

## **Connecting Inuit observations with fine-scale environmental modeling: Informatics and the Silalirijit project**

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Climate change affects many aspects of the environment, including weather patterns and the frequencies of various weather events and phenomena. Inuit in Clyde River, Nunavut, are concerned about the changes that may be in store, noting that they have already observed changes in wind patterns and other weather features. Arctic indigenous peoples are careful observers of their environment, and the documentation of their observations has provided a wealth of information about specific ecological, environmental, and climatological changes. Concurrently, numerical models simulate past climates on regional and global scales and make projections into the future, providing crucial insight into climatological trends and processes. The Silalirijit project attempts to connect Inuit observations with fine-scale meteorological models. Part of this effort involves the development of new information systems. Through partnership with the Exchange for Local Observations and Knowledge of the Arctic (ELOKA) (<http://eloka-arctic.org>), a web-based system has been developed to allow Inuit from Clyde River and other communities to access near real-time meteorological data from four regional weather stations in the language of their choice, Inuktitut or English\* (<http://clyderiverweather.org>). These data are also available to the public and may support the interests of scientists, recreationalists, or search and rescue personnel, for example. In this presentation we provide a high level discussion of the technical architecture, related components, and resulting system that supports data dissemination and stewardship. Data are presented in numerical form and are presented using visualization techniques. In addition to an easy-to-use Web interface, future iterations of the system will provide machine-to-machine interfaces using open standards common to data intensive science methods. We conclude with a discussion of our approach to long term. \* Multilingual support being released summer 2011