
National Park Service
U.S. Department of the Interior



Lake Clark National Park and Preserve
Port Alsworth, Alaska

Installation of a Climate Reference Network Station at Port Alsworth

Environmental Assessment
July 2009



Landscape at proposed Climate Reference Network location (View to east)

CHAPTER 1: PURPOSE AND NEED FOR ACTION

Purpose of Action

The National Park Service is considering the issuance of a right-of-way to the National Oceanic and Atmospheric Administration (NOAA) for the installation of a permanent climate monitoring station in Lake Clark National Park and Preserve at Port Alsworth, Alaska. The United States Climate Reference Network (USCRN) is a network of climate observing stations being developed as part of a NOAA research initiative.

The purpose of USCRN is to provide and maintain future long-term (50-100 year) high-quality observations of temperature and precipitation that can be coupled to past long-term observations for the detection and attribution of climate change and with the ability to meet the stringent data quality and continuity requirements of the climate science community. Reliable observations from the CRN will allow the detection of present and future climate change, and enable scientists to increase our understanding of natural and human-induced effects. The CRN System Monitoring Parameters include air temperature, surface temperature, wind speed, precipitation, relative humidity, atmospheric pressure, global solar radiation.

A Network Spatial Density Study was conducted to determine the number and locations of an array of stations that would provide the best possible coverage in the different U.S. climate regions. Deployment of 114 stations in the continental United States, including 13 in national parks, was completed in 2008, and NOAA is expanding the Network with 30 additional stations in Alaska beginning in 2009.

The National Climatic Data Center (NCDC) will act as the central operating facility. The NCDC will provide the data ingest, operational quality control monitoring, archiving and user access functions (NOAA-CRN 2003).

Need for Action

The CRN program is planned to provide the United States with an environmental monitoring and climate change network that meets national needs and international commitments to monitor and document climate change. The CRN sites will be selected for long-term stability of siting characteristics, sensitivity to large-scale climate forcing, and to represent climate conditions in the United States (NOAA-CRN 2003).

The National Parks Omnibus Management Act, passed by Congress in 1998, directs the NPS “to establish baseline [resource] information and to provide information on the long-term trends in the condition of National Park System resources.” Climate is a fundamental driver of ecological condition and the patterns of plant and animal communities found in NPS park units. Climate Monitoring has also been identified as a Vital Sign of the Southwest Alaska Network, one of 32 networks of the NPS Inventory and Monitoring Program. Installation of a CRN site at Port Alsworth will support NPS directives as established by Congress.

Certain provisions of Title XIII of ANILCA govern facilities for weather and climate research and monitoring and other facilities within the conservation system units established or expanded by this act. Section 1310 (b) addresses new stations for weather and climate research and

monitoring. This provision permits the establishment, operation, and maintenance within any conservation system unit of new facilities for weather and climate research and monitoring.

This environmental assessment (EA) analyzes the potential environmental impacts which could result from the proposed action and the No Action alternative. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council of Environmental Quality (CEQ) (40 Code of Federal Regulations 1508.9), and the NPS NEPA compliance guidance handbook (Director's Order (DO)-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*).

Criteria for Selection of Potential Climate Reference Network Station

There are many scientific criteria governing site selection. NOAA conducted a Network Spatial Density Study to determine the number of instrument suites and the approximate (general) geographic locations. About 215 instrument suites selectively located throughout the 50 states, Puerto Rico and Virgin Islands will capture on a national spatial scale at least 90% of the National signal for climate trends, variations, and change.

A significant consideration when examining specific instrument sites is whether the area surrounding the candidate instrument site has a high degree of probability of continuing in its present condition, without major changes for very long periods of time (50 to 100 years). The need for unchanging physical surroundings, particularly encroachment by human-made structures, is a key factor in determining the probable long-term stability of a potential site.

