

New Frontiers: Contested Claims in Arctic Exploration



Resource Packet for Educators

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Global Classroom Teacher's Workshop
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CANADIAN STUDIES CENTER

UNIVERSITY *of* WASHINGTON

The Henry M. Jackson School of International Studies

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USING THIS RESOURCE GUIDE

NOTE: Many of these descriptions were excerpted directly from the source website.

RECOMMENDED RESOURCE

VISUAL MEDIA

LESSON PLAN

STEM RESOURCE

AUDIO

ENGLISH/LANGUAGE ARTS

CHARTS AND GRAPHS

Source: noaa.gov

Introducing The Speakers

Dr. Nadine Fabbi:

Dr. Fabbi is the Managing Director of the Canadian Studies Center and Arctic and International Relations in the Henry M. Jackson School of International Studies at the University of Washington. She oversees Center programs that focus on Canada and the Arctic as well as conducts research on the subject and teaches. She is one of the founding members and lead chair of UW's interdisciplinary minor in Arctic Studies and teaches one of the core courses for the minor – ARCTIC 200 Indigenous Diplomacies and International Relations in the Arctic.

Dr. Fabbi's research interests include an understanding of the Arctic as an emerging region in the field of area studies, the political mobilization of the Inuit Tapiriit Kanatami in Canada, Arctic indigenous internationalism, the role of the Permanent Participants on the Arctic Council, and Arctic domestic and foreign policy including the declarations of Arctic indigenous peoples. Her most recent publications are: "Inuit foreign policy and international relations in the Arctic," in L. C. Jensen & G. Hønneland (Eds.), *Handbook of the politics of the Arctic* (2015); "Inuit political involvement in the Arctic." in L. Heininen (Ed.), *Arctic yearbook 2012*; and "Geopolitics, Arctic Council, and Arctic resources," with V. Gallucci and D. Hellmann, in C. Carothers, et al. (Eds.), *Fishing people of the North: Cultures, economies, and management responding to change* (2012).

Dr. Fabbi is UW's Council Representative for University of the Arctic and serves on University of the Arctic's Academic Leadership Team. Her travels have taken her to Greenland, the Westfjords in Iceland, Yakutsk in Siberia, the Yukon, Alaska, and Churchill, Manitoba.

Professor Vincent Gallucci:

Professor Gallucci is a marine biologist who studies the conservation, management, and population dynamics of sharks. He has nearly two decades of research on benthic ecosystems in both temperate and tropical systems. He worked for over a decade on marine resource management in Central and South America and Africa, focusing on small-scale fisheries at the village level, and he lived in the Soviet Union for a year in Moscow working on environmental issues. Most of this latter work has involved the mathematics of quantitative stock assessment, i.e., the assessment of the current status of a stock of fish and the prediction, using mathematical models and statistics of their future status, of what happens when various levels of mortality are imposed as part of a harvest.

He has experience in fisheries policy and he has two primary areas of interests, one of which is Arctic policy and conservation. His group in the Canadian Arctic Studies Center is having major roles in Arctic policy and governance. They work with Asian, European, Russian and Canadian governmental agencies, especially relative to Arctic Council issues, procedures, etc. This work has a strong flavor of Inuit policy and governance. The second interest is in the conservation management of elasmobranchs, especially sharks and in cold water, such as the Arctic. This work has been applied in the North Pacific and North Atlantic environment. For many years worked in the Bering Sea and on the Arctic Ocean on fishing vessels and 5. have just begun a second term as an advisor to the Chinese Arctic Program. In 2016, he spent three weeks on the Siberian ice in the Arctic Ocean with a team of Russian scientists and graduate students—and this winter he will spend time on the Canadian side of the Arctic Ocean, after the ice melts.

Harkiran Rajasansi:

Ms. Rajasansi is a career diplomat with Global Affairs Canada (formerly the Department of Foreign Affairs, Trade & Development), serving as Consul and the Program Manager for the Foreign Policy and Diplomacy Service Section at the Consulate General of Canada in Seattle, Washington State. Ms. Rajasansi's role at the Consulate focusses on the Canada US bilateral relationship in Alaska, Idaho, Oregon and Washington. Key areas of interest include the Arctic, defense and security, energy and environment, and competitiveness.

Ms. Rajasansi has served abroad at the Embassy of Canada in Jakarta, Indonesia, from 2005 to 2007. In Ottawa, she has had assignments in the West Europe division, been Canada's representative on the Committee for Trade and Investment at the Asia Pacific Economic Cooperation (APEC), and was a senior policy advisor at the Privy Council Afghanistan Task Force. She also has worked in the Minister of Foreign Affairs office as a departmental advisor, and has had assignments in policy and planning and in the North America Branch, prior to departing for Seattle. She grew up in Kitchener, Ontario and has a Bachelor of Science from the University of Waterloo and a Master of Science from the Imperial College of Science, Technology and Medicine, London UK.

Eileen Hynes:

Eileen Hynes is the Director of Thematic Studies at the Lake and Park School in Seattle, where she works throughout the school with each of the classrooms and all of the teachers. In 2012, Eileen was named a National Geographic Grosvenor Teacher Fellow. She traveled to Arctic Svalbard with National Geographic in 2012 and has continued to contribute to the NatGeo learning community, most recently developing materials for the Washington State Geographic Alliance. After returning from the Arctic where the effects of climate change were so pronounced, Eileen joined the NOAA Climate Stewards to further her own education and understanding of the causes and effects of climate change on the world's systems as she worked to develop classroom materials to share with her students. Eileen joined the National Center for Science Education Teacher Advisory Panel in 2015. She helped pilot the NCSEteach program to help K-12 teachers teach about evolution and climate change. Eileen has also worked with EarthEcho International which also includes the World Water Monitoring Challenge, as part of their Learning and Education Advisory Panel since 2014.

Key Learning Objectives

1. Students will gain a sense of the basic geography in the Arctic, and will be able to identify the different countries with claims in the region.
2. Students will be able to identify differences between the Arctic and similar regions.
3. Students will explore the culture and history of Arctic Indigenous Peoples.
4. Students will analyze the impact of climate change on the Arctic region.
5. Students will learn about contested claims to Arctic territory, and will be able to construct an argument for indigenous rights and land claims in the Arctic region.
6. Students will gain an understanding of the Arctic's key resources, including natural resources that are being fought over and resources that should be protected.
7. Students will explore the Arctic's emerging significance in terms of shipping and trade.
8. Students will examine how Arctic policies are shaped, and will be able to compare and contrast differing geopolitical interests in the Arctic .
9. Students will be able to make predictions about the future significance of the Arctic region, in terms of climate change, indigenous rights, and global geopolitics.
10. Students will identify ways to get involved in environmental protection, and will explore creative avenues for taking action against climate change.

What is the Arctic?



What is the Arctic?

<https://nsidc.org/cryosphere/arctic-meteorology/arctic.html>

This is a great resource that includes information on different aspects of the Arctic such as: general data, the effects of weather patterns, climate change, and people and cultures present in the Arctic region. Also, information on different scientists involved in Arctic exploration, current news, and a resource guide and photo gallery for the classroom and beyond.

"The region surrounding the North Pole consists of a large ocean surrounded by land. This ocean, called the Arctic Ocean, is like no other ocean on Earth; and because of its special location and climate, the lands that surround it are unique."

Spotlight: Arctic Phenomena

<https://nsidc.org/cryosphere/arctic-meteorology/phenomena.html>

Exploring optical and acoustical phenomena, aurora borealis, coronas and anticoronas, water sky and ice blink, mirages, optical illusions, optical haze, and halos.



https://nsidc.org/sites/nsidc.org/files/images/arctic_map.gif

"In the Arctic, people can sometimes see and hear things that they cannot see or hear most other places on Earth. These phenomena are caused by special atmospheric conditions. Microscopic ice crystals are suspended in the air, changing how light and sound travel over distances. Layers of hot and cold air refract, or bend, light rays. Light bounces off the surfaces of clouds, water, and ice to create optical illusions."

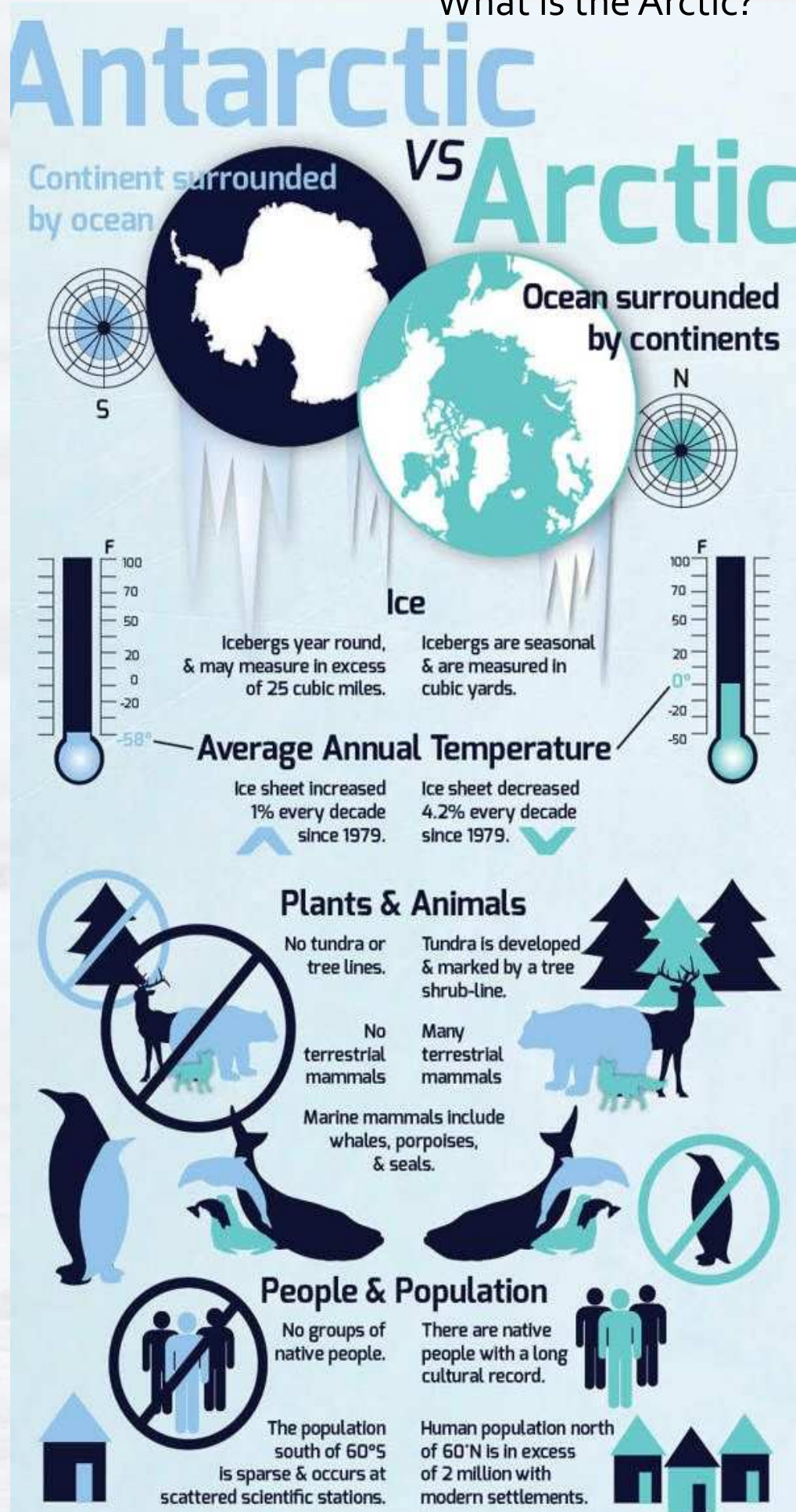


Satellite Observation of Arctic Change interactive map

<http://nsidc.org/soac>

The purpose of this site is to expose NASA satellite data and research on Arctic change, in the form of maps that illustrate the changes taking place in the Arctic over time.

