

Expand Historical Climate Analysis to the Pacific Sector of the Arctic

Principal point of contact

Dr. Jim Overland, NOAA, Pacific Marine Environmental Laboratory

In this task we proposed a comprehensive survey and data rescue of climate-relevant historical data resources in the north Pacific & Arctic regions. The project is divided into five activities that will each result in a distinct data/research product:

- a. Bibliography
- b. Data identification and transcription
- c. Integration with existing datasets
- d. Web interface for research and public outreach
- e. Synthesis

Over the past year progress has been made under headings a, b and d, while c and e are awaiting results of the transcription program. The most notable success to date is the establishment of a first-of-its-kind NOAA digital imaging facility at the US National Archives. This allows us enhanced access to the Archives' vast collection of US Navy, Revenue Marine and Coast Guard logbooks wherein one of the largest unutilized reservoirs of marine-meteorological and environmental data reside. We have so far identified 1066 project-relevant items (~250,000 pages of data) in the Archives inventory. Data will begin to be transcribed from longhand to digital form with the launch of the Old Weather – Arctic project expected by the end of February 2012. See www.oldweather.org. Once this occurs the data will begin to be available for integration into the International Comprehensive Ocean-Atmosphere Data Set (ICOADS) and will become accessible for direct analysis and for sparse-input reanalysis assimilation. We have also sourced bibliographic information for historical (pre-1950) material that currently exceeds 3000 entries. This will become a functional part of the project webpage, currently under development, by June 2012.

Three education-outreach projects have been established to date. The *HMS Plover historical data intercomparison project* is a high-school experiment to quantify the bias associated with a particular instrument screen used at Point Barrow 1852–1854. The *Arctic Sea Ice Explorer* is a Google-Earth/Maps-based utility to support the transcription, display and analysis of text-based historical sea ice information that has been designed by master's level information school students. A project with University of Washington students to digitize a large collection of unpublished historical photographs of Revenue Marine and Coast Guard activities in Alaska has recently been launched. This will result in an online exhibit for the Coast Guard Museum NW built by these students, but we also anticipate uncovering a set of geolocated sea ice photographs that can be collated with weather data from the Archives logbook collection.