

National Park Service
U.S. Department of the Interior

Wrangell-St. Elias National Park and Preserve
Alaska

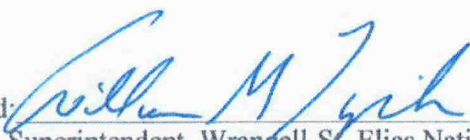


Finding of No Significant Impact

St. Elias Erosion and Tectonics Project

June 2006

Recommended:

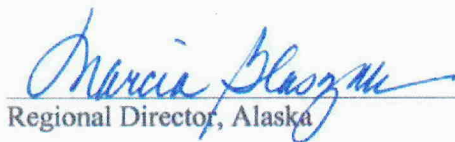
A handwritten signature in blue ink, appearing to read "William M. Zich".

Superintendent, Wrangell-St. Elias National Park and Preserve

6-7-06

Date

Approved:

A handwritten signature in blue ink, appearing to read "Marcia Glasz".

Regional Director, Alaska

6/8/06

Date

FINDING OF NO SIGNIFICANT IMPACT

St. Elias Erosion and Tectonics Project

Wrangell-St. Elias National Park and Preserve, Alaska

June 2006

An environmental assessment (EA) was prepared that would permit expansion and upgrading of the existing seismic station monitoring network in Wrangell-St. Elias National Park and Preserve (WRST) from 17 to 27 stations. To accomplish this expansion, a research permit would be issued to the Geophysical Institute (AGI), affiliated with the University of Alaska Fairbanks, for the St. Elias Erosion and Tectonics Project (STEEP). STEEP seeks an improved understanding of interactions between surface processes and tectonics in active mountain belts.

This would be accomplished by the installation of 10 new seismic stations in WRST to improve earthquake detection and hazard forecasting in the region. Four of the existing 17 stations would also be upgraded. The seismic stations are unmanned and consist of fiberglass hut housing equipment, and a seismometer. Collectively, the seismic stations in WRST are elements of the Alaska Earthquake Information Center (AEIC) seismic monitoring network that catalogs earthquake events for the region. Eleven (11) of the 27 seismic stations would be co-located with a radio repeater or permitted global positioning system (GPS) site. Twenty-five (25) of the seismic stations would be in wilderness, and 10 of the seismic stations in wilderness would be co-located with a radio repeater or permitted GPS site.

The NPS has selected Alternative B: Expand Seismic Monitoring Network with mitigation measures. The alternative was not modified during the public comment period.

No changes were made to the EA and five written comments were received during the public comment period.

ALTERNATIVES

Three alternatives were evaluated in the EA.

Alternative A: No Action

With the No Action Alternative, no additional seismic monitoring stations would be established in WRST. Basic seismic data would continue to be collected using the existing network of 17 seismic stations in WRST. Of the 17 existing stations, 4 are co-located with a radio repeater site or permitted global positioning system (GPS) site. Fifteen (15) of the existing 17 seismic stations are in wilderness, and 3 of the existing seismic stations in wilderness are co-located with a radio repeater site or permitted GPS site. Each station has a footprint of about 120 square feet, or about 0.003 acre. AEIC may upgrade existing stations with replacement or additional equipment as needed. Upgrades at existing sites would involve the installation of telemetry repeaters (radios, antennas, and batteries - all located within the hut).

In the long-term, each of the existing seismic stations would be visited for maintenance once every 4 years during the summer field season to replace batteries. Station maintenance would take 4 hours or less per station. The sites would require use of a helicopter for access. Maintenance would be spread out so that 4 to 5 stations are visited each year for regular maintenance. In the long-term, 2 helicopter days, each day consisting of one round trip flight from the heli-base linking each site scheduled that day, would be required during maintenance years for visits to seismic stations as up to 3 stations can be maintained in one day. Maintenance flights often originate in Valdez or Yakutat. Flight paths are direct from the helibase to the sites.

