

## **BCS 311: Land and Environments of the Circumpolar World I**

This course provides an in-depth understanding of the lands and environments that defines the Circumpolar North, as well as the key issues involving interaction between humans and environment. This resource kit provides students and instructors with some contemporary resource materials that highlight Indigenous content or Indigenous impacts.



Muskoxen (Source: <https://pixnio.com/fauna-animals/musk-ox-pictures/muskox-animals-arctic-mammals-ovibos-moschatus>)

### **Module 1: Environmental Knowledge: Development and Quality Assessment**

**How science-based and Indigenous knowledge about the northern environment is acquired, preserved and transferred to future generations.**

**Article:** *Working with Indigenous, local and scientific knowledge in assessments of nature and nature's linkages with people.*

(See Rosemary Hill et al. Working with Indigenous, local and scientific knowledge in assessments of nature and nature's linkages with people. *Current Opinion in Environmental Sustainability*, Volume 43, 2020: 8-20. <https://www.sciencedirect.com/science/article/pii/S1877343519301447>)

**Criteria that can be used to evaluate the quality of scientific and Indigenous knowledge about the environment**

**Video:** *How Indigenous knowledge is changing what we know about the Arctic.* (See Radio Canada International. <https://youtu.be/2XeUkz1D3nw>)

**News story:** <https://www.ktoo.org/2022/08/05/indigenous-knowledge-entwined-with-arctic-research-for-75-years-in-utqiagvik/>

## **Module 2: Northern Climates**

Glacier (Source: <https://pxhere.com/en/photo/870312>)

### **Perspectives on climate change from reindeer herders:**

**Article:** *Turning to the ancient reindeer for help on climate change*

(See Shira Ruben et al. In an ancient reindeer forest, one woman has found a way to slow climate change. <https://www.washingtonpost.com/climate-solutions/interactive/2022/climate-change-reindeer-habitats-deforestation/Washington-Post>)

### **Indigenous led conservation and adaptation**

**Article:** *Indigenous-led conservation in the Arctic supports global conservation practices*

See Victoria O. Buschman. Indigenous-led conservation in the Arctic supports global conservation practices Arctic Science 8 February 2023 <https://doi.org/10.1139/as-2022-0025>. <https://cdnscepub.com/doi/10.1139/as-2022-0025>)

**Video:** Indigenous Knowledge Science and Climate Change in the North | Climate Atlas of Canada (See <https://climateatlas.ca/video/indigenous-knowledge-science-and-climate-change-north>)

The Climate Change Emergency and Gwitchin Leadership (See <https://www.youtube.com/watch?v=Vhou96D83B4>)

## **Module 3: Geological Processes (and Extraction Resource Impacts)**

**Where are geological features that lead to natural resource abundance likely to support development under conditions of climate change?**

**Article:** Identification of development areas in a warming Arctic with respect to natural resources, transportation, protected areas, and geography  
(See: Kjartan Eliasson et al. Identification of development areas in a warming Arctic with respect to natural resources, transportation, protected areas, and geography. Futures Volume 85, January 2017: 14-29 <https://www.sciencedirect.com/science/article/pii/S0016328715300379>)

**Exploitation of minerals and hydrocarbon resources impacts the culture and economy of the indigenous peoples living in the region.**

**Article:** *Decolonization and Arctic Engagement: A Critical Analysis of Resource Development in the US Arctic*

(See Elisabeth Moeser. Decolonization and Arctic Engagement: A Critical Analysis of Resource Development in the US Arctic. The Arctic Institute.  
<https://www.ktoo.org/2022/08/05/indigenous-knowledge-entwined-with-arctic-research-for-75-years-in-utqiagvik/>)

**Article:** *On thin ice – The Arctic commodity extraction frontier and environmental conflicts*

(See: Ksenija Hanaček et. Al. On thin ice – The Arctic commodity extraction frontier and environmental conflicts. Ecological Economics Volume 191, January 2022, 107247.  
<https://www.sciencedirect.com/science/article/pii/S0921800921003062?via%3Dihub>)

### **The Sami Perspective**

**Video:** *The Sami Perspective: Exclusive interview with Stefan Mikaelsson*

( See: The Sami Perspective: Exclusive interview with Stefan Mikaelsson.  
<https://www.youtube.com/watch?v=uUwkqrUoRuw>)

**Video:** First Métis community-owned solar project in Canada | Climate Atlas of Canada

(See <https://climateatlas.ca/video/first-metis-community-owned-solar-project-canada>)

**News** article: <https://www.theperspective.se/2023/03/07/article/kiruna-mining-and-reindeer-how-sami-communities-are-paying-the-price-for-the-green-transition/>

## **Module 4: Northern Landscapes**

**How is melting snow and ice affect indigenous and community life?**

### **Permafrost that and slope slump**

**Website:** *The Impacts of permafrost thaw on Northern Indigenous communities.*

(See The Impacts of permafrost thaw on Northern Indigenous communities.

