity, serendipity, and interdisciplinary linking of thought-to-be separate fields. Many of his synthesis papers have set the stage for the field, one notable example being that his work initiated the discussion on the heterotrophic nature of oligotrophic systems and identified the role of hypoxia

## The Carlo Heip International Award for Outstanding Accomplishments in Marine Biodiversity Science (Continued)

thresholds for marine biodiversity. To date, Carlos has over 630 publications cited 42,000 times. As was Carlo Heip before him, Carlos has been listed as one of the most cited scientists by Thomson Reuters.

Recognizing the many gaps in our understanding of the deep-sea pelagic ecosystem, Duarte led the Malaspina Circumnavigation Expedition, involving more than 500 scientists and that sailed the oceans between 2010 and 2011 to provide a global assessment of the deep-sea biodiversity and functioning. Other leadership service roles included editing journals, being a member of numerous international scientific committees, and being President of the American Society of Limnology and Oceanography.

During the last decade, his publications have been instrumental in advancing our understanding of the impact of climate change on marine ecosystems, organisms and biodiversity. He has also contributed original work to science in support of policy and management towards sustainable use of ecosystems.

Finally, Carlos Duarte, together with the late Carlo Heip, initiated the World Marine Biodiversity Conference series and organized and chaired the first of these conferences in Valencia, Spain.

**All WCMB delegates are invited to the Carlo Heip Award ceremony, taking place 18:30-22:00 Tuesday, May 15 in the Perspectives room at the Centre des Sciences in the Old Port.**

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2 Rue de la Commune Ouest  
Montréal QC H2Y 4B2  
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# MENTORING PROGRAM

## Mentoring Program Schedule

### **Mentoring Program Workshops\***

Theme 1: Room 518A

Theme 2: Room 518B

Theme 3: Room 518C

Theme 4: Room 519A

Theme 5: Room 519B

Theme 6: Room 524A

Theme 8: Room 524B

\* Workshops are only open to Mentoring Program participants.

### **Mentoring Program Panel Discussions and Presentations\***

Room: 517CD (Exhibition)

Monday, May 14 – 12:00-12:30: Theme 1

Monday, May 14 – 12:30-13:00: Theme 2

Monday, May 14 – 13:00-13:30: Theme 3

Tuesday, May 15 – 12:00-12:30: Theme 4

Tuesday, May 15 – 12:30-13:00: Theme 5

Tuesday, May 15 – 13:00-13:30: Theme 6

Wednesday, May 16 – 12:30-13:00: Theme 8

\* Participation in panel discussions is reserved for Mentoring Program members; however, all conference delegates are welcome to attend.

## WCMB 2018 Mentoring Program

Much like a hero's journey, the mentoring program consists of three acts with their respective challenges. The journey will culminate with the publication of a series of short perspective papers in a special issue of the open access journal Peer J dedicated to the conference and a synopsis paper in a high-profile journal.

### **The Objective**

In contrast to typical conference mentoring programs, we offer a program specifically aimed at bringing senior and early-career scientists together to tackle a specific scientific challenge. This challenge will provide the opportunity to meet and work collaboratively with other scientists who share similar interests from around the world.

### **The Challenge**

In 2010, the Conference of the Parties revised and updated a Strategic Plan for Biodiversity that included the Aichi Biodiversity Targets for the 2011-2020 period. With this strategic plan rapidly coming to a close, the time is ripe to start reflecting on our accomplishments and the next stage of our ocean sciences journey. With this in mind, we challenge mentoring program participants

## WCMB 2018 Mentoring Program (Continued)

to reflect on the accomplishments of a decade of work since the establishment of the Aichi Biodiversity Targets and to contemplate perspectives for ocean sciences beyond 2020.

### The Themes

Specific themes attributed to groups of mentors and mentees will reflect conference themes and include components explicitly related to upcoming changes that governing bodies will discuss and propose over the following months and years. Theme descriptions should guide but not constrain the breadth of specific subjects tackled in each theme.

