Participatory Photo-mapping of Environmental Conditions in the Inuvialuit Settlement Region

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The Mackenzie Delta region (MDR), of Northwestern Canada is a dynamic environment that is ecologically and culturally significant. This region is experiencing rapid environmental change that is expected to worsen with continued climate warming and additional anthropogenic stressors. In northern regions, conventional environmental monitoring strategies can be hindered by complex and cost prohibitive logistics. In some areas changes in land cover are occurring so rapidly that maintaining an accurate inventory is problematic. Knowledgeable land users are in a unique position to assess changes in regional environmental conditions and inventory cumulative impacts. In this context of environmental change and uncertainty, there is a critical need to draw on local knowledge and observations to inform decision-making.

In this project we developed and field-tested a community-based monitoring program that used participatory photography. Our objective was to create a monitoring program consistent with community goals and Inuvialuit culture that documented local observations in an accessible format. Working with the Hunter and Trapper Committees of Aklavik, Inuvik, and Tuktoyaktuk, and the Inuvialuit Joint Secretariat, we adapted a participatory photo-mapping (PPM) method to record Inuvialuit observations of environmental conditions.

In the summer of 2010, we tested the PPM protocol by organizing field trips with groups of knowledgeable Inuvialuit hunters and land users. Inuvialuit observations of environmental conditions were recorded using digital cameras and hand held GPS units. Subsequently, digital photographs and video became the focus of photo-elicitation interviews, which added a detailed narrative to each geo-referenced observation. Following fieldwork and interviews, geo-referenced photos, video, audio recordings, and associated text files were entered into web-based map. Approximately 150 observations were mapped and grouped into 50 themes.

Interviews with monitors and a range of potential map users suggest that web-based mapping is an effective way to record and share observations and concerns related to the regional environment. Slow internet connection speeds, a complex web-based mapping interface, and technical demands of managing and organizing geo-referenced multi-mediaobservations are key challenges that will need to be overcome before the PPM protocol can be implemented widely.

Overall, this research highlights the effectiveness of using visual methods to document and share Inuvialuit observations. A monitoring program built around local observations that are linked to geo-referenced images (and other media) will significantly improve our capacity to detect the impacts of environmental change. By providing a record of the location and magnitude of anomalous environmental conditions, this monitoring initiative will also contribute to northern planning and decision-making.

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