Alternative B: Expand Seismic Monitoring Network

With Alternative B, the NPS would issue a research permit to implement a long-term seismic monitoring plan at WRST that would include 10 new seismic stations and upgrades of 4 existing seismic stations. The expanded seismic monitoring network in WRST would consist of 27 stations (see figure). Seismic stations must be located on bedrock at high elevations on landforms that have good long-distance lines of site to other stations for data telemetry. Eleven (11) of the 27 seismic stations would be co-located with a radio repeater or permitted global positioning system (GPS) site. Twenty-five (25) of the seismic stations would be in wilderness, and 10 of the seismic stations in wilderness would be co-located with a radio repeater or permitted GPS site.

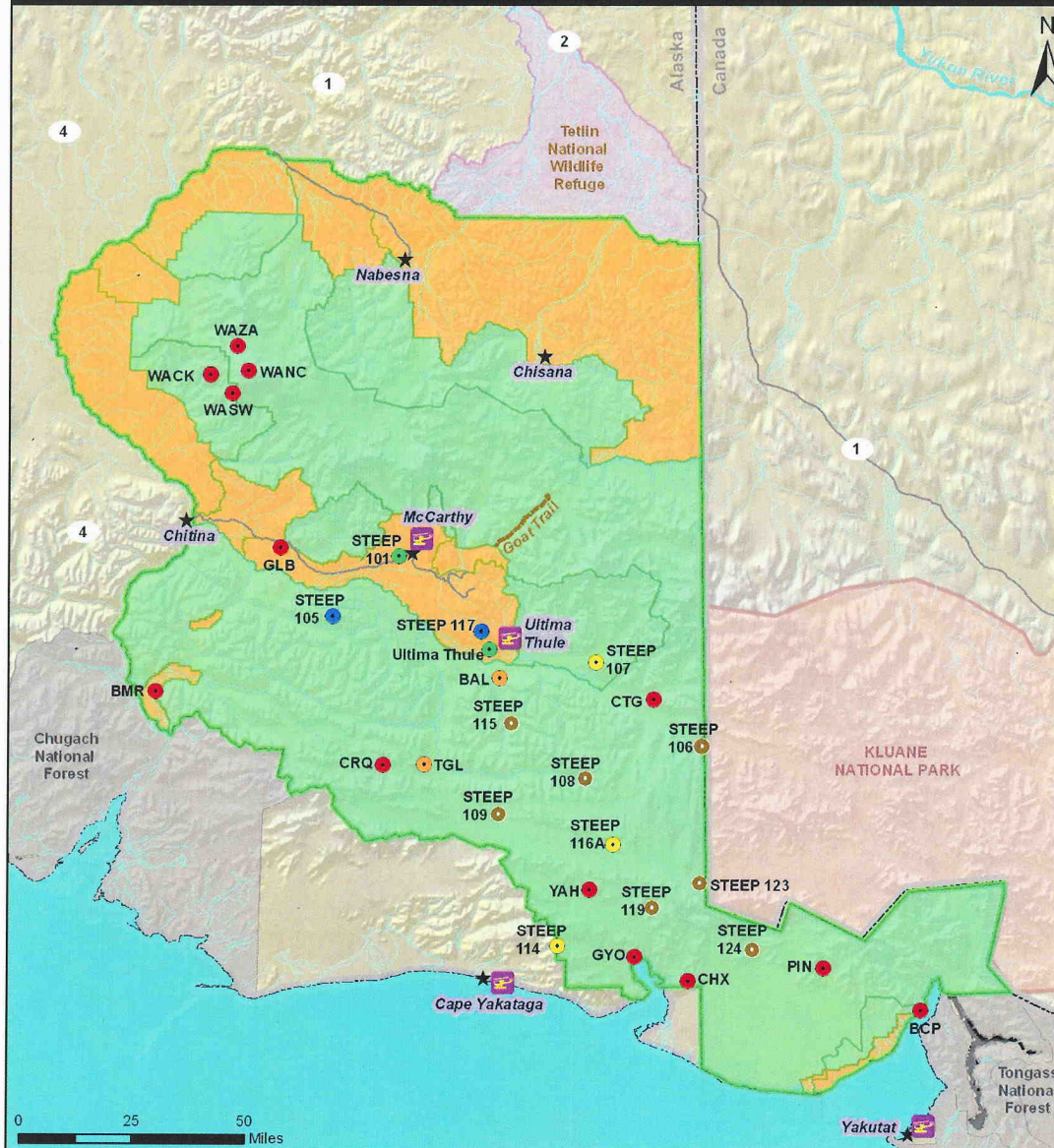
Locations of proposed sites include an "umbrella" of approximately a 2 mile radius to ensure the station locations work with telemetry requirements. A final determination of the actual site-specific station locations would be made in advance of installation during onsite environmental clearance field work in 2006 with an archaeologist, botanist, and a station installation specialist. Installation would not begin until environmental site clearance is completed.