General Geographic Location Factors

- Regionally and Spatially Representative. Stations will be distributed to ensure that all major nodes of regional climate variability are captured while taking into account large-scale regional topographic factors. The Network Spatial Density Study will provide guidance.
- General location sensitive to measuring long term climate variability and trends. The site location is representative of the climate of the region, and is not heavily influenced by unique local topographic and mesoscale/microscale features/factors.
- Reasonably high probability of Long Term Site Stability and surrounding area. Minimize risk of human made encroachments over time and/or the chance the site will close due to the sale of the land or other factors. Stations located on government (federal, state, local) land or at colleges (granted/deeded land with land use restrictions) often provide a higher stability factor. This criterion also includes the need for USCRN deployment and maintenance personnel to have reasonably convenient access to the site. A review of recent (last ten years) and possible future population growth patterns in the area is a part of the overall evaluation process.
- Avoid high-risk sites: Flood Plains (low areas adjacent to river basins, estuaries, and coastal offshore barrier islands/beaches); Extreme/above average frequency of tornado incidents; Enclosed locations that may “trap” air and create unusually high incidents of

fog, cold air advection, etc.; Vicinity of orographically induced winds, such as Santa Ana and Chinook; Complex meteorological zones, such as adjacent to an ocean or other large bodies of water.

- Persistent periods of extreme snow depths (e.g., several meters/tens of feet). Digital topographic maps and a climatological profile of the area will be examined as part of the overall site evaluation and selection process. When available, aerial photographs are very useful.
- Proximity (within a few tens of kilometers) to an existing or former observing site with a relatively long period of record (decades) of daily maximum and minimum temperature and precipitation is highly desirable. The historical data (metadata) record and observational data from these sites should be of sufficient quality and detail to permit reasonable processing of the data to account for changes with a high degree of confidence (i.e., documented vegetation and terrain changes, changes in the location of the station and/or instruments, type of instruments described, the observation time, the observing practices, etc.).
- Site is located in the vicinity of other similar observing systems, which are operated and maintained by personnel with a knowledge, understanding, and appreciation for the purpose of climate observing systems.
- Avoid endangered species habitats and sensitive historical locations of a sensitive nature.
- AC power source available nearby. However, in some cases solar panels may be an alternative to achieve the use of an otherwise desired location.
- Relatively easy year round access by vehicle for installation and periodic maintenance. (http://www1.ncdc.noaa.gov/pub/data/uscrn/site_info/CRNSiteInfobook.pdf)

Issues and Impact Topics

Vegetation: Vegetation at the project site may be affected by installation of the CRN station and powerline.

Soils: Soils at the project site would be affected by installation of concrete footing necessary to support the CRN station.

Cultural Resources: Undiscovered archaeological resources may be affected by CRN station footing installation.

Aesthetics: Aesthetics of the headquarters area may be affected by visibility of the CRN station

Issues Eliminated from Detailed Consideration

Air quality: No effects to air quality would be expected from siting a CRN Station.

Water Resources and Wetlands: No wetlands or water resources occur on the site.

Floodplain: The site is not within the 100-year floodplain.

Wildlife: Minimal behavioral disturbance would be expected to wildlife during station installation. No threatened or endangered species occur on the site.

Visitor Experience: Visitor experience in the headquarters area would not be affected since the CRN Station site would be located 300 feet south of the trail and would barely be seen by visitors.

Environmental Justice: Executive Order 12898 requires federal agencies to incorporate environmental justice into their missions by identifying and addressing high and adverse human health or environmental effects in their programs and policies on minorities and low-income populations and communities. Installation of a CRN station would not result in adverse impacts on minority or low-income populations or communities.

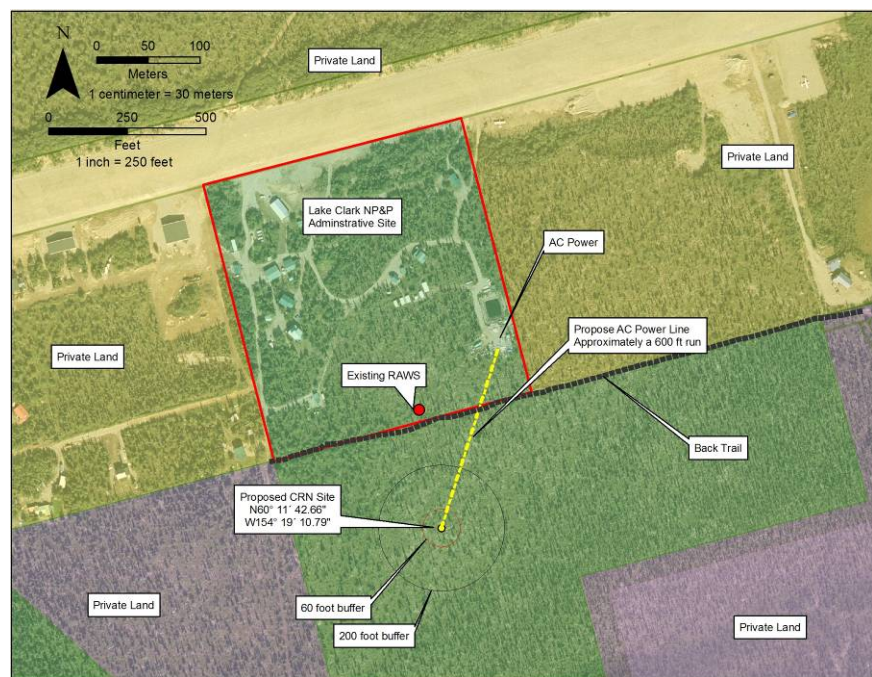
CHAPTER 2: ALTERNATIVES:

