

# NORTHERN UFOs: INVASION OF THE ARCTIC

## Introduction

### Focus

Recently, the sighting of mysterious visitors in Canada's Arctic has raised concerns that other nations may be planning to challenge Canada's sovereignty in the area. This *News in Review* module looks at some of the reasons behind these potential challenges. We also look at the roots and history of Canada's sovereignty claim, the ways in which Canada tries and has tried to defend it, and the rich resources of the Arctic that make it a prized possession.

### Quote

"The definition of the word *sovereignty* is simple: it is the international independence of a state, combined with the right and power of regulating its internal affairs without foreign dictation."  
— Mark E. Gaillard, *Northern Review*, Winter 2001



Sections marked with this symbol indicate content suitable for younger viewers.

Canada is a polar nation. Almost 40 per cent of its landmass is north of the line of permafrost. Canada has more Arctic territory north of the tree line than any of the other seven Arctic nations. Canadian sovereignty over the Arctic Archipelago is an accepted fact.

### On Land . . .

Canada's acquisition of the Arctic as part of its territory began in 1870, when the Hudson's Bay Company transferred title to all of its lands to the Government of Canada. Ten years later the British government, by an Imperial-Order-in-Council, formally transferred legal title to the Arctic Islands to Canada. The British had actually been pressuring Canada to assume responsibility for the islands for some years.

In 1895, Canada, by its own order-in-council, set its northern boundary to include all islands south of the northernmost point of Ellesmere Island (83 degrees north). Two years later Arctic sovereignty patrols began.

Some challenges were made to Canada's claim, but various governments effectively handled these. The most important was the "discovery" and claim for Norway of the Sverdrup Islands in the 1880s by Otto Sverdrup. This was finally settled in 1930 by a Canadian payment of \$67 000 to Sverdrup; in return, Norway recognized Canada's sovereignty over the territory.

By the 1920s, Canada was sending annual expeditions to the High Arctic, mostly by the RCMP, as a way of reinforcing its claim. The 1920s also saw the passage of important legislation to further enforce Canadian control. An amendment to the Northwest Territories

Act obliged all foreign explorers to obtain a permit to work in the area. In 1926 the creation of the Arctic Islands Preserve made the entire Canadian Arctic region a hunting preserve for the exclusive use of its aboriginal inhabitants.

In May 1969, Prime Minister Pierre Trudeau was able to advise Parliament that Canada's sovereignty over the Arctic "is well established and that there is no dispute concerning this matter. No country has asserted a competing claim, no country challenges Canada's sovereignty on any other basis, and many countries have indicated in many ways the recognition of Canada's sovereignty over these areas" (quoted in *Northern Review*, Winter 2001). Only the ownership of Hans Island, off the north coast of Greenland, is currently in dispute (with Denmark).

### . . . and Sea?

At the time of Trudeau's statement to Parliament, a challenge was about to take place to Canada's Arctic sovereignty—not on land, but at sea. The U.S. icebreaking tanker *Manhattan* was soon to set sail for what Canada considered its Northwest Passage. The U.S., like many other nations, considered (and still considers) the Northwest Passage to be an international strait. It saw no need to request Canada's permission to proceed.

The legal arguments are lengthy and complicated, but the Canadian view is well presented by Mark E Gaillard (in *Northern Review*, Winter 2001): ". . . since the 1880 deed transfer, the waters of the Arctic Archipelago have been Canada's internal waters by virtue of

**Definition**

An *order-in-council* is an administrative order coming from the Cabinet of a provincial or federal government. It does not have to pass through debate in a legislature.

**Quote**

"If you don't assert your sovereignty—and we could talk about Hans Island as an example—if you don't go there and put boots on the ground, and don't show the flag, then it is very hard to come back and say, 'This is my land and nobody can take it from me.' — Colonel Norm Couturier, Commander, Canadian Forces Northern Area, *National Post*, March 3, 2005

historic title. These waters have been used by Inuit, now of Canada, since time immemorial. Canada has exercised unqualified and uninterrupted sovereignty over the waters."

