

SCHOOL OF GEOGRAPHY AND THE ENVIRONMENT

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Letter of support for the Statewide Digital Mapping Initiative (SDMI)

The Alaska State-wide Mapping Initiative is one of the first projects of its kind, providing high resolution data of remote polar environments. The SDMI provides a mechanism for establishing an inventory of near-pristine habitats, which is critically important in documenting the extent of climate change impacts. As a member of the polar research community, I would like to offer my support to this project; with the advancement of remote sensing technology, polar researchers are increasingly side-lined by the absence of high quality, high resolution data. This is a pertinent issue, and many international conferences, such as the AGU Chapman Conference on Remote Sensing (February 19th 2012) have begun to focus specifically on this.

As an arctic hydrologist, my research integrates remote sensing, modelling and extensive field research. I aim to improve our understanding of how climate change influences the hydro-ecology and biogeochemistry of freshwater ecosystems. To this end over the past 6 years I have been working in collaboration with the Denali National Park Service (DNPS), developing a landscape model to enable large scale assessments of the potential impacts of climate change on aquatic ecosystems in polar environments. This model uses satellite imagery, in conjunction with existing biogeochemical models, and empirical hydrological and ecological measures of environmental instability. By incorporating NOAA predictions of climate change, this project will assist the National Park Service to mitigate against the increased frequency of 'extreme events'.

To accurately delimitate water flow pathways and subcatchment boundaries I require high resolution digital elevations models. Prior to the work undertaken by the SDMI this data was unavailable. The model had, by necessity, been built using Landsat data (30m resolution), which had restricted its uses. DNPS and the USGS had acquired LIDAR data for only a few individual catchments within the national park's 6 million acres; such independent work resulted in sporadic coverage of areas, where data availability is difficult to establish and obtain. The data collected by the SDMI will enable new and exciting applications of this model, to develop our understanding of climate change implications.

I believe that the statewide availability of high resolution remote sensing data in Alaska is imperative for the future of climate change research in the United States of America. It is not only of great benefit to the research community, but has clearly also been greatly sought after by government funded bodies. It is additionally in the interest of the wider public and their economy, where the data is applied in maintaining and restoring ecosystems, which support a healthy tourist industry.

I am firmly in support of the SDMI, and am very hopeful that the processing of this data will continue.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Crossman'.

Dr Jill Crossman
Postdoctoral Researcher