

**Compatibility Determination**  
**Alaska Maritime National Wildlife Refuge**  
**Homer, Alaska**

**Use:** Rights-of-Way/Research. The University NAVSTAR Consortium, Inc. (UNAVCO) has applied for a right-of-way permit to install high precision geodetic monitoring stations on lands administered by the Alaska Maritime National Wildlife Refuge to track the physical processes that control earthquakes and volcanic eruptions.

**Refuge Name:** Alaska Maritime National Wildlife Refuge, Kenai Peninsula Borough, Homer, Alaska.

**Establishing and Acquisition Authority(ies):** Alaska National Interest Lands Conservation Act of (ANILCA; 94 Stat. 2371) December 2, 1980. This act established the Alaska Maritime National Wildlife Refuge by merging 11 previously existing refuges and adding additional acreage. The use requested in this right-of-way would include lands on the following islands: Chernabura, Sutwik, and Chirkof (Alaska Peninsula Unit), and Ushagat (Gulf of Alaska Unit).

**Refuge Purposes:**

**Alaska Maritime Refuge (ANILCA, Section 303(1)(B)):**

- i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
- ii) to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
- iii) to provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;
- iv) to provide a program of national and international scientific research on marine resources; and
- v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i) water quality and necessary water quantity within the refuge.

**National Wildlife Refuge System Mission:** The mission of the National Wildlife Refuge System is *“to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”* (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

**Description of Use:** The University NAVSTAR Consortium, Inc. (UNAVCO), a non-profit corporation funded by the National Science Foundation, has requested a right-of-way permit to install, operate, and maintain seismic monitoring equipment on lands administered by the Alaska Maritime National Wildlife Refuge. The four islands on which the equipment would be placed are Chernabura, Sutwik, Chirikof, and Ushagat. The proposed installation would begin in 2008 once all approvals are obtained for a right-of-way permit, which would be issued for a period of 20 years. A description of the project with photographs of the equipment, maps of the project area, and land status information is included in the *Environmental Assessment, Plate Boundary Observatory Global Positioning System Network, Installation and Maintenance on the Alaska Maritime National Wildlife Refuge* (USFWS 2008). The environmental assessment can be viewed at <http://alaska.fws.gov/nwr/planning/completed.htm>. A summary of the information contained in the environmental assessment follows.

The proposed project is part of a large monitoring network known as the Plate Boundary Observatory (PBO) which consists of about 1,000 continuously operating Global Positioning System (GPS) stations in the continental United States and Alaska. The network is used to monitor physical processes that control earthquake and volcanic eruptions. These data may be useful in providing hazard warnings to the public.

The equipment to be installed on each island consists of a GPS monument, equipment enclosure, and solar panels. On Chirikof Island only, a seismometer vault containing two seismometers will be co-located with the GPS equipment.

The GPS Monument is basically a tri-pod (not more than 6 feet high) with a small 16 inch diameter dome mounted on top. The small equipment enclosure (70 inches x 48 inches x 55 inches) is a prefabricated fiberglass hut that encloses the power and communications equipment. The fiberglass hut supports two solar panels, and two additional solar panels would be mounted on a supporting framework adjacent to the hut.

The seismometer vault is a 95-gallon drum with the bottom cut off in which the two seismometers are placed. The vault is buried so the top of the vault is below the surface of the ground.

Because of the size and weight of the equipment and the steep, road-less terrain of the islands, helicopters would be used to transport materials for installation and for maintenance checks, during which the heavy batteries powered by the solar panels will be replaced. Maintenance visits would be scheduled approximately once every three years for the duration of project.

**Availability of Resources:** The project is funded by the National Science Foundation. The use will require staff time during the permitting process, which will be reimbursed by the applicant, but once established, these unattended, remote, monitoring stations will require little staff time or funds except for periodic site inspections to monitor permit compliance. Permit stipulations requiring the Permittee to reimburse staff time and provide transportation to these sites for permit compliance monitoring will defray costs associated with permit oversight.

**Anticipated Impacts of the Use:** Use of a portion of the refuge for unattended, remote seismic monitoring is a non-program use that does not contribute to the primary objectives of the National Wildlife Refuge System. However, permission for such uses may be granted if the use is found to be compatible; that is, when the use will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or purposes for which the refuge was established (50 CFR 29.21). Seismic monitoring as a research activity was found to be a compatible use of the refuge in an Alaska Maritime National Wildlife Refuge compatibility determination dated September 20, 1994. However, this general Research Compatibility Determination recommended an environmental assessment be prepared for proposed projects to specifically evaluate effects of the use on Refuge resources and purposes.