Alternative 1: No Action

A Climate Reference Network Station would not be installed at the NPS administrative site at Port Alsworth.

Alternative 2: Install a Climate Reference Network Station (Proposed Acton)

The NPS would issue a right-of-way to NOAA for the installation of a CRN station near the



Lake Clark National Park and Preserve administrative headquarters at Port Alsworth. A standard climate station would be installed near the administrative headquarters at Port Alsworth (Figure 1). The proposed site or the CRN station (N60° 11' 42.66", W154° 19' 10.79") is south of the 15 acre administrative headquarters at Port Alsworth. The location is 300 feet south of the "back trail" which follows an old survey line between two NPS parcels. A CRN station is typically

Figure 1. Location of proposed CRN site.

composed of three structures: a tower that hosts a suite of sensors, a rain gauge and a battery box (Figure 2). The CRN site may also have solar and wind generating capability and these

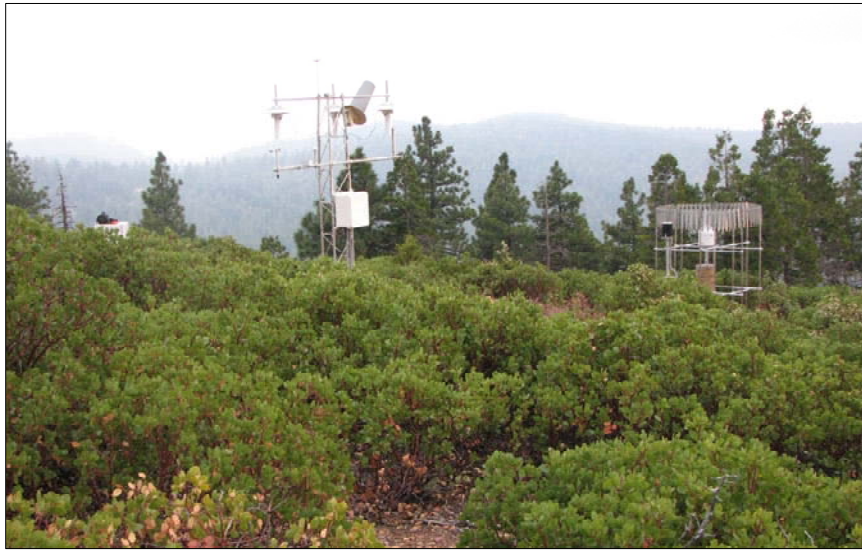


Figure 2. Typical CRN site. The sensor tower on the left and the precipitation gauge and shielding on the right. This particular site is located at Yosemite National Park.

components can be housed on the sensor tower and with the battery box. CRN sites require a permanently undeveloped 200 foot radius buffer around the instruments, an AC power source, and access for annual maintenance. A 60-foot radius (3,600 ft²) around the towers, instruments and shielding around the rain gauge must be cleared of trees. This area would be designed to appear as a natural clearing.

The instrument tower would be installed on a cement footing measuring 3 feet by 3 feet by 4 feet deep. The rain gauge would be installed on a circular cement footing measuring 2 feet in diameter and 2 feet deep, within a shield eight feet in diameter. The battery box would be installed on a cement footing measuring 1.5 feet by 1.5 feet by 3 feet deep (NOAA no date).

