

# Canada has longest coastline in world, should protect oceans

The health of our oceans is deteriorating because of two human stressors: global warming and over-fishing.

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ter and simmer down through the cabinet to the Minister of Fisheries and Oceans and to the upper echelons of the bureaucracy.

Second, I would argue that there is a need for new legislation, the primary purposes of which would be to prevent and end over-fishing and to rebuild depleted fish stocks. The new act could be called something along the lines of the "fish and fisheries conservation and management act." The new law would formalize the explicit use of target and limit reference points in fisheries conservation and management. That would fulfill obligations that Canada has under various international agreements to implement rules for how to harvest and rebuild depleted stocks. Proscriptive legislation would end over-fishing and allow stocks to rebuild. These are the objectives written into the U.S. legislation.

A related concern is the regulatory conflict that exists within DFO insofar that the department has a dual role: promotion of industry and economic activity on the one hand, and, on the other hand, protection of fish and fish habitat. The simultaneous achievement of these two goals within a single piece of legislation has generally proven ineffective.

Third, we require environmentally informed consumer and corporate behaviour. Among other things, it would involve the simple labelling of fish products at the supermarkets that would inform the consumer about things such as the correct species of fish, the waters from which the fish were caught and the means used to catch the fish. The increased move towards some form of third party certification of sustainable seafood may provide an effective means of informing consumers and of changing consumer behaviour.

Fourth, I would point to education and acceptance of society's responsibilities. I have an eight-year-old daughter, and it will be up to people like her and her generation to change things. We can help by educating our youngsters, our children and grandchildren about the oceans and the diversity of life that inhabits the oceans. Such education can only lead to a sense of proprietary care and concern and a sense of stewardship and ownership that does not currently exist in this country.

Assigning blame for over-fishing is not simply a matter of pointing a finger at a minister, at a bureaucrat or a fisherman. We are all involved;

we are all implicated. The fish are our fish; they belong to us. We all need to pay for the sustainability of that biological ocean bounty in some form or another. The question is: What will you give up? Be it the commercial catching of fishing or the eating of tuna-filled sushi, societal behaviours must change.

Newfoundland's northern cod provides an illustrative example of what I have been trying to convey in these introductory remarks. For 500 years, the fishery was sustainable. It was the largest cod stock in world. Since then, it has declined 99 per cent. It represents the greatest numerical loss of a vertebrate in Canada history. There has been no recovery since the fishery was first closed in 1992, 17 years ago, but that has not stopped the fishing for northern cod. In June of last year, the minister of Fisheries and Oceans announced a 30 per cent increase in the quota for northern cod. It was astonishing to me that such an un-environmental and scientifically vacuous decision, so bereft as it is of careful thought and consideration for future generations, could have been made on the most depleted fish stock in the world with barely a whimper from the media, the public, the NGOs or Parliament.

It speaks volumes to me of the central political problem facing fish and fisheries in this country: there are minimal political costs associated with poor decisions.

To conclude, biological depredation of the waters bordered by the longest coast line in the world ultimately reflects a disingenuous commitment to environmental sustainability. There is a clear need to replace societal and governmental lip service with meaningful responses to over-exploitation, habitat alteration and climate change. I have suggested that such responses require committed and honourable leadership on the national and international stages, new legislation in some form, environmentally informed consumer and corporate behaviour and acceptance of the inevitable short-term socio-economic costs borne by all Canadians that will be required to achieve longer term societal benefits.

Recovering and maintaining the health of our oceans is a non-negotiable responsibility to future generations that we can neither afford nor have the right to ignore.

—Source: *Senate Committee on Fisheries and Oceans, May 5.*

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## WORLD OCEANS DAY

# World Oceans Day: Will Canada keep riding the wave?

We're leading the world in oceans S&T, but it won't be for long if we don't invest now.

By MARTIN TAYLOR

VICTORIA, B.C.—Understanding the oceans has never been so critical to our national and global futures. The oceans feed us, provide vital natural resources, determine climate patterns, and harbour in their depths the biological, chemical and physical processes that shape our planet. In short, our existence depends on them.

