Climate change adaptations for northern First Nation communities & individuals

ECOSYSTEMS

CLIMATE CHANGE

- warmer temperatures
- changing rain & snow
- more extreme weather

IMPACTS ON THE LAND

- more wildfire
- possibly more drought
- possibly more flooding
- permafrost thaw
- warmer lakes/rivers
- changes in vegetation
- earlier spring
- warmer winters

IMPACTS ON ECOSYSTEMS

- plants & animals moving north
- change in temperature-driven events
- berries, trees, plants & animals under stress
- changing ecosystems
- invasive species in new places
- changing migration patterns

Start a land monitoring program

Assist plant migration

Protect permafrost

Keep forests connected & rivers flowing

Keep ecosystems healthy

like lakes, rivers, forests & peatlands

Be guided by Traditional Knowledge

Adjust harvesting

Prevent spread of invasive species

Restore damaged habitat

Protect threatened or culturally important areas, plants & animals

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ECOSYSTEMS - ADAPTATION OPTIONS

Start a monitoring program

- Monitoring can help track changes happening in traditional areas and guide future actions.
- What a community monitors will depend on its needs/goals and could include:
  - Presence of new or invasive species
  - Timing of events like spawning or flowering
  - Migration times and patterns
  - Number and health of culturally significant plants & animals

Traditional Knowledge

- Traditional Ecological Knowledge (TEK) contains valuable information about the land and water and can guide decisions about protection. Intergenerational sharing of TEK is key to continued land and water protection.

Protect permafrost

- Permafrost loss can change the landscape and affect plants and animals (palsa collapse, thaw slumps, shoreline erosion, etc.).
- Protect permafrost by limiting disturbances and properly constructing roads and buildings.
- Limiting global warming by reducing greenhouse gas emissions is the best way to protect permafrost.

Restore damaged habitat

- Help bring damaged habitats back to their natural state by: replanting native vegetation, removing invasive species, cleaning up trash and pollution, etc.
- Restoring habitat supports biodiversity and could provide other benefits like natural flood control and carbon storage.

Keep ecosystems healthy

- Healthy land and water help support all species and may be better able to cope with the impacts of climate change like drought, wildfire, flooding, and invasive species. Healthy peatlands and forests also store carbon which can help limit further climate change.

Keep forests and rivers connected

- Climate change will mean some plants and animals will have to move to new places to survive. Keeping forests continuous or connected and not blocking the paths of rivers can help species that need to move to new areas.

Adjust harvesting

- Change harvesting time and location to match when/where animals and plants are now available. Consider harvesting species new to the area, like deer and bass.

Prevent invasive species

- Climate change could make it possible for invasive species to live in new places.
- Prevention is key. Encourage actions like:
  - Cleaning boats and fishing gear
  - Using local firewood
  - Avoiding invasive plants in gardens
- Monitor for new species and have a control plan for ones that could be damaging.

Protect important areas/plants/animals

- Protect important habitat or culturally significant places from destruction or damage.
- Protect important animals, plants, and medicines by looking after the habitat they need and prevent overharvesting.

Assist plant migration

- Programs where humans help plants move to new areas in response to climate change is called 'assisted migration'.
- This includes helping important plants continue to grow (through seed collection, local transplants, etc.).
- Bringing in new plants could lead to ecosystem disruptions. Weigh risks carefully.

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*Adaptations vary in scale (small to large), focus (individual to community) & cost (low to high). Find what works for you and your community.