MEOPAR

MARINE ENVIRONMENTAL OBSERVATION
PREDICTION & RESPONSE NETWORK

OVERVIEW

Neil Gall

May 2014

MEETING THE CHALLENGES OF OUR CHANGING OCEAN


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OUR FUTURE DEPENDS ON AN INFORMED
RELATIONSHIP WITH THE OCEAN
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MEOProjects

GENERATING KNOWLEDGE people want and will use

BRINGING TOGETHER people in new and different ways

TRAINING the next generation of ocean experts

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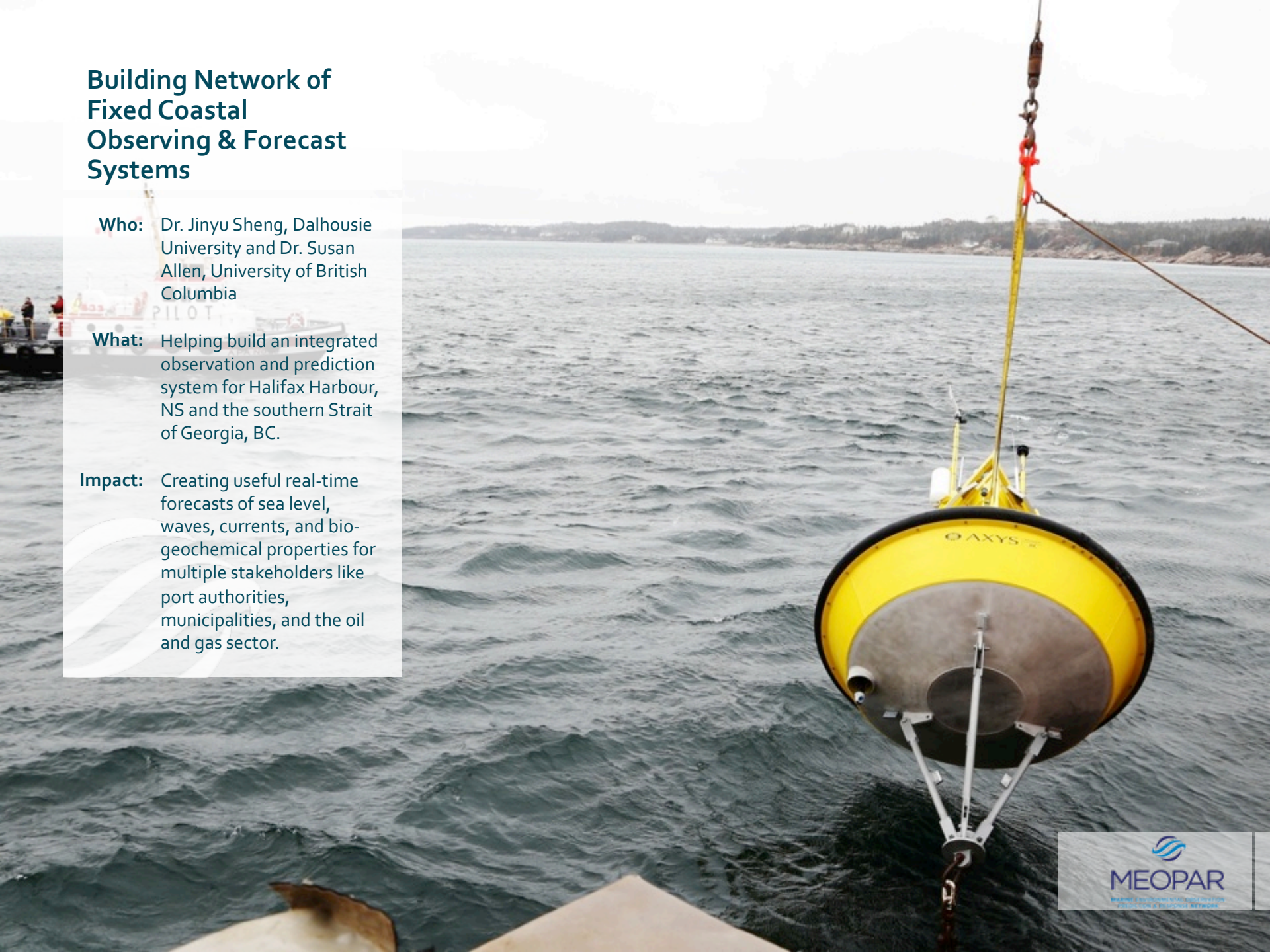
Building Network of Fixed Coastal Observing & Forecast Systems