What is the Arctic?



Differences Between the Arctic & Antarctica

<http://www.arcticantarcticcollection.com/polardifferences.htm>

Antarctica, or the south pole region, is a continent which is covered with an immense ice shelf. The Arctic region, however, is mainly located in the north polar ocean and includes several larger islands such as Greenland, Spitzbergen, Franz Josef Land, Severnaya Zemlya Wrangel Island, Bank Island, Victoria Island, Ellesmere Island and various others that all boarder countries like Russia, Canada, Alaska and Greenland.



Source: bbc.co.uk

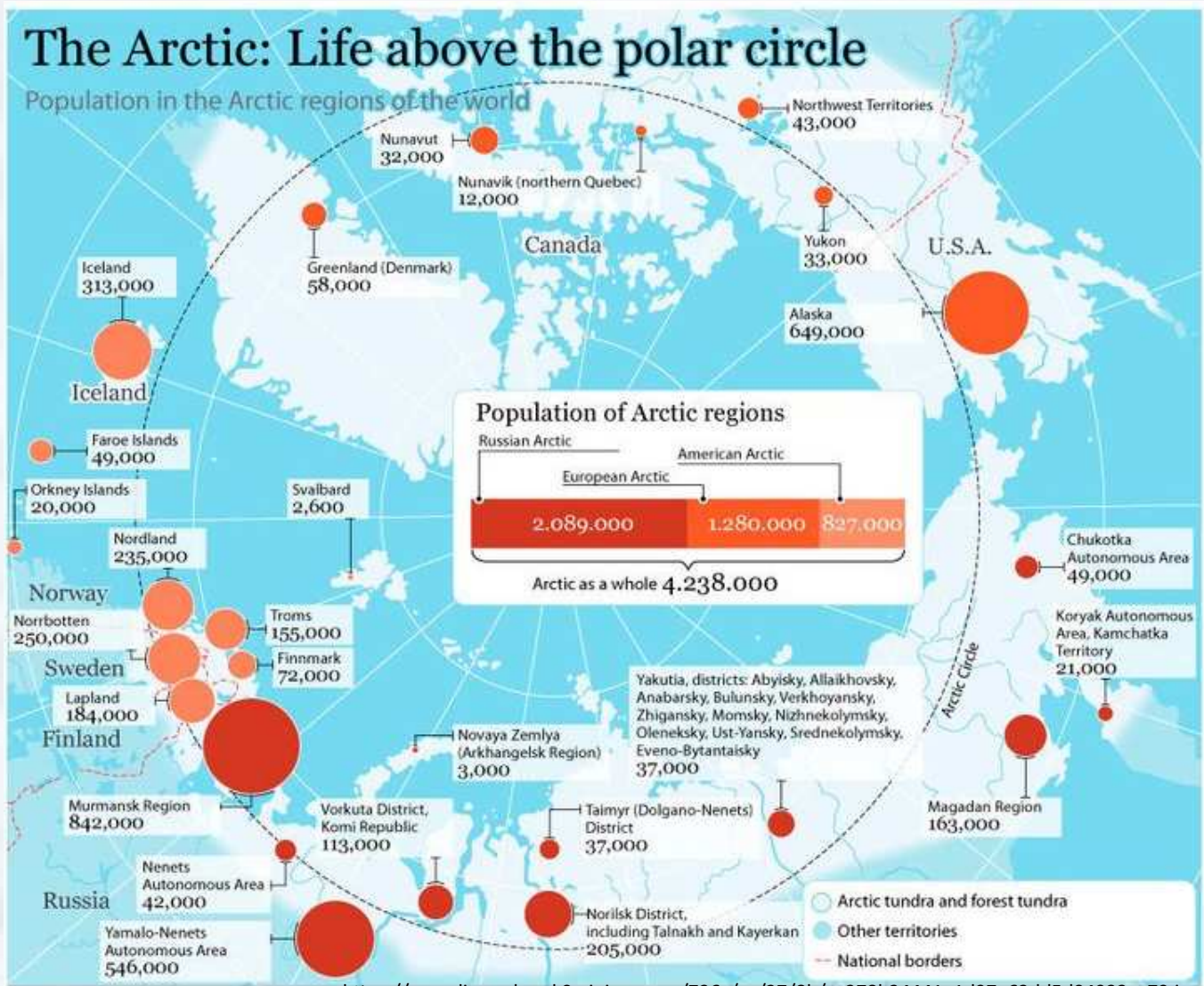


LESSON PLAN Grades 2-6

After learning about the Arctic and Antarctic, work in groups to create a Venn Diagram of the differences and similarities of these regions. Then walk around the room to compare and contrast your findings with your classmates.

Discussion (5-10 mins): Reflect on what new things you learned during this segment. What's something interesting about both the Arctic and the Antarctic?

What is the Arctic?



<https://s-media-cache-ak0.pinimg.com/736x/ca/27/8b/ca278b24441a1d97e63dd5d04933ec79.jpg>

The Arctic Circle

<http://fairbanks-alaska.com/arctic-circle.htm>

The Arctic Circle is also the name given to the region around the North Pole. It includes the Arctic Ocean, thousands of islands, and the northern part of Europe, Asia, and North America, including the Arctic and subarctic regions of Alaska, Canada, Greenland, Iceland, Scandinavia, Siberia and the Russian Far East. A region of immense beauty far removed from the industrial areas of the world, it is also rich in mineral and other natural resources.



Polar Arctic

<http://www.worldatlas.com/webimage/countrys/polar/arctic.htm>

This map depicts where on a globe the Arctic Ocean, and The Arctic Circle are located.



<http://astronomy.swin.edu.au/cosmos/A/Arctic+Circle>

Statistics on Arctic

<http://www.nationmaster.com/country-info/profiles/Arctic-Ocean>

For more Facts and Stats visit this link

Fact: The Arctic is slightly less than 1.5 times the size of the US

Fact: Ice islands occasionally break away from northern Ellesmere Island; icebergs calved from glaciers in western Greenland and extreme northeastern Canada; permafrost in islands; virtually ice locked from October to June; ships subject to superstructure icing from October to May

Life in the Arctic



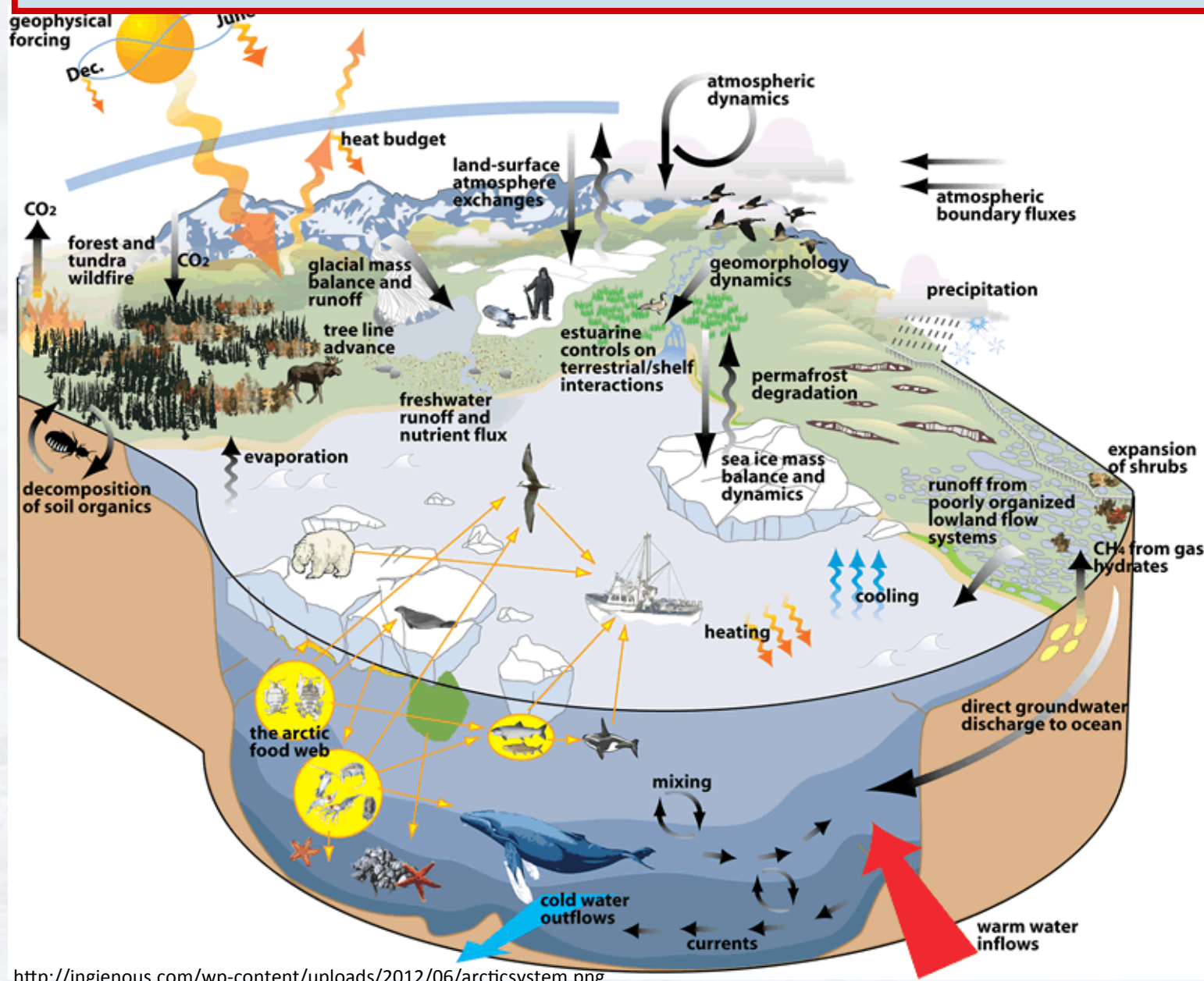
https://c1.staticflickr.com/9/8060/8154290495_aedebd049a_b.jpg

(PDF PACKET) The Arctic Ecosystem
<http://www.thearctic.is/articles/overviews/ecosystem/enska/index.htm>

This is another great resource highlighting the different ecosystems that populate the Arctic.

“Deep snow blankets land near the oceans but barely covers the polar deserts and semi-deserts of the continental land masses. Here, on patterned ground, musk ox and reindeer scratch for fodder while fox and wolf scavenge and female Polar Bears sleep and give birth in their snow lairs.”

STEM activity: Discuss and break down the Arctic ecosystem image below. What are we seeing and how do you think it will change over time if climate change is not addressed?



<http://ingenious.com/wp-content/uploads/2012/06/arcticsystem.png>

Arctic Indigenous Peoples

This excellent list of resources about the indigenous peoples of the Arctic was provided courtesy of the University of Washington’s Canadian Studies Center in the Jackson School of International Studies

Permanent Participants, Arctic Council

Aboriginal Portal - <http://www.aboriginalcanada.gc.ca/acp/site.nsf/eng/ao35100.html>

Single window to First Nations, Métis and Inuit online resources and government programs and services. Part of Indian and Northern Affairs Canada.

Arctic Council Indigenous Peoples Secretariat - <http://www.arcticpeoples.org/>

This is the support Secretariat for the International Indigenous Peoples’ Organizations that are Permanent Participants to the Arctic Council .