Even so, the U.S. and others argue that the Northwest Passage is a special case, that "the passage is an international strait and that all countries' vessels have the right to sail through without Canadian permission—if they meet international standards of construction and operations" (Rob Huebert of the University of Calgary, *The Globe and Mail*, January 29, 2002). There are 110 such international straits around the world, all used to navigate from one part of the high seas to another.

In many ways the question has remained academic. To date, the number of successful transits of the Northwest Passage by ship is about 50. If the passage is almost permanently closed by ice, it is not likely to ever be a prime route between the Atlantic and Pacific. But, if that ice is melting, Canada's Arctic waters could become a prime shipping area—and one over which

Canada has little effective control.

A 1985 transit of the Northwest Passage by the U.S. Coast Guard icebreaker *Polar Star* led to the following statement by External Affairs Minister Joe Clark: Government policy is to "exercise full sovereignty in and on the waters of the Arctic archipelago and this applies to the airspace above as well" (quoted in *Northern Review*, Winter 2001). Three years later the U.S. and Canada signed an Agreement on Arctic Co-operation, which stated that "all navigation by U.S. icebreakers in waters claimed by Canada to be internal will be undertaken with the consent of the government of Canada" (quoted in *Northern Review*, Winter 2001).

Meanwhile, mysterious visitors continue to operate in Canada's Arctic waters without Canada's permission. The Agreement on Arctic Co-operation, after all, deals only with surface vessels. Canada currently has few ways of monitoring surface activity in the Arctic. It has no methods at all of monitoring subsurface traffic.

**For Discussion**

This introduction opens with the sentence: "Canada is a polar nation." Consider this statement by Franklyn Griffiths, Professor Emeritus at the University of Toronto (quoted in *The Walrus*, December/January 2005): "We are not an Arctic nation, except in a mystical sense, as part of our greatness by extension, our grandeur as a people. We still don't go there." If Griffiths is correct, how likely are we as Canadians to rally to protect our sovereignty over the Arctic? Do you think that we should be concerned now about future control of the Arctic lands, waters, and airspace? Explain.

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## Video Review

Answer the questions in Part I as you watch the video, before considering Part II.

### Part I

1. How soon do observers think the Northwest Passage might become a suitable route for shipping? \_\_\_\_\_  
\_\_\_\_\_
2. Why would the operators of supertankers and container ships especially like to see the Northwest Passage available to their vessels?  
\_\_\_\_\_  
\_\_\_\_\_
3. In what year did the Inuit begin seeing “Unidentified Floating Objects” in the waters around Baffin Island? \_\_\_\_\_
4. According to the Chief of Maritime Command when do most sightings take place? \_\_\_\_\_
5. How many sightings of UFOs have there been since 1999? \_\_\_\_\_
6. Reporter Kelly Crowe says that, “when it comes to sovereignty, the rules are clear.” What are the rules?  
\_\_\_\_\_  
\_\_\_\_\_
7. Canadian Forces Northern Commander Pierre LeBlanc indicates that a foreign submarine in Canadian waters without permission is, in international law, guilty of a serious act. What is that act?  
\_\_\_\_\_  
\_\_\_\_\_
8. How does Minister of National Defence Bill Graham describe the presence of foreign submarines in Canadian waters?  
\_\_\_\_\_  
\_\_\_\_\_
9. According to international law, what might happen if Canada fails to challenge foreign subs in its territorial waters?  
\_\_\_\_\_  
\_\_\_\_\_
10. What was photographer Mike Bidel the first ever to do in the Northwest Passage?  
\_\_\_\_\_  
\_\_\_\_\_
11. How does Russia’s treatment of its Northeast Passage differ from Canada’s treatment of the Northwest Passage?  
\_\_\_\_\_  
\_\_\_\_\_

12. How serious a problem in your opinion is the issue of Canadian control of the Arctic? Explain.

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## Part II

The following quotes are taken from an excellent article by Andrea Mandel-Campbell, "Who Controls Canada's Arctic?" which appeared in *The Walrus*, December/January 2005. Form groups with your classmates to discuss how each of these is validated or contradicted by information presented in the video. Note that you may wish to view the video a second time before undertaking this exercise. Also indicate whether you agree or disagree with each quote and briefly note why. Which comments have your greatest/least support? Why?

