Polar Research Stations
What Canada now has in the Arctic

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In 1957, the United Nations Conference on the Law of the Sea gave nations the rights to mineral and energy resources on their continental shelves to a depth of 200 metres. At the time, Canada knew almost nothing about this suboceanic territory in the Arctic.

So in the spring of 1958, the federal government established the Polar Continental Shelf Project. Since its first scientific forays into the field in 1959, Polar Shelf has built up a logistics-support network that stretches 2,160 kilometres, from Alaska to Greenland and from the Arctic Circle to the geographic North Pole.

But the base in Resolute hasn't kept up with the times. It has no labs or storage systems to support on-site scientific research. Nor does it have the working space or information technology that scientists need to process their results. Contact with aircraft and scientists in the field is still done largely by two-way radio.

Currently, the entire show is run by a staff of just 10 people.

Canada also has a number of independently operated research stations in the Arctic that are badly in need of upgrading.

What other countries have in the polar world

- Norway -- The Norwegians are arguably world leaders in polar research. In addition to operating research stations in Ny-Ålesund, Svalbard and Antarctica, they have the Lance, a research ship that goes to both the Arctic and Antarctica. The Norwegian Polar Institute has roots that go back to 1906, when the first scientific expedition to Svalbard took place.

About 110 people are employed at the Norwegian Institute in Tromsø, Svalbard and Dronning Maud Land.

- Great Britain -- Based in Cambridge, the British Antarctic Survey operates four year-round research stations in Antarctica and another at Ny-Ålesund in the Arctic. Its annual budget, 90 per cent of which comes from the government, is about $90 million. Its sixth version of Halley, which is nearing
completion, will have a greenhouse, atrium, music centre, saunas and other amenities. It is also built on legs that can move the station out of harm's way.

- Spain -- It is one of several countries that have research stations in Antarctica. The Juan Carlos research base is located on Livingstone Island in Antarctica. Inhabited for only four months of the year, scientists there focus on geology, meteorology, glaciology and biology.

A new station that is being built will get its water from a glacial-melt stream, which flows next to the base in the summer, and from desalination of seawater when the stream is unavailable. All sewage will be treated in a bioreactor on site. Only clean, treated waste-water will be left behind.

The ultimate aim is to use solar and wind energy to power the entire operation.

- United States -- Besides operating several field stations in Antarctica, the United States has also invested heavily in Arctic research. The Toolik Field Station is located in the northern foothills of the Brooks Range in northern Alaska, on the southeast shore of Toolik Lake. Toolik Field Station serves as a base for researchers working along the ecological transect connecting tundra to boreal forest along the Dalton Highway between Prudhoe Bay and Fairbanks. Toolik Field Station is operated and administered by the Institute of Arctic Biology at the University of Alaska Fairbanks.

The Barrow Arctic Science Consortium (BASC) is a non-profit organization dedicated to the encouragement of research and education pertaining to Alaska’s North Slope and the adjacent Arctic Ocean. Located within the Arctic Circle in Barrow, Alaska, BASC is fully funded by the National Science Foundation. It is unique in the sense that scientists work closely with Alaskan natives.

- Australia -- The Australian Antarctic Division maintains four permanent research stations. Mawson, Davis and Casey are on the Antarctic continent, and Macquarie Island is in the sub-Antarctic. All four stations are occupied year-round by scientists and support staff. Mawson is one of the longest-continuously operating stations in Antarctica and the oldest south of the Antarctic Circle.

- New Zealand -- Scott Base is located on Ross Island in the Ross Sea region of Antarctica. Ross Island is 3,932 kilometres (2,114 nautical miles) from Christchurch New Zealand, and 1,500 kilometres from the South Pole.