

Warming Arctic spurs battles for riches, shipping routes

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A polar bear steps out of a pool while walking on the ice in the Franklin Strait in the Canadian Arctic Archipelago, Saturday, July 22, 2017. Industry experts, researchers and veterans of the Far North say there remain many obstacles to reaping the riches once blocked by the ice. Conservationists also oppose the large-scale extraction of Arctic resources, fearing that the fragile environment will be irreparably harmed. (AP Photo/David Goldman)

From a distance, the northern shores of Baffin Island in the Arctic appear barren—a craggy world of snow-capped peaks and glaciers surrounded by a sea of floating ice even in the midst of summer.

Yet beneath the forbidding surface of the world's fifth largest island lies a vast treasure in the shape of an exceptionally pure strain of iron ore. The Baffinland mine, part-owned by a local company and ArcelorMittal, one of the world's biggest steel producers, is believed to hold enough ore to feed smelters for decades.

As [climate change](#) pushes the cold and ice a little farther north each year, it is spurring talk of a gold rush for the Arctic's abundant natural resources, prized shipping routes and business opportunities in tourism and fishing. The Arctic, including the fabled Northwest Passage between the Atlantic and the Pacific, is among the last regions on earth to remain largely unexplored. In April, U.S. President Donald Trump signed an executive order to reverse Obama-era restrictions on oil drilling.

Yet industry experts, researchers and veterans of the Far North say there remain many obstacles to reaping the riches once blocked by the ice. Conservationists also oppose the large-scale extraction of Arctic resources, fearing that the fragile environment will be irreparably harmed.

The Associated Press took a first-hand look at the Arctic on a month-long, 10,000-kilometer (6,200-mile) journey aboard the Finnish icebreaker MSV Nordica, along with researchers specializing in Arctic development. The journey was in part an effort to promote the ship to potential clients in North America as an "icebreaker for hire."

"As the world demand for raw materials is ever increasing, and (with) a realization that a large part of the unexplored deposits are in the Arctic, there is a natural shift to focus on that area," said Mads Boye Peterson, head of Denmark's Nordic Bulk Carriers Shipping.

Peterson's company sent a freighter through the Northwest Passage four years ago to demonstrate the feasibility of using the route to haul cargo

during the summer months, when melting sea ice opens up these frigid waters. But he also noted that rising temperatures make operations more difficult because moving floes are less predictable than unbroken sheets of ice.



A China Shipping Line cargo ship sails the North Pacific Ocean off the coast of Alaska past the Finnish icebreaker MSV Nordica, Tuesday, July 11, 2017. Low oil prices that have made the Arctic shortcut less attractive to freight companies are one of the reasons, along with public pressure, why the search for fossil fuels above North America has also slowed in recent years. (AP Photo/David Goldman)

"On the surface it might look like a slam dunk," he said. "But it's actually a lot more complicated than just something you decide to do overnight."

The Arctic stretches from the North Pole to roughly the 66th parallel north, an area of about 20 million square kilometers (almost 8 million square miles) of freezing seas and tree-less lands.

The U.S. Geological Survey has estimated that up to 30 percent of the world's undiscovered gas and 13 percent of oil waiting to be found are inside the Arctic Circle. Even if only a fraction of these fossil fuels are tapped they could be worth hundreds of billions of dollars.

Coal, diamonds, uranium, phosphate, nickel, platinum and other precious minerals also slumber beneath the icy surface of the Arctic, according to Morten Smelror, director of the Geological Survey of Norway. And the growing need for sophisticated batteries to power electric cars and handheld devices likely will drive demand for rare earth elements, lithium and cobalt found in significant amounts in the Arctic regions of Russia, the Nordic countries and Greenland, he said.

"The Arctic is certainly among the last frontiers with respect to undiscovered mineral resources, along with the deep oceans," said Smelror.

Apart from natural resources, the geography of the Arctic also opens up new opportunities. Sailing through the Northwest Passage could potentially cut the distance from East Asia to Western Europe by more than 10,000 kilometers (6,200 miles), compared with the traditional route through the Panama Canal, offering huge fuel savings for shipping companies.

It's a far cry from the Cold War, when the only ships crisscrossing the frigid straits were nuclear submarines patrolling the frontier between East and West. The new battle for the Arctic and its resources is being fought by geologists and legions of lawyers.