1. Gordon O'Connor, Conservative Party defence critic: "My worry is, when global warming takes effect, the Northwest Passage is going to be freed up. A number of countries are going to say it's an international passage and we could start losing our sovereignty over pieces of the Arctic."

**Agree** \_\_\_ **Disagree** \_\_\_ **Why?** \_\_\_\_\_

2. David Hik, University of Alberta biologist: "We are one of the most significant northern nations, yet we don't have a plan, or any obvious interest, and we haven't made strategic investments. This is our security, and this is our future for the next century."

**Agree** \_\_\_ **Disagree** \_\_\_ **Why?** \_\_\_\_\_

3. Pierre LeBlanc, retired commander, Canadian Forces Northern Area: "There is a feeling among the majority of people up here that there will be a major disaster before something is done. Small smouldering fires usually erupt into flames."

**Agree** \_\_\_ **Disagree** \_\_\_ **Why?** \_\_\_\_\_

4. Franklyn Griffiths, Professor Emeritus, University of Toronto: "We should be taking the lead from the Inuit. They are asking for enforcement rather than an abstract idea of sovereignty—that the ice is not disturbed, that the marine animals not be scared away. Hardly anyone is talking about that."

**Agree** \_\_\_ **Disagree** \_\_\_ **Why?** \_\_\_\_\_

5. Donat Pharand, leading Ottawa international lawyer: "It's highly doubtful that Canada could succeed in proving that the waters of the Canadian Arctic Archipelago are historical internal waters over which it has complete sovereignty."

**Agree** \_\_\_ **Disagree** \_\_\_ **Why?** \_\_\_\_\_

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## *The Northwest Passage*

### Further Research

To learn more about Arctic exploration, consider visiting <http://collections.ic.gc.ca/arctic/explore/intro.htm>.

“Westward from the Davis Strait ’tis there ’twas said to lie  
The sea route to the Orient for which so many died;  
Seeking gold and glory, leaving weathered, broken bones  
And a long-forgotten lonely cairn of stones.”  
— from the song “Northwest Passage,” by Stan Rogers

The Northwest Passage is a water route between the Atlantic and Pacific Oceans, through Canada’s Arctic Archipelago and along the north coast of Alaska. Early explorers, eager to travel quickly from Europe to Asia, longed for such a route. Its existence, however, was not proven until the middle of the 19th century.

### The Search for a Passage

Early explorers, mostly British, gave their names to the area. In the 16th century, Martin Frobisher and John Davis explored the eastern approaches to the passage, and in 1610 Henry Hudson visited what is now Hudson Bay while seeking a shortcut to Asia. Hudson actually believed he had reached the Pacific when he sailed into Hudson Bay. In 1616 William Baffin came to Baffin Bay. It was here that the route into the passage would finally be found.

By the early 1770s, Samuel Hearne’s cross-country overland voyage to the Coppermine River had proven that the Northwest Passage, if there were one, would not be short. It was not until the 1850s, when Robert McClure travelled from the west coast eastward to Viscount Melville Sound, that the actual

existence of a passage was proved. McClure reached a point that William Parry had earlier reached by sailing from the east.

### Successful Voyages

The first ship to make a full transit was the *Gjøa*, captained by Roald Amundsen, a Norwegian explorer. It took him from 1903 to 1906 to complete the passage. Amundsen, incidentally, did not plan his full traversal of the passage; he took advantage of a convenient western exit when it became available. Amundsen is even more famous as the leader of the first expedition to reach the South Pole.

