



CLIMATE CHANGE: IMPACTS AND ADAPTATION IN THE XENI GWET'IN CARETAKER AREA

CLIMATE CHANGE PROJECTIONS

Temperature

- Summer, winter, fall and spring will be warmer
- As much as 2.5 degrees increase in average annual temperature by 2050

Precipitation

- Less snow in the winter and spring but more in the fall and winter
- Less rain in the summer
- As much as 104 mm more rain annually by 2050

COMMUNITY OBSERVATIONS OF PAST CLIMATE CHANGES

Temperature

- Winter is warmer
- Fall is shorter, frost comes sooner
- Spring arrives earlier but is colder
- Summer is longer and hotter

Precipitation

- Less rain, thunder, lightning and wind in the fall
- Less predictable snow in the winter, more rain

POTENTIAL IMPACTS ON THE LAND

Water

- Higher water temperatures in lakes and streams
- Lower water volumes in lakes and streams during summer
- Earlier spring freshet
- More frequent droughts
- Continued decline in snow pack and glacier mass
- Klokon glacier will likely decline significantly
- Groundwater recharge will slow and be particularly vulnerable during summer months

Fish

- Warmer waters will negatively impact Sockeye, Coho and Chinook stocks as well as other cold water fish stocks



Wildlife and Wild Horses

- Winter foraging challenges for Moose, Mule Deer, California Big Horn Sheep and Mountain Goats may lead to seasonal migration and/or population declines
- Decline of key foods may lead to seasonal hardships or migration for Grizzly Bears
- Wild Horses are likely to adapt well
- Declining water levels and marshlands will negatively impact waterfowl



Forests and Vegetation

- Continued mortality of Lodgepole Pine and Whitebark Pine due to pest and disease
- Larger and hotter wildfires
- Forest species will shift to more interior Douglas Fir and Ponderosa Pine stands and more brush grass in the long term
- Wild Potato, Beartooth, Hellebore, Raspberry and Labrador Tea are at risk to warmer and drier climate or wetter areas
- Strawberry, Chokecherry, Saskatoon berry, Soapberry and Kinnikinnick may expand

POTENTIAL IMPACTS ON THE PEOPLE

Health and Safety

- Higher risk to life and health due to wildfires
- Higher risk of increased respiratory ailments with wetter winters
- Higher risk of spring flooding
- Higher risk of gastrointestinal infections with lower summer water flows

Livelihood

- Longer and hotter summers could expand ecotourism opportunities
- Longer growing season could increase commercial agricultural opportunities
- A shift to a more predominant interior Douglas Fir forest could enhance commercial ecoforestry opportunities



Photo: Susannah Anderson aka Wanderin' Weeta

Infrastructure and Shelter

- Higher risk of damage or loss of homes and infrastructure due to wildfires or flooding
- Higher risk of mould and mildew in homes with wetter winters
- Community water system may be vulnerable to decline in Klokon glacier

Food and Culture

- Potential decline of wild fish, moose and certain traditional food plants
- Longer growing season for agriculture and ranching
- Higher risk of damage to cultural sites due to wildfires
- Wildfires may create more rangeland for cattle and Mule Deer

CLIMATE CHANGE ADAPTATION OPTIONS

Goals

Biodiversity Protection and Conservation

- Maintain the Xeni Gwet'in Caretaker Area (XGCA) as an intact ecosystem
- Conserve wildlife and wild horses in the XGCA
- Conserve fish stocks
- Preserve wild plants and their habitats in the XGCA

Health and Safety Enhancements

- Protect residents and key cultural sites from wild fires in the XGCA
- Protect residents and key cultural sites from floods in the XGCA

Water Supply Protection and Conservation

- Protect key potable water sources
- Conserve potable water

Food Supply Protection and Diversification

- Conserve and use wild food sources
- Increase development and diet cultivated food sources
- Increase preservation of wild and cultivated foods

Shelter and Infrastructure Protection

- Protect shelter and infrastructure
- Reduce risk of mould, mildew and rot

Energy Supply Protection, Conservation and Diversification

- Protect existing energy sources
- Strengthen energy conservation
- Continue energy diversification

Livelihood Diversification

- Develop nature-based aboriginal tourism
- Develop ecoforestry and wood products
- Develop natural/organic agriculture
- Develop other adaptive enterprise opportunities

Good Governance

- Incorporate climate adaptation strategies into local governance objectives

Cultural Preservation

- Protect the Xeni Gwet'in Culture
- Celebrate the Xeni Gwet'in Culture

COMMUNITY OBSERVATIONS OF SIGNS OF CHANGE IN NATURE

- There used to be thick ice on the lakes; now there is much less
- Deer used to be fatter in the fall, now they are skinny
- Snow does not go until June, sometimes July
- Summers used to be greener and there was more hay to harvest

