

## Climate Change Research and Adaptation Planning in Clyde River, Nunavut



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Nick has many roles, but is representing the Clyde River Research Committee at this meeting, as well as the community of Clyde River. The Clyde River Research Committee was co-founded by Nick and Shari in 2005, as both had great interest in research and what it could do for the community. Nick sits on the Hamlet Council and Shari is a research scientist at the University of Colorado, but lives full time in Clyde River. Nick and Shari collaborate closely on several climate change projects and have started a new research centre to be launched in Clyde later this year.

## Past, Present, and Future Research at Clyde River



- Clyde River is actively involved in climate change research and adaptation planning. Collaborations between Hamlet, HTO, government and university researchers.
  - **Ongoing since 2000:** documenting Inuit knowledge of climate and climate change.
  - Several **current** projects include:
    - **Igliniit Project (IPY):** mapping travel routes using integrated snowmachine-mounted GPS/mobile weather station/palm pilot technology. Links TEK and GPS/GIS. New approach has application for environmental change research; harvest data; wildlife observations; mapping land/sea ice use; search and rescue.
    - **Siku-Inuit-Hila Project:** international collaboration to study sea ice, sea ice use, and changes at local scale (Clyde River, Barrow, Qaanaaq). Includes sea ice monitoring at each community and ongoing interviews with local ice experts.
  - **Future:**
    - Starting new partnership with NRCAN and GN. Clyde River is the pilot community for the *Integrated Assessment of Climate Change Impacts and Adaptation Options in Nunavut Communities*.

A brief outline of climate change research at Clyde – past, present, and future:

- Clyde River has been actively involved in climate change research for a long time. Elders and other residents in our community are very aware of the environment and they notice when things change.
- Since 2000, the knowledge of the Elders about climate and environmental change has been systematically documented. Much of this work has been organized by Shari Gearheard in collaboration with local organizations like HTO, Hamlet, Elders Committee, and Ilisaqsivik Society. Specific projects have been done that look at weather forecasting, winds, sea ice conditions, plants and traditional medicines, hunting and travel.
- This work provides a lot of the foundation for new projects that we are exploring now and are planning for in the near future.
- One current project is called the Igliniit Project (igliniit means trails that people regularly use). This project is an International Polar Year project and starts this summer. It uses the latest technology in GPS, mobile weather stations, and Palm Pilot technology to track travel routes by snow machine. Hunters and GPS engineers are working together to design a unit that will constantly log position, weather, and hunters' observations through customized icons that are present on the unit – a hunter using the unit can press icons to log observations of animals, cracks in the ice, icebergs, good hunting locations, or any other parameter. It is also a way to keep track of unusual observations.

## Past, Present, and Future Research at Clyde River (cont'd)



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We will test this system over the next 3 years in Clyde. We hope this innovative technology, over time, will be useful for environmental change research, documenting land/ice use, harvest information, hazards, and will have application for things like land claims/parks negotiations, and search and rescue (the units can be used "live" so hunters' positions are known). If the units test well in Clyde, they might be of interest to other communities and can be used on other vehicles such as boats.

- The Siku-Inuit-Hila Project is an international collaboration to study sea ice, sea ice use, and sea ice changes at the local scale. It is a partnership between the communities of Clyde River, Barrow Alaska, and Qaanaaq, Greenland. Members from each community, along with scientists, form a research team. The team travelled to Qaanaaq and Barrow already this spring and next spring everyone will meet in Clyde River. The comparative study allows for sea ice to be studied from the perspectives of different cultures and scientific disciplines. It includes on-going interviews with local ice experts and monitoring of sea ice and snow conditions at each community.
- This meeting focuses on adaptation and this is an area that is of great interest to Clyde River. We just started a large project involving adaptation planning this year. Clyde River lobbied successfully to be the pilot community for the *Integrated Assessment of Climate Change Impacts and Adaptation Options in Nunavut Communities*.
- This project is a joint effort between Natural Resources Canada and the Government of Nunavut. They want to create an adaptation to climate change plan for the territory of Nunavut, but they need to start with one community first. Clyde River is that community.

## Adaptation planning for Clyde River

- *Integrated Assessment of Climate Change Impacts and Adaptation Options in Nunavut Communities*
  - Studies specific to Clyde River include:
    - Examining risks to potable freshwater supply.
    - Mapping of vegetation changes over time using satellite imagery.
    - Improve understanding on relative sea-level changes and its impact on community vulnerability.
    - Geologic mapping to assess hazards from erosional processes and permafrost degradation.
    - Canadian Institute of Planners will work with Hamlet to establish an adaptation planning process and complete a community adaptation plan for the community.
- Alternative energy options are of great interest to the community as part of adaptation.



- Specifically, this project has 2 main components. The first is a series of scientific assessments – the first 4 bullets on the slide. These studies were discussed with the community back in March, when the community officially agreed to be part of the assessment.
- The second component is to develop a community adaptation plan for climate change. We will be working with the Canadian Institute of Planners on this. This community plan will help inform the territorial plan, so that other communities can learn from our process. Clyde River is the main community in this study, but NRCAN and the GN are also working with Hall Beach, Iqaluit, and Gjoa Haven.
- Lastly, we want to mention that Clyde River has a great interest in alternative energy as part of our adaptation plan. We look forward to what other communities and organizations represented at this meeting have to say on this subject.
- Thank you for inviting us to this meeting. We look forward to the discussion over the next few days and to making connections with others.