It was almost 40 years before the next successful voyage through the passage took place. This time the ship was Canadian. *St. Roch*, an RCMP vessel under Sgt. Henry Larsen, travelled west to east through the passage from 1940 to 42. In 1944 it took the reverse route and became the first boat to have made the trip in both directions—and the first to make the passage from east to west in a single year.

There have been about 50 successful transits (that are on record) since then. The most significant include that of the Canadian Coast Guard icebreaker *Labrador*, which, in 1954, became the first ship to travel west to east in a single year.

Two crossings have had a special impact on Canada’s Arctic policy, and both of these were by U.S. vessels. The first, the 1969 voyage of the oil tanker *Manhattan*, is related later in this guide in “Flashback 1969.” The second of these took place in 1985, when the U.S. Coast Guard icebreaker *Polar Star* used

the Northwest Passage to take what it said was the quickest route home. It pointedly did not request Canada's permission to use the Northwest Passage. In what was seen by many as a face-saving move, Canada granted permission anyway. Joe Clark, then Minister for External Affairs, said that the voyage "does not compromise in any way the sovereignty of Canada over our northern waters" (quoted in *Time* August 12, 1995). The incident ultimately led to the 1988 Agreement on Arctic Co-operation between Canada and the United States.

### **A New Shipping Route?**

Currently, the only time the Northwest Passage is penetrable is during a brief period from August to mid-October. Should this period ever lengthen, the passage could become the fastest sea route between the two coasts of North America.

What makes us think this change may happen? First, the extent of the sea ice in the passage shrank about six per cent between 1978 and 1996, and is continuing this trend. Second, tests show that the ice has grown thinner by about 40 per cent in the past 30 years—with the average thickness reduced from 3.1 metres to 1.87 metres.

### **Analysis**

Canada's main reasons for wishing to control access to the Northwest Passage are national security, environmental protection, and the assertion of sovereignty over the entire Arctic Archipelago. How would you rank these in importance, and why?

What would a more navigable Northwest Passage mean to shipping? It would cut the travel distance from Europe to Asia by almost 11 000 kilometres. This would save about eight days of travel for most ships. Some experts believe that commercial use of the Northwest Passage could begin as soon as 2015.

For oil supertankers too big for the Panama Canal it would mean a saving of 19 000 kilometres. But it might not be the great solution oil producers are looking for. In addition to the unpredictability of polar weather, shippers would need to build much tougher ships—all with double hulling—and would face much higher insurance costs. However, if oil prices continue to rise, the economic feasibility of such shipping also rises.

Environmentalists are quick to point out that the loss of just one tanker in these waters would have a devastating effect on the Arctic ecosystems. As J. Victor Owen wrote in the January 1, 2002, issue of *Mercator's World*: "Ironically, 500 years after explorers began exploring and mapping the Arctic regions in their search for a passage to the Orient and the corresponding fame and commercial gain, their dreams have a chance to be realized—but the cost may prove too high."

# NORTHERN UFOs: INVASION OF THE ARCTIC

## *Defending Canada's North*

### Quote

"The Canadian Government needs to increase its presence in order to better monitor all activities taking place in the Arctic and exercise sovereignty over it. It needs to provide the federal departments responsible for its security with the assets required to perform their mission and assure the *human security* that Canadians deserve.

"The Arctic is the attic of Canada. It is a beautiful and vast part of our country. It contains incredible amounts of natural resources. We must protect it adequately." — Pierre LeBlanc, "Canada and the North — Insufficient Security Resources," [www.ccs21.org/ccspapers/papers/leblanc-canada\\_north.htm](http://www.ccs21.org/ccspapers/papers/leblanc-canada_north.htm).

This is a most useful overview of Canada's military preparedness for Arctic Defence, prepared in 2002 for the Council for Canadian Security in the 21st Century.

How will Canada defend its Arctic territories, both land and marine? This is a troubling question for many of those responsible for protecting the north.