Saami Council (1956)– <http://www.saamicouncil.net/?deptid=1116>

Inuit Circumpolar Council (1977) – <http://inuitcircumpolar.com>

Russian Association of Indigenous Peoples of the North (1991) –<http://www.raipon.info/en/>

Aleut International Association (1998) – <http://www.aleut-international.org/>

Gwich’in Council International (1999) – <http://www.gwichin.org/>

Arctic Athabaskan Council – <http://www.arcticathabaskancouncil.com/>

Inuit in Canada

Inuit Tapiriit Kanatami (1971) – <http://www.itk.ca/>

Nunavik – <http://www.nunavikgovernment.ca/>

Makivik Corporation – <http://www.makivik.org/>

Nunavut – www.gov.nu.ca/

Nunavut Tunngavik Incorporated - <http://www.tunngavik.com/>

Nunatsiavut – <http://www.nunatsiavut.com/>

Inuvialuit – <http://www.irc.inuvialuit.com/>

Other

Nanoq, Government of Greenland – <http://uk.nanoq.gl/>

Interuniversity Centre for Aboriginal Studies and Research, Université Laval –<http://www.ciera.ulaval.ca/English/index.htm>

Under the United Nations Law of the Seas, sovereign nations have exclusive rights to all internal waters, territorial waters extending 12 nautical miles from shore, a contiguous zone extending an additional 12 nautical miles, and maintain an exclusive economic zone (EEZ) extending an additional 200 nautical miles. **Major disputes in the Arctic center primarily on additional waters a country may claim if scientific evidence shows that the claimed area lies on a continuation of its inland continental shelf.** (See image under the UN Law of Seas section of this packet for more information about continental shelves; also see: http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf)



http://programmes.putin.kremlin.ru/media/2014/11/18/57911/photolenta_big_photo.jpeg

Arctic Indigenous Peoples

The Arctic As A Homeland (PDF packet)

<http://www.thearctic.is/articles/overviews/homeland/enska/index.htm>

This packet examines the different Indigenous peoples who consider the Arctic their home and the different conflicts that they face.

Spotlight: The Arctic As A Frontier

http://www.thearctic.is/articles/overviews/homeland/enska/kafli_0300.htm

Huge profits could be made by trading and when the usual routes around Africa and through the Middle East were seen as too long

or dangerous, merchants starting seeking a northwest passage to the Far East through the islands of the Canadian North. At the same time, Russian navigators were exploring the northern coast of Siberia in search of a northeast passage to Asia via the Bering Strait.



<http://www.k-international.com/wp-content/uploads/2015/12/eskimo-family-760x321.jpg>

“Europeans began to settle in the North only during the last 300 years, as part of the same colonial expansion which took them to the tropics. For Native peoples, the Arctic is their homeland, while for outsiders it is a frontier land where most of them do not expect to remain all their lives. This distinction has become more and more important since the 1960s, as immigration and industrialization has increased and local peoples have increasingly become outnumbered in their own homeland.”

Arctic Indigenous Peoples

"You are now facing a group of people who are saying that no amount of money is worth exchanging our culture for."
- Robert Thompson, the Kaktovik petition to Congress March 14, 2005.

Peoples of the Arctic

<http://portlets.arcticportal.org/the-people>

This portal has information of the different people who live in the Arctic as well as Indigenous Rights and Organizations, Law of Sea, general information, and information of today's eight member states of the Arctic

Spotlight: Indigenous Rights

<http://portlets.arcticportal.org/indigenous-rights>

It is estimated that there are today more than 370 million indigenous peoples in some 70 countries <http://www.arcticcentre.org/loader.aspx?id=3b11a1dc-f9a9-4080-8846-2e2024a42fe6> worldwide. Since the establishment of the Working Group in 1982, awareness on indigenous issues has been steadily arising. Today, their rights are well protected under international law. However, work is still to be done before the world's indigenous peoples can say that their identities and ways of life are truly respected by the dominant societies.

Distribution of indigenous population in the Arctic. Click to enlarge. (Map from Arctic Human Development Report - 2004)

Spotlight: History of Arctic Expeditions

<http://portlets.arcticportal.org/expeditions>

Indigenous Peoples, Inuit and Mongolians, were first to discover the marine routes through the North, which were used mostly for delivering community supply, searching for food and new settlement areas. For marine operations, they used kayaks and small man-powered boats with covered decks, which did not have ice breaking capabilities but were light and easy to carry over the ice.

Arctic Indigenous Peoples

Canada’s First Peoples

http://firstpeoplesofcanada.com/fp_groups/fp_inuit1.html

This website has different information on the First Peoples of the Arctic, their lifestyles, and histories.

“The Inuit have a distinct culture and appearance from other First Peoples groups in Canada, which really set them apart. Historically, the Canadian Inuit were divided into eight main groups: Labrador Inuit, Ungava or New Quebec Inuit, Baffin Island, Igloolik, Caribou, Netsilik, Copper and Western Arctic Inuit. ”



Demography of Indigenous peoples of the Arctic based on linguistic groups
<http://www.arcticcentre.org/EN/communications/arcticregion/Arctic-Indigenous-Peoples/Demography>

Lesson plan! The Arctic Peoples
<http://www.alaskawild.org/wp-content/uploads/2014/10/Arctic-Peoples-Activity.pdf>
Central question: How has climate shaped the past, present and future of Arctic communities?
Objectives:
· Students will explain how Arctic peoples’ lives have been shaped by climate.
· Students will describe how current changes in climate are impacting Arctic peoples.
· Students will predict how Arctic communities may be impacted by future changes in climate.

Arctic Indigenous Peoples

<http://www.arcticcentre.org/EN/communications/arcticregion/Arctic-Indigenous-Peoples>

This website compiles an in-depth look at indigenous peoples, their traditions, and identifications.

“Indigenous peoples have inhabited the Arctic for thousands of years. The proportion indigenous people is estimated to be about 10 percent of total population

<http://www.arcticcentre.org/loader.aspx?id=446ddcf2-ef07-44b0-901a-312a85361676>

living in arctic areas. There are over 40 different ethnic groups living in the Arctic.”

<http://www.arcticcentre.org/loader.aspx?id=cb8812e7-ed74-47ac-80b1-5d42109a338c>

Arctic Significance: Access

Opening up

The 1.1 million square miles of open water north of accepted national boundaries — dubbed the Arctic Ocean “donut hole” — is considered the high sea and is therefore beyond the Arctic states' jurisdictions. As the Arctic ice melts, the area is predicted to become a center of strategic competition and economic activity. (Buisnessinsider)

Militaries Know That The Arctic Is Melting-Here’s How They’re Taking Advantage

<http://www.businessinsider.com/the-competition-for-arctic-resources-2014-6>

The region is stocked with valuable oil, gas, mineral, and fishery reserves. The U.S. estimates that a significant proportion of the Earth’s untapped petroleum — including about 15% of the world's remaining oil, up to 30% of its natural gas deposits, and about 20% of its liquefied natural gas — are stored in the Arctic seabed.

Russia’s Increasing Advantage

Russia wants the Northern Sea Route, where traffic jumped from four vessels in 2010 to 71 in 2013, to eventually rival the Suez Canal as a passage between Europe and Asia. The Northern Sea Route from Europe to Asia takes only 35 days, compared to a 48-day journey between the continents via the Suez Canal. (Buisnessinsider)

Arctic Significance: Oil

25 YEARS LATER
The tanker *Exxon Valdez* spilled almost 11 million gallons of oil into Alaska's Prince William Sound on

Timeline of Recovery from the *Exxon Valdez* Oil Spill



What If All The Ice Melted On Earth?

Ft. Bill Nye (5:50)

[https://www.youtube.com/watch?](https://www.youtube.com/watch?v=b6CPsGanOU)

[v=b6CPsGanOU](https://www.youtube.com/watch?v=b6CPsGanOU) U

(VIDEO) The True Cost OF Oil, Garth Lenz TEDxVictoria

https://www.youtube.com/watch?v=84zlj_EdQdM

What does environmental devastation actually look like? At TEDxVictoria, photographer Garth Lenz shares shocking photos of the Alberta Tar Sands mining project -- and the beautiful (and vital) ecosystems under threat. For almost twenty years, Garth's photography of threatened wilderness regions, devastation, and the impacts on indigenous peoples, has appeared in the world's leading publications. His recent images from the boreal region of Canada have helped lead to significant victories and large new protected areas in the Northwest Territories, Quebec, and Ontario

The Race for Arctic Domination

<http://visualoop.com/blog/91093/this-is-visual-journalism-136>

(PDF PACKET) Environmental Risks with Proposed Offshore Oil and Gas Development off Alaska's North Slope

<https://www.nrdc.org/sites/default/files/drilling-off-north-slope-IP.pdf>

This paper argues that drilling and related industrial activity would create an unacceptable risk of irreparable damage to this unique part of the planet and should be postponed until comprehensive research can be performed and a credible system for responding to spills is put into place.

Arctic Significance: Oil

Oil Drilling in the Arctic Could Protect America and the Environment
<http://time.com/4544445/arctic-oil-drilling-ban/>

The primary argument cited against Arctic drilling is that the environmental risks of a spill would have a potentially catastrophic impact on the fragile ecology of the far north. But that position ignores an important point: Other countries continue to explore for resources in Arctic waters, regardless of what we do here.

Pros and Cons of Drilling ANWR
<http://healthresearchfunding.org/pros-and-cons-of-drilling-in-anwr/>

The drilling of oil ANWR is a controversial topic among the oil industry, politicians, and environmentalists. The North Slope, where the drilling for oil is highly observed, is the home of the Arctic National Wildlife Refuge, the Naval Petroleum Reserve No.4, and the Prudhoe Bay Oil Field.

Lesson Plan: Debate! For and Against drilling for oil in the Arctic.



Resource: An interactive online booklet/film/extensive article on the current interest and dangers facing the Arctic

<https://www.theguardian.com/environment/ng-interactive/2015/jun/16/drilling-oil-gas-arctic-alaska>

She says she has seen at close quarters what happens in a community that is subject to an oil rush. Although many outsiders presume that fossil fuel extraction is new to the northern shores of Alaska, the contrary is true.

How Does Drilling For Oil In The Arctic Work?
<http://science.howstuffworks.com/environmental/energy/drilling-oil-arctic.htm>

Like all offshore drilling, drilling in the Arctic is more costly, complicated, and politically controversial than drilling for oil on land.

The Alaskan Arctic Drilling Controversy Explained
See the full infographic here
<http://www.livescience.com/51948-the-alaskan-arctic-oil-drilling-controversy-explained-infographic.html>

Arctic Significance: Climate Change

Spotlight: Changes in Biological Diversity:

<http://www.lop.parl.gc.ca/content/lop/ResearchPublications/prbo804-e.htm#biologicaldiversity>

The people of the North are heavily reliant, both for food and for social and cultural reasons, on the variety and abundance of organisms (biodiversity)

<https://s-media-cache-ak0.pinimg.com/originals/bb/72/cf/bb72cf7093c2e2011594fb1e095f8efe.jpg>

The Arctic: Environmental Issues

<http://www.lop.parl.gc.ca/content/lop/ResearchPublications/prbo804-e.htm>

This website from the Parliament of Canada has links explaining the different impacts of climate change on the different biological species in the Arctic.

Spotlight: Toxic Chemicals

<http://www.lop.parl.gc.ca/content/lop/ResearchPublications/prbo804-e.htm#toxicchemicals>

The use of toxic compounds threatens the health of the people and wildlife of the North. Pollutants that persist in the environment and accumulate in tissue (persistent organic pollutants or POPs) are of particular concern in the Arctic because they move in the atmosphere and oceans to finally accumulate in the food that people eat, such as whale fat.

