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Oceans science: A critical mass of minds

UNIVERSITY MATTERS

WE DESCRIBE Nova Scotia as Canada's ocean playground, so we have a unique responsibility to reverse the alarming deterioration of our marine ecosystems and resources.

Progress happens faster when we combine our talents in seeking solutions to climate change, global warming, water pollution and vanishing fish stocks. Long known for our fisheries and coastline, Nova Scotia is now earning respect as an international leader in the areas of marine management and climate change.

Halifax, in particular, with the world's third largest collection of ocean researchers is out front broadening our knowledge about restoring and sustaining ocean environments. We've achieved a critical mass of experts here in marine biology and geology, oceanography, atmospheric sciences, marine law, engineering, information technology and telecommunications, wastewater disposal, coastal defence and environmental planning.

Integrated approaches mean we're no longer considering oceans in isolation. Increasingly, Canadian research and public policy focus on the close interrelation between water and our atmosphere, and the human impacts of both. Ocean circulation is changing. Arctic ice masses are thinning. Sea levels and water temperatures are rising. The resulting shifts in air-sea interactions are affecting hurricane seasons and other weather patterns, posing threats to salmon, leatherback turtles, coral reefs and other marine life, not to mention humans.

Ocean studies are an area of special emphasis at Dalhousie. Our researchers work closely with The Bedford Institute of Oceanography, Canada's largest centre for ocean research, as well as government agencies and institutions around the world. Our campus is home base to such organizations as the International Oceans Institute of Canada, which is exploring an affiliation with our RBC Centre for Risk Management to plan emergency response to natural and human-created disasters and major storms. Marine environmental prediction is a prominent research priority for Dalhousie. Oceanography professor John Cullen is forecasting flood risk along Canada's eastern seaboard by tracking currents, storm surges and blooms of plant life in the sea.

Our growing coalition of expertise is showing long-term economic benefits as well. Satlantic, which grew out of a research effort at Dalhousie, manufactures optical sensors that attach to buoys, ships and airplanes. Their applications range from marine pollution monitoring to space exploration and national defence. The Nova Scotia Oceans Initiative, involving Dalhousie,

government and industry partners, aims to stimulate growth in the ocean technology sector.

Dalhousie marine biologist Ransom Myers placed third on Fortune magazine's list of Ten People to Watch in the next 75 years because his research on the decline of large fish species will have a lasting influence on the entire planet. He and colleague Boris Worm have been invited to speak at U.S. Senate hearings and the U.S. Oceans Congress. Dalhousie's Associate Dean of Science, Ron O'Dor, leads a large-scale U.S. monitoring system tracking the movement of marine life with tiny electronic tags and receivers, to study whether warmer water is affecting animal behaviour.

Recently, Dr. O'Dor and his colleagues were invited to bid on a $46-million Canadian project to build a curtain of electronic sensors across the world's oceans. This will give us the capacity to understand ocean environment changes and fish stock levels better than ever before. Our international partners on this project will add another $120 million to extend the reach and significance of this research. Dalhousie and Nova Scotia play the lead role in this global project because of our talent and expertise.

World Oceans Day, June 8, is rapidly approaching. This international observance, first declared in 1992 at the United Nations Earth Summit in Rio de Janeiro, is an annual global checkup for our ailing oceans. But it is also an opportunity to celebrate the major strides we are making with our research and industry. Halifax has staked out a solid place in marine management, and its potential for future development puts it on par with our burgeoning IT and health sciences sectors.

There is much at stake for our coastal communities and ecosystems – biodiversity, the fisheries, aquaculture, offshore oil and gas development, ecotourism, shipping, and our safety from natural disasters and major storms. We've always taken the ocean for granted. It's huge and it sits at our back door. Increased academic, government and industry co-operation to explore how and why our oceans are changing will vastly improve the likelihood of bringing them back to health and preserve our ocean legacy.

Tom Traves is president of Dalhousie University.