In the *Environmental Assessment, Plate Boundary Observatory Global Positioning System Network, Installation and Maintenance on the Alaska Maritime National Wildlife Refuge* (USFWS 2008), the proposed UNAVCO seismic monitoring project was evaluated and found to have minimal impact on Refuge wildlife, vegetation, or infrequent visitors during the short-term installation phase and the long-term maintenance phase provided permit conditions and stipulations were included in the right-of-way permit to lessen or avoid impacts. The permit stipulations to be included in the permit are listed in their entirety at the end of this document. Included are measures prohibiting helicopter access for installation and maintenance work between May 15 and September 15 to avoid disturbance to Steller sea lions during the pupping season, and to nesting birds, particularly seabirds, which often nest in dense colonies. If an event occurred warranting a maintenance visit during the sensitive summer time period, the Refuge Manager would have the latitude to approve or disapprove the visit and specify additional precautions if approved. Other stipulations to lessen impacts from helicopter use are flight separation minimums between aircraft and noise sensitive areas like seabird colonies and Steller sea lion rookeries or haul-outs. Federal Regulations also prohibit approach on foot within ½ mile, or within sight, of a documented Steller sea lion rookery or haul-out, and boat access within a three mile radius of a rookery site.

Stipulations addressing visual and vegetative impacts include painting equipment to blend with the surrounding environment to lessen visual impacts, and re-vegetating and restoring sites upon permit expiration or completion of the project.

An evaluation of the effects of this project on subsistence uses and needs in the vicinity of this project was completed in 2007, with a determination of no significant restriction in subsistence uses.

**Public review and comment:** A news release announcing the availability of the environmental assessment and draft compatibility determination was prepared and released for a 30-day public comment period from February 21, 2008, through March 21, 2008 to the following: U.S. Fish and Wildlife Service Region 7 Planning Web site and stakeholder email list, Alaska Maritime National Wildlife Refuge web site, and U.S. Fish and Wildlife Service Region 7 External Affairs statewide and local news media (radio, television, print) outlets.

**Comments Received:** During the public comment period, we received only one response, which was from the State of Alaska. The State is highly supportive of the PBO project and the proposal to add four GPS stations and one seismometer to the Alaska network. The State expressed concern about limiting the GPS stations to non-wilderness areas; however, only non-wilderness locations were requested in the right-of-way permit application.

**Determination:**

This use is compatible

This use is not compatible

**Special Conditions/Stipulations Necessary to Ensure Compatibility:** The project area includes islands in the Alaska Peninsula and Gulf of Alaska Units of Alaska Maritime Refuge. Conditions to be incorporated into the right-of-way permit to lessen impacts on refuge lands and resources include:

1. At least three months prior to initiating field work each year, UNAVCO shall notify the Division of Realty and the Refuge Manager of scheduled field work, including flight plans and time frames for completion of work at each seismic station. The Permittee shall also provide the Refuge Manager with (1) the name and method of contact for the field party chief/supervisor; (2) the identification information for aircraft and other vehicle types to be used; and (3) any changes to the scope of work that was detailed in the permit application.
2. Field work must be conducted before May 15 or after September 15 unless previously approved by the Refuge Manager. Scheduling of unanticipated emergency maintenance visits to seismic sites on refuge lands must be coordinated with the Refuge Manager.
3. UNAVCO is responsible for ensuring that all personnel, including employees, aircraft pilots, and any other persons conducting activities under this permit are familiar with and adhere to the conditions of this permit.
4. The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft flying over refuge land maintain a minimum altitude of 2,000 feet above ground level (AGL), except for take off and landing, as detailed in the Federal Aviation Administration (FAA) Advisory Circular 91-36C, "Visual Flight Rules (VFR) Flight Near Noise-Sensitive Areas".
5. If an unanticipated emergency maintenance visit is authorized during the May 15 to September 15 timeframe, AVO pilots are prohibited from flying over, or within ½ mile of documented seabird colonies. These areas will be identified in consultation with the Refuge Manager at the time the approval is obtained. However, in some cases (e.g.

colonies comprised solely of burrow nesting species), the Refuge Manager may authorize flights within this ½ mile radius. In other cases, the Refuge Manager may require a broader ‘no-fly-radius’ of one mile or more, in order to adequately protect especially sensitive colonies.

6. Aircraft or helicopter pilots are prohibited from flying over, or within ½ mile of documented Steller sea lion rookeries identified in 50 CFR 223.202 (Table 1). The UNAVCO scientists are prohibited from approaching on land within ½ mile, or within sight, of a documented rookery or haulout. Boats may not approach within three nautical miles. The same precautions should be taken in the vicinity of haulouts identified in 50 CFR 226 (Table 2).
7. The construction or clearing of landing strips or pads is prohibited. Incidental hand removal of rocks and other minor obstructions may be permitted.
8. Any action by a permittee or the Permittee's employees which unduly interferes with or harasses other refuge visitors or impedes access to any site is strictly prohibited. Examples of prohibited acts include, but are not limited to, low flights over camps or persons at less than 500 feet (unless landing).
9. The UNAVCO staff and/or authorized agents shall restrict their activities to the installation sites.
10. Prior to traveling to each island, bags, boxes, and equipment will be checked for small rodents or signs of rodents, such as chew holes in boxes, as well as seeds and insects, to prevent transmission of invasive species to the islands. Drilling equipment must be washed before and after each site is drilled to prevent transmission of non-native plant material and seeds. Boats used to transport materials or helicopters for construction or maintenance activities shall be rodent free.
11. Fuel caches are authorized during the construction phase of the project only. Fuel containers shall be properly stored and marked with the Permittee’s name, type of fuel and last date of filling. Fuel barrels shall be stored on end, with openings upright. All fuel containers, including those emptied, shall be capped when not in actual use. Any spills in excess of 5 gallons must be reported to the Refuge Manager.
12. Spill containment/clean-up supplies (sorbents and overpacks) will be available at all times for use at fuel storage sites, remote caches, and temporary caches. Provide sorbent material in sufficient quantity to recover at least 10 percent of the volume of the largest container.
13. All solid waste and building materials shall be removed from the site after construction, and solid waste and batteries shall be removed after each maintenance visit and not allowed to accumulate. Used batteries shall be disposed of at a licensed disposal site for used batteries, off of the refuge.