Anthropogenic climate change (brought about by human activity) is caused by greenhouse gases accumulating in the atmosphere, largely the result of fossil fuel use since the industrial revolution and land use changes associated with deforestation. These gases trap energy in the atmosphere that would otherwise escape to space. While there is a good deal of uncertainty related to the effects, they are expected to be significant, including sea level rise and increases in the frequency and intensity of extreme weather events. The Arctic is warming twice as fast as the rest of the globe, and these changes are already affecting the life of the people of the North; permafrost is less reliable, animal ranges are changing, making hunting more difficult, and sea ice loss is bringing increased interest in the Arctic Ocean for its resources.

Arctic Glacier’s Fast Retreat Causes Alarm, AJ+ (1:31)

<https://www.youtube.com/watch?>

<http://we-are-star-stuff.tumblr.com/post/38736005969/saveplanetearth-today-scientists-at-west>

Arctic Significance: Climate Change

Experts said Arctic sea ice would melt entirely by September 2016- they were wrong

This article incorporates multiple useful graphs, maps, and animations of the changes of rapid ice melting and drastic changes in sea levels over time.
<http://www.telegraph.co.uk/science/2016/10/07/experts-said-arctic-sea-ice-would-melt-entirely-by-september-2016/>
Although a quick glance at NSIDC satellite data going back to 1981 shows an undeniable downward trend in sea ice over the past 35 years, scientists have accused Prof Wadhams and others of "crying wolf" and harming the message of climate change through "dramatic", "incorrect" and "confusing" predictions.

Lesson plan: Research congress members that have made arguments against climate change. Write a letter to a congressperson or senator that evaluates and assesses their points.

“Climate change is happening, humans are causing it, and I think this is perhaps the most serious environmental issue facing us.”
-Bill Nye

2017 Ushers in Record Low Extent
<https://nsidc.org/arcticseaicenews/category/analysis/>
Date, News, and Analysis from the National Snow & Ice Data Center

CBS 60 Minutes The Arctic Frontier

<http://www.cbsnews.com/news/60-minutes-arctic-frontier-lesley-stahl/>

Lesley Stahl goes to the top of the world where the next battle over oil and mineral resources is shaping up as the region becomes more accessible due to climate change.

Lesson plan: After reading this article, what are your thoughts and reflections on the relationship between Western explorers and the land?



Climate change is killing our Mother Earth
<http://www.climatechangenews.com/2014/08/01/indigenous-people-climate-change-is-killing-our-mother-earth/>
In their own words: indigenous people from Canada, Finland, the US, Guatemala and Peru tell their climate stories.

http://politicalhumor.about.com/od/cartoontopics/ss/Climate-Change.htm?utm_source=pinterest&utm_medium=social&utm_campaign=shareurlbutton_nip#step15

Arctic Significance: Climate Change

Climate Change: Classroom Activities & Lesson Plans

Lesson Plans for Educators: A student’s guide to global climate change (middle school)

<https://www3.epa.gov/climatechange/kids/resources/lesson-plans.html>

EPA has compiled a suite of hands-on, interactive lesson plans to complement and make use of the material on this website. The plans, aimed primarily at middle school students, work systematically and individually to reinforce students’ knowledge of climate change, as well as enhance skills across multiple disciplines. The lessons are correlated to national science standards.

An Earth System Science Teacher Professional Development Toolkit for Climate Science

<http://www.purdue.edu/discoverypark/climate/climate-change/toolkit/teacher%20lesson%20plans.pdf>

The Teacher Lesson Plans packet provides a description of and link to classroom lessons that align with the climate system content of the workshop and PowerPoint program. It is designed to assist teachers in the classroom implementation of the climate system content covered in the workshop. Many of the lessons identified engage students in analyzing and interpreting climate data and visualizations. Pedagogically the activities promote active learning and collaboration.

British Council – Teaching English Lesson plans

<https://www.teachingenglish.org.uk/sites/teacheng/files/climate-change-lesson-plan.pdf>

This lesson is about climate change – and encourages students to think about their attitudes towards the environment. (Interesting fact you could use in the intro – according to Friends of the Earth the UK has 1% of the world’s population, yet produces 2.3% of the world’s carbon dioxide) This lesson could be linked nicely with the lesson plan on the weather.

How Do We Balance Environmental Conservation with Human Needs? (Lesson Plan for HS History)

http://earthwatch.org/Portals/0/Downloads/Education/Lesson-Plans/How_Do_We_Balance_Environmental_Conservations_with_Human_Needs.pdf

Students will be asked to simulate a meeting between conservation biologists and representatives of local populations from the Peruvian Amazon; Yangtze River, China; and Hunter’s Point in San Francisco, CA. Goal: For students to understand different perspectives in controversial conservation issues.

Our Future – Narrated by Morgan Freeman

<https://www.youtube.com/watch?v=8YQlaOldDU8>

Morgan Freeman narrates this hopeful, must-watch short film about the need to solve the climate change problem. Video by the United Nations.

What has climate change got to do with human rights?

<https://www.amnesty.org/en/latest/campaigns/2015/12/climate-change-human-rights/>
Climate change is one of the greatest human rights challenges of our time, says Savio Carvalho, Senior Advisor on International Development and Human Rights.

For Younger Learners



Take a Climate Change Expedition!

<https://www3.epa.gov/climatechange/kids/expeditions/index.html>

Get your passport ready! It's time to go on a trip around to world to explore the effects of climate change. Each flag on the map below represents a stop on your journey, and you can visit them in any order you like. You'll see a short video at each stop... and you'll also need to complete a few challenges along the way!

Global Warming for Kids

<https://www.youtube.com/watch?v=PqxMzKLYrZ4>
You will learn about "Global Warming" in this video.

Changes to Indigenous Lands

Arctic Indigenous Peoples, Climate Change Impacts, and Adaptation

<http://www.e-ir.info/2014/04/10/arctic-indigenous-peoples-climate-change-impacts-and-adaptation/>

As the region warms over twice as fast as the global average (IPCC, 2013), many changes are already visible and adaptation actions are called for or are underway.

Indigenous Peoples, Lands, and Resources

<http://nca2014.globalchange.gov/report/sectors/indigenous-peoples>

This report has in-depth information of how the Indigenous Peoples traditions and livelihoods are and will continue to be effected by changes in the Arctic.

Spotlight: Sectors

<http://nca2014.globalchange.gov/report#section-1946>

Explore how climate change affects important sectors such as health, water, and agriculture. Cross cutting sections explore climate change impacts at the intersection of various sectors (such energy, water, and land use), as well as impacts on urban areas, rural communities, Indigenous Peoples, and more.

Spotlight: Regions

<http://nca2014.globalchange.gov/report#section-1948>

Evidence of climate change appears in every region and impacts are visible in every state. Explore how climate is already affecting and will continue to affect your region.

Spotlight: Response Strategies

<http://nca2014.globalchange.gov/report#section-1949>

Explore actions to reduce emissions (“mitigation”) and adapt to a changing climate. Many of these actions can also improve public health, the economy, and quality of life.

Climate Change, Indigenous Peoples, and Mobility in the Arctic

<http://hir.harvard.edu/climate-change-indigenous-peoples-and-mobility-in-the-arctic/>

The very first report of the Intergovernmental Panel on Climate Change recognized that one of the main consequences of climate change will be the movement of people.

The Nenets of Siberia

<https://www.theatlantic.com/photo/2012/04/the-nenets-of-siberia/100277/>

In arctic northern Russia, industrialized resource extraction and climate change are presenting a double threat to the Nenets, an indigenous people native to Siberia.

What’s Happening In The Arctic And Why It Matters To You, Elizabeth Arnold, TEDxSeattle 2017 (14:06)

<https://www.youtube.com/watch?v=N1-W7Td8VoE>

Elizabeth Arnold creates a soundscape as she tells of her two trips to the North Pole. The moving experience motivated her capture the stories of those living in the Arctic Circle, bringing this incredibly remote place to life and showing it's relevance to us all.

Lesson Plans

STEM Lesson Plans On The Arctic And Global Warming

CENTER FOR REMOTE SENSING OF ICE SHEETS: K-12 EDUCATION

<https://www.cresis.ku.edu/education/k-12>

The Center for Remote Sensing of Ice Sheets (CReSIS) provides links to educational materials that focus on topics related to global climate change and remote sensing, particularly changes in continental ice sheets and glaciers in Greenland and Antarctica. K-12 education resources include links to materials (including lesson plans) on ice sheets and glaciers, global climate change, robotics, and mapping and modeling.

ARCTIC THEME PAGE

<http://www.arctic.noaa.gov/education.html>

The Arctic Theme Page is a rich and comprehensive resource linking to widely distributed data and information, from research institutions throughout the world, focused on the Arctic. Available information includes relevant data, graphics, and forecasts, including historical perspectives and in-depth analyses. Also included is a selection of Essays by Arctic experts on key issues in the Arctic. The audience for the Arctic Theme Page is wide, including scientists, students, teachers, decision makers and the general public.



INTERNATIONAL ALLIANCES

<http://www.nationalgeographic.com/xpeditions/lessons/13/g912/eurounion.html>

This lesson can be adapted to include the Arctic Council as one of the organizations students can research. <http://www.arctic-council.org/> In this lesson, students will learn the history, mission, function, and geographical range of six international alliances. They will research opposing viewpoints concerning these alliances and consider the reasons why some people want to reform or disband these organizations. Students will: list the reasons why countries might form alliances with one another; describe some of the things they know about major international alliances; research and answer questions about six international alliances; mark the geographical range of these unions on a world map; and research opposing viewpoints concerning these groups, and present the findings to the class. Grades 9-12

Activities For Young Learners

1. In a group pick your favorite Arctic animal and create a presentation about it and if it's in danger or not.

2. Arctic Sensory Play Ice Melt STEM Activity

<http://littlebinsforlittlehands.com/arctic-sensory-play-ice-melt-science-kids/>

Talk about the change in temperature and how quickly it's happening today.

3. Lessons and Activities about Arctic Peoples

<http://beyondpenguins.ehe.osu.edu/issue/peoples-of-the-arctic/lessons-and-activities-about-arctic-peoples>

Follow the link to a range of in class activities for a deeper understanding of Arctic Peoples for Grades K-5

Social Studies Discussion Questions

1. How have you noticed the change in climate impacting Indigenous Peoples' diets?
2. If the Indigenous people have to migrate, what do you think that would look like; where will they go, what will they bring, what will the conditions be like?

Mapping the Arctic: An Introduction to Arctic Issues Grades 9-12

http://www.canadiangeographic.com/educational_products/activities/polar_imperative/Arctic-lessons-En-lesson1.pdf

Evaluate the spatial information contained in the maps. Ask students to share their findings and identify information that has been omitted from the maps. Speculate as to the reasons why.

Arctic Council

The Arctic Council website

This is the website created for the Arctic Council comprising of all information surrounding the Council.

<http://arctic-council.org/index.php/en/>

Spotlight: Observers- Artic Council

<http://www.arctic-council.org/index.php/en/about-us/arctic-council/observers>

As set out in the Declaration on the Establishment of the Arctic Council and governed by the Arctic Council Rules of Procedure, observer status in the Arctic Council is open to non-Arctic States; inter-governmental and inter-parliamentary organizations, global and regional; and non-governmental organizations that the Council determines can contribute to its work.

Spotlight: Agreements

<http://arctic-council.org/index.php/en/our-work/agreements>

The Arctic Council has provided a forum for the negotiation of two important legally binding agreements among the eight Arctic states.

Arctic Member States

<http://www.arctic-council.org/index.php/en/about-us/member-states>

Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States of America.

The Environmental Protection Agency’s (EPA) role in the Arctic Council

<https://www.epa.gov/international-cooperation/epas-role-arctic-council>

Eye On The Arctic

<http://www.rcinet.ca/eye-on-the-arctic/>

This site hosted by Radio Canada International keeps up to date information and news articles on the different countries invested in the Arctic.

