



Cambridge Bay, ᐱᓄᐅᐅᐅᐅᐅᐅᐅᐅᐅ, Iqaluktuuttiaq, "Good fishing place"

Introduction

The Hamlet of Cambridge Bay serves as the administration and transportation hub for the Kitikmeot region. It is located on the southeastern coast of Victoria Island, situated between Queen Maud Gulf and Dease Strait. With a population of 1,766 in 2016, it is the largest community in the region. The community's hunting and fishing area covers the Bathurst Inlet, southeast Victoria Island, Queen Maud Gulf, Victoria Strait, and Coronation Sound. Important species for food and income include arctic char, seals, geese, caribou, and muskoxen. The culturally and ecologically significant Ovayok Territorial Park is about 15km east of here. Southwest of Victoria Island is the only migratory bird sanctuary in the Kitikmeot region.

Community Restoration Priorities

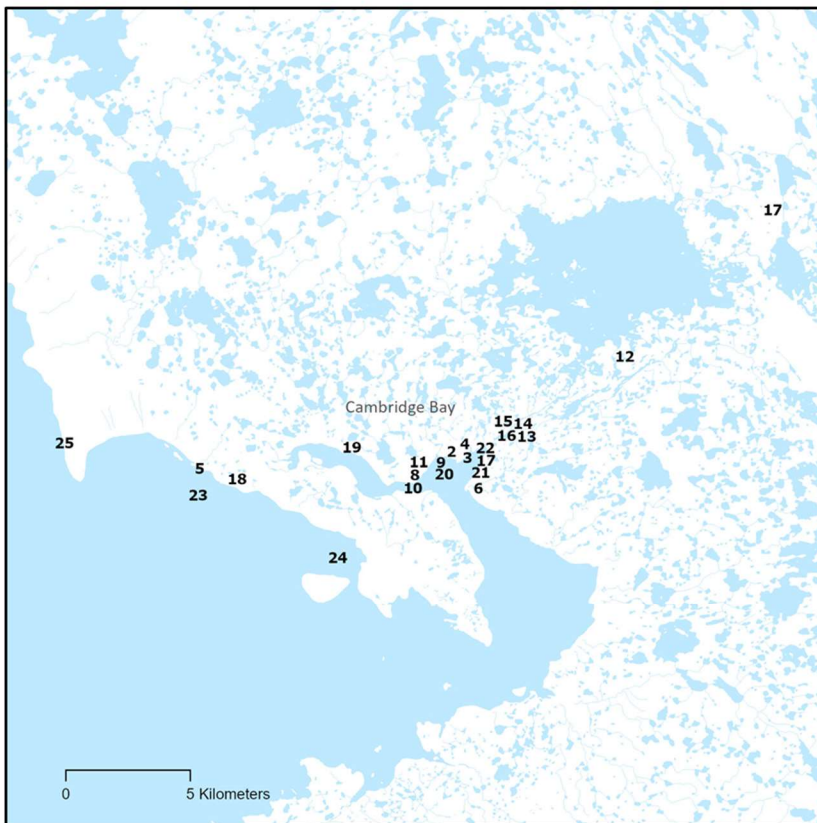
At the time we visited the community, no urgent coastal restoration priorities were identified. However, improvements in culvert design are needed to enhance water flow in some areas, which may reduce changes in fish behavior.

Community Map and Workshop Highlights

The research team visited the community in February 2019. Community members identified changes and issues relating to erosion and landslides and anchorage for cruise ships and pleasure crafts. An increase of boats and float planes in some areas has limited access to fishing sites where gill nets are used. Action items include regular garbage clean-up especially on the route to cabins and the removal of gill nets abandoned at some fishing areas.