Who: Dr. Jinyu Sheng, Dalhousie University and Dr. Susan Allen, University of British Columbia

What: Helping build an integrated observation and prediction system for Halifax Harbour, NS and the southern Strait of Georgia, BC.

Impact: Creating useful real-time forecasts of sea level, waves, currents, and bio-geochemical properties for multiple stakeholders like port authorities, municipalities, and the oil and gas sector.



A Re-locatable Atmosphere-Ocean Prediction System

Who: Dr. Harold Ritchie, Environment Canada/ Dalhousie University

What: Developing a re-locatable atmosphere-wave-ocean forecast system that can be set up within hours of a marine emergency. It can track plumes of tracers and hazardous materials in two and three dimensions.

Impact: Providing forecasts (hours to days) of the physical properties of the ocean and atmosphere to help guide response to an emergency. Eventually, this system will be transferred to Environment Canada for national, operational use.

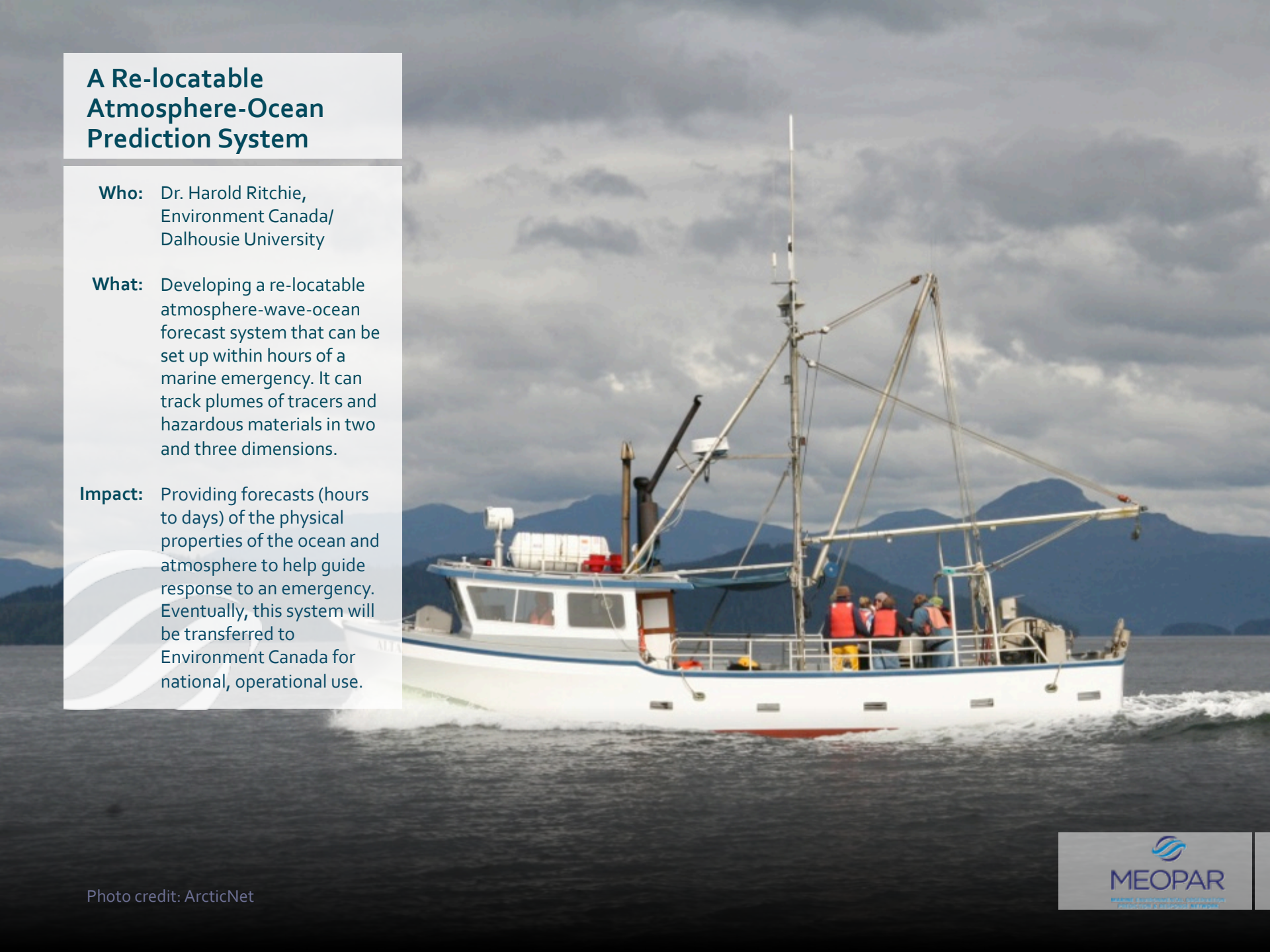


Photo credit: ArcticNet

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Improving Surface Drift Forecasts

Who: Dr. Dany Dumont, Université du Québec à Rimouski

What: Improving surface drift forecasts in seasonally ice-infested seas by recording data that estimates wave forecasts and surface drifting. Buoys were deployed by UQAR ice canoe team.

Impact: Being able to respond to emergencies along Canadian coasts requires accurate hindcasts and forecasts of winds and surface currents to estimate where a person or an oil patch will drift. Time is key in ice-infested water where survival time is short and conditions are extremely difficult.

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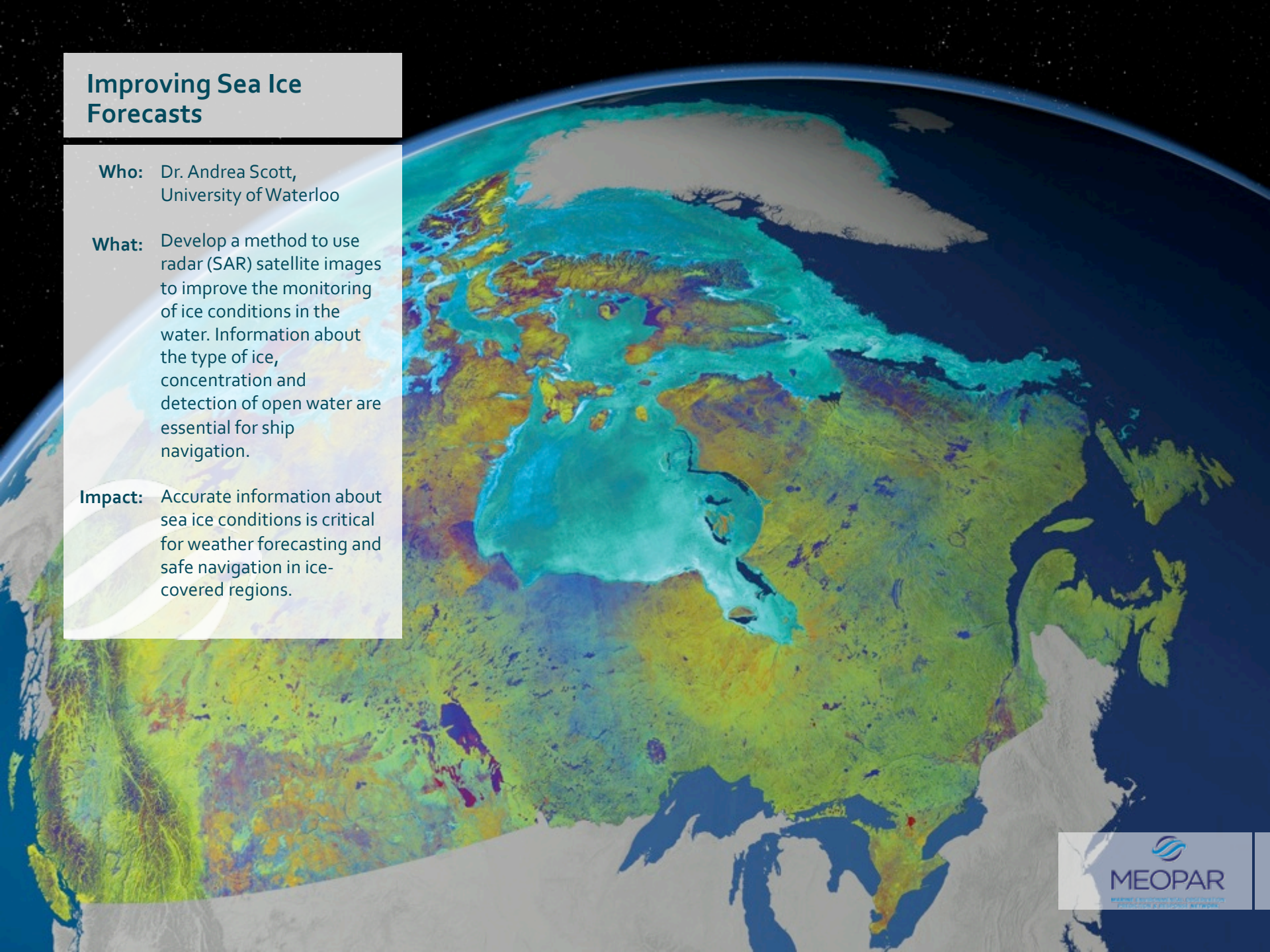
Improving Sea Ice Forecasts

