



# Canada's Three Oceans

The three oceans that surround Canada are interconnected by the flow of water masses. This ocean 'continuum' offers an opportunity to understand the impact of climate change on Arctic ice cover, ocean properties and marine life in an integrated way.

The goal of *Canada's Three Oceans* is to observe North Pacific, Arctic, and North

Atlantic waters, and establish a scientific basis for sustainable, long-term monitoring.



To achieve this goal, scientists will use two Canadian Coast Guard icebreakers as research platforms on Arctic missions that encircle Canada. Research along this 15,000 kilometre track will include measurements of ocean temperature, salinity, oxygen, nutrients, tracers, sediments, virus, bacteria, plankton, birds, and whales.

This data will enhance our knowledge of the physical environment and its relationship to nature. *Canada's Three Oceans*, led by Fisheries and Oceans Canada researchers, will take a snapshot of ocean conditions in 2007 and 2008. This snapshot will allow observers to gauge the consequences of global climate change, and to provide essential information to policy-makers and the Canadian Public.



Lucie Theriault

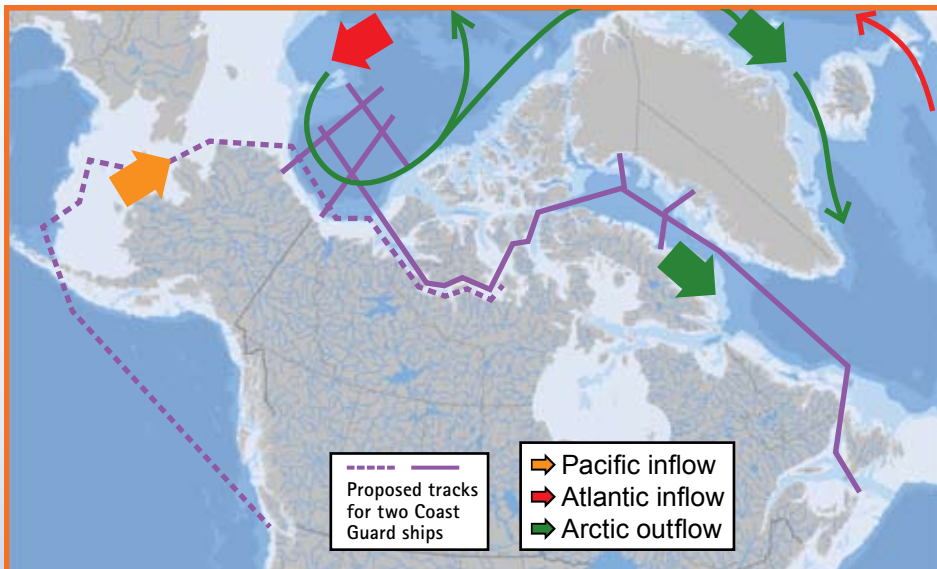
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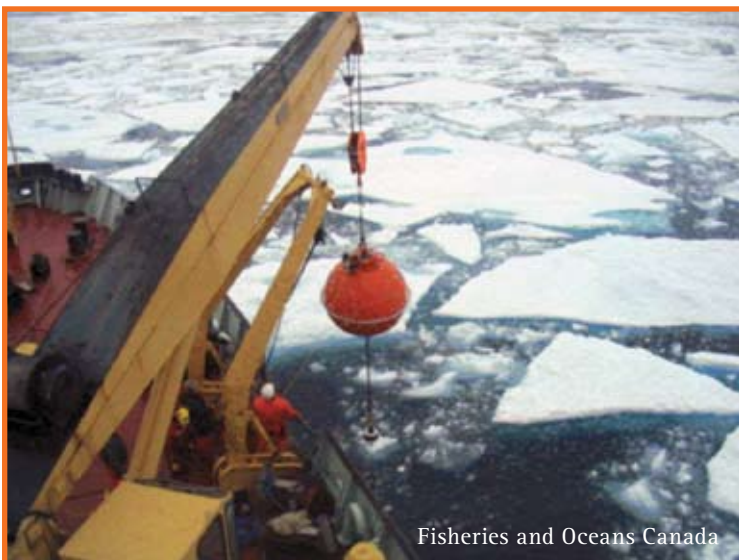
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This research project will also measure water circulation timescales in the Arctic. Several samples of water will be taken, and measured for harmless nuclear traces. These trace amounts pose no threat to health or safety, but they do allow for an effective means to chart water movement. By identifying and following the samples, it can be determined at what rate the waters of the Atlantic Ocean circulate through the Arctic Ocean.

Ocean currents are large masses, and carry a lot of heat with them. Understanding water current structure and heat movement offers insight into potential climate change in the Arctic.



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