The wind turbine tower would be installed on instrument tower at about 7.5 meters, thus not requiring its own foundation. The solar panels would be installed with the battery box, thus not requiring its own foundation. All footings would be dug by hand and materials (soils/dirt) removed for footing installations would be scattered outside the installation footprint. A suite of sensors are placed on the 3 or 10 meter (10-30 ft.) instrument tower at 1.5 meters (4.5 ft.) above the surface of the ground. (Note that the cement footing might be interchangeable with a steel frame footing of the same size.)

AC power is available at the “boneyard” of the NPS Field Headquarters, approximately 600 feet away from the proposed CRN installation. The powerline would be threaded through PVC pipe and laid under the moss mat from the power source in the boneyard to the CRN site. The powerline corridor will be 12 to 18 inches wide and approximately 600 feet long (900 ft²). A flap of moss and dwarf shrubs 12 to 18 inches wide and 6 to 8 inches thick would be cut by hand and folded back in sections for the length of the power corridor. The powerline would be laid on the humus layer and the vegetation mat restored to its original position. The vegetation mat should resume growing naturally within one summer.

About 4 feet of the proposed powerline would be buried where it crosses the “back trail” a barren walking path behind the “boneyard”. No vegetation would be removed in this area.

Materials and equipment would be moved to the site by helicopter sling load from the park maintenance facility on the airstrip or via an ORV and trailer. If ORVs are used for access, plywood panels would be laid onto the route from the “back trail” to the site. Plywood would be removed immediately after materials are moved.

Alternatives Considered but Dismissed from Further Consideration

Co-locate the Climate Reference Network Station with the Existing Remote Automated Weather Station (RAWS) Site in the Park Administrative Headquarters Area.

This alternative was considered but dismissed due to the proximity to of NPS facilities (shop, incinerator). The RAWS is approximately 250 feet from these facilities. CRN site requirements include a high probability of long term site stability and surrounding area minimizing the risk of human made encroachments over time.

Climate Reference Network Station Outside the Park or on Private Property.

This alternative was considered but dismissed due to the lack of control over the uses/development of private property. Again, CRN site requirements include a high probability of long term site stability and surrounding area minimizing the risk of human made encroachments over time. Stations located on government (federal, state, local) land or at colleges (granted/deeded land with land use restrictions) often provide a higher stability factor.

CHAPTER 3: ENVIRONMENTAL CONSEQUENCES:

A full description of the affected environment is presented in the EAs prepared for the NPS for upgrading seasonal housing facilities (NPS 2005) and the upgrade of the Visitor’s Center and maintenance facility (NPS 2003).

Alternative 1: No-Action (Environmentally Preferred Alternative)

Under the No-Action Alternative a Climate Reference Network Station would not be installed near the Lake Clark National Park and Preserve administrative headquarters at Port Alsworth. No impacts to the natural resources in the area would result from this alternative.

Conclusion: There would be no impacts to the environment by not installing a CRN site at Port Alsworth.

Alternative 2: Install a Climate Reference Network Station (Proposed Acton)

Vegetation:

The vegetation on the site is black spruce woodland, with scattered willows and ground cover of moss, lichens and Labrador tea (see photo on document cover). The impacts to vegetation would be primarily associated with clearing trees within a 60-foot radius (93,600 ft²) around the CRN instrumentation. About 10 to 12 black spruce trees would be removed in this area. As trees

regrow in this area they would be removed when they reach a height of 2 to 3 feet. Removal of the trees would have a minimal affect on the vegetation in the park head quarters area.

The placement of the 600-foot power line would have limited effects on vegetation. Because the ground cover of moss and dwarf shrubs will be cut and lifted back to place the powerline/PVC the effects would be minimal. The vegetation mat should resume growing naturally within one summer. There would be no impacts to vegetation where the power line crosses the back trail. This area is a bare ground walking trail, so no additional vegetation will be removed.

The use of plywood panels for transporting equipment via ORV will alleviate disturbance to the ground cover from ORV tires.

Soils:

Three pits will be dug by hand and filled with cement to anchor and stabilize the towers, the rain gauge and the battery box, for a total of 12 ft² down 2-4 feet. An additional four ft² area approximately 8-12 inches deep will be dug by hand to bury the power cable under the “back trail. This disturbance is minimal in the context of the facilities in the administrative area. Materials (soils/dirt) removed for footing installations will be scattered outside the installation footprint. (Note that the cement footing might be interchangeable with a steel frame footing of the same size.)