Who: Dr. Andrea Scott, University of Waterloo

What: Develop a method to use radar (SAR) satellite images to improve the monitoring of ice conditions in the water. Information about the type of ice, concentration and detection of open water are essential for ship navigation.

Impact: Accurate information about sea ice conditions is critical for weather forecasting and safe navigation in ice-covered regions.



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Climate Change and Extreme Events in the Marine Environment

Who: Dr. Gregory Flato, Environment Canada/University of Victoria

What: Flato and his team are developing ways to assess and visualize changes in the marine environment and the associated risks. How to create accurate and detailed risk maps of ocean conditions will be explored.

Impact: These ocean maps could be used to guide ship traffic, and drift models could be used in the event of a spill. The fishing industry and coastal communities could also use these maps to manage their exposure to extreme weather events.

Photo: CC Sam Beebe

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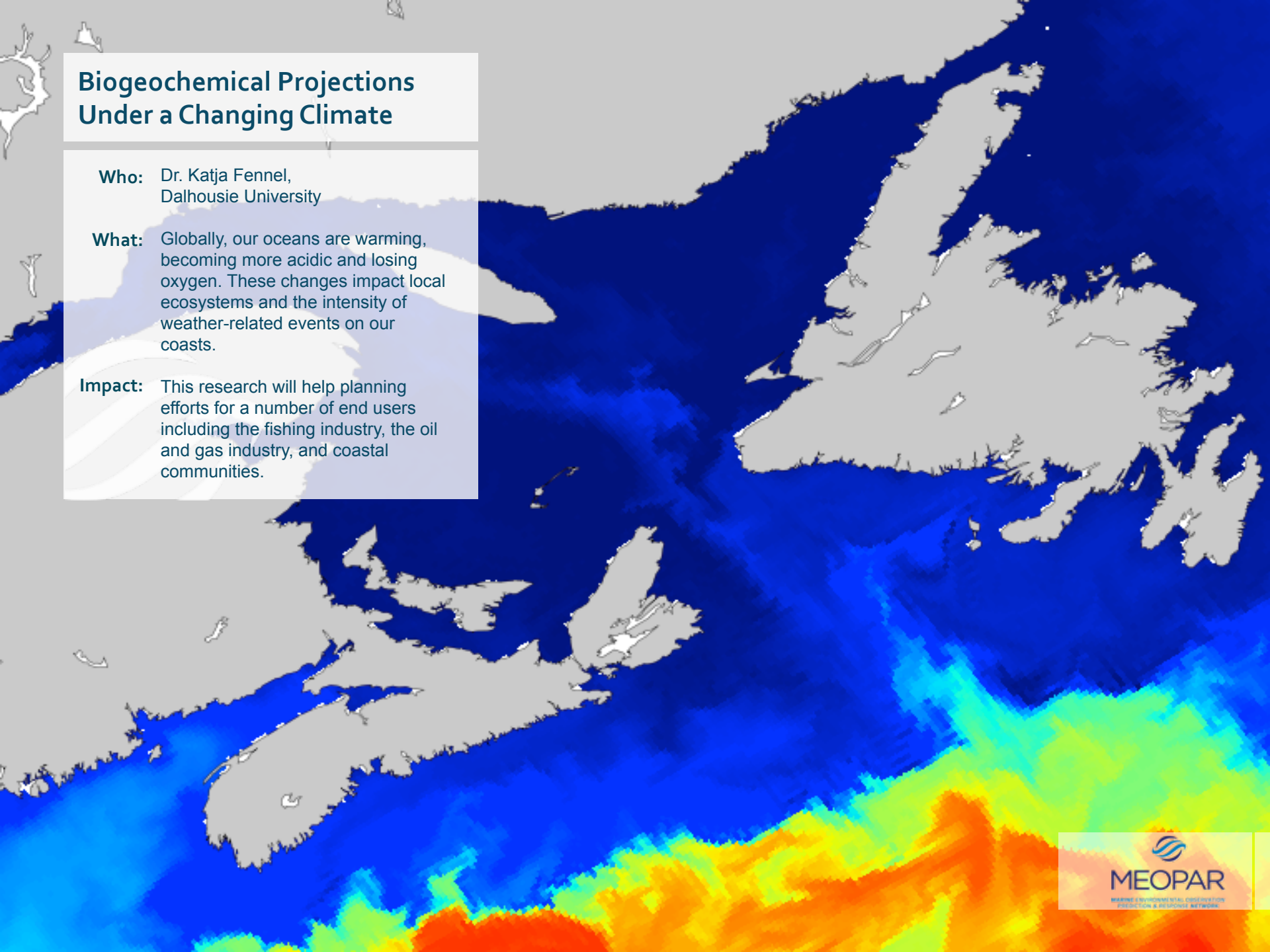
Biogeochemical Projections Under a Changing Climate

Who: Dr. Katja Fennel,
Dalhousie University

What: Globally, our oceans are warming, becoming more acidic and losing oxygen. These changes impact local ecosystems and the intensity of weather-related events on our coasts.

Impact: This research will help planning efforts for a number of end users including the fishing industry, the oil and gas industry, and coastal communities.



User-Driven Monitoring of Adverse Marine and Weather States in the Eastern Beaufort Sea

Who: Dr. David Atkinson, University of Victoria

What: How large-scale weather patterns adversely impact marine transport and industrial activity and near-by stakeholders in the Eastern Beaufort Sea.

Impact: Ensure marine operators, coastal communities and emergency response operators have access to weather forecast information that helps them when planning their operations.