Cambridge Bay

Map Legend



- Contamination:** 1 Water flows green near the dump & sewage lagoon
- Debris and garbage:** 2-3 Abandoned shacks & boats; 4 Clean-up needed; lots of garbage on route to cabins; 9 Abandoned shacks
- Building or structure:** 5-6 Cabins near Long Point; 7 Cabins; 8 Tank farm; 10 Boat launch - just gravel pathway to ocean; 12 Culverts; 13 Bridge - scheduled to be replaced; 14 Bridge; 16 New graveyard
- Erosion:** 11 Water washing out road to airport; culverts recently installed but too small; 15 Graveyard - land eroding; 17 ATV crossing - drive directly through water
- Harvesting areas:** 18-19 Fishing site – gill nets
- Water issues:** 20 No gill nets - too many boats & float planes
- Shipping issues:** 21 Anchorage site for cruise ships; 22 Anchorage site for sailboats & yachts; 23 Crystal Serenity anchorage site
- Mammal migration sites:** 4-25 Seal sightings



Literature Review

Cambridge Bay is situated within a zone of continuous permafrost, with a thin (<1m) active or seasonal thaw layer; ground materials and bedrock remain frozen year-round¹. The area is characterized by rivers, lakes, and tundra ponds, which provide habitat for arctic char and support large breeding populations of arctic birds²

Attributes	Examples of Environmental Changes & Observations
Sea-level (SL) rise	<ul style="list-style-type: none"> SL rise is dependent on how the mean sea-level in the Arctic Archipelago relates to the global mean, how fast the land is rising in this region, and the effects of ice melt from glaciers and ice caps, including the Greenland and Antarctic ice sheets³. A study by the Climate Change Secretariat, Nunavut, indicated that sea-level here was estimated to probably not fall more than 35cm, nor rise more than 50cm by 2100⁴.
Warmer temperatures	<ul style="list-style-type: none"> Community has concerns about bacterial growth and water contamination in Water Lake (the main water source) due to warmer temperature species⁵. People have noticed warmer and longer summers, more intense heat from the sun, shorter winters, and less snowfall or later snowfall³.
MYL Sea ice, freshwater ice, & storms	<ul style="list-style-type: none"> Spring starts earlier and sea ice forms later, taking up to two months longer before it is safe to travel on⁶. Sea ice extent in the Victoria island region is expected to decrease steadily over time and the trend to later freeze-up and earlier melt is expected to continue⁵. Residents have noticed a shorter duration of freshwater ice and snow, thinner and less multi-year ice, and a longer ice-free season in the area³.
Weather	<ul style="list-style-type: none"> Weather in the region appears to be more variable and unpredictable with increased annual occurrences of hail and thunderstorms⁵.

Attributes	Examples of Species and Habitat Changes & Observations
Polar & Grizzly bears	<ul style="list-style-type: none"> Polar bears are usually a rare occurrence but due to the abundance of seals they are sometimes attracted to the area. Residents have seen an increase in bears between 2005 and 2015, compared to the past⁶. Grizzly bears had also been spotted in the region with an increased presence and aggressive behavior. Some bears appeared to be denning on the island⁶.
Seals	<ul style="list-style-type: none"> Ringed seals are abundant in the Cambridge Bay area and are an important part of the local economy⁶. Bearded seals are also present in the area and are abundant in the spring and summer when the ice is breaking up and there is an abundance of prey e.g., capelin⁶.
Whales	<ul style="list-style-type: none"> Beluga sightings have increased from 2005 to 2015 and have been seen consistently in the area from 2010 to 2015⁶. Narwhals and orcas have been observed in the area since 2013⁶.
Birds	<ul style="list-style-type: none"> Species of geese are nesting up to two weeks earlier than before, making egg picking more difficult to time⁶. Some residents have seen an increased presence of new species e.g., sparrows, robins, grizzly bears, and fish⁵.
Arctic char	<ul style="list-style-type: none"> Arctic char are an important food and economic source for residents and are typically fished between March and December⁶. Residents travel in the spring and fall to catch char through the ice of freshwater lakes, and in the summer to string nets along the southern shore of Victoria Island⁶.

Based on the Current Gaps in the Literature, Research Needs Include:

- Inuit Qaujimajatuqangit and Western science studies:** To assess changing sea ice conditions and increasing vessel traffic through the region - development and implementation of effective management strategies.
- Climate change studies:** Integration with community climate change education. Methods to foster traditional knowledge to studies on ecosystems, species, land use patterns, and climate change.
- Monitoring and testing:** Status and health of species hunted and consumed, including caribou, Arctic char, and ringed seals.

Selected references

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