Cultural Resources:

There is a potential for undiscovered archeological materials to be on the site where the holes will be dug for the installation. If necessary, an archeologist will monitor the digging for artifacts, especially between the glacial outwash and duff layers in the soil.

Aesthetics:

The instrument tower is ten meters high, and a baffle around the rain guage will cause visual intrusions on the natural landscape. The tower is approximately as tall as the spruce trees on the site. The willows and dwarf birch are fairly thick along the “back trail” where most human traffic passes. The CRN station would be located 300’ south of the trail, and would be barely visible to passing hikers and runners.

Cumulative Impacts. There would be long term impacts due to tree removal in the immediate vicinity of the instrument tower. Approximately 10 trees would be removed every 30-50 years. The affected area of 0.08 acres would be a minimal increase to the past and ongoing development activity in the community of Port Alsworth.

There are currently four RAWS (Remote Automated Weather Stations) in Lake Clark, with a fifth due for deployment in summer 2009. The proposed CRN site is located nearby the Port Alsworth RAWS for long-term calibration. The proposed CRN site would make a total of six weather stations in a park of four million acres. Other installations in Lake Clark include four FAA weathercams, one radio repeater (a second one is outside the park), and 13 facilities for collecting geophysical data about volcanoes, seismic activity and movements of tectonic plates (Figure 3). In addition to scientific data, all of these facilities provide data to ensure human safety and resource protection in and around the park.

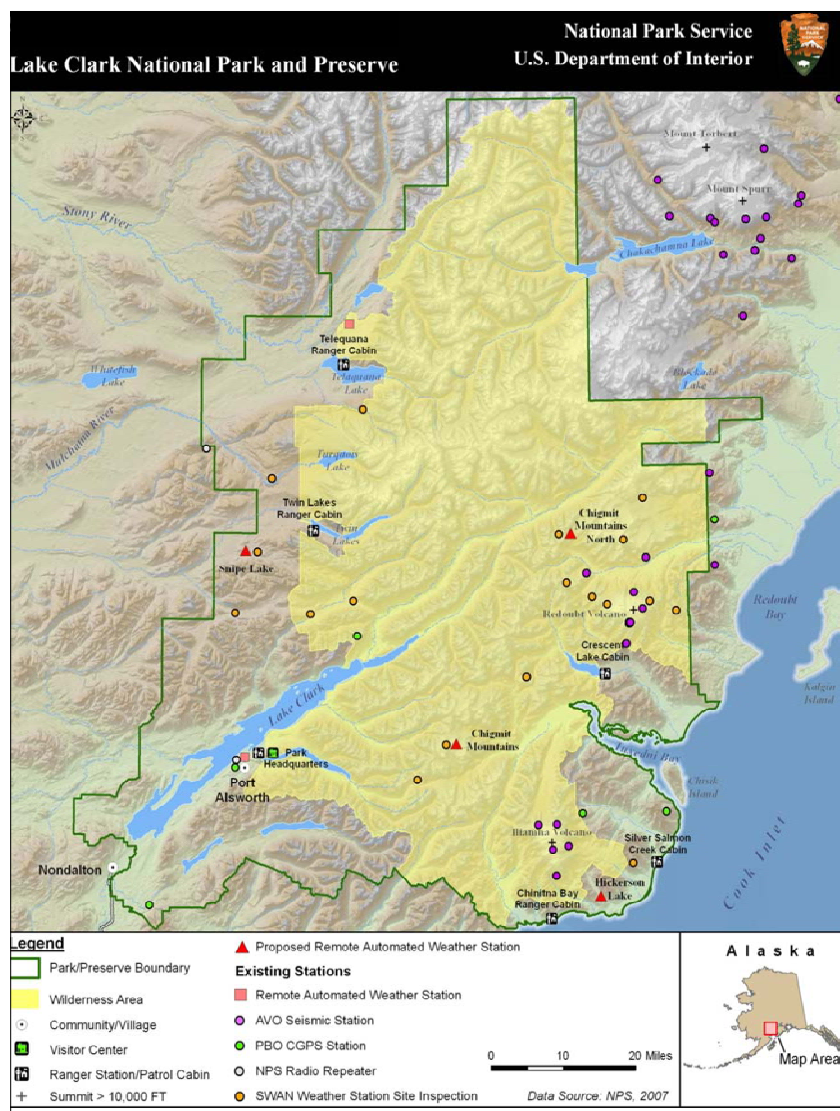


Figure 3. Existing stations and facilities, Lake Clark National Park and Preserve

The cumulative impacts of these sites are described in the EA for the Plate Boundary Observation network (NPS, 2007). Because of the CRN site's small footprint and close proximity to the park headquarters area at Port Alsworth this facility would have negligible cumulative impacts to the park environment.