14. All structures (fiberglass huts, steel boxes, etc) shall be painted to blend in with the environment as much as possible. UNAVCO will coordinate with the Refuge Manager on color selection for the equipment.
15. Within three years of monitoring cessation, the monument, electronics huts, solar panel swing set structure, and associated conduit shall be removed and the area restored to its original condition. If individual seismic stations are decommissioned prior to the end of the project, all equipment must be removed from those sites, and the area restored to its previous condition, within one year of monitoring cessation at those sites, even if monitoring is continuing elsewhere.
16. In accordance with the Archaeological Resources Protection Act (16 USC 470aa), the disturbance of archaeological or historical sites and the removal of artifacts from Federal land is prohibited. The excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archaeological specimens or artifacts is prohibited. Permittee agrees to cease work on Federal land immediately upon discovery of any cultural resources or when ordered to do so by the Refuge Manager.
17. The use of Native or State lands that have been conveyed (patented) is not authorized by this permit.
18. Any problems with wildlife and/or animal taken in defense of life or property must be reported immediately to the Refuge Manager and the Alaska Department of Fish and Game and be salvaged in accordance with State regulations.
19. All or part of this permit may be terminated by the Service for failure to comply with any or all of the terms or conditions of the grant, or for abandonment. A rebuttable presumption of abandonment is raised by deliberate failure of the Permittee to use for any continuous two-year period the permit for the purpose for which it was granted or renewed. In the event of noncompliance or abandonment, the Service will notify the Permittee in writing of its intention to suspend or terminate the grant 60 days from the date of the notice, stating the reasons therefore, unless before that time the Permittee completes such corrective actions as are specified in the notice. The Service may grant an extension of time within which to complete corrective actions when, in its judgment, extenuating circumstances not within the Permittee's control such as adverse weather conditions, disturbances to wildlife during breeding periods or periods of peak concentration, or other compelling reasons warrant. Failure to take corrective action within the 60-day period will result in suspension or termination of the permit.
20. The Permittee will provide to the Regional Director upon completion of establishing said GPS station the geographic coordinates for each GPS station, and other improvements installed under this permit and copies of the latest USGS 1:63,360 Quadrangle Maps of the areas involved showing the location of each of these sites.

21. The Permittee shall reimburse the United States for reasonable costs incurred by the Fish and Wildlife Service in monitoring the construction, operation, maintenance, and termination of facilities within or adjacent to the permit area.
22. The permittee will provide to the Regional Director of the U.S. Fish and Wildlife Service copies of all reports, studies, and surveys conducted and prepared for lands covered under this permit.

**Justification:** The installation of GPS units and seismometers for seismic monitoring, as proposed by UNAVCO, would not interfere with the purposes for which the refuge was established if the following conditions are met: 1) The project is situated on specific lands approved by the refuge and only if private lands in the vicinity are not suitable or available 2) The equipment is installed in non-wilderness locations away from concentrations of wildlife as approved by the refuge 3) Special stipulations are incorporated into the right-of-way permit to ensure all activities are conducted in an environmentally sound manner and to address any wildlife or resource concerns identified by the refuge, including timing and method of access 4) Cumulative impacts of the project to the Refuge System in Alaska remain within acceptable limits of compatibility as determined by the Refuge Manager(s) and Regional Chief of Refuges.

The installation of these GPS stations will contribute to the public's understanding of natural geologic processes and how those processes correlate with earthquake and volcano activity in the areas to be monitored. The data may be useful in providing hazard warnings to the public.

**Supporting Documents:**

1. Appropriate Uses
2. Environmental Assessment (USFWS 2008)
3. Section 810 Evaluation and Finding (USFWS 2007)

**NEPA Compliance for Refuge Use Decision:**

Categorical exclusion without environmental action memorandum

Categorical exclusion and environmental action memorandum

Environmental assessment and finding of no significant impact

Environmental impact statement and record of decision

**Refuge Determination:**

**Signature:** Refuge Manager/  
Project Leader  
Approval:

*/s/ Gregory E. Siekaniec 1 April 2008*  
**Signature and Date)**

**Concurrence:** Regional Chief  
National Wildlife  
Refuge System:

*/s/ Todd J. Logan 4/8/08*  
**(Signature and Date)**

**Mandatory 10-year Re-evaluation Date:** April 2018