Only one serious challenge has recently been made to Canadian land claims in the Arctic, but it has underlined the country's difficulties when it needs to assert its authority. Denmark has laid claim to Hans Island off the northernmost tip of Greenland, which Canada considers part of its Arctic possessions. One of the reasons the island is important is that its waters are home to large stocks of turbot and shrimp. In 2002 the Danes sent a navy frigate to patrol the waters between the northwest corner of Greenland and Ellesmere Island. The only Canadian vessels that can respond to such a challenge are the five aging icebreakers staffed by the Coast Guard. These vessels do not have the protection of sovereignty as one of their missions. This is all Canada has to defend the world's longest coast, most of it frequently surrounded by ice.

Most future challenges to Canada's Arctic sovereignty will be to her claims of ownership of areas like the Northwest Passage. Will Canada be able to defend these claims?

### Who Guards the North?

The Canadian military presence in the Arctic is limited. Currently, the Navy has no surface ships or submarines that can operate in the area. There are no systems for monitoring underwater activity. Aurora aircraft patrol only a few times a year. There is no comprehensive surveillance capability such as

might be provided by a satellite network. As a result, foreign vessels of any sort entering Canadian waters are requested, but not required, to report their presence. Canada has no way of requiring it.

The Air Force maintains a North Warning System in the Arctic, but large portions of the area are not covered by its radar. Its newest helicopters cannot fly in temperatures below -25° Celsius. The Army's presence in the north is almost limited to a reserve force, the Canadian Rangers. The Rangers are responsible for most of Canada's sovereignty patrols in the Arctic.

### The Canadian Rangers

The Department of National Defence Web site describes the Canadian Rangers as follows: "The Canadian Rangers are part-time reservists who provide a military presence in remote, isolated and coastal communities of Canada. Formally established in 1947, Canadian Rangers are responsible for protecting Canada's sovereignty by reporting unusual activities or sightings, collecting local data of significance to the Canadian Forces, and conducting surveillance or sovereignty patrols as required."

There are at present 4 000 Rangers, a number that is expected to increase to 4 800 by March 2008. They are located in 165 communities across the country, mostly in the north and along both coasts.

The Ranger group that serves the Arctic is almost exclusively made up of Inuit. Headquarters is in Yellowknife, NWT; it supervises an area consisting of the Northwest Territories, Yukon,

**Did you know . . .**

As of early 2005, Canada was involved in four international territorial disputes in the north? Two are with the United States, one is with Russia and the last is the Hans Island dispute with Denmark.

**Further Research**

The Canadian Rangers Web site (under the Department of National Defence) is at [www.rangers.forces.gc.ca/pubs/rangers/intro\\_e.asp](http://www.rangers.forces.gc.ca/pubs/rangers/intro_e.asp). Canada is also a part of NORAD, and you might wish to visit the official alliance Web page at [www.norad.mil](http://www.norad.mil).

**Did you know . . .**

Canada has run military exercises to simulate rescue operations for a downed airliner in the Arctic? As of 2005, about 12 aircraft cross the North Pole every day.

Nunavut, northern B.C., and Alberta. There are 1 414 Rangers in 58 different patrols.

In addition to their responsibilities outlined above, the Rangers provide an enormous service to the military simply by providing their local expertise as needed to the regular forces. They are also often the first group called upon when search-and-rescue operations are required in the Arctic. But their greatest contribution is likely their maintenance of a Canadian presence in the north.

Rangers regularly perform sovereignty patrols to reinforce Canadian claims to the territory. One such patrol, in April 2002, took 30 rangers and two soldiers 850 kilometres on snowmobiles from Resolute Bay to the Magnetic North Pole in April 2002 (see [www.cbc.ca/sunday/northpole/rangers.html](http://www.cbc.ca/sunday/northpole/rangers.html) for details).

**Discussion**

What are some of the basic changes you feel should be made to Canada's Arctic defence capabilities? How important is Arctic defence compared with Canada's other military activities, such as peacekeeping? Brainstorm a list of at least five priorities for Canada's Arctic defence policy.