Conclusion: There will be minimal impacts to the environment from installing a CRN site at Port Alsworth. The level of impacts resulting from the proposed action would not result in impairment of park resources that fulfill specific purposes identified in the enabling legislation or that are essential to the natural and cultural integrity of the park.

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- NPS. 2007. Plate Boundary Observatory Global Positioning System Network Installation and Maintenance in Alaska. Denali National Park and Preserve, Katmai National Park And Preserve, and Lake Clark National Park and Preserve. 169 pgs.
- NPS, 2008, EA Climate Monitoring Program in Katmai National Park and Preserve, Kenai Fjords National Park and Lake Clark National Park and Preserve. 88 pgs.

APPENDIX A

Alaska National Interest Land Conservation Act (ANILCA), Section 810(a) Summary Evaluations and Findings

I. INTRODUCTION

This section was prepared to comply with Title VIII, Section 810 of the Alaska National Lands Conservation Act (ANILCA). It summarizes the evaluations of potential restrictions to subsistence uses that could result from the proposed action by NOAA to install a Climate Reference Network (CRN) site at Port Alsworth in Lake Clark National Preserve.

II. EVALUATION PROCESS

Section 810(a) states:

“In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands...the head of the federal agency...over such lands...shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency—

- (1) gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to Section 805;
- (2) gives notice of, and holds, a hearing in the vicinity of the area involved; and
- (3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary...and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.”

When Congress passed ANILCA in 1980, it expanded the national park system in Alaska by creating new parks, monuments and preserves and making additions to existing units. In establishing these new park areas, ANILCA Title II states the purposes for which Congress created each unit and the outlines the human uses and activities that may be permitted. ANILCA Title II Section 201(7)(a) states the following purposes for Lake Clark National Park and Preserve:

“To protect the watershed necessary for perpetuation of the red salmon fishery in Bristol Bay; to maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including active volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state; and to protect habitat for and populations of fish and wildlife including but not limited to caribou, Dall sheep, brown/grizzly bears, bald eagles, and peregrine falcons... Subsistence uses by local residents shall be permitted in the park where such uses are traditional in accordance with the provisions of Title VIII.”

ANILCA Section 810 (a) further requires that the potential for significant restriction of subsistence uses by a proposed action be evaluated on “...the availability of other lands for the purposes sought to be achieved and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes.”

III. PROPOSED ACTION ON FEDERAL PUBLIC LANDS

NOAA proposes to install a CRN site near the NPS field headquarters in Port Alsworth. The installation consists of an instrument tower 10 m. tall, a rain gauge and a battery box. Power will be supplied through a line from the NPS “boneyard” by threading the wires through a PVC pipe and laying it just below the moss and root mat to the CRN site. The installation itself is arrayed in an area 60X60’. An area 200’ diameter must remain undeveloped for the next 50-100 years.

IV. AFFECTED ENVIRONMENT

Lake Clark National Park and Preserve is located in southcentral Alaska adjacent to Cook Inlet and was established in 1980 by Title II Section 201(7) of ANILCA. Subsistence uses are allowed within Lake Clark National Park and Preserve in accordance with Title II, Section 201(1) and Title VIII of ANILCA.

Section 803 of ANILCA defines subsistence uses as: “the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible by-products of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.”

In accordance with Title 36 CFR Part 13 regulations, residents of the NPS designated resident zone communities of Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay and Port Alsworth are qualified to engage in subsistence uses within Lake Clark National Park and Preserve. Local rural residents who do not live in these communities, but who have customarily and traditionally engaged in subsistence activities within the park and preserve may continue to do so with a subsistence use permit issued by the park superintendent.

