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BC researchers receive grants to study local marine environments

Vancouver & Victoria—Along Canada’s west coast, there is a delicate balance to preserve between human use of the environment, such as shipping and fishing, and the resilience of the local ecosystems. Research into sustainable practices is increasingly vital to communities, organizations and governments as they seek the best management paths forward.

The Marine Environmental Observation, Prediction and Response Network (MEOPAR) and the University of Victoria’s Ocean Networks Canada (ONC) have announced the successful recipients of research grants supported jointly by the two organizations.

Dr. Susan Allen (University of British Columbia), Dr. Maycira Costa (University of Victoria) and Dr. Philippe Tortell (University of British Columbia) received funding through a competitive submission process held in partnership between MEOPAR and ONC in the fall of 2017.

The projects span a variety of marine research topic areas, including modelling the fate of oil spills in the Salish Sea, using Indigenous knowledge to improve ecological monitoring, classifying ecosystems along the migration route of juvenile salmon, and improving underwater oxygen monitoring to better understand ocean deoxygenation and its effects on British Columbian salmon aquaculture.

The partnership between MEOPAR and ONC grew out of a mutual interest in using ocean observation to advance marine science for the benefit of Canada. This is not the first collaboration between the two organizations; they frequently work together on marine research initiatives and hosting regional science-focused workshops.

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Quotes:

Doug Wallace, Scientific Director

Marine Environmental Observation, Prediction and Response Network

“In the first five years of MEOPAR, we built a national network to anticipate and respond to the changing risks of the marine environment. These new projects are very exciting for me; not only because of their originality, but also because of the fascinating variety of partners from all across Canada that will be involved. There is a tremendous diversity of research that will be supported.”

Richard Dewey, Associate Director of Science Services

Ocean Networks Canada

“These projects highlight the very successful collaboration between Ocean Networks Canada and MEOPAR. Ocean Networks Canada is excited about the potential outcomes from the research and how it will benefit Canadian science.”

Fact Sheet:

- The three projects will receive over \$1.3 million over the course of the project durations
- Model of Impact of Dilbit and Oil Spills in the Salish Sea (MIDOSS)
 - Dr. Susan Allen, University of British Columbia
 - Project will receive \$494,200
- Spatiotemporal dynamics of the coastal ocean biogeochemical domains of British Columbia and Southeast Alaska - following the migration route of juvenile salmon
 - Dr. Maycira Costa, University of Victoria
 - Project will receive \$361,500
- OxyNet: A network to examine ocean deoxygenation trends and impacts
 - Dr. Philippe Tortell, University of British Columbia
 - Project will receive \$491,000
- The projects will kick off in the spring of 2018.

About MEOPAR:

The Marine Environmental Observation, Prediction and Response Network (MEOPAR) is a national Network of Centres of Excellence, connecting top marine researchers across the country with highly-qualified personnel, partners and communities. MEOPAR aims to train the

next generation of marine research professionals, fund leading-edge research, and connect research results to real-world solutions. For more information, please visit www.meopar.ca.

About Ocean Networks Canada:

The University of Victoria's Ocean Networks Canada (ONC) monitors the west and east coasts of Canada and the Arctic to continuously deliver data in real-time for scientific research that helps communities, governments and industry make informed decisions about our future. Using cabled observatories, remote control systems and interactive sensors, and big data management ONC enables evidence-based decision-making on ocean management, disaster mitigation, and environmental protection. For more information, please visit <http://www.oceannetworks.ca>.

Dr. Susan Allen, Professor, Earth, Ocean and Atmospheric Sciences University of British Columbia

Allen is a physical oceanographer who studies fluid mechanics including scaling, analytics, laboratory and numerical modelling. Her areas of expertise include coastal oceanography, mesoscale meteorology and biogeochemical-physical interactions in the ocean. For more information, visit <https://www.eoas.ubc.ca/people/susanallen>

"With this funding we will model how oil and diluted bitumen from a spill would move through the Strait of Georgia in different conditions. We will develop effective ways to communicate the risk to communities, improving their ability to reduce damage to the environment. The model will also provide ocean information to pilots to help reduce accidents."

Dr. Maycira Costa, Associate Professor, Geography University of Victoria

Costa is working toward developing research methods to make more effective use of remotely sensed imagery for understanding and monitoring biophysical processes in ocean waters and wetlands, and researching light attenuation in coastal and riverine waters. Her areas of expertise include remote sensing, coastal oceanography, wetlands and biogeophysical processes. For more information, visit <https://www.uvic.ca/socialsciences/geography/people/faculty/costamaycira.php>

"Our research will provide new insights into the spatial and temporal variability of B.C. and southeast Alaska ocean waters along the main migration routes of juvenile salmon. This will be a large effort combining data from ocean satellites and other platforms, such as ships of opportunity and Ocean Networks Canada observatories."

**Dr. Philippe Tortell, Professor, Earth, Ocean and Atmospheric Sciences
University of British Columbia**

Tortell is a sea-going oceanographer with broad interests in marine biogeochemical cycles. His current research focuses on understanding the biological, chemical and physical factors regulating oceanic primary productivity, and the concentration of climate active gases including carbon dioxide (CO₂), dimethylsulfide (DMS), methane (CH₄) and nitrous oxide (N₂O). For more information, visit <https://www.eoas.ubc.ca/people/philippetortell>

“Our work will provide much-needed information on the trends and potential future trajectories of dissolved oxygen loss across Canada’s three oceans. This information will be critical for understanding an evolving threat to natural ecosystems and commercial marine harvesting activities.”

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