

**Plenary Two: Getting Personally Involved with Climate Change
Moderator: Diane Gunter, Environment Yukon**

Introduction

**Diane Gunter, Environment Yukon
Local Action on Climate Change**

Impacts

- Increasing temperatures in the Yukon (as much as a 5 degree C change in the North, compared to less than 1 degree C globally).
- Winters warming more than summers, winter warming more in the North, summers warming more in south and central Yukon.
- Greater winter precipitation (more in North).
- More storm events, forest fires.
- 2004 – Biggest fire season, 2007 – major flooding in the southern Lakes, the Klondike highway closed, due to greater snow packs than normal.
- Permafrost is degrading – causing infrastructure problems and structure damage.
- Increasing invasive species.

Climate Change Action Plan

- 33 new or enhanced actions and goals.

Highlights

- Released Feb 09.
- Key priority – enable effective action.
- YG Climate Change Secretariat (to open Fall 09).
- Energy Strategy for Yukon also being developed.
- Focus on forging partnerships.
- Back of the CCAP – 50 things individuals can do to mitigate climate change.

Projects

- 5 underway through INAC.
- Northern Climate ExChange.
- International Polar Year (hope the work will continue on, even though IPY is done).
 - Better our understanding of climate change in Yukon

YG Projects

- Government climate neutral by 2020, to make target for all of Yukon by 2011.
- Reporting through *The Climate Registry*.
- Decrease emissions with fleet vehicles.
- Green procurement (incorporating environmental standards in purchasing)
- Green Action Committee.
- All YG Construction – meet LEED standards.
- Inventory on permafrost.
- Education and monitoring ecosystem and biodiversity.

INAC Projects

- More information to better address climate change issues.
 1. EMR and UNBC (forestry)
 2. Water users (YG Environment)

3. HPW and Geological Survey (hwy vulnerability to permafrost)
 4. College and CYFN (Community info and needs assessment)
 5. CYFN, College, YG Environment (scenarios)
- All government departments are active participants.
 - External partners
 - Government of Canada, NGOs, private, college, YFN, Universities, research.
 - Climate change is going to take all of us to work together.

Priorities this Year

- Establishing Secretariat (have the staff to move forward).
- Research to reduce greenhouse gas emissions.
- Prepare for climate change youth forum.
- Coordinating partnerships in COP 15 (Copenhagen in December).
- Work with partners (internal and external).

Reducing Your Carbon Footprint

Sean McKinnon – Energy Solutions Centre

- We have to understand what climate change is. We have to understand embodied energy.
- Our energy scenario here in Yukon is different, so climate change information and information to reduce our footprint from elsewhere may not be applicable.
- Climate change caused by burning fossil fuels – contributing carbon (greenhouse gases) to atmosphere.
 - Energy intensive society.

Embodied energy

- Important to understand this concept.
- Involved in everything we consume (even services). Think of it as an *energy shadow*.
- We're always releasing emissions – indirectly, but we're still responsible.

Yukon Energy Scenario

- Power – two isolated grids.
- Electricity difficult to store – so we only generate what we need.
- Thermal heating
 - In Yukon we use heating oil, some propane, lots of wood.
- Transportation
 - Transport of goods, vacations, recreation
 - Some options – biodiesel, transit, hybrid vehicles.
- Solar, wood, geothermal, wind – possible solutions.

Reducing Carbon Footprint

- Globally – Yukon is a big offender.
 - 14.2 tonnes/year (CO₂ equivalent) released by average Canadian (other numbers say 22-23 tonnes/yr).
- Global average is much lower (global poor average not even 1 tonne/year)
 - Wasteful systems and luxurious lifestyles.
- Need to know where emissions come from.
 - Fossil fuels and industrial processes.
 - Wood considered neutral (but we should still consider sustainability).
 - Hydro still has emissions – infrastructure to run.
- Transportation of goods and heating – biggest Yukon emitters.
- We need to change our habits, reduce consumption.

- Transportation – up to 50% of our emissions.
 - Drive less, more efficiently, or not at all, avoid planes (vacation close to home), and limit motorized recreation.
 - Idling
 - Lots of myths – people think we need to idle a lot, your engine is ready in 60 seconds in winter.
 - Drive gently.
 - Saves money, hyper-miling – people who do everything they can to reduce consumption of fuel, maintain your vehicle.

Housing/Buildings

- Not insulated the way we should be.
- Retrofitting to Supergreen Standards.
 - Retro-fitting has a lower impact than building new.
- Energy-efficient homes.
- Efficient use of furnace, use programmable thermostat.

Diet and Lifestyle

- Huge impact.
 - Plant a garden, harvest local food, buy minimally processed food.
 - Avoid domestic meat.
 - Beef – 7x emissions per 100 calories.
 - Shrimp, lamb, beef, pork – big offenders.
 - Consider food’s embodied energy.
- Review of main points: travel, transport, heating, general consumption – three main contributors in the Yukon.

Youth Engagement in Climate Change Cassandra Andrew and Aliye Tuzlak Porter Creek School

- Involved in ever-growing issue.
- The generation that must step in, raise awareness and take action.
- Deal with mistakes of past and future challenges; this is likely most serious issue of our time.
- Youth are at huge decision-making point in their lives.
 - Decisions will affect the rest of our lives.
 - Need to make good decisions on climate change now.
- Young minds are creative – ways to use planet not take more than we need.
- Everyone has an impact – good or bad, we need to make a choice on our actions.
- Our choice is on what kind of influence we want to have.