Major resources used for subsistence by resident zone communities include caribou, brown bear, moose, beaver, Dall sheep, snowshoe hare, fox, lynx, mink, wolf, wolverine, ptarmigan, waterfowl, otter, marine mammals, salmon, trout, Dolly Varden, grayling, pike, suckers, humpback and round whitefish, halibut, crab, clams, berries, wild edible plants, and wood.

Located in Game Management Units (GMU) 9A, 9B, 16B, 17B and 19B, Lake Clark National Park (which encompasses 2,439,000 acres) and Preserve (which encompasses 1,214,000 acres) contain exceptional geologic features, scenery, wildlife, and cultural landscapes. These GMUs also include other federal public lands such BLM administered lands in 9B, 16B and 17B; the Denali National Park and Preserve in 16B; and the Upper Mulchatna Controlled Use Area in 17B.

The proposed action at Port Alsworth is located in the Bristol Bay Area, GMU 9B, within the boundaries of Lake Clark National Preserve. Federal subsistence fishery regulations currently allow residents of the Iliamna-Lake Clark drainage in the Naknek-Kvichak District to subsistence fish for salmon and other freshwater fish for customary and traditional uses. Federal game regulations for GMU 9B allow residents to harvest black bears, brown bears, caribou, Dall sheep, moose, coyotes, red and arctic fox, lynx, wolves, wolverine, beavers, hares, grouse and ptarmigan for subsistence uses.

The following annual harvest figures are from subsistence resource harvest surveys conducted by the Alaska Department of Fish and Game in the resident zone communities of Iliamna, Newhalen, Pedro Bay, Port Alsworth and Nondalton in 2004.

SUBSISTENCE RESOURCE	ILIAMNA	NEWHALEN	PEDRO BAY	PORT ALSWORTH	NONDALTON
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Bears	0 animals	4 animals	0 animals	1 animal	6 animals
Moose	3 animals	9 animals	4 animals	1 animal	17 animals
Caribou	3 animals	50 animals	1 animal	7 animals	18 animals
Dall sheep	0 animals	0 animals	0 animals	7 animals	0 animals
Small Land Mammals	17 animals	63 animals	5 animals	91 animals	257 animals
Migratory Birds	81 birds	605 birds	11 birds	85 birds	268 birds
Other Birds	152 birds	190 birds	110 birds	160 birds	321 birds
Bird Eggs	355 eggs	3018 eggs	417 eggs	0 eggs	0 eggs
Salmon	6879 fish	16714 fish	4346 fish	2250 fish	9045 fish
Other Fish	2478 fish	2994 fish	642 fish	767 fish	4342 fish
Berries	356 gallons	796 gallons	98 gallons	116 gallons	667 gallons
Plants	8 gallons	142 gallons	21 gallons	4 gallons	87 gallons
Firewood	5 cords	111 cords	105 cords	70 cords	137 cords

Annual subsistence harvest in may vary considerably from one year to the next due to spatial and temporal factors and natural causes such as weather, climate change and natural population cycles. The primary species taken for subsistence are moose, caribou, fish (primarily sockeye salmon) and berries. The overall subsistence pattern of the five resident zones surveyed by ADF&G in 2004 is represented below in pounds harvested annually and by percentage of subsistence resources harvested.

<u>Edible Subsistence Resource</u>	<u>Pounds/Year</u>	<u>Percentage of Resources Harvested</u>
Bears	972	.5
Moose	18,307	8.6
Caribou	11,862	5.6
Dall Sheep	709	.3
Small Mammals	1,790	.8
Migratory Birds	1,663	.8
Other Birds	654	.3
Salmon	152,774	72.0
Other Fish	14,486	6.8
Berries	8,132	3.8
Plants	1,048	.5
TOTAL	213,428 lbs/yr.	100%

“Bears” include both brown and black bears. “Small mammals” include beaver, coyote, ground and red squirrel, land otter, lynx, marten, mink, muskrat, red fox, weasel, wolverine, and wolf. “Migratory birds” include bufflehead, eider, goldeneye, mallard, northern pintail, northern shoveler, wigeons, cranes, geese and swans. “Other birds” include upland game birds such as ptarmigan and grouse. “Salmon” includes all

five species of Pacific salmon. “Other fish” includes whitefish, northern pike, longnose suckers, grayling, Dolly Varden, arctic char, rainbow trout, lake trout, and burbot as well as some saltwater fish such as halibut, rockfish and smelt. “Berries” include blueberries, cranberries, salmonberries and other edible species. “Plants” include wild celery, Labrador tea, rose hips and other edible plants. “Firewood” refers to spruce, birch and cottonwood cut into cords for home heating. These wood species, in addition to willows and alders, are also used for crafts. “House logs” are primarily white spruce.