<https://climateinstitute.ca/reports/the-impacts-of-permafrost-thaw-on-northern-indigenous-communities/#:~:text=Infrastructure%20damage%20from%20permafrost%20thaw,%2C%20employment%20opportunities%2C%20and%20culture.>

Website: *Due North: Facing the Costs of Climate Change for Northern Infrastructure*

(See Due North: Facing the Costs of Climate Change for Northern Infrastructure

<https://climateinstitute.ca/wp-content/uploads/2022/06/Due-North.pdf>

### **Changing ice and ice conditions in Greenland**

**Video:** Global warming and Greenlandic Inuit Way of life

(See <https://www.youtube.com/watch?v=4aKcilNYaKw>)

**Video:** *Inuit falling through sea ice*

(See <https://www.youtube.com/watch?v=bzREdhTFqOg>)

## **Module 5: Ecological Principles**

## Indigenous ethnoecology

**Article:** *Nunatsiavut, 'our beautiful land': Inuit landscape ethnoecology in Labrador, Canada*  
(See Alain Cuerrier *Nunatsiavut, 'our beautiful land': Inuit landscape ethnoecology in Labrador, Canada*  
<https://cdnsiencepub.com/doi/full/10.1139/cjb-2021-0112>)

**Website:** Arctic Centre <https://www.arcticcentre.org/EN/arcticregion/Arctic-Indigenous-Peoples/Traditional-knowledge>

**Website:** [Traditional Knowledge \(arcticcentre.org\)](https://www.arcticcentre.org)

## Module 6: Terrestrial Ecosystems

### Indigenous Peoples and terrestrial environments

**Article:** *Arctic environments at Risk: Arctic Indigenous people, local livelihoods and climate change*

(See Nuttal, M. Arctic environments at Risk: Arctic Indigenous people, local livelihoods and climate change. In *Arctic Alpine Ecosystems*. Springer: p 19-19. [https://link.springer.com/chapter/10.1007/978-3-540-48514-8\\_2](https://link.springer.com/chapter/10.1007/978-3-540-48514-8_2))

### Changing food security contexts

**Video:** *Healthy environments for food security and climate change in northern Canada*

(See Healthy environments for food security and climate change in northern Canada  
See <https://www.youtube.com/watch?v=FDGk-1-tXZA>)

**Website:** *Indigenous Peoples and biodiversity in the Arctic*

( See [Indigenous peoples and biodiversity in the Arctic - Arctic biodiversity, Conservation of Arctic Flora and Fauna \(CAFF\)](#))

## Module 7: Freshwater and Marine Systems

**Article:** Inuit Peoples and Aquatic Ecosystems

(See Hauser et al. Co-production of knowledge reveals loss of Indigenous hunting opportunities in the face of accelerating Arctic climate change. *Environmental Research Letters*, Volume 16, Number 9 Focus on Arctic Change: Transdisciplinary Research and Communication *Environ. Res. Lett.* 16 095003. <https://iopscience.iop.org/article/10.1088/1748-9326/ac1a36/pdf>)

**Video** *How do Inuit adapt to melting Arctic ice?:*

(See How do Inuit adapt to melting Arctic ice? <https://www.youtube.com/watch?v=inowZnC77o0>)

**Website:** CAFF Inuit Peoples and Aquatic Ecosystems

(See Arctic Council - CAFF <https://arctic-council.org/news/arctic-wetlands-biodiversity-management-fundamental-role-indigenous-peoples/>)

**Report:** *The Arctic Freshwater System in a Changing Climate*

(See The Arctic Freshwater System in a Changing Climate  
[https://iasc.info/images/news/2016/AFS\\_Report.pdf](https://iasc.info/images/news/2016/AFS_Report.pdf))

## Module 8: Climate change

Ice formation. (Source: [Landscape Photography of White and Blue Snow Formation · Free Stock Photo \(pexels.com\)](#))

### **Current problems of indigenous minorities of the Russian Arctic.**

**Article:** *Current Problems of Indigenous Minorities of the Russian Arctic in the Context of Climate Change*

(See Matvienko, Irina I. Current Problems of Indigenous Minorities of the Russian Arctic in the Context of Climate Change. Arctic and North. 2023. No. 52. Pp. 130–140. Original article UDC 332.1(=511.2)](985)(045) 52\_130\_140.pdf (arcticandnorth.ru)

**Book chapter.** *Resilience, Reindeer, Oil, and Climate Change: Challenges Facing the Nenets Indigenous People in the Russian Arctic*

(See Tysiachniouk, Maria *Resilience, Reindeer, Oil, and Climate Change: Challenges Facing the Nenets Indigenous People in the Russian Arctic* Project MUSE - The Big Thaw (jhu.edu) Connolly, Kim Diana, et al. *The Big Thaw: Policy, Governance, and Climate Change in the Circumpolar North*. State University of New York Press, 2019. *Project MUSE*, <https://doi.org/10.1353/book.100021>.)

### **Greenland's Inuit communities**

**Video:** Elder Joanasie speaks to youth about climate change | Climate Atlas of Canada (See <https://climateatlas.ca/video/elder-joanasie-speaks-youth-about-climate-change>)

**News Video:** Greenland struggles to adapt to social, cultural changes from climate change ( See Greenland struggles to adapt to social, cultural changes from climate change )[https://www.youtube.com/watch?time\\_continue=51&v=3i64nU88KT8&embeds\\_referring\\_uri=https%3A%2F%2Fwww.bing.com%2F&embeds\\_referring\\_origin=https%3A%2F%2Fwww.bing.com&source\\_ve\\_path=Mjg2NjY](https://www.youtube.com/watch?time_continue=51&v=3i64nU88KT8&embeds_referring_uri=https%3A%2F%2Fwww.bing.com%2F&embeds_referring_origin=https%3A%2F%2Fwww.bing.com&source_ve_path=Mjg2NjY)

**Website:** *Climate change is forcing Native Alaskans from their ancestral homes*

( See <https://www.npr.org/2022/12/22/1144942195/climate-change-is-transforming-the-arctic-and-alaska-natives-are-on-the-frontlin>)