The New Arctic Ocean: U.S. Chairmanship of the Arctic Council During a Dynamic Time

<http://americangeo.org/news-and-information/the-new-arctic-ocean-u-s-chairmanship-of-the-arctic-council-during-a-dynamic-time/>

The Arctic Council is an intergovernmental forum between the eight nation states with territory in the Arctic region.

Below: The Arctic Council in its eighth session in Kiruna (Image: Jonas Karlsbakk)

Above: Arctic Claims (Image: International Boundaries Research Unit, Durham)

The Arctic in Action: Accomplishments of the Arctic Council as we Look to the Future

<http://www.alaskapublic.org/2016/09/09/the-arctic-in-action-accomplishments-of-the-arctic-council-as-we-look-to-the-future/>

Admiral Papp became the State Department’s Special Representative for the Arctic in July of 2014. He is leading the effort to advance U.S. interests in the Arctic Region, with a focus on Arctic Ocean governance, climate change, economic, environmental, and security issues in the Arctic region as the United States holds the chairmanship of the Arctic Council from 2015-2017.

The Arctic Council: A backgrounder

What is the Arctic Council?

The Arctic Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic states, Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic.

Who takes part?

The *Ottawa Declaration* lists the following countries as Members of the Arctic Council: Canada, the Kingdom of Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States.

In addition, six organizations representing Arctic Indigenous peoples have status as Permanent Participants. The category of Permanent Participant was created to provide for active participation and full consultation with the Arctic Indigenous peoples within the Council. They include: the Aleut International Association, the Arctic Athabaskan Council, Gwich'in Council International, the Inuit Circumpolar Council, the Russian Association of Indigenous Peoples of the North and the Saami Council.

Observer status in the Arctic Council is open to non-Arctic states, along with inter-governmental, inter-parliamentary, global, regional and non-governmental organizations that the Council determines can contribute to its work. Arctic Council Observers primarily contribute through their engagement in the Council at the level of Working Groups.

The standing Arctic Council Secretariat formally became operational in 2013 in Tromsø, Norway. It was established to provide administrative capacity, institutional memory, enhanced communication and outreach and general support to the activities of the Arctic Council.

What does it do?

The work of the Council is primarily carried out in six Working Groups.

- The Arctic Contaminants Action Program (ACAP) acts as a strengthening and supporting mechanism to encourage national actions to reduce emissions and other releases of pollutants.
- The Arctic Monitoring and Assessment Programme (AMAP) monitors the Arctic environment, ecosystems and human populations, and provides scientific advice to support governments as they tackle pollution and adverse effects of climate change.
- The Conservation of Arctic Flora and Fauna Working Group (CAFF) addresses the conservation of Arctic biodiversity, working to ensure the sustainability of the Arctic's living resources.
- The Emergency Prevention, Preparedness and Response Working Group (EPPR) works to protect the Arctic environment from the threat or impact of an accidental release of pollutants or radionuclides.
- The Protection of the Arctic Marine Environment (PAME) Working Group is the focal point of the Arctic Council's activities related to the protection and sustainable use of the Arctic marine environment.
- The Sustainable Development Working Group (SDWG) works to advance sustainable development in the Arctic and to improve the conditions of Arctic communities as a whole.

The Arctic Council: A backgrounder

What does it do? (continued...)

The Council may also establish Task Forces or expert groups to carry out specific work. The Task Forces operating during the United States Chairmanship (2015-2017) are:

- Task Force on Arctic Marine Cooperation (TFAMC)
- Task Force on Telecommunications Infrastructure in the Arctic (TFTIA)
- Task Force for Enhancing Scientific Cooperation in the Arctic (SCTF)

What are some of its accomplishments?

The Arctic Council regularly produces comprehensive, cutting-edge environmental, ecological and social assessments through its working groups. The Council has also provided a forum for the negotiation of two important legally binding agreements among the eight Arctic states. The first, the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, was signed in Nuuk, Greenland, at the 2011 Ministerial Meeting. The second, the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, was signed in Kiruna, Sweden, at the 2013 Ministerial Meeting.

How does it work?

Arctic Council assessments and recommendations are the result of analysis and efforts undertaken by the Working Groups. Decisions of the Arctic Council are taken by consensus among the eight Arctic Council states, with full consultation and involvement of the Permanent Participants.

The Chairmanship of the Arctic Council rotates every two years among Arctic states. The first country to chair the Arctic Council was Canada (1996-1998), followed by the United States, Finland, Iceland, Russia, Norway, Denmark and Sweden. The second cycle began in 2013, as Canada assumed the Chairmanship for the second time. On 24 April 2015, the second Canadian Chairmanship concluded, and the second Chairmanship of the United States (2015-2017) began. The next country to assume the Chairmanship will be Finland (2017-2019).

What doesn't it do?

The Arctic Council is a forum; it has no programming budget. All projects or initiatives are sponsored by one or more Arctic States. Some projects also receive support from other entities.

The Arctic Council does not and cannot implement or enforce its guidelines, assessments or recommendations. That responsibility belongs to each individual Arctic State.

The Arctic Council's mandate, as articulated in the Ottawa Declaration, explicitly excludes military security.

Geopolitics

How Climate Change Could Reshape Geopolitics Around The Arctic
<https://thinkprogress.org/how-climate-change-could-reshape-geopolitics-around-the-arctic-2228f9265ode#.yhb6nzo6w>

As the rapidly melting ice unlocks commercial opportunities in shipping, tourism , and oil and gas extraction, the world’s largest economies are jockeying for control of the region.

Geopolitics of the Arctic (11:35)
<https://www.youtube.com/watch?v=dV67yJHoPvw>

In the coming decades, climate change will make Arctic passages and resources more accessible. Given the abundance of resources and critical trade routes, it should come as no surprise that the Arctic will turn into a new geopolitical flashpoint.

Geo Briefing: Arctic Tension
<http://geographical.co.uk/geopolitics/geopolitics/item/904-arctic-tension>

As the Arctic heats up, so does the debate surrounding its ownership. With so much at stake, the Arctic region is becoming an increasingly geopolitical hotspot



The Growing Importance of the Arctic Council
<https://www.stratfor.com/analysis/growing-importance-arctic-council>

By admitting more observers, the Arctic Council — an organization that promotes cooperation among countries with interests in the Arctic — will likely become more important as a forum for discussions on Arctic issues. However, this does not necessarily mean it will be able to establish itself as a **central decision-making body regarding** Arctic matters.

<https://www.iiss.org/en/iiss%20voices/blogsections/2012-6d11/april-2012-e31d/cooperation-not-conflict-in-the-arctic-2eae>

Dominance and Change in the Arctic
Article includes a **VIDEO** (24:06)
<http://www.globalissues.org/article/740/dominance-in-the-arctic>

The Arctic region has long been considered international territory. Five countries—Canada, Denmark (via Greenland), Norway, Russia, and the United States—share a border with the frozen Arctic Ocean. Some of these nations have claimed parts of the region to be their territory.

Discussion Question: Why do you think countries and people other than the Indigenous Peoples feel that they have a right to “claim ownership” of this area? Do you think their arguments are valid, why or why not?

Geopolitics

Report on Arctic Policy

<https://www.state.gov/documents/organization/262585.pdf>

There are clearly major benefits to the United States, in both public and private sectors, from this cooperation, which also extends to several other countries.

The Arctic: A New Middle East?

<http://www.natureandcultures.net/arctic-geopolitics.html>

The attitude towards Arctic affairs began to change in 2007. On August 2 of that year, a bathyscaphe of the Arktika-2007 expedition dropped a Russian flag made of titanium on the bottom of the Arctic Ocean at the exact point of the North Pole. A small symbolic gesture to support territorial claims and to advertise the importance of research in the region. The event attracted world-wide attention and was considered as so serious that it even generated debated about a possible reboot of the Cold War.

Subsistence Values and Ethics

http://arcticcircle.uconn.edu/HistoryCulture/icc_lynge.htm

Survival of the Inuit culture is a cultural issue -- yes. It is also a question of a historical process. A question of colonial policies in generations past, and of political developments at the turn of the millenium. And, it is a question of the attitude taken by contemporary Inuit themselves toward the original social and spiritual culture, fishing and hunting, toward economic development and industry, toward the contemporary and necessary work of teachers and administrators.

Global Brief: Arctic Competition

<http://globalbrief.ca/blog/tag/arctic-competition/>
This platform features a series of articles relating to competition around the Arctic region.

Above: Shipping; Proposed routes by Yamal LNG (Image: Yamal, Total)

CBS This Morning: Competition for Arctic riches

http://www.cbs.com/shows/cbs_this_morning/video/wTyVCv_vQlwx2mxDCkYnDZbQQQv_d6JN/more-accessible-arctic-reveals-competition-for-region-s-riches/

An ocean is opening! CBS This Morning explores what this means for mankind.

https://upload.wikimedia.org/wikipedia/commons/e/ee/Icebreaker_Stephan_Jantzen_in_Stadthafen_Rostock_2010-12-28_perspective_correction-GD.jpg

The Arctic and The U.S.

US Navy Eyes 'Aggressive' Plan For Expanding Its Arctic Presence

<http://www.businessinsider.com/us-navy-arctic-presence-2014-2>

The U.S. Navy is mapping out how to expand its presence in the Arctic beginning around 2020, given signs that the region's once permanent ice cover is melting faster than expected, which is likely to trigger more traffic, fishing and resource mining.

"The Arctic is all about operating forward and being ready. We don't think we're going to have to do war-fighting up there, but we have to be ready," said Rear Admiral Jonathan White, the Navy's top oceanographer and navigator, and director of the Navy's climate change task force.

Obama blocks new oil, gas drilling in Arctic Ocean

<http://www.seattletimes.com/business/obama-blocks-new-oil-gas-drilling-in-arctic-ocean/>

The Obama administration is blocking new oil and gas drilling in the Arctic Ocean, handing a victory to environmentalists who say industrial activity in the icy waters will harm whales, walruses and other wildlife and exacerbate global warming.

Discussion: Do you think The United States is overreacting by bringing up “war-fighting”, why or why not?

Do you think President Obama made the right decision to block new oil drilling? Why or why not?

<http://www.seattletimes.com/business/obama-blocks-new-oil-gas-drilling-in-arctic-ocean/>

Alaska House Democrats introduce oil-tax bill, sparking heated debate

<https://www.adn.com/politics/2017/02/08/alaska-house-democrats-kick-off-alaskas-oil-tax-debate-with-a-flare-up-even-before-first-committee-hearing/>

Alaska House Democrats unveiled their proposal Wednesday to raise oil taxes and limit cash subsidies and oil-tax credits, officially launching a legislative debate over how much more the industry should contribute to filling the state's massive deficit.

Blog: Trump’s election a cold reality check for Arctic

<http://www.rcinet.ca/eye-on-the-arctic/2016/11/10/blog-trumps-election-a-cold-reality-check-for-the-arctic/>

For the Arctic, his presidency does not bode well – but at the end of the day, there may be hope. Here are four damaging outcomes a Trump presidency could have for the Arctic, along with a few possible silver linings.

Discussion: If President Trump acts on his previous comments regarding the Arctic, what response do you think citizens should have toward potential Arctic policies?

