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Title: *The Canadian Rangers Ocean Watch Polar Passage Exercise 2013*

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The objective of the Canadian Ranger Ocean Watch (CROW) is to establish sustainable environmental monitoring in the Northwest Passage, by residents, through a collaboration in which Department of National Defense (DND)-Canadian Rangers are trained by Fisheries and Oceans Canada (DFO) scientists and technicians to collect climate-related data, during patrols, that is then returned for outreach and education, policy and governance, and scientific use. CROW recognizes that Northern residents possess unmatched skills of travel and knowledge of their local environment and social scientists now recognize the need to involve natural scientists in the interpretation and application of Traditional Knowledge. As such, CROW participants will form a unique team to measure parameters that relate to changes of concern, including ocean warming and freshening, reduced ice and snow cover, altered nutrients and productivity and ocean acidification. It is also expected that Rangers engaged in the project will provide 'early warnings' related to loss of fish resources, sudden flips in species presence, changes in ice cover, and shifts in species distributions. By combining the resources of DND, DFO, and other partners CROW is arguably the most cost-effective and sustainable way to:

- Monitor fundamental change in the marine system across the full span of the Canadian Arctic Archipelago and build a time-series of essential climate-related parameters.
- Down-scale observation of change at the global and regional levels to issues that are of concern to local communities.
- Put in place an "Early Warning System" of abrupt change, species invasion and regime shift.
- Link participating communities with one another in their own observations of a changing Arctic marine system.
- Build an 'outward network' of dialog and exchange from CROW nodes in individual communities to other institutions within those communities; e.g. schools, resource management agencies and associations, health authorities.

The fundamental Knowledge to Action achievements of CROW will be to bridge the scales from the global to the local, to link and empower local communities in their abilities to measure their own land and waters, and to grow the cross-cultural partnerships required for sound and beneficial policy and governance. In February/March 2013 a large multi-community Ranger patrol called Polar Passage Exercise will begin in Taloyoak, Gjoa Haven, Cambridge Bay and Kugluktuk in the Northwest Passage and converge on Hat Island. The patrol is science-based and the data collected on this patrol will give an unprecedented view of the wintertime oceanography of the southern Canadian Arctic Archipelago and thus we will be able to improve our seasonal description of the region.

