

**U.S. Department of the Interior
Fish and Wildlife Service
Region 7, Alaska**

FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment:

**Installation of Temporary Seismometer Stations on Multiple Wildlife Refuges in Alaska
(EarthScope)**

The Department of the Interior, U.S. Fish and Wildlife Service (Service) is considering an application from the Incorporated Research Institutions for Seismology (IRIS) to install infrastructure as part of a project to collect data on seismic activity. These seismograph stations would contribute as a part of the nationwide EarthScope Transportable Array (USArray). The installations would be for a term of 5 years.

Eleven (11) seismograph stations are proposed for installation on seven (7) National Wildlife Refuges (NWRs) across Alaska. These would complement the existing network of seismic stations in Alaska, approximately 294 other stations now being installed across Alaska and northwestern Canada, and a system operating in the contiguous United States and Canada.

The USArray is one segment of EarthScope, an extensive earth science research project funded by the National Science Foundation and operated by IRIS, a nonprofit 503(c) corporation comprised of a consortium of over 100 US universities dedicated to the operation of science facilities for the acquisition, management, and distribution of seismological data. The USArray is a temporary seismic monitoring network that collects and analyzes seismic data for use in improving the understanding of active tectonics, and geologic history of the North American continent. Data collected will provide new insights into earthquake processes and improve earthquake and tsunami warning systems for hazard mitigation. The array images the deep structure of the earth and records earthquakes. The resulting data is made immediately available to Federal agencies and researchers worldwide. The USArray has installed over 1,700 seismometer stations across the contiguous United States and Canada in an array with approximately 42-mile grid spacing. The seismometers in Alaska will remain in place for up to 5 years at which time the equipment will be removed and the sites restored to their original states.

Refuges with Proposed Installations	Number of Sites
Alaska Peninsula - Becharof NWR	1
Arctic NWR	4
Koyukuk-Nowitna-Innoko NWR	2
Togiak NWR	1
Yukon Flats NWR	3
Total	11

Alternatives Considered

Two alternatives were considered for analysis.

Alternative A – No Action

Under Alternative A, the No Action Alternative, the Service would not grant a right-of-way (ROW) permit. The project would not go forward on refuge lands.

Alternative B – Proposed Action

Under Alternative B, the Service would issue the requested ROW permit for the temporary installation of 11 new seismic monitoring stations on 7 NWRs in Alaska.

Access to each site would be by helicopter and would require approximately 4 to 6 trips over 2 to 3 days to transport and install each monitoring station. A helicopter would also be needed for access to perform occasional routine maintenance at the sites and for removal of all equipment at the end of the project.

Footprints of the seismic monitoring stations would be approximately 120 square feet. A fiberglass hut would house an antenna, electronic equipment, and lithium ion batteries that are charged by a solar panel array attached to the hut. The huts would be gel-coated to blend with surrounding areas to reduce visible impacts. A seismometer would be inserted into a borehole approximately 15 feet from the equipment hut. The seismometer would be housed in a 6-inch diameter PVC pipe buried to approximately 15 feet or bedrock. A cable, placed in a shallow cut in the tundra mat to prevent disruption from animals and other natural phenomena, would connect the seismometer to the equipment hut.

Analysis of Impacts

The Environmental Assessment (EA) analyzed direct and indirect impacts on refuge resources including the natural sound environment, vegetation, visual characteristics, and wildlife and habitat. Issues considered but not evaluated in depth include effects on cultural resources, threatened and endangered species, wetlands, minority and low-income populations, and subsistence users.

The Refuges with proposed installations have reviewed the proposal and contributed stipulations which would minimize potential for adverse impacts. Those stipulations are included in the EA and will be included in any ROW.

Noise/Soundscape

NWRs can provide outstanding opportunities for solitude - places to retreat from the sights, sounds, and presence of others, and from the developments and evidence of man. There is a concern that helicopters can be an intrusion on a visitor's opportunity for solitude or enjoyment of a primitive recreational experience. Drilling operations and human activity will generate localized noise.

Noise impacts would be short-term and transitory since flights would occur during installation, occasional maintenance visits, and during removal of the equipment at the termination of the ROW. However, during periods of helicopter activity, there could be an irretrievable loss of solitude.

To reduce noise levels, helicopters will be required to fly at a minimum altitude of 2,000 feet. Additionally, noise impacts will be reduced or eliminated by scheduling flights during periods when there are few users in the area.

Impacts on the soundscape from the proposed project would be anticipated to be minimal.

Vegetation

The footprint for the equipment housing is small, and the proposed installation sites would generally be located on areas where vegetation is thin and interspersed with bare rock and gravel.

Control of non-native plants will be required. Minor crushing and trampling effects can be expected in the areas where the huts and bore holes will be placed.

Impacts on vegetation would be anticipated to be short term and minimal.

Visual Characteristics

Equipment huts will modify the visual characteristics the areas. Visual impacts will be minimized by requiring that equipment huts be designed to blend with the natural summer surroundings.

Impacts on the visual characteristics from the proposed project would be anticipated to be minimal.

Wildlife and Habitat

Most of the equipment would be installed at elevations that receive little use by wildlife. There is, however, the potential for visual and noise disturbance to some wildlife populations, such as peregrine falcons, resulting from helicopter use and human activity.

Helicopters will be required to maintain a minimum altitude and to avoid areas identified by the refuges.

Impacts to wildlife from the proposed project are anticipated to be minimal.

Anticipated Impacts of Alternatives		
Category	Alternative A (No Action)	Alternative B (Proposed Action)
Noise/Soundscape	No new impacts on the natural sounds of the areas.	Minor transitory adverse impacts on the natural sounds of the areas. Helicopter flights can disturb wildlife. Helicopter noise may detract from visitor solitude or primitive recreational experiences. Drilling operations and human activity will generate localized noise. Minimum altitude of 2,000 feet AGL will be required. Date restrictions will minimize impacts.
Vegetation	No new impacts on vegetation	Minor crushing and trampling effects in the areas where the huts and bore holes will be placed. Control of non-native plants will be required.

<p>Visual Characteristics</p>	<p>No new impacts on the visual characteristics of the areas.</p>	<p>Minor effects on the visual characteristics of the areas. Visual impacts would be minimized by designing equipment huts to blend with the natural summer setting.</p>
<p>Wildlife and Habitat</p>	<p>No new impacts on wildlife or habitats</p>	<p>Potential temporary displacement of wildlife. Helicopter flights can disturb game and disrupt hunting activities. Potential for disturbance to ground nesting birds. Potential for entrapment of wildlife in bore holes.</p> <p>Minimum altitude will be required. Known sensitive areas will be avoided. Boreholes and casings will be covered to prevent entrapment.</p>

Public Review

The EA and Finding of No Significant Impact (FONSI) will be made available to the public on the Region 7 website <http://www.fws.gov/alaska/nwr/planning/nepa.htm>

Conclusions

Based on review and evaluation of the information contained in the EA (included by reference) and other supporting documentation, I have determined that the proposed action is similar to other projects which have taken place on refuges in Alaska and will not cause significant individual or cumulative impacts to the human environment, within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, and that the activities described in the EA are not major Federal actions. Accordingly, the Service is not required to prepare an Environmental Impact Statement.

Mitch Ellis

Mitch Ellis

5/18/16

Date

Chief of Refuges, Alaska Region
U.S. Fish and Wildlife Service