

MMS ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

Region: Alaska

Planning Area: North Slope, Beaufort Sea

Title: Support of the Collection of Meteorological Data on the North Slope and Beaufort Sea, Alaska (06-x13)

MMS Information Needs to be Addressed: The data and analysis from the collection of these meteorological data is invaluable to ongoing MMS scientific studies. These data are presently being used to validate the output from the Beaufort Sea Mesoscale Meteorological Model, currently under development by the University of Alaska, Fairbanks. Other uses of the data would be testing of oceanographic and oil-spill trajectory models to assist in MMS management in the Beaufort Sea region; to assist with the validation of surface current measurements collected by high frequency radar and subsurface currents collected by Acoustic Doppler Current Profilers (ADCP); MMS field operations studies, and air quality measurements from offshore operations.

Total Cost: \$40,000

Period of Performance: FY 2007-2008

Conducting Organization: University of Alaska, Fairbanks

MMS Contact: [Chief, Alaska Environmental Studies Section](#)

Description:

Background The US Department of Interior, MMS operated five meteorological stations along the Beaufort Sea Coast, Alaska. Data collection at four of the meteorological stations began on January 1, 2001. A fifth station at Cottle Island was added to the study area on August 21, 2002. These stations operated until September 30, 2006. These five meteorological stations collected data on wind speed, wind direction, barometric pressure, relative humidity, solar radiation, and air temperature. MMS produced two final reports from the analysis of these and other coastal meteorological station data from Barrow, Alaska to the Mackenzie delta. The analysis can be found within OCS MMS final reports 2005-069 and 2007-011.

At the end of the contract period in 2007, instead of demobilizing the stations and warehousing them, MMS transferred the stations to the University of Alaska, Fairbanks so they would be incorporated into a larger network of stations previously established by the University of Alaska. <http://www.uaf.edu/water/>. The University of Alaska is planning to integrate these stations into a larger network of stations that will support multiple organizations. The lead organizations for operating and maintaining the network will be the University of Alaska Fairbanks, Water and Environmental Research Center (WERC). The location of these stations will also help serve as a linkage between terrestrial and ocean observing network in the Arctic. The Network approach is also consistent with the major recommendations of key variables needing long-term monitoring for an Arctic Observing Network (National Research Council, 2006).

Objectives

The collection of meteorological data along the North Slope and nearshore Beaufort Sea in support of other MMS study efforts and field surveys.

The data collection network will be upgraded to help meet current project needs and those of the project partners. The upgrades will enhance data collection and objectives of the network, such as adding precipitation gauges and measurements at the stations. The identified priority stations are Milne Point, Badami, and Cottle Island. The objectives of the modified data network will include;

- Provide data to help characterize the west-east distribution of winter and summer precipitation. Applications include area-wide precipitation analysis for North Slope lake water use research and management.
- Provide soil temperature and moisture information for applications in both hydrology and tundra travel management.
- Provide wind data for research efforts on coastal atmospheric models, including coastal erosion applications and oil-spill evaluation and response modeling efforts.
- Provide radiation data to help improve estimates of evaporation and evapo- transpiration in the network region.
- Provide data on the Internet in hourly updates to benefit field operations, traveler weather information, and emergency response.
- Provide data for National Weather Service forecasting use to help improve daily forecasts in network region.

Current Status:

The field team has successfully integrated the Milne Point meteorological station into the data network and posted the data on the URL above. The field team will make their third attempt to get to Cottle Island this spring or early summer to add new equipment and integrate the Cottle Island station into the regional network. They are also working with the oil and gas operators to access the eastern most meteorological station at Badami.

Final Report Due: Annual database December 2008

Publications Completed: None

Affiliated WWW Sites: <http://www.uaf.edu/water/CurrentData.html>
<http://network.colville-watershed.org/Main/QAQCData>
<http://www.mms.gov/alaska/>

Revised Date: March 2008