Expedition

- Traveled to Iceland, Greenland, and Baffin Island.
- Participants - Students, Artists, Scientists.
- To raise awareness and action in our communities.
- Discover ways to raise awareness. Inspirational to observe how Arctic vegetation can be affected. Science and art can work together – strong messages.
- In vast environment, we feel small and insignificant.
 - We have power and technology to destroy.
 - We can use this power and technology to influence change for the better.
- Responsibility to instill passion, understanding and skill in others back home.

- Small fishing villages who live off the land affected the most – but not contributing.
- What if all that the scientists are saying is wrong.
 - But the risks are too great.
 - Better to change our lifestyles now.
 - What is better for our environment is better for us.
- Raise environmental concern at our school.

Porter Creek Environmental Ground Crew

- Awareness about environmental issues.
- Became a Green Team at the school.
- Meet weekly and discuss issues.
- First big problem – set up a waste management program.
- Met with local politicians.
 - Asked what government is doing.
- Petition to support Bill C11 – climate change accountability act.
- Earth day – can do simple things – brought up a speaker from UBC.
- Want to expand their club.
 - Talk to elementary schools.
- Limits to waste program expansion (need help from custodial staff).
- Installing hand dryers.
- Green grad next year.

Darcie Matthiessen – Council of Yukon First Nations

- Youth Conference – Inuvik – August.
- Last year – Northern Voices Coalition – 5 organizations came together.
 - Concerned about climate change.
 - Wrote the Inuvik Declaration - what we want to see in global negotiations.
- 18-30 year olds from across Canada – especially Northern youth.
- Share stories, solutions, skills.
- www.climateleaders.ca or contact CYFN.

Planning for the Unplanned

Ryan Hennessey – Northern Climate ExChange

- “The other foot” – climate change adaptation.
- Answer three questions:
 - How might climate change influence community life?
 - What should Yukon communities consider when discussing climate change?
 - Why should Yukon communities develop an adaptation strategy?

Question 1 - How might climate change influence community life?

- Temperature shift.
 - We will likely see a warming, more in winter.
 - Will create changes in shoulder seasons.
- Precipitation
 - Defined by geography.
 - The patterns won't change, but the type may change – wetter, more snow.
- Growing days
 - Increase in number of frost-free days – will stress indigenous, wild species

- Invasive species are cold-limited (with warmer climates, invasive species may flourish).
- Hydrology (water source)
- Biodiversity (hunting patterns) – how we eat what we eat.
- Transportation (infrastructure will be affected)
- Not all climate change is bad.
- Local economy may be stressed; local communities may be strapped to keep up.

Question 2 - *What should Yukon communities consider when discussing climate change?*

- Regional differences.
- 9 different eco-zones.
- Transition zones will shift.
 - Species struggle to keep up as new species move in.
- Dawson has discontinuous permafrost.
- Lots of uncertainty.
 - Scenarios driven by growth and consumption
 - Very complex systems.
 - Can't predict how systems will respond to increasing greenhouse gas emissions.
 - Not enough information to say how climate change will affect communities.
- Yukon communities are vulnerable.
 - Need to plan to adapt.
 - Regional responses are better.

Question 3 - *Why should Yukon communities develop an adaptation strategy?*

Community Climate Change Adaptation Project

- Planning for the unplanned.

Three steps:

- 1. Determine vulnerability
 - What is the community susceptible to?
 - Events and impact (frequency and intensity)
 - Have to plan to deal with changes.
 - Opportunities.
 - Planning for resilience – ability of a system to cope with uncertainty.
 - Vulnerable communities have low adaptive capacity, high degree of uncertainty, high degree of risk.
- 2. Establishing priorities
 - 150 adaptations identified in Dawson.
 - Balancing what a community needs with current uncertainty.
 - Immediate needs – safety and security.
 - Information and education (more research to decrease uncertainty).
- Short term needs
 - Protection of heritage, infrastructure and increasing local self-sufficiency.
- Long term needs
 - Large scale infrastructure replacement.
 - Opportunities
 - People will take advantage of the opportunities themselves.
- 3. Implementation
 - Budget
 - Guided by selection committee

- Key to avoid mal-adaptation.
- Focus on win-win scenarios
- Risk solutions
- Consider mitigation
 - Decrease the carbon footprint of the community

Next Steps

- Finalize the plan this summer.
- Move to implementation
- Start in Whitehorse this summer.
- Third community coming in winter 09-10.
- Project ends in 2012.
- Each community has local coordinators.

Questions:

- (1) For Youth: You discussed what youth can do for climate change, it's important for youth to keep up with their friends; have you ever talked about re-thinking what you are buying to take into account the embodied energy and transportation greenhouse gas emissions?
 - We haven't really discussed that; focused more on issues directly linked to schools.
- (2) For Ryan: the government awarded group from Vancouver for new sewer systems underground, how will this work with climate change and permafrost – will it increase permafrost melt?
 - Ryan only just heard about this.
 - The new sewer system does not require a lagoon – uses shafts drilled instead.
 - Not sure with certainty how climate change will affect this.
- (3) For Sean: the construction of hydroelectric emits lots of greenhouse gases – it takes many years to recover those emissions; are we looking at original emissions or day to day emissions?
 - We're looking at the day to day.
 - Lots of embodied energy.
 - Over the long term hydro becomes relatively carbon neutral (especially compared to fossil fuels).
 - Need to be aware of efficiency and conservation in all areas.
 - Focus less on electricity here – other priorities – focus on transportation.
 - Complicated question to attribute real emissions.