Secretary Kerry Addresses a News Conference After the Arctic Council Ministerial Meeting in Canada 2015

Spotlight: The Arctic Gateway

<http://arcticportal.org/arctic-governance/arctic-policies-database>

This is a great resource containing links to each nation state and their Arctic policies as well as the Arctic policies of the Indigenous People’s and those by non-Arctic States. “Over the past few years, States and Indigenous People Organizations have outlined and defined their national priorities and policy objectives in the Arctic and on northern issues in response of a growing global strategic importance of the Arctic region. This process has involved not only the eight Arctic States and Arctic Indigenous Peoples, but also non-Arctic States both in Europe—such as France, Germany, and the United Kingdom—and in Asia—such as Japan and South Korea.”

https://upload.wikimedia.org/wikipedia/commons/c/c2/Secretary_Kerry_Addresses_a_News_Conference_After_the_Arctic_Council_Ministerial_Meeting_in_Canada.jpg

The Arctic and Russia

Washington & Moscow’s High North Dance
<http://globalbrief.ca/blog/2016/02/19/washington-and-moscow-dance-in-the-high-north/>
The US has long had a contentious relationship with Russia. Even going back to the days of the Russian Empire, the US never considered Russia a ‘friend’ as the US today views, say, Canada or the UK. We were allies of convenience during WW2 and sworn enemies during the Cold War. Following the collapse of the USSR in 1991, the bilateral relationship warmed in that business relationships were developed and political relations were friendlier, if still cautious. The warmer relations chilled considerably under a nationalist Vladimir Putin, and became downright cold following Russia’s 2014 invasion and annexation of Crimea and its military support of separatists in the Donbass region of eastern Ukraine. So what about the Arctic? One should recall that nearly half of the Arctic coastline belongs to Russia, which has for hundreds of years explored and settled portions of its Arctic onshore and offshore territory. The US purchase of Alaska from Russia in 1867 gave the US its first and only Arctic territory. While the US has become a superpower in the area of Arctic scientific research, it is slowly beginning to embrace the idea that it is indeed an Arctic nation.

In the Arctic’s Cold Rush, There Are No Easy Profits
<http://www.nationalgeographic.com/magazine/2016/03/new-arctic-thawing-rapidly-circle-work-oil/>
“Gas fields discovered in the 1960s laid the foundation for Russia’s decades-long dominance of the global natural gas market. Now these Soviet-era giants are in decline. Moving farther north into the Arctic is the next logical step.”
Discussion: How do you think the international community should respond to this bold move by Russia?

<http://globalbrief.ca/blog/2016/02/19/washington-and-moscow-dance-in-the-high-north/>

What are Russia’s Interests in the Arctic?
<http://globalbrief.ca/blog/2016/02/19/what-are-russia%E2%80%99s-interests-in-the-arctic/>
Conceptually, Russia’s leadership now realizes that most of the threats and challenges to the Arctic Zone of the Russian Federation (AZRF) originate from inside rather than outside the country. These problems are rooted in a confluence of factors, including the degradation of Soviet-made economic, transport and social infrastructure in the region, the current resource-oriented model of the Russian economy, and the lack of funds and managerial skills in Russia to properly develop the AZRF. It follows that Russia’s current Arctic strategy is of an inward- and not an outward-looking nature. It aims to solve existing domestic problems rather than focus on external expansion. Moreover, in developing the AZRF, Moscow seeks to demonstrate that it is open for international cooperation and to foreign investment and know-how.

Oettinger: EU may not help Russia develop Arctic oil, gas
<http://www.euractiv.com/section/europe-s-east/news/oettinger-eu-may-not-help-russia-develop-arctic-oil-gas/>
While stopping far short of targeting physical energy supplies, EU ministers for the first time this week raised the idea of restricting Russian access to oil and gas technology.
How Russia is Fortifying the Arctic
<http://theweek.com/articles/614075/how-russia-fortifying-arctic>
The Arctic has traditionally been a low military priority for everyone. Its climate, particularly during the winter, makes it unfriendly to human life. The prevalence of ice and lack of dry land makes stationing forces there difficult. Military outposts are generally limited to arctic research, early warning, and meteorological stations.

The Arctic and Canada

Canada’s Northern Strategy

<http://www.northernstrategy.gc.ca/index-eng.asp>

This website contains links to all areas of which Canada approaches its “Northern Strategy” including; sovereignty, environment, social and economic development, governance, and science and technology.

Spotlight: Exercising Our Arctic Sovereignty

<http://www.northernstrategy.gc.ca/sov/index-eng.asp>

The Government is firmly exercising our sovereignty over our Arctic lands and waters – sovereignty that is long-standing, well-established and based on historic title, international law and the presence of Inuit and other Aboriginal peoples for thousands of years.

Canadian International Arctic Centre

<http://www.international.gc.ca/arctic-arctique/Arctic-Centre-Arctique.aspx?lang=eng>

Working in partnership with Canadian missions and other departments and agencies in Canada, the Centre's objective is to act as an arm of Global Affairs Canada’s Circumpolar Affairs division to advance Canada’s Arctic Foreign Policy.

Renewable Energy Powers Up In Nunavut

http://www.huffingtonpost.ca/wwfcanada/renewable-energy-nunavut_b_10700498.html

In March, Prime Minister Trudeau and President Obama agreed that reducing reliance on diesel fuel in the Arctic was a priority for both Canada and U.S. This was presented as a priority for meeting climate change reduction goals and protecting important marine areas, but it also fits into international Sustainable Development Goal commitments to deliver energy security to people around the world.

Time to put Russia-Canada tensions in the deep freeze

<http://www.aljazeera.com/indepth/opinion/2016/10/time-put-russia-canada-tensions-deep-freeze-161027060505200.html>

This new Cold War is what Canada's most pessimistic pundits predict while touting Canada's "Arctic sovereignty" and detailing Russia's investments of billions of dollars in northern military and missile bases, nuclear ice-breakers and fighter jets.



Above: Canadian forces performing a sovereignty exercise in the Arctic
(Image: Canadian Forces)

The Arctic and Sweden

Sweden and the Arctic region

<http://www.arctic-council.org/index.php/en/about-us/member-states/sweden>

Sweden is an Arctic country with interests in the region and has an important role to play in both multilateral and bilateral discussions. In 2011 Sweden adopted a strategy on the Arctic region based on the process of far-reaching change in the Arctic region. Climate change is creating new challenges, but also new opportunities. Sweden promotes economically, socially and environmentally sustainable development throughout the Arctic region.

Sweden's Strategy for the Arctic Region

http://www.geopoliticsnorth.org/index.php?option=com_content&view=article&id=186:swedens-strategy-for-the-arctic-region&catid=43&Itemid=110

Since Sweden was the last of the eight Arctic states to issue and approve an Arctic strategy or policy, there was growing international pressure on Sweden as well as domestic calls for the Government to do so, not least due to the Swedish chairmanship of the Arctic Council.

Strategic Environmental Impact Assessment of development of the Arctic

<http://www.arcticinfo.eu/en/sweden>

The Swedish Polar Research Secretariat is a government agency under the Ministry of Education and Research that promotes and co-ordinates Swedish polar research and development, as well as monitor, promote and assist in international negotiations, collaborations and cooperation with the EU.

Swedish NATO membership may jeopardize Arctic opportunities

<http://globalriskinsights.com/2016/05/swedish-nato-membership/>

Russia has already warned Sweden of the possible consequences of NATO membership, yet Sweden is apparently swayed less by either Russia or NATO and more by the wishes of its own citizens. The Swedes are split regarding the possibility of a NATO membership, and the division is multi-fold, as it encompasses disunity not only between citizens and their elected parties but also between Sweden itself and its fellow neutral neighbor, Finland.



http://www.geopoliticsnorth.org/index.php?option=com_content&view=article&id=186:swedens-strategy-for-the-arctic-region&catid=43&Itemid=110

The Arctic and Norway

Norwegian Grand Strategy and the Arctic

<http://globalbrief.ca/blog/2011/06/27/norwegian-grand-strategy-and-the-arctic/>

With rising energy prices and diminishing prospects for extraordinary oil and gas profits, the ongoing international claims process under the UN Convention on the Law of the Sea and the ever-growing pace of climate change, the Arctic is the setting of Norway's key strategic theatre for the 21st century.

Managing the Arctic- Norway's views

<http://eu-arctic-forum.org/publications/managing-the-arctic-%E2%80%93-norway%E2%80%93views/>

In Norway's view, the EU should play a more active role in the Arctic Council. However, a particular responsibility rests with the coastal states bordering the Arctic Ocean.

Norway's Arctic Policy for 2014 and beyond- a summary

https://www.regjeringen.no/en/dokumenter/report_summary/id2076191/

This report describes Norway's Arctic policy, but also includes comments from the foreign ministers of the US, South Korea and France, from the Chair of the Intergovernmental Panel on Climate Change, and from a number of researchers and representatives of the Norwegian business sector. Common to all of is an emphasis on the global significance of the Arctic.

The Arctic, Important for Norway, Important For the World

<http://hir.harvard.edu/the-arctic-important-for-norway-important-for-the-world/>

Norway was the first Arctic coastal state to receive its recommendation from the Commission on the Limits of the Continental Shelf and thus fulfill the requirements of the United Nations Convention on the Law of the Sea in this respect.

Incredibly thin Arctic sea ice shocks researchers

<http://www.nature.com/news/incredibly-thin-arctic-sea-ice-shocks-researchers-1.21163>

The Norwegian project cost roughly US\$5 million and involved more than 70 researchers from 10 countries. The researchers presented some of the first results from the expedition this week at the American Geophysical Union's Fall Meeting in San Francisco.

<http://www.norway.org/Documents/Infographic.jpg>

The Arctic and Finland

Finland: Increased militarization brings more infrastructure to the Arctic

<http://www.highnorthnews.com/finland-increased-militarization-brings-more-infrastructure-to-the-arctic/>

More military presence in the Arctic does not necessarily translate to a return of the Cold War manufactured positioning of the region in global strategic considerations, says the two Finnish experts.

(PDF JOURNAL) *Spotlight:* The Arctic in world politics. The United States, Russia, and China in the Arctic- Implications for Finland

<http://projects.iq.harvard.edu/files/fellows/files/virtanen.pdf>

Increased activities in the Kola Peninsula are forcing Finland to follow Russian activity closely, as 5 most state action happens near Finnish borders. The defense of Lapland remains important for Finland. Increased activities in the Arctic will create new economic opportunities for Finland, especially regarding Finnish expertise in operating in the Arctic.

Finland's Arctic Strategy

http://www.geopoliticsnorth.org/index.php?option=com_content&view=article&id=151:june-2010-finland-recently-presented-its-first-arctic-strategy&catid=38&Itemid=106

Finland is one of the eight Arctic states with significant economic, political and security interests in the Arctic region. It has also been active in international northern and Arctic undertakings like, for example, the initiatives for the Arctic Environmental Protection Strategy and the EU's Northern Dimension.

Arctic Finland

<http://www.arcticfinland.fi/en>

This website encompasses Finland's views of the Arctic in in political, economic, and scientific sphere.

***Spotlight:* Finland's Arctic economy and business**

<http://www.arcticfinland.fi/EN/Economy>

The strong expertise of Finland in Arctic questions is based on first-hand knowledge of the circumstances in the region. The best-known examples of Finland's Arctic expertise include Arctic marine technology and related business opportunities, solutions and services.

Finland set to chair Arctic Council as member relations sour

<https://thebarentsobserver.com/en/arctic/2016/10/finland-set-chair-arctic-council-member-relations-sour>

Finland will assume the two-year rotating chairmanship position of the Arctic Council, an intergovernmental forum addressing sustainable development and environmental protection in the Arctic, in May 2017.

The Arctic and Iceland

Iceland's Arctic Awakening

<http://www.worldpolicy.org/blog/2015/04/22/iceland%E2%80%99s-arctic-awakening>

Iceland, the world's oldest democracy and the site of the world's northernmost capital, is an excellent case in point of Stefansson's vision that an outward looking modern society with high living standards and excellent infrastructure can be developed in the Arctic.