The federal government is completing a major review of defence and security policy that will likely contain many recommendations for changes in the way Canada protects its Arctic territory. When it comes to the Canadian Rangers, however, it will likely echo the advice of Pierre LeBlanc, retired commander of the Northern Area: "The use of the Canadian Rangers should continue. They provide the eyes and ears of the Canadian Forces in those areas close to their communities. They have the ability to pick up signs of a foreign presence for which we have no sensor. Their closeness to the environment is such that any change to that environment alerts them. The Ranger Program should continue to be supported, as it is one of the most cost-effective sovereignty programs in place" ("Canada and the North — Insufficient Security Resources").

# NORTHERN UFOs: INVASION OF THE ARCTIC

## Flashback 1969

### Did you know . . .

The most famous exploratory voyage in 1969 was the first landing on the moon by the astronauts of *Apollo XI*. Here on Earth the voyage that captured the greatest public attention was that of the oil tanker *Manhattan* through the Northwest Passage.

### Further Research

Icebreaking and "Ice-Engineering" are fields of special interest to polar nations. A good introduction to the subject is available from *Hansa International Maritime Journal* at [www.hansa-online.de/print.asp?artikelID=304](http://www.hansa-online.de/print.asp?artikelID=304). It includes information on a Canadian invention, the Alexbow, which was competitive with the MIT design in 1969.

On August 29, 1969, a 127 000 tonne oil tanker set sail for the eastern entrance to Canada's Northwest Passage. Built for Humble Oil and Refining Co. at a cost of \$40-million, it was hoped *Manhattan* would be the first commercial vessel ever to complete a crossing of the route.

*Manhattan* was originally constructed in 1962 in Quincy, Massachusetts, but required extensive modification to survive an Arctic voyage. The boat was divided into four separate sections and modified in four separate shipyards before being reassembled for the voyage. Among the modifications were extra sheet metal reinforcements and ice protection for the twin propellers.

The most significant change to the ship, however, was a new bow. This was specially designed by scientists at the Massachusetts Institute of Technology (MIT) to be able to withstand pressure of up to 42 kg/cm<sup>2</sup>. It was expected that the new design would make *Manhattan* 40 to 70 per cent more effective than conventional icebreakers.

### Major Plans

Humble Oil hoped that a successful voyage by *Manhattan* would mean the opening of a year-round tanker route through the Arctic ice. Humble believed that a successful trip would have several outcomes:

- The establishment of a relatively inexpensive link between northern Alaska oilfields and oil markets in the U.S. and Europe, saving more than \$1-million per day over the costs of a transcontinental pipeline
- A major reshaping of world trade patterns

- The development of other Arctic resources — iron, copper, nickel, lead, silver, and other mineral deposits
- A shipbuilding boom (Humble estimated that the new route would require about 30 icebreaking tankers of 254 000 tonnes worth \$2-billion to \$3-billion)
- The opening of a "new frontier" across the Alaskan and Canadian Arctic

Canada was eager to participate in the experiment, seeing the possibility of exploiting mineral resources from areas that were currently seen to be uneconomic. It also saw a new route as a way of getting any future oil finds in Canada to market. Canadian assistance was crucial to the voyage's success, providing the results of years of Arctic research—ice-surveys and hydrographic and meteorological data.

### A Successful Voyage?

*Manhattan* sailed with 126 people aboard, crew and observers, American and Canadian. Two icebreakers accompanied it—Canada's *John A. Macdonald*, commanded by Captain Paul Fournier, and the U.S. *Northwind*. They entered the Baffin icepack for the first time on September 1; *Manhattan*'s first tests were highly successful, as it ploughed its way through ice up to 4.5 metres thick.

*Northwind* soon proved to be inadequate to the job at hand, and was requested to leave the expedition in Melville Sound. *Manhattan* and *John A. Macdonald* continued the voyage. On September 11, in the McClure Strait, *Manhattan* twice was trapped in ice.

