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Our next frontier: the Arctic Ocean

The pressure's on to map an underwater area larger than Alberta. At stake is nothing less than sovereignty in the True North, says **MICHAEL BYERS**

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GLOBE AND MAIL UPDATE

What a difference a year makes. Last summer, then-defence minister Bill Graham visited tiny Hans Island, tucked

between Ellesmere Island and Greenland, to assert Canadian sovereignty in the face of a competing Danish claim. Now, a joint Canadian-Danish expedition is mapping the floor of the Arctic Ocean several hundred kilometres farther north.

Hundreds of seismic sensors and depth charges are being lowered through the ice above the Lomonosov Ridge, an undersea mountain range that transects the North Pole. When the explosives are detonated, shock waves bounce off the ocean floor, and layers of sediments and bedrock up to 40 kilometres below the ocean floor, providing detailed geographical and geological information.

The data are not being collected only for science's sake. Coastal states have sovereign rights over their adjoining continental shelves. These rights extend to the resources of the seabed and underlying strata, including all minerals, oil and gas. Usually, the rights do not go more than 200 nautical miles from shore. But under the UN Convention on the Law of the Sea, countries may -- depending on the depth and shape of the seabed, as well as the thickness of underlying sedimentary layers -- claim a shelf that reaches much farther.

Any such claim must be submitted, with supporting scientific data, to a Commission on the Limits of the Continental Shelf, a body of scientists elected by parties to the UN Convention. Once a country ratifies the Convention, it has 10 years in which to make its submission. Canada ratified in 2003; just seven years remain to complete its claim.

Conceivably, Canada could assert sovereign rights over an underwater expanse larger than Alberta -- with comparable natural resources. Scientists estimate 25 per cent of the world's undiscovered

oil and gas

reserves are in the Arctic. As prices rise, new technology develops, and climate change makes northern regions increasingly accessible, the Arctic Ocean could become humanity's last major source of fossil fuels.

Alternatively, from an environmental perspective, Canadian sovereignty could help keep the fossil fuels locked in the ocean floor, where they cannot contribute to further climate change.

In any event, the expedition to the Lomonosov Ridge is just a beginning. Of the \$70-million for seabed mapping allocated by the 2004 federal budget, more than half was designated for the northwest flank of the Arctic Archipelago -- a vast, frozen expanse of ocean stretching from Ellesmere Island to the Beaufort Sea.

Logistically, mapping that area is as challenging as mounting an expedition to the moon. Two heavy icebreakers working together could take four or more summers to complete the job. Canada has only one such vessel, the aging Louis St. Laurent. Another icebreaker will have to be chartered or bought. And icebreakers consume vast quantities of fuel, the price of which has risen sharply since 2004. As a result, the money allocated by Paul Martin's government will probably not suffice.

The United States could help. During the Cold War, the U.S. Navy mapped the geography of the Arctic Ocean, using nuclear submarines operating under the ice. Recently, it declassified the data obtained from areas more than 200 nautical miles offshore. Yet it will not, officially, at least, even admit to having data from within 200 nautical miles of other

countries, since collecting that data would have been illegal without the coastal state's consent.

More recently, Ottawa invited Washington to send its mapping submarines into Canadian waters, but the specialized vessels were decommissioned before that could be done. In these circumstances, consideration should be given to providing retroactive consent to any clandestine mapping that occurred. Washington might also be persuaded to coordinate the timing and substance of its own claim to an extended continental shelf with Ottawa. Before filing coordinated claims, Ottawa and Washington would have to resolve their maritime boundary dispute in the Beaufort Sea, since the line within 200 nautical miles provides the starting point for the line farther out. That dispute -- over just 65 kilometres of seabed -- pales in significance when compared to the sovereign rights available to both countries farther offshore.

Even if Washington co-operates, much remains to be done. Submarines are not particularly useful for mapping the geology of the seabed, and data on sediments is an essential component of any claim to an extended continental shelf. The seismic mapping along the northwest flank of the archipelago must begin soon with full federal support.

The stakes are high. A complete, scientifically sound, punctual submission could result in Canada having widely recognized sovereign rights over an enormous, and enormously important, expanse of seabed. Seen in this light, the joint Canadian-Danish expedition is more than a curiosity -- it signals the opening of Canada's next frontier.

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