The bow of the Finnish icebreaker MSV Nordica pushes down sea ice as it traverses the Arctic's Northwest Passage through the Canadian Arctic Archipelago, Friday, July 21, 2017. Sailing through the Northwest Passage could potentially cut the distance from East Asia to Western Europe by more than 10,000 kilometers (6,200 miles), compared with the traditional route through the Panama Canal, offering huge fuel savings for thirsty ships. But it's not without hurdles. (AP Photo/David Goldman)

Greenland, an autonomous region of Denmark, has staked its claim to the Lomonosov Ridge—a massive underwater feature jutting hundreds of miles beneath the Arctic Sea that would greatly extend Greenland's sea bed continental shelf for possible use in future undersea mining. Russia contests the claim—one of several disputes before the U.N. Commission on the Limits of the Continental Shelf.

Moscow boldly underlined its claim to a vast part of the Arctic Ocean floor 10 years ago by planting an underwater flag at the North Pole. Russia has also been expanding infrastructure along its northern coast, partly to exploit reserves of natural gas in the region.

Canada, meanwhile, contends that the waters of the Arctic archipelago—an area about twice the size of Texas—are its internal waters. To support its claim, Canada has been stepping up its activities in the region, including creating a new Arctic research center and developing autonomous submarines to improve underwater charts. It has also been conducting search and rescue exercises in anticipation of growing ship traffic in the Northwest Passage.

Preparations for Nordica's journey included registering with Canadian authorities, who closely monitor traffic in the Northwest Passage to ensure compliance with environmental rules. Fewer than 500 ships have sailed through the passage since the first transit in 1906.

Canada's claim to the waters of the Arctic archipelago is contested by the United States, mainly due to concerns that it could set a precedent other, less friendly nations might follow.

In general, the United States is taking a back seat for now. Washington has yet to ratify the U.N. Convention on the Law of the Sea that would regulate territorial disputes, due to concerns among some senators that submitting to international treaties would impinge on U.S. sovereignty.

Despite competing claims and tough talk to home audiences, Arctic nations are cooperating well with each other, said Rachael Lorna Johnstone, a professor of law at the University of Akureyri in Iceland.



Nigel Greenwood, assistant ice navigator, left, talks with second officer Ilkka Alhoke on the bridge of the Finnish icebreaker MSV Nordica as they sail through sea ice while traversing the Northwest Passage in the Canadian Arctic Archipelago, Saturday, July 22, 2017. In July the multi-purpose icebreaker became the first vessel of the season to travel through the Northwest Passage, completing the earliest transit ever recorded. (AP Photo/David Goldman)

"Everyone is following the rulebook," she said.

Some smaller firms are pressing ahead with business in the Arctic. The Alaska-based company Quintillion is laying a fiber optic cable through the Northwest Passage to provide high-speed Internet traffic to local communities. It would also establish an additional link between London and Tokyo—where two of the world's main stock markets are located.

The growth in adventure tourism and the lengthening summer season have produced a surge of traffic over the past decade. Last year, the

cruise ship Crystal Serenity with 500 crew and 1,100 passengers paying at least \$22,000 each for a four-week journey sailed through the passage.

Such tours require years of planning and the approval of almost 30 Canadian agencies, including the authorities in the indigenous territory of Nunavut. Part of the revenue goes to local communities whose hunting grounds and travel routes might be disrupted by large vessels.

"It basically opens up so much ice that we can't even use the ice anymore, and we have to go by land where it was just right across before," said Maatiusi Manning.

The 33-year-old Inuk from Baffin Island's Cape Dorset was on board the Nordica, gaining 'ship time' as part of his training to work on a factory fishing ship.

Developing the local fishing industry is one way to solve the region's chronic lack of jobs, now further threatened by the effects of climate change. "Money-wise it's great," Manning said of the fishery job he hopes to land when his training is completed. "It's going to help a lot of families."



The midnight sun shines across sea ice along the Northwest Passage in the Canadian Arctic Archipelago, Saturday, July 22, 2017. Canada considers the waters of the Arctic archipelago—an area about twice the size of Texas—part of its internal waters. The claim is contested by the United States, not least because this would give Ottawa the right to stop ships from freely traveling through the Northwest Passage. (AP Photo/David Goldman)

The environmental group Greenpeace said it was important to ensure the Inuit control their own fisheries, rather than let outside corporations with no link to the Arctic harvest its rich waters.

"The fisheries are abundant in the Arctic," said Charles Latimer of Greenpeace. "But we don't want to make the same mistakes that we've done in other parts of the world where fisheries are collapsing."