The bad news is that science-based "state of the ocean" reports point to a list of serious problems—ocean acidification, ocean pollution, ocean warming, depleted fish stocks, reduced biodiversity—that together constitute an environmental crisis.

The good news is that the wake-up call for immediate action is starting to be heeded nationally and internationally, and the scientific community is uniquely placed to serve the public good by providing the research base on which sound policy decisions can and should be made.

The best news is that the Canadian ocean science community is an international leader in key areas of ocean research—in fisheries biology, ocean observing systems, ocean (especially fish) tracking networks, ocean ecosystems, and Arctic Ocean research. This prominence makes sense since we border three major oceans and have the longest coastline in the world. More directly, it reflects strategic decisions by several universities—including the University of Victoria, Dalhousie, Memorial and Laval—to build critical mass in the ocean sciences and complement the long history of research by Fisheries and Oceans Canada. This capacity-building has in turn led to successes in major research funding competitions, especially those of the Canada Foundation for Innovation and the Natural Sciences and Engineering Research Council, as well as the creation of major research infrastructure platforms.

In the case of ocean observing systems, Canada is home to the world's most innovative

ocean observatories—VENUS and NEPTUNE Canada. Both involve pan-Canadian consortia of universities led by the University of Victoria in collaboration with private and public sector partners. This pioneering S&T is transforming ocean research using powered, submarine fibre-optic cabled systems and state-of-the-art data communications that stream real-time data to the Internet from sensors and instruments on the seafloor and in the water column.

The data allow for advanced system-based science over a 25-year span in ways not previously possible, and support a quantum leap in understanding complex ocean processes and their consequences. These Canadian facilities are the focus of international attention as other countries plan similar ocean observing systems.

The observatories are informing public policy, stimulating economic development, promoting public outreach, and

Under the leadership of Ocean Networks Canada (ONC), the not-for-profit agency created by the University of Victoria in 2007, a federal Centre of Excellence in Commercialization and Research has recently been established to accelerate the economic development and outreach opportunities created by the VENUS and NEPTUNE Canada research programs.

Building upon strong partnerships established during the design and installation of the two observatories, the new ONC centre of excellence will increase the global competitiveness of Canadian ocean industries in the areas of sensors and instruments, ocean system technologies, and oceans information technology. The outreach programs of the centre will expedite the communication and dissemination of the research, mostly in real time, to audiences of all ages through the Internet, school programs, aquaria and science centres, and the media.

And yet, despite these impressive accomplishments and the prospect of major scientific and societal returns on the capital investment in these observatories, there remains a critical Achilles heel which threatens their future vitality and success as world-leading major science facilities in Canada—the absence of a program to fund the core operating costs of major initiatives in S&T.

The issue is currently under review by the federal Science and Technology Innovation Council (STIC), but the urgency of a resolu-

tion cannot be overstated, with the short-term operating funding of both observatories due to expire by mid-2010.

Rarely is Canada in a position of world leadership in S&T. This is all the more significant in an area of such profound global consequence as ocean research. It's an enviable and envied position for Canada. The scientific, environmental, economic and social consequences of letting this opportunity slip are huge, nationally and internationally.

World Oceans Day is a timely and vital reminder of why we cannot let this happen.

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positioning Canada as a global leader in addressing the challenges of ocean change. Located in coastal (VENUS) and in coastal to deep ocean environments (NEPTUNE Canada) to maximize their scientific contribution, the observatories are yielding data that address some of the most challenging ocean-related public policy issues—hazard mitigation (earthquakes and tsunamis), ocean-climate dynamics, resource assessment, and sovereignty and security.

Although they are positioned in Pacific waters off the Canadian coast, the two observatories are test beds for backbone technologies, innovative instrumentation and data management systems that can be applied in the Arctic and Atlantic oceans as their strategic, environmental and economic importance continues to build.

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