



## Ensuring our coasts and oceans are clear of risk

Ronald Pelot can't think of a better place to explore the risks and safety of Canada's marine environments than Dalhousie University.

"It's literally by the ocean, which is inspiring," says Pelot. "You also have access to ocean-trained experts here, and in Halifax. If you're studying the impact of noise on marine environments, there are people who know about ships, people who know noise and people who know marine mammals and noise."

That's vital expertise to have when you're developing the type of methodologies, software and tools that Pelot and his team are developing through the Maritime Activity and Risk Investigation Network (MARIN). The Dalhousie-based research group's tools are enhancing decision-making in search and rescue planning, addressing oil spills and coastal zone planning for safer oceans activity, but also to protect marine life and environments.

"We've been doing a lot of work with Canada's Coast Guard, Defence Research and Development Canada and with Transport Canada," says Pelot. "We're looking at everything from

improving Coast Guard responses to incidents to weather impact on fishing vessel safety."

Although Pelot has been researching marine risk and safety for nearly 20 years, it came about partly by happenstance. Originally from Ottawa, he was studying resource energy modeling at the University of Waterloo when he got involved in the Institute for Risk Research on campus. That sparked an interest in environmental risk, which continued when he joined Dalhousie University in 1994 as an Industrial Engineering professor. And that made him the ideal candidate when a Canadian Coast Guard representative approached the Faculty to conduct a risk analysis of its cross-country capabilities.

"I was the only person doing risk analysis here, so I started doing marine risk research. There was very little work being done in the area at the time, but it's grown exponentially since."

Somewhat of a pioneer in the field, the appeal of the work for Pelot was the opportunity to do applied projects. "Saving lives, which the Coast Guard does, is about as close as you can get

## FOCUS ON RESEARCH

**RONALD PELOT** IS A PROFESSOR OF INDUSTRIAL ENGINEERING AND ASSOCIATE SCIENTIFIC DIRECTOR OF THE MARINE ENVIRONMENTAL OBSERVATION PREDICTION AND RESPONSE NETWORK (MEOPAR).

to where the rubber hits the road. That kind of grounded research drives me because it's helping people."

Over the years, Pelot and his team's research has led to improvements in air searches for mystery oil spills and enhanced Coast Guard response times through recommendations on station and vessel locations. Currently, he's researching how the Coast Guard can minimize the impacts of its upcoming fleet refit and collaborating on a surveillance project for the Northwest Passage leading through the Canadian Arctic Archipelago.

"Because ice is melting in the area, there'll be more shipping, oil and gas exploration and cruise tourism, for example. We're doing spatial traffic projections and risk analyses to see if there are sufficient tracking, risk management and communications to handle all that activity."

The work also dovetails with Pelot's role as Associate Scientific Director with the Marine Environmental Observation Prediction and Response Network (MEOPAR). This nationwide team of researchers is dedicated to refining Canada's ability to manage marine risks. He's been studying oil spills with MEOPAR, extreme weather events and fishing fleet safety, and he will be investigating the impact of shipping noise on marine life. Happy to contribute to the safety of Canada's marine environments, Pelot hopes his work will lead to more collaboration between researchers and policymakers.

"This is really about dealing with future uncertainty when making decisions about maritime safety and protection. I'd like to think the research taking place now, including mine, will help demonstrate good ways to do that."