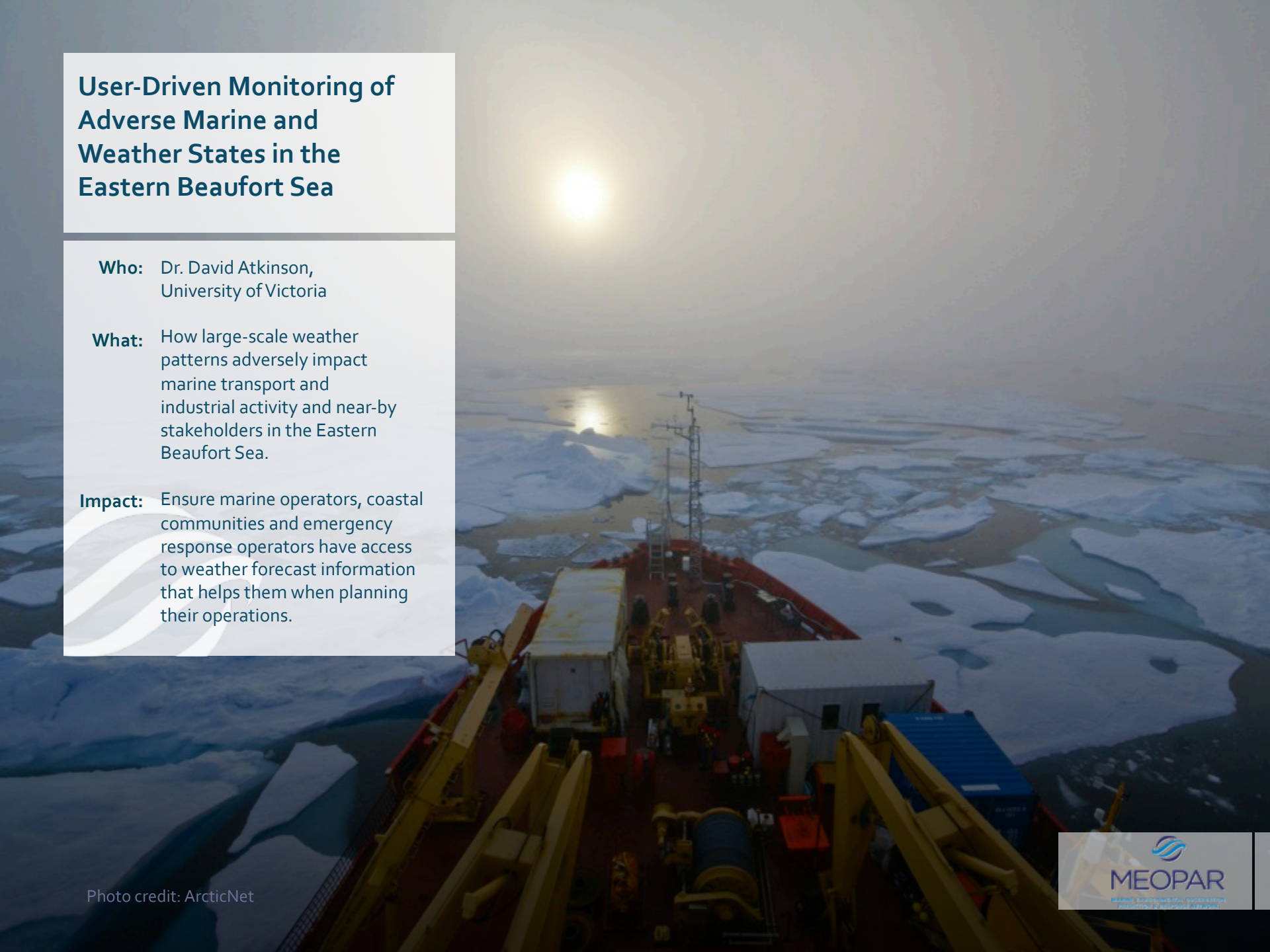


Photo credit: ArcticNet

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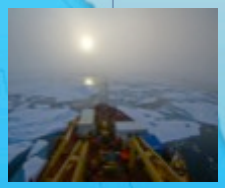
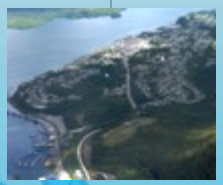
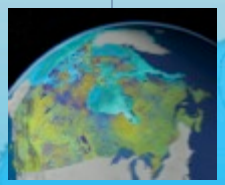
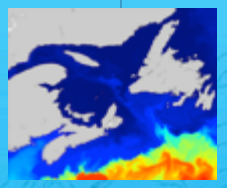
ET C'EST LE BUUUTTTT!!!
CRAZY HABS FANS

Networking & Partnerships



MEOPAR as Network of Centres of Excellence

50 researchers from 12 Canadian universities and 4 federal departments

Headquartered in Halifax, Nova Scotia at Dalhousie University

Established in 2013

MEOPeople

All the projects we spoke of are training students – these students are our MEOPeers. We have a network of researchers across the country.

MEOPAR'S Outcomes

INFORMED SOCIETY

- More people using research results
- Information about the ocean readily available

COORDINATED CANADIAN APPROACH

- Bringing together researchers, industry, and NGOs
- Better techniques & policies
- Hazard management

TRAINED PEOPLE

- Ocean skills
- Student mentoring

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