Arctic Policy of Iceland

<http://www.arcticiceland.is/en/island-og-nordhurslodhir/stefna-islands-i-malefnum-nordhurslodha>

A parliamentary resolution on Iceland's Arctic Policy was approved by Althingi on March 28 2011. It aims at securing Icelandic interests with regard to the effects of climate change, environmental issues, natural resources, navigation and social development as well as strengthening relations and cooperation with other States and stakeholders on the issues facing the region.

Iceland: Outsized Importance for Transatlantic Security

<http://www.heritage.org/global-politics/report/iceland-outsized-importance-transatlantic-security>

Today, Iceland still plays an important role in transatlantic security, especially when viewed in light of recent Russian behavior in continental Europe, and both Russian and Chinese interests in Arctic and North Atlantic waters. The U.S. should seek to rebuild its security partnership and strengthen relations with Iceland.



<https://s-media-cache-akopinimg.com/564x/e3/4b/d5/e34bd5eaed552793701f8617cb4e82ao.jpg>

Spotlight: Iceland and the Arctic

<https://www.institutenorth.org/assets/images/uploads/articles/Nor%C3%Boursl%C3%B3%C3%Boastefna%20Alaska%202011%202012.pdf>

An in depth look at Iceland's Arctic Policy, Iceland's Arctic coastal state, and political and economic interests in the Arctic.

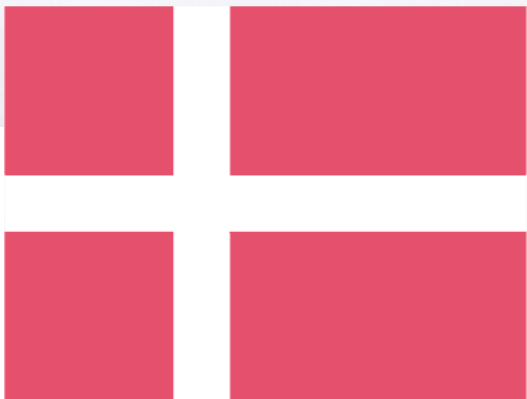
https://upload.wikimedia.org/wikipedia/commons/0/09/Arctic_fox_Iceland.JPG

China, Iceland and the Arctic

<http://thediplomat.com/2015/05/china-iceland-and-the-arctic/>

The development and strengthening of Beijing's ties with Reykjavik should be understood in the context of Iceland's role as a player with influence in the region's institutional transformation. This is demonstrated by the recent successes of Icelandic authorities.

The Arctic and Denmark



Analysis: What a Trump Presidency Means for Denmark and Greenland
<https://www.newsdeeply.com/arctic/articles/2016/11/22/analysis-what-a-trump-presidency-means-for-denmark-and-greenland>
The election of Donald Trump as president of the United States – and its Commander-in-Chief – will have a direct impact on the relationship Greenland and Denmark have with the U.S., just as it will affect the fragile international relationships in the Arctic, which Greenland and Denmark have made a priority.

Denmark’s Strategy for the Arctic
<http://foreignpolicyblogs.com/2011/11/14/denmarks-strategy-for-the-arctic/>
One of Denmark’s main objectives in the Arctic concerns sustainability and social development. This is in sharp contrast to Canada and Russia, for instance, two countries which are arguably more concerned with defense and sovereignty than the environment and people. The government also strives to prevent conflicts and avoid the militarization of the Arctic.

Denmark’s strategic interests in the Arctic: It’s the Greenlandic connection, stupid!
<http://www.thearcticinstitute.org/denmarks-strategic-interests-in-the-arctic-its-the-greenlandic-connection-stupid/>
It is of primary importance that Denmark take utmost care of the relationship with Greenland and treat any possible disagreements between Nuuk and Copenhagen with great mutual respect.



https://upload.wikimedia.org/wikipedia/commons/2/2a/Kingdom_of_Denmark_map.png

Russia eyes Arctic deal with Denmark
<http://www.thelocal.dk/20160908/russia-eyes-arctic-deal-with-denmark>
The Russian minister of natural resources, Sergey Donskoy, told President Vladimir Putin that Russia's bid to the UN for portions of the Arctic shelf should be moved along by speaking directly with Danish officials.

Denmark claims potentially energy-rich Arctic waters
<http://www.dw.com/en/denmark-claims-potentially-energy-rich-arctic-waters/a-18129572>
The Danish government said it would tell the UN Commission on the Limits of the Continental Shelf (CLCS) that data collected since 2002 supports its claim to ownership over an area of about 895,000 square kilometers (346,000 square miles) beyond the current nautical borders of Greenland, an autonomous Danish territory.

Lesson Plan: How do you think the Arctic affects Russian-Danish relations?

Southeast Asia and China

Enter Asia: The Arctic Heats Up

<http://www.worldaffairsjournal.org/article/enter-asia-arctic-heats>

In 2012, the amount of cargo transported through the region more than doubled, and in May 2013 the Arctic Council, traditionally membered by Europe's Nordic countries, along with Russia, Canada, and the US, granted observer status to China, Japan, India, South Korea, Singapore, and Italy, a reminder that climate change is opening the Arctic to wider use and commercial exploitation, especially by Asian interests.

How Asian Countries Are Making Their Way Into the Arctic

<http://thediplomat.com/2016/10/how-asian-countries-are-making-their-way-into-the-arctic/>

Discussions are also being held concerning strengthening the observer status in the Arctic Council, particularly by providing Asian members with more rights in decision-making processes in the working groups of the AC. One of the latest examples of this trend was negotiations on a new Agreement on Enhancing Arctic Scientific Cooperation, which were held in Ottawa, Canada in July 2016. Observers, along with the Arctic states, were given an opportunity to take part in preparing provisions for this intergovernmental document.

Governance, climate, resources, shipping base for Asian interests in the Arctic

<http://barentsoobserver.com/en/arctic/2015/01/governance-climate-resources-shipping-base-asian-interests-arctic-19-01>

Asian stakeholders see that scientific research in the Arctic is more important than ever, as climate change is seriously affecting Asian countries. 70 percent of the world's natural disasters occur in Asia, many of which are exacerbated by climate change.

The Asian States and the Arctic

<http://www.arctis-search.com/The+Asian+States+and+the+Arctic>

Two issue areas seem to attract the collective attention of the Asian countries: a) The oil and gas potential of the region; and b) transportation corridors through Arctic and southern waters.

Ash via Flickr

China and the Arctic

China's Emerging Arctic Policy

<http://thediplomat.com/2016/12/chinas-emerging-arctic-policy/>

Given China's growing Arctic interests, it ought to articulate its objectives. To allay the concerns of Arctic States, high-level Chinese diplomats have started to publicly articulate what China sees as its role in the region.



China wants ships to use faster Arctic route opened by global warming

<http://www.reuters.com/article/us-china-arctic-idUSKCN0XH08U>

China is increasingly active in the polar region, becoming one of the biggest mining investors in Greenland and agreeing to a free trade deal with Iceland.

The new cold war: China's creeping ambitions in the Arctic set the stage for ice showdown

<http://www.news.com.au/technology/environment/natural-wonders/the-new-cold-war-chinas-creeping-ambitions-in-the-arctic-set-the-stage-for-icy-showdown/news-story/753e74bed12c66658118b25ce7c36e56>

China is considered an Arctic newcomer but the increasingly emboldened superpower is certainly making its presence known in the critically important polar north, a region considered to be the stage for the next big resource battle.

Friends If We Must: Russia and China In The Arctic

<https://warontherocks.com/2016/05/friends-if-we-must-russia-and-chinas-relations-in-the-arctic/>

China is not just interested in Russia's energy resources, but also in its coastline: 2013 saw the first Chinese merchant ship use the increasingly navigable Northern Sea Route that promises to connect Asia to Europe in fewer days than through the Suez Canal, and without the hazards commonly found in the Malacca Straits.

China in a heterogeneous and complex Arctic

<http://arctic-council.org/arr/china-in-a-heterogeneous-and-complex-arctic/>

Recently, China has strengthened its diplomatic ties to Nordic countries such as Iceland, Denmark, Norway, and Sweden, reflecting the Chinese government's increased attention to Arctic issues. In May 2013, China was granted permanent observer status to the Arctic Council, formalizing its intent to participate in discussions about Arctic issues.

A Chinese View of Arctic Sea Routes

<http://www.arctis-search.com/The+Asian+States+and+the+Arctic>

Southeast Asia and the Arctic

Japan, Korea, Singapore and the Arctic Sea Lanes

<http://thediplomat.com/2014/03/japan-korea-singapore-and-the-arctic-sea-lanes/>

Like their larger Asian neighbors, Japan, Singapore and South Korea aim to participate in energy resource development and climate change research in the polar north. Yet the primary interest driving the Arctic engagement of all three countries is the increasing accessibility of northern waters to commercial shipping.

Why Singapore Is Breaking Ice In The Arctic

<https://www.asiatoday.com.au/content/why-singapore-breaking-ice-arctic>

Singapore boasts one of the world's busiest ports, and its strategic position gives it a bigger global role than that accorded to other nations of its size. Since Stamford Raffles founded Singapore back in 1819, the island State's importance has been directly related to its strategic geographic location. Playing an entrepot role has becoming something of Singapore's birthright.

China and India go Arctic

<http://www.politico.eu/article/china-and-india-go-arctic-sanctions-gas-oil-exploration-Ing/>

The question that arises next is whether India and China, whose 2.7 billion people have a voracious appetite for energy, but which also share a contentious land border and harbor a mistrust of each other, can cooperate on international economic deals such as those in the oil and gas sector. The answer is yes, and they have been doing it successfully for a long time in the Middle East and Africa.

India's Increasing Interest In The Arctic

<https://southasianvoices.org/indias-increasing-interest-in-the-arctic/>

India, being an agrarian economy, heavily depends on monsoons that are affected by any change in the Arctic.

Arctic Opportunities

<http://indianexpress.com/article/opinion/columns/arctic-region-opportunities-south-korea-india-2964498/>

It is proposed that India should leverage trade talks with South Korea to achieve this goal, especially since we can't have strategic partnerships with Russia or China going by our current US-leaning foreign policy.

Japan's Arctic Policy

http://www.research.kobe-u.ac.jp/gsics-pcrc/sympo/20160728/documents/Keynote/Japan_Arctic%20Policy.PDF

This PDF packet is a concise overview of Japan's Arctic Policy and how it plans to address environmental issues, indigenous peoples, natural resources in the region and more.

Japan's Evolving Efforts toward Sustainable Development of the Arctic

[http://www.sciencediplomacy.org/files/](http://www.sciencediplomacy.org/files/japans-evolving-efforts-toward-sustainable-development-of-the-arctic-science-diplomacy.pdf)

[japans-evolving-efforts-toward-sustainable-development-of-the-arctic-science-diplomacy.pdf](http://www.sciencediplomacy.org/files/japans-evolving-efforts-toward-sustainable-development-of-the-arctic-science-diplomacy.pdf)

Japan's Arctic policy rests on a foundation of science and technology, which is an indispensable tool for designing effective solutions to global challenges.

South Korea's Positioning in the Arctic

<http://www.worldpolicy.org/blog/2015/09/30/south-korea%E2%80%99s-positioning-arctic>

In the same manner, the former South Korean ambassador to Norway [declared](#) in his speech during the 2013 Arctic Frontiers Conference that the region will require innovative policies to promote sustainable development. His comments underlie the importance of the Arctic region in the fight against climate change while setting it as an example of a new growth engine.

Action: Moving Forward

3 ways you can save the Arctic ice

<https://www.weforum.org/agenda/2015/09/3-ways-to-save-the-arctic-ice/>

If the Arctic is screaming, it's hard for most of us to hear. Despite the social, environmental and economic opportunities and risks, the world blithely ignores the sound of Arctic change.

