

RESEARCH DOSSIER

Marine Contaminants

Marine contaminant-related research and capacity in the MEOPAR Network

Canada's oceans are vulnerable to the adverse effects of a diverse array of contaminants including oil, plastics and coastal stormwater runoff. MEOPAR is working together with partners from the government, industry, NGO and community sectors to reduce the likelihood of marine contamination, to better understand the impacts of pollutants, and to improve our collective ability to anticipate and respond to contamination events.

Anticipating Contamination Events

MEOPAR supports research and development that improves safety at sea and strengthens our collective understanding of when, where and why marine contamination events are likely to occur in Canada. This information enables government agencies, marine industries and coastal communities to reduce the risk of contamination, and to strategically allocate resources to improve response capabilities.

- **Contributing Factors:** Investigating the natural and social factors that contribute to contamination events including risk communication, attitudes towards safety, marine weather and ocean conditions, marine transportation and navigation, and factors specific to individual forms of pollution.
- **Probability of Contamination:** Assessing the probability of a contamination event occurring by analyzing trends in maritime traffic, marine accidents, environmental conditions, human behaviour, the shipment of hazardous substances and other factors that may increase and/or mitigate contamination risk.



Fukushima Radionuclides

Dr. Jay Cullen (University of Victoria) is monitoring Canada's West coast for radionuclides from the 2011 Fukushima nuclear disaster in Japan. He works closely with Health Canada to ensure accurate information about potential risk to environmental or human health is communicated to the public.

Marine Plastics

Dr. Max Liborion (Memorial University) is developing tools and approaches for monitoring marine plastics in Canada's North. The region's ice-laden waters and predominantly rocky coastline renders protocols from other parts of the world largely ineffective.



Responding to Contamination Events

MEOPAR supports research and knowledge mobilization activities that help communities, industries, government agencies and emergency responders better prepare for, and respond to, marine hazards and emergencies.

- **Environmental Monitoring:** Creating and validating new techniques, tools and methodologies for establishing ecosystem baselines and for observing and monitoring marine pollutants.
- **Contamination Modelling:** Developing models to forecast the spread of pollutants through the marine and coastal environment.
- **Identifying and Forecasting Impacts:** Working with industries, government agencies and communities to better understand and forecast the physical, environmental and socio-economic impacts of marine contaminants.
- **Supporting Response:** Informing immediate emergency response strategies and supporting the development of long term prevention, mitigation and response plans - including the strategic allocation of emergency response infrastructure.

Partner Engagement

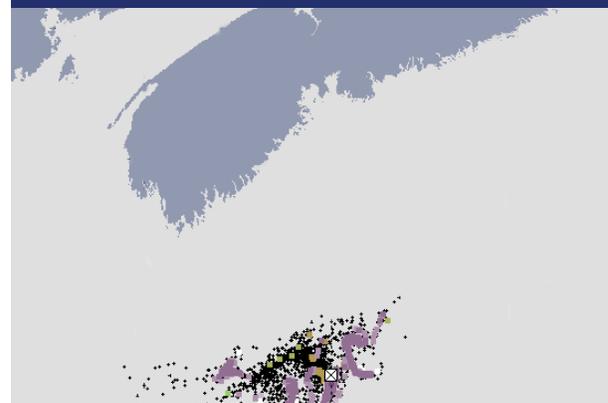
MEOPAR's research, training and knowledge mobilization activities are conceived and delivered in response to specific partner needs. We aim to supply partners with knowledge, tools, people and pathways that strengthen their resilience and opportunity in Canada's marine environment.



Oilspills

(Above): Dr. Casey Hubert (University of Calgary) is working with ExxonMobil to investigate the role of marine bacteria in remediating oilspills

(Below): Dr. Haibo Niu (Dalhousie University) is creating and validating a model to simulate a subsurface, deepwater oil spill on the Scotian slope.



About MEOPAR

Established in 2012 through Canada's federal Networks of Centres of Excellence Program, the Marine Environmental Observation Prediction and Response (MEOPAR) Network is a national network of academic researchers and students, government scientists, and partners in the private, NGO and community sectors working together to reduce vulnerability and strengthen opportunity in Canada's marine environment.

**Marine Environmental Observation
Prediction and Response Network**
Steele Ocean Sciences Building
Dalhousie University
1355 Oxford St.
Halifax, NS B3H 4J1
t. (902) 494 - 4384
info@meopar.ca



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Networks of Centres
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www.meopar.ca