Climate change is even opening new avenues in agriculture. Mette

Bendixen, a climate researcher at the University of Copenhagen, projects that global warming will continue into the 21st century, extending the growing season by two months.

"Not many people know that potatoes, strawberries are grown in southern Greenland," he said.

Despite its promise, there are several challenges holding back the development of parts of the Arctic and the use of its resources.

The search for fossil fuels above North America has slowed in recent years. One reason is low oil prices, which along with public pressure have made the Arctic shortcut less attractive to shipping firms. The drop in prices has hit Alaska's budget hard, because it relies heavily on oil and gas revenue.

While Russia and Norway are pressing ahead with new oil and gas projects along their coastlines, the seas off Alaska and northern Canada are much less accessible and any major spill would be difficult and costly to contain.



Researchers look over a map aboard the Finnish icebreaker MSV Nordica as it sets sail in the North Pacific Ocean toward the Bering Strait to traverse the Arctic's Northwest Passage Thursday, July 6, 2017. Only 10 percent of the Northwest Passage is surveyed to the highest modern standards, meaning uncharted shallows pose a serious risk to shipping. (AP Photo/David Goldman)

Shell relinquished most of its federal offshore leases in Alaska's Chukchi Sea last year, after pouring billions of dollars into exploration efforts over the past decade. Former Shell leases in the neighboring Beaufort Sea have been taken over by an Alaska Native-owned company.

"There are a lot of hydrocarbons in the Arctic, but for them to be economically viable the cost per barrel has to be higher," said David Barber, an expert on the Arctic environment at the University of Manitoba. "Of course it will go higher, and thus the Arctic issue will come to the foreground again."

The rugged nature of the Arctic also slows development. Only 10 percent of the Northwest Passage is surveyed to the highest modern standards, meaning uncharted shallows could pose a serious risk to shipping. Ocean currents are predicted to push polar pack ice into the passage for decades, limiting the route to sturdy vessels with experienced navigators—and keeping insurance costs high.

"Think about a high mountain pass that is closed for half the year, has no gas stations, convenience stores or repair facilities," said Andrew Kinsey, a senior marine risk consultant at insurance giant Allianz. "Is this the route that you want to use for your daily commute?"

Environmental concerns and a growing acceptance of the rights of the region's indigenous population also have held back some plans for Arctic exploration.

As the Nordica made its way through the Franklin Strait, giant ripples indicated a pod of whales moving ahead of the ship—a mass of speckled narwhals occasionally breaking the water along the edge of the ice. It wasn't clear whether the narwhals had spotted the ship, but they would have heard its growl as it crashed through piles of sea ice, a sound unlike any other in this remote corner of the Northwest Passage.

Cargo hauls to the Baffinland iron ore mine are already restricted to August to mid-October, so as not to disrupt the Inuit's ability to cross the ice to hunt, fish or trade. Such rules recognize the growing assertiveness of the region's original inhabitants for a share of its riches, including the protection of local hunting grounds for seals and walruses.



Narwhals swim between sea ice floating in the Canadian Arctic Archipelago, Saturday, July 22, 2017. Known as the unicorns of the ocean because of the male's long single tusk, narwhals are among the species that stand to lose out if climate change turns the frozen waters into a shipping highway. Credible surveys of the Arctic predict that trillions of dollars worth of oil, gas and precious minerals lie untapped beneath the surface. (AP Photo/David Goldman)

Manning, the trainee fisherman, hopes the opportunities his children gain from Arctic development will outweigh the disadvantages.

"The ice in our bay, when it went, they noticed it really quickly," he said. "My son was excited about it, but my daughter said, 'Oh, there goes our trail to go to the fish lakes.'"

Daria Gritsenko, a public policy researcher traveling on board the icebreaker Nordica, cautioned that any economic excitement about global warming opening up the Arctic needs to be tempered by an understanding of the risks. Melting permafrost already poses a problem for Russia's Arctic infrastructure, from ports to pipelines, from roads to

residential buildings.

"We need to rethink how we build things in the Arctic," said Gritsenko, who is based at the University of Helsinki. "Even if we develop a tremendous system of Arctic ports, how would the goods get there? That's the irony of climate change."

Gritsenko said there's likely no single answer to the multitude of problems ahead, including the overarching question of how a global economy that fostered climate change can be adapted to tackle it.

"We need new ideas," she said. "We need more alternatives."

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