1. **Application of biodiversity knowledge:** This theme explores social ecological systems, marine stewardship, education, outreach and participatory programs, marine policy and law and the integration of local communities and traditional knowledge into ocean science, management, and policy.
2. **Biodiversity discovery & prediction:** This theme brings us on a journey into biodiversity discovery in frontier areas (e.g. polar regions, deep sea and tropics), the technologies developed to access them, and areas yet to be explored. It will also consider new methods and approaches to predict multiple facets of biodiversity. Thus, the theme will address the future of biodiversity exploration, both in the field and analytically.
3. **Biodiversity in a changing ocean - Holistic assessments:** This theme addresses the effects of global changes and human impacts (e.g. fishing and nutrients) on biodiversity through the lens of holistic assessments such as cumulative impacts assessments. It also explores the role of systematics in understanding ocean change and the sustained observations of life as an integral component of coastal and ocean observing systems.
4. **Biodiversity tools and data:** This theme explores the new age of open data by focusing on big vs smart data in ocean observation, new technologies for observation, data management, analysis and visualization both in space and time, novel analytical approaches, citizen science, collaborative processes and capacity building.
5. **Marine biodiversity in the Anthropocene - Drivers of change:** This theme focuses on drivers of biodiversity change in an age of rapid oceanic alterations, be it from a stressors perspective (e.g. invasive species and plastics) or a technological and exploitation perspective (e.g. blue biotechnologies and marine genetic resources).
6. **Integrative frameworks:** This theme focuses on holistic and integrative tools and approaches that consider oceans as complex and interconnected systems, and will discuss progress and insights into indicator development, ocean connectivity, and large-scale biogeography.
7. **Linking biodiversity to ecosystem function and services:** This theme explores emerging insights on ecosystem function and services, approaches to integrated assessments, the link between ecological traits and ecosystem functions, ecosystem connectivity and resilience to climate change across spatial scales.
8. **Strategies for conservation of marine biodiversity:** This theme critically examines marine conservation paradigms and technologies aimed at protecting, monitoring and restoring ecosystems, species and genetic diversity and promoting sustainable use, from local to regional to global scales.

## WCMB 2018 Mentoring Program (Continued)

### **The Mentoring Groups**

Based on individual expertise and/or interest, mentoring groups of up to 3 mentors will pair with up to 8 early-career scientists in order to tackle theme-specific challenges. These groups will be joined by up to 2 International Leaders during the conference.

### **The Journey**

#### **Act I - Pre-conference**

##### **Objective: Receive challenge & begin preparations**

To kick things off, mentors and mentees will meet virtually and begin exchanging ideas two months before the conference. These exchanges will build relationships and initiate reflection on theme-specific accomplishments over the last decade. It will also set the stage for Act II of the challenge.

#### **Act II - Conference**

##### **Objective: Panel mediation, group workshop & plenary session**

Act II of the challenge will take place during the conference. Mentors and mentees for each theme will meet in person and continue preparations begun during Act I. During this stage mentees from each team will moderate a theme-specific panel during the nightly poster sessions. Mentees will give a **5-minute presentation** on theme-specific accomplishments over the last decade and moderate discussions on accomplishments and perspectives with conference participants. Mentoring groups will also attend theme-specific oral and poster presentations and use that material as they tackle their own challenge.

Individual team workshops will be scheduled throughout the conference to meet and work, with the opportunity to invite and work with International Leaders. Discussions will focus on the work accomplished so far by each team and on theme-specific perspectives. These exchanges will structure Act III and provide material for a plenary session on the final day, where International Leaders will have the opportunity to present their thoughts on the broad topic of beyond Aichi 2020.

#### **Act III - Post-conference**

##### **Objective: Perspective and synopsis papers**

Act I and Act II will have seen mentors and mentees learn and share thoughts on their respective themes, reflecting on perspectives for ocean sciences at the close of Aichi 2020. During the last stage of The Challenge, Act III, mentoring groups will write a short theme-specific perspective paper focused on the accomplishments of the last decade and the outlooks for the future of oceans sciences. Papers will be submitted to a special issue dedicated to the conference in Peer J for publication in July 2018. Each perspective piece will go through a peer-review process before publication.

## WCMB 2018 Mentoring Program (Continued)

We will invite International Leaders to work on a synopsis paper presenting the conference recommendations and ideas, and summary of the work accomplished through the mentoring program. This paper will be co-authored by all participants in the plenary presentation and mentoring program, and submitted to a high-profile journal (e.g. Nature) aiming for publication to coincide with the [G7 ministerial meeting on climate change, oceans and clean energy](#) in October 2018 and the [Fourteenth meeting of the Conference of the Parties to the Convention on Biological Diversity](#) (COP-14) in November 2018.

*Now a single question remains: do you accept the challenge?*