Studies of subsistence use in the area include: Final Environmental Statement for the Proposed Lake Clark National Park (NPS); the park general management plan; Resource Use and Subsistence in the Vicinity of the Proposed Lake Clark National Park (Behnke 1978); Subsistence Production and Exchange in the Iliamna Lake Region, Southwest Alaska, 1982-1983 (Morris 1983); Land Use and Economy of Lime Village (Russell-Kari 1983); Lake Clark National Park and Preserve: Historic Uses of Cook Inlet Natural Resources (McNabb and Petrivelli 1992); Subsistence Uses of Vegetal Resources In and Around Lake Clark National Park and Preserve (Johnson et. al. 1998), Community Profile Database (Alaska Department of Fish and Game Subsistence Division 2001), Subsistence Harvests and Uses of Wild Resources in Iliamna, Newhalen, Nondalton, Pedro Bay and Port Alsworth, Alaska, 2004 (ADF&G, 2006) and subsistence houselog permit information.

V. SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on subsistence activities, three evaluation criteria were analyzed relative to current subsistence resources that could be impacted.

The evaluation criteria are:

1. The potential to reduce important subsistence fish and wildlife populations by (a) reductions in abundance; (b) redistribution of subsistence resources; or (c) loss of habitat.
2. Potential impacts the action may have on access for subsistence hunters and fishermen
3. The potential for the action to increase competition among hunters and fishermen for subsistence resources.

1. The potential to reduce populations:

There should be no significant reductions in populations of subsistence fish and wildlife resources as a result of the proposed CRN installation. The proposed action will result in the loss of up to 10 spruce trees. Installation and related activities may also result in the loss of some willows, berry bushes and other vegetation in the immediate vicinity. However, this should have no impact on the availability, quality and overall abundance of habitat important to plants, animals and fish utilized for subsistence.

The proposed CRN installation is not expected to alter subsistence habitats or result in any measurable reduction in or redistribution of wildlife or other subsistence resources. Provisions of ANILCA, the Federal Subsistence Program, and NPS regulations provide tools for adequate protection of fish and wildlife populations within Lake Clark National Park and Preserve while ensuring a subsistence priority for local rural residents. In addition, the superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

2. Restriction of Access:

All rights of access for subsistence harvest on NPS lands are granted by Section 811 of ANILCA. Lake Clark National Park and Preserve are managed according to legislative mandates, NPS management policies and guidelines within the approved LACL General Management Plan. The proposed action to install a CRN station is not expected to limit or restrict the access of subsistence users to natural resources within the park or preserve. The superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

3. Increase in Competition:

The proposed action to install a CRN station is not expected to result in increased competition for fish, wildlife or other resources that would significantly impact subsistence users. NPS regulations and provisions of ANILCA mandate that if and when it is necessary to restrict taking of fish or wildlife, subsistence users will be given a priority over other user groups. Continued implementation of the ANILCA provisions should mitigate any increased competition from resource users other than subsistence users. The superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

VI. AVAILABILITY OF OTHER LANDS

A CRN station requires AC power nearby, and an assurance that the area will not be developed over the long term. The location selected for the CRN site meets these criteria without interfering with other park activities such as the current woodlot or hiking trails. The proposed action is consistent with NPS mandates and the General Management Plan and is not expected to impact subsistence uses. Subsistence users also utilize other Federal, State and private lands within the region for subsistence activities.

VII. ALTERNATIVES CONSIDERED

A “no action alternative” to preserve the status quo was considered in preparing this analysis. This alternative was rejected in favor of the proposed action alternative because it did not provide for long term climate records and provide ability to reference ancillary weather stations to the national network. No other alternatives were considered in this analysis since the proposed action is both site and project-specific.

VIII. FINDINGS

This analysis concludes that the proposed action would not result in a significant restriction of subsistence uses.