

Technical Summary: BOEMRE Publication 046-2011

A Summary of Meteorological Stations and Data Along the Beaufort Sea Coastal Plain

Background

The former Minerals Management Service (MMS), currently Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) and the University of Alaska Fairbanks (UAF), Institute of Northern Engineering (INE), signed a Memorandum of Understanding in 2006. As a result of this agreement, BOEMRE transferred five meteorological stations along the Beaufort Sea Coast, Alaska (Figure 1) to INE. The purpose of the Memorandum was the expansion of the data collection network for the North Slope Lakes Project, a research project conducted at that time by the University of Alaska Fairbanks and Geo-Watersheds Scientific (GWS), funded by the Department of Energy (DOE). Three stations, named as Badami, Milne Point – F Pad, and Cottle Island, remained in their original locations, while the other two stations, Northstar Production Island and Endicott, were decommissioned due to site logistics on offshore installations. Data collection at Badami, and Milne Point, began in 2001 and from Cottle Island in 2002 and continued through September 2006, under a previous contract between Hoefler Consulting Group and BOEMRE (Wilcox and Veltkamp, 2007).

Under the MOU between the University of Alaska, Fairbanks, Institute of Northern Engineering and Bureau of Ocean Energy Management, Regulation and Enforcement, data collection and station upgrades were continued through 2010.

Several other stations are also mentioned in this report to help represent the series of stations operated under the Arctic Transportation Network - Beaufort Coastal Network. These stations include the Duck Island, F-Pad Tundra, and Alpine area L9312 stations, which are both a lake monitoring and weather station. The data and information from these stations are used for a variety of different applications by various supporting groups in the network. The applications vary from real-time weather conditions for forecasting and traveler weather information, to use in the development of water and tundra-travel management tools. The length of the data records vary with each site, depending on the site history.

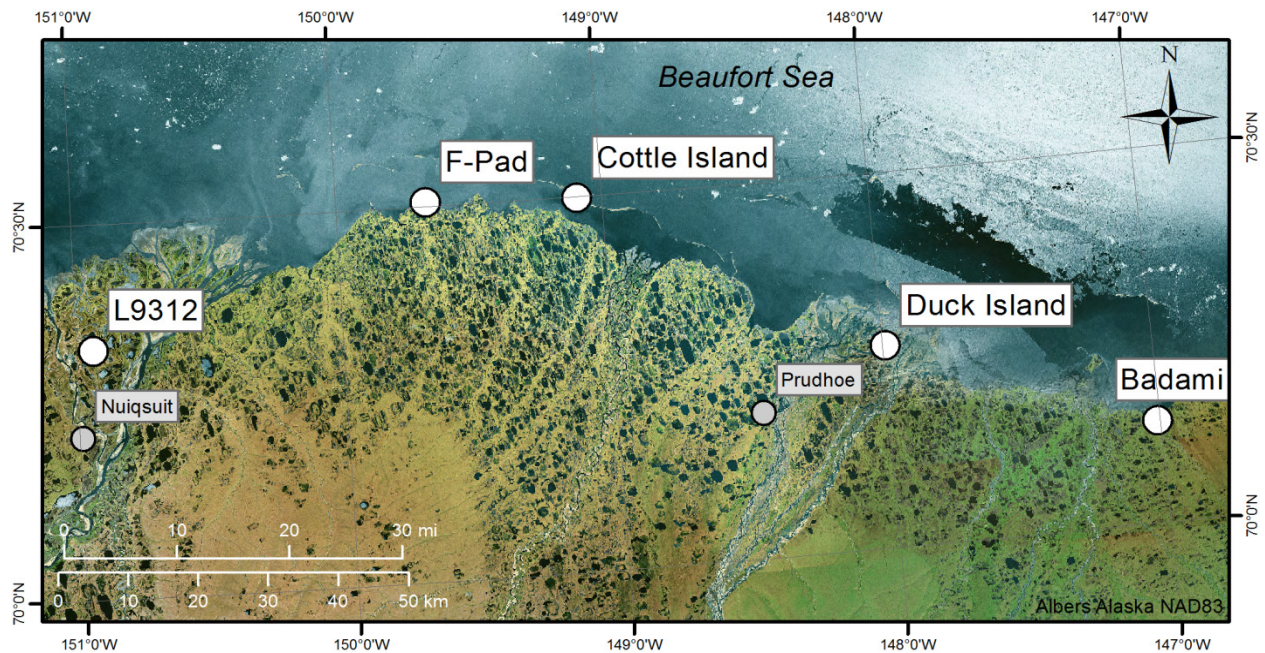


Figure 1. Map of Beaufort Sea Coastal Plain with Meteorological Stations.

Objectives & Summary of Results

The objective of this project was to maintain data collection at the original former MMS stations to the highest degree possible given the fiscal and logistical constraints.

The network of stations covered by this report covers a wide operational area and depends on a number of supporting projects, and logistical support from oil field operators. Primary data-collection objectives at each station and over time have varied with funding sources. The operation of the stations and resulting data quality are affected by three main issues; arctic weather conditions, site access logistics, and sensor technology changes. Based on the experience gained during the last four years, meteorological stations located in remote and extreme areas in Alaska require adequate funding to cover costs associated with station visits, preventative maintenance, operation, data communication (telemetry) and regular quality control data processing. Additionally, the needs of multiple data uses, such as current conditions and regional climate analysis, need to be part of the operational designs for current and future stations to maintain a collaborative base of support from the multiple organizations and stakeholders along the Beaufort Coastal Network.

Despite occasional data collection outages due to weather conditions and equipment failure the overall data collection effort was successful and has significantly contributed to the historic data availability in the area of interest.

STUDY PRODUCTS:

Final Report, meteorological observation database including hourly data values for temperature, wind speed, wind direction, barometric pressure, relative humidity, and solar radiation.

CONTRACT NUMBER(S): M07PX13228

SPONSORING OCS REGION: Alaska OCS Region

APPLICABLE PLANNING AREA(S): Beaufort Sea

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COMPLETION DATE OF REPORT: September 2011

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CUMULATIVE PROJECT COST: \$40,000

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REPORT AVAILABILITY:

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