Both times she was freed by the Canadian icebreaker. As a result of these difficulties, *Manhattan* abandoned her original route for an easier one through Prince of Wales Strait. With the continued assistance of *John A. Macdonald*, *Manhattan* continued on to Prudhoe Bay, where she took on a ceremonial barrel of Alaskan oil. Both ships returned through the passage, conducting further tests on ice floes, and arrived in Halifax in early November.

Ultimately, Humble Oil abandoned its plans to use the passage. Transportation costs were much higher than ex-

pected, and a pipeline offered far less possibility of major pollution because of an oil spill. The *Manhattan* voyage's greatest effect was on Canada's Arctic policy. By April 1970, Canada had asserted that the waters between the islands of the Arctic Archipelago were Canadian waters. Canada also declared a 12-mile limit for its territorial waters—placing eastern and western entrances to the Northwest Passage under Canadian control—and a 100-mile Arctic control zone to prevent potential pollution by ships using the passage.

## Discussion

1. Charles Jones, Humble Oil and Refining Co.'s president, summed up the company's expectations for *The Globe and Mail*, August 25, 1969: "The Northwest Passage could become the catalyst which opens up the resources of far northern Alaska and Canada to the world. A year-round sea route could do in this area what the railroads did for the western United States—and do it quicker." The opening of such a year-round passage seems much likelier today than it did in 1969. Do you agree that it would have the dramatic result that Jones predicted?
2. Is the passage essential to a full exploitation of our Arctic resources?
3. List what you feel would be the central pros and cons of year-round access to the Northwest Passage.

# NORTHERN UFOs: INVASION OF THE ARCTIC

## **Arctic Riches**

The Canadian Arctic is a potential source of great wealth for this country. In addition to fish and marine animals, huge mineral deposits have been found in the area. Fresh water is abundant. The Arctic also holds about 40 per cent of the country's oil and gas reserves.

In a module for a course at the University of the Arctic, Snorri Baldursson, the Assistant Director General of the Icelandic Institute of Natural History, outlines some of the major resources to be found in the Arctic ([www.uarctic.org/bcs/BCS311/mod9.pdf](http://www.uarctic.org/bcs/BCS311/mod9.pdf)). He identifies four in particular as being of special interest for Canadians. The exploitation of all four has an environmental as well as an economic impact.

1. Fresh water. These are the Arctic's lakes, rivers, and ice reserves. They are seen as a potential fresh-water supply for many water-deficient regions of the world. Canada is currently committed to a policy of not permitting its water to be sold to other countries.
2. Hydroelectric power. Norway, Iceland, northern Sweden, and parts of Canada's north have optimal natural conditions for the generation of huge amounts of electricity by hydroelectric power. Hydroelectricity's biggest drawback in the region is the need to regulate the flow of water with dams and reservoirs. These cause major changes to the habitat, both for animals and humans.
3. Oil and gas. Arctic oil and gas are located in three main areas, two of which are at least partly in Canada. The first is in northern Russia. The

second, the Beaufort Sea coast, includes the North Slope of Alaska and the Mackenzie Delta of Canada. The third is in the northeast Canadian Arctic, in Nunavut.

The Beaufort Sea coast has an estimated 300 million cubic metres of oil, and 300 000 trillion cubic metres of gas. Canada's Norman Wells oilfield on the Mackenzie River currently produces about 1.3 million cubic metres of oil annually. A new \$7-billion pipeline is planned to carry gas 1 350 km from Inuvik to northern Alberta.

In Nunavut's Sverdrup Basin, 160 exploratory wells have indicated that approximately five per cent of Canada's known oil reserves are in the area—and there may be even much more.

There have been two major oil accidents resulting from the Beaufort Sea oil operations in Alaska. The most significant of these saw the oil tanker *Exxon Valdez* run aground in Prince William Sound, Alaska, spilling 41 000 tonnes of crude oil.

