

# Climate Monitoring

## Vital Signs Monitoring - Southwest Alaska Network



### Importance / Issues

Climate is considered to be the most important broad-scale factor influencing ecosystems. Global climate models predict that climate change and variability will be most severe at high latitudes. Without climate data, it is impossible to appreciate the causes of a variety of ecosystem changes—from vegetative cover changes to shifts in aquatic and terrestrial plant and animal communities.

Existing weather stations in southwest Alaska are focused primarily on the safety and needs of the aviation community and are thus, typically collocated near towns and villages of the region, thus sited at lower elevations in broad valleys, or in coastal areas. SWAN parks exhibit extreme topographic and geographic gradients and consequently, climate variability (maritime to continental), most of which is not represented in the current network of weather stations. Deployment of weather stations and the accurate collection of weather observations in remote coastal and mountainous locations will help to fill data gaps that currently exist in SWAN.

### Sampling Design and Objectives

To deploy a network of remote automated weather stations in SWAN with the ability to:

- Fill in gaps of the existing network of weather stations.
- Capture average climate and climate variability across the SWAN region.
- Contribute to larger scale climate monitoring and modeling efforts.
- Contribute current weather observations to enhance day-to-day park operations.

Hourly weather observations will include:

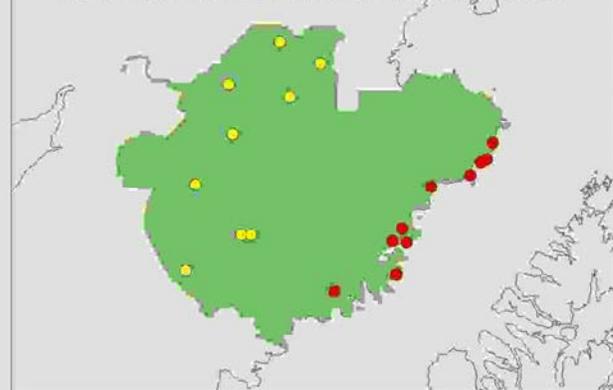
- Air temperature,
- Relative humidity,
- Wind speed and direction,
- Snow depth,
- Solar radiation,
- Precipitation

Monthly and annual summaries of weather observations are available at the Western Regional Climatic Center web site at: <http://www.wrcc.dri.edu/NPS.html>

### Current and Future Work Efforts

Prior to the 2006 field season, potential weather station deployment sites were identified within KATM, KEFJ and LACL. During the 2006 field season, on-the-ground site surveys were conducted in KATM (9 sites) and in KEFJ (7 sites). Data collected during these site surveys will be evaluated by Alaska experts in weather and climate with the goal of producing a prioritized list of sites for station deployment. Station deployment will begin in 2007.

### Katmai National Park and Preserve



### Kenai Fjords National Park



*Weather station site surveys completed in 2006. On-the-ground surveys – yellow. Aerial surveys – red.*

### Contacts:

Bruce Giffen, ARO [bruce\\_giffen@nps.gov](mailto:bruce_giffen@nps.gov)

Laurel Bennett, SWAN [laurel\\_bennett@nps.gov](mailto:laurel_bennett@nps.gov)