Four Steps to Protect the Arctic, Our Final Ocean Frontier

<https://www.nrdc.org/experts/lisa-speer/four-steps-protect-arctic-our-final-ocean-frontier>

So far, mismanagement of virtually every other ocean on the planet has led us to a brave new world of collapsing fisheries, massive dead zones, huge floating garbage patches and destroyed habitats. The Arctic Ocean -- long protected by a blanket of ice and now on the brink of major new development -- might be our last chance to get oceans management right.

Alaska Conservation Foundation

<http://alaskaconservation.org/conservation-issues/arctic/>

Alaska's Arctic is ground zero for the world's climate crisis.

The Pew Charitable Trusts: Protecting Life in the Arctic

<http://www.pewtrusts.org/en/projects/protecting-life-in-the-arctic>

Pew promotes science- and community-based conservation of the Arctic waters in the United States, Canada, and Greenland, and between nations in the international Arctic.

<https://www.columnfivemedia.com/work-items/infographic-save-the-arctic-tour>

Ocean Conservancy – The Arctic

<http://www.oceanconservancy.org/places/arctic?referrer=https://www.google.com/>

Help Ocean Conservancy protect the pristine Arctic, including its wildlife and those who depend on the abundance of Arctic waters to support their subsistence way of life.

Action: Moving Forward

Indigenous Peoples Protest For Climate Rights In Paris, AJ+ (1:32)

<https://www.youtube.com/watch?v=esY5CPHtw-o>
Indigenous peoples from the Arctic to the Amazon took to the waters of Paris, calling for the UN climate agreement being negotiated at #COP21 to include indigenous rights. A study by the World Resources Institute shows that ensuring indigenous people's land rights can reduce deforestation and CO2 emissions.



Sarah James, a Gwich'in leader from Arctic Alaska, won the Goldman Environmental Prize in 2002 for her defense of ANWR. Now she warns of rapid climate change in the far North, which threatens upheaval for Native people. Photo courtesy Conversations with the Earth

<http://voices.nationalgeographic.com/2011/10/11/indigenous-people-climate-change/>

<http://www.greenpeace.org/italy/A3oxA3o/?lacurci&id=lacurci>

Arctic National Wildlife Refuge

<http://www.defenders.org/arctic-national-wildlife-refuge>

Drilling the Arctic Refuge could alter the annual path of the Porcupine caribou herd, one of the longest land mammal migrations in the world. The critical breeding grounds for migratory birds would be severely impacted, and could cause population-scale impacts for many species.

Indigenous peoples using traditional knowledge to adapt to climate change

<https://ourworld.unu.edu/en/land-use-climate-change-adaptation-and-indigenous-peoples>

(INCLUDES 3 VIDEOS)

Brian Keane, the co-founder and director of the indigenous rights group [Land is Life](#), said, "There are 370 million indigenous people today, in roughly 5,000 nations, and these people are tough as diamonds. They are where the hope lies for the future of this planet."

Indigenous People Sound the Alarm on Climate Change

<http://voices.nationalgeographic.com/2011/10/11/indigenous-people-climate-change/>

According to the delegates at the conference, representing more than a dozen Native cultures from around the world, the message is clear: Mother Earth is in trouble. But fortunately, many of the assembled elders were also quick to point out that there is much the Western world can learn from indigenous people to address some of the problems, and to more effectively deal with the impending changes.

<http://assets.inhabitat.com/wp-content/blogs.dir/1/files/2011/08/tar-sands-protest-2.jpg>

Protect the Arctic

<https://www.nrdc.org/issues/protect-arctic>

NRDC fights for long-term protections that will protect the Arctic and its unique wildlife in the face of climate change and industrial development.

Action: Moving Forward

Greenpeace: Arctic Oil Drilling

<http://www.greenpeace.org/usa/arctic/issues/oil-drilling/>

The people and animals that live in the Arctic depend on its unique ecosystem to survive. Yet major companies like Shell and Exxon are making aggressive moves to usher in a new “oil rush” in the Arctic Ocean.

Greenpeace: Be Part Of The Generation That Ends Oil (1:30)

<https://www.savethearctic.org/en-US/peoplesarcticoil/>

In a historical court case, we’re suing the Norwegian government for allowing Statoil and many other oil companies to expand oil drilling in the Arctic.

Fjällräven Save The Arctic Fox Backpack

<http://www.fjallraven.com/responsibility/nature-environment/save-the-arctic-fox>

We help spread information, supply equipment and donate money to research and food supplementation.

Frozen Treasure: Defending the Arctic

<http://earthjustice.org/features/photo-essay-arctic>

The Arctic is ground zero for climate change, and offshore drilling will only intensify the problem, placing additional stress on the Arctic’s animals which rely on its delicate ecosystem to survive. We must safeguard the Arctic from the high risk of oil spills—and the planet from the irreversible damage that will arise from Arctic Ocean drilling.

Save the Arctic from oil drilling!

<http://wilderness.org/article/save-arctic-oil-drilling>

Alaska's Arctic is one of the world's last great, untouched wildernesses -- a place where polar bears still roam and massive caribou herds thunder through the land. Yet, the powerful oil and gas lobby is pressuring Congress and the Obama Administration to open sensitive parts of this pristine area to oil and gas drilling. Oil and gas development would irreparably damage the wild character of the Arctic.

Additional Resources

Interactive Sea Ice Graph

<http://nsidc.org/arcticseaicenews/charctic-interactive-sea-ice-graph/>

10 Arctic Region Maps

<http://www.arcticcentre.org/EN/communications/arcticregion/Maps>

Animated map of melting arctic ice 1979-2005

http://www.nasa.gov/mpg/134729main_sea%20ice%20average_NASA%20WebV_1.mpg

Map Activity: Ask you students to consider 3 different maps of the Arctic. What are their differences? Are there any biases that come across from each of the maps? Looking at each map, what predictions can you make about the cartographer’s background and why?

Arctic Variety

<http://www.arcticcentre.org/EN/communications/variety>

The Arctic Variety video series [fi, smi, sv] looks at everyday life and competence in the Finnish Arctic. Cool experts can be found all around the country and in a wide range of occupations and duties.

Interactive Arctic Map from UN Environmental Program

<http://maps.grida.no/arctic/>

Historical Highlights of Arctic Exploration Graph

<https://nsidc.org/cryosphere/arctic-meteorology/studying.html>

Planet Earth “Ice Worlds” episode: <https://vimeo.com/122414919>

Additional Articles

Ethnographic Portraits of Northern Peoples An Introduction

<http://arcticcircle.uconn.edu/HistoryCulture/introportraits.html>

Why Is Antarctica’s Sea Ice Growing While the Arctic Melts? Scientists Have an Answer

<https://insideclimatenews.org/news/31052016/why-antarctica-sea-ice-level-growing-while-arctic-glaciers-melts-climate-change-global-warming>

What We Can Learn From Traditional Arctic Diets

<https://food.good.is/articles/traditional-arctic-diets>

What Happens When Oil Spills in the Arctic?

<http://news.nationalgeographic.com/news/energy/2014/04/140423-national-research-council-on-oil-spills-in-arctic/>

As sea ice melts and the oil industry prepares to exploit the Arctic’s vast resources, the United States faces big gaps in its preparedness for an oil spill in the region, according to a report released Wednesday by the National Research Council (NRC).

How Capt. James Cook’s intricate 1778 records reveal global warming today in Arctic

<http://www.seattletimes.com/seattle-news/science/how-capt-james-cooks-intricate-1778-records-reveal-global-warming-today-in-arctic/>

Records from Cook’s voyage north reveal the extent of the Arctic ice pack and contrast with today’s ice-free summer route through the Northwest Passage.

Exploring the Past: An Archeological journey

<http://arcticcircle.uconn.edu/HistoryCulture/journey.html>

These earlier humans entered the New World by way of Beringia, an intercontinental land ‘bridge’ half the width of the United States connecting the region of Bering Strait with Siberia. We know little of human antiquity in this northern sector of the Old World, although archeological remains from the Lake Baikal region of the Trans-Baikal date as far back as 13,000 to 25,000 years ago.

Arctic Peoples

http://wwf.panda.org/what_we_do/where_we_work/arctic/arctic_peoples/

Indigenous peoples of the Arctic have a store of ecological knowledge based on their own observations of the environment, and on information handed down over generations.

LESSON PLANS



Arctic Lesson Plans from NOAA
<https://ocean.si.edu/ocean-news/arctic-lesson-plans-noaa>

Explore the Arctic in the "Under Arctic Ice" photo essay, co-developed by the National Oceanic and Atmospheric Administration (NOAA) Office of Ocean Exploration and Research and the Smithsonian's National Museum of Natural History. This essay lets you follow along as researchers explore the stunning life hidden in the icy Arctic Ocean. It highlights the work that scientists conduct in the Arctic, the technology and equipment that is needed to dive beneath the Arctic ice, and displays a variety of stunning images of the animals that inhabit the Arctic's icy waters.

The NOAA lesson plans below are an excellent companion to the "Under Arctic Ice" photo essay. Explore the Arctic photo essay with your class, then dive into one of these classroom activities, each corresponding with a chapter in the photo essay.

NOAA Climate Steward—teachers should register for prof. development; this month’s webinar was from Globe.gov (great books on climate change—including newest book); free to download



Archives on the Arctic Lesson Plans
http://www.k12studycanada.org/arctic_lesson_plans.html

These lessons were developed by teachers after participating in the "Archives on the Arctic: Connecting to Global Issues with Primary Sources" workshop in June 2013. This new teacher-developed collection of curricula has been made possible with grant support from the Library of Congress Teaching with Primary Sources Western Regional Center.

Arc-Tic-Toc: Climate Change and the Ticking Clock (Gr. 6-8)

- Supplement 1: Teacher Backgrounder
- Supplement 2: Questioning Primary Sources
- Supplement 3: Photo Analysis Worksheet
- Supplement 4: NOAA Activity: Are You Climate Literate

ARS Annotated Resource Set - Defining the Arctic Region (Gr. 6-8)

- Supplement 1: Arctic Region Convention Graphic Organizer
- Supplement 2: Arctic Region Convention Worksheets
- Supplement 3: Personal Action Plan (Arctic Region Convention Goals)
- Supplement 4: Individual Assessment of Personal Action Plan
- Supplement 5: Final Essay Rubric

Annotated Resource Set (ARS):

Learning about the Arctic through Newspaper Primary Sources (Gr. 6-8)

Being Inuit/Being Me:

Student Projects that Compare and Contrast Inuit Life with Lummi Life (Gr. 6)

Compare/Contrast - Native Americans in Tree-less Landscapes (Gr. 6)

Supplement 1: What If There Were No Trees? PowerPoint

Debating the Future of the Arctic (Gr. 10)

- Supplement Intro Lesson: Advertising the Arctic
- Supplementary PowerPoint: Advertising the Arctic
- Supplement 1: Venn Diagram (Arctic - Antarctica - Both?)
- Supplement 2: Venn Diagram Key
- Supplement 3: Assignment Classifying Canadian Facts

Geospatial Technologies and the Arctic - Past, Present, and Future (Gr 9-12)

Global Warming - We are all Threatened (Gr. 6-8+)

Historical Inquiry of Inuit Culture (Gr. 5-6)

Inuktitut: Learning about Inuit Language (Gr. 9-12)

Portrait of an Inuit and an Inuksuk (Gr. 2-3 Mini-Unit)

Racing to the North with Peary and Cook (Gr. 6-9)

Structured Academic Controversy - Exploitation of the Arctic (Gr. 9-12)

Voyaging through the Northwest Passage (Gr. 8)

Who Owns the Arctic? Class Debate (Gr. 9-12)