4. The most abundant and common minerals in the Arctic are coal, iron, lead, copper, nickel, zinc, and sulphides, but rare minerals such as gold and diamonds are also found. Diamonds have become especially important for Canada. In 1991, volcanic shafts that carry diamonds, called kimberlite pipes, were found 300 kilometres north of Yellowknife in the Northwest Territories. By 1998 over 200 such shafts had been discovered. There are now two mines operational, with a third soon to open.

### Further Research

Among the organizations promoting responsible development of Arctic resources is the Canadian Arctic Resources Committee (CARC), “a citizens’ organization dedicated to the long-term environmental and social well-being of northern Canada and its peoples” ([www.carc.org](http://www.carc.org)). The United Nations Environment Program is also taking a hard look at resource exploitation in Arctic lands ([vitalgraphics.net/arctic.cfm](http://vitalgraphics.net/arctic.cfm)).

Mining has been an important part of the Canadian north for a long time. It has dominated the Yukon economy since the Klondike gold rush of the 1890s. Commercial mining began in the Northwest Territories in the 1930s with uranium mining at Port Radium. A new boom has begun since the diamond discovery; Canada is now the third-largest diamond producer in the world. Nunavut, however, currently has no active mining operations.

Mining probably has the greatest effect on the northern environment. Diamond mining, for example, requires access roads and huge machinery. To produce a single one-carat polished, gem-quality diamond requires the processing of 250 tonnes of earth. Mining requires and contaminates large quantities of water, which raises metal concentrations to dangerous levels and

affects many species.

Gerard Duhaime of the University of Laval, one of the authors of an “Arctic Human Development Report” released in November 2004, describes the Arctic as a “reservoir of resources” for the rest of the world ([www.nunatsiaq.com/archives/41126/news/nunavut/41126\\_05.html](http://www.nunatsiaq.com/archives/41126/news/nunavut/41126_05.html)). Duhaime calculates that the Arctic Circle produces about \$230-billion annually, mostly in natural resources. But, he says, while the region generates a great deal of money, most of it flows out of the Arctic, leaving residents to cope with pollution.

Most observers expect that pressure will build to correct this imbalance, to promote sustainable development and environmental responsibility across the Arctic. At the same time, the wealth of its resources will continue to beckon those who wish to exploit them.

### Discussion

Many areas in Canada’s northern territories have been contaminated by mining activity. Many of these mines have closed, leaving behind environmental damage for others to repair. Who bears the responsibility for the clean-up? How can governments ensure that this type of irresponsible resource exploitation is prevented in the future?

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## *UFO Sighted!*

Given the number of recent reported sightings, it seems almost inevitable that, one day soon, the presence of a foreign submarine in Canadian waters will be confirmed. Consider the following scenario:

A submarine has been forced to surface through the ice near Baffin Island, either because of an accident or engine failure. The submarine has identified itself as “friendly” although, until now, Canada had no indication that it was operating in Arctic waters. It has requested assistance both from its own government and from the government of Canada.

As Prime Minister, it is ultimately up to you to decide what the government’s response will be in this situation. Some of the possible actions you might take include:

- Sending out an all-Canadian search and rescue team
- Inviting the home government of the foreign submarine, if they have Arctic expertise, to assist in the rescue
- Towing the submarine to Halifax where repairs could be undertaken, while permitting the home government to arrange the repatriation of the crew
- Seizing the submarine and arresting the crew
- Seizing the submarine and deporting the crew
- Sending an official letter of protest to the submarine’s home government
- Recalling the Canadian ambassador “for consultations”
- Raising the issue in the United Nations as an infringement of Canadian sovereignty
- Breaking diplomatic relations with the home government
- Declaring that an “act of war” has taken place against Canada
- Any other steps you feel are appropriate in the circumstances

Whatever you choose to do, it should be your government’s aim to affirm Canada’s Arctic sovereignty while dealing with the situation realistically and appropriately.

After you determine your government’s response, prepare a brief written statement that you will read to the members of the House of Commons announcing your decision, or, in this case, to your classmates. Good luck.