Seismic stations would be installed or upgraded in summer 2006. Each seismic station would require 2-3 days for installation. The field crew would consist of three people who would be dropped off at each site and picked up every day. Installation of the seismic stations would take up to 6 weeks during the 2006 summer field season.

Installation of the new stations and upgrades of existing stations within WRST would require approximately 66 helicopter round-trips for transport of field crews and equipment. Each of the 10 new stations and 2 of the stations being upgraded would require approximately five helicopter flights (from the base of operations or from a remote staging area at an airstrip) for installation (2 flights for personnel, 2 flights to sling huts and vaults, 1 flight for equipment). Upgrades for two existing stations (Mt. Baldy and Tana Glacier) would occur during their regular maintenance schedule. Fixed-wing aircraft would be used to preposition equipment at landing strips close to several of the installation sites, thus reducing the area of the park to be overflown by helicopter and the total amount of helicopter flight time. No aviation fuel would be stored in the park and refueling would occur only outside the park. Helicopter flights would originate from bases at Ultima Thule Lodge, Yakutat, or Cape Yakataga. Flight paths would be direct from the helicopter bases to the sites. In some cases, high elevation terrain would require that helicopters fly up valleys rather than in straight lines from the helicopter base.

Alternative B Wrangell - St. Elias National Park and Preserve

National Park Service
U.S. Department of Interior



Legend

- Wrangell-St. Elias National Park
- Wilderness
- Non-Wilderness
- Helipad Site

- Existing Seismic Station
- Upgrade Existing Seismic Station
- Upgrade Existing Seismic Station; Site Co-located with NPS Repeater
- Proposed Seismic Station
- Proposed VSAT Station
- Proposed Seismic Station; Co-Located with GPS Site

Source: Geophysical Institute, University of Alaska-Fairbanks



Each of the existing and new seismic stations would be visited for maintenance once every 4 years during the summer field season to replace batteries and upgrade equipment. Station maintenance would take 4 hours or less per station. The sites would require use of a helicopter for access. Maintenance would be spread out so that 7-8 stations are visited each year. In the long-term, 3 helicopter days, each day consisting of one round trip flight from the helicopter base linking each site scheduled that day, would be required during maintenance years for visits to seismic stations as up to 3 stations can be maintained in one day.

The footprint for the new seismic monitoring stations at each site would be about 120 square feet or 0.003 acre. A specially designed 4-foot by 4-foot fiberglass weatherproof hut about 5 feet high would house an antenna, electronic equipment, and gel cell batteries that are charged by a 2-foot by 3-foot solar panel array attached to the hut. The hut would be gel-coated a color to blend with the surrounding area so it would not be highly visible. A seismometer placed in a small polyethylene drum with less than a 2-foot diameter and approximately 2-3 feet high would be mostly buried at each new location (about 6 inches would remain above ground). A buried cable in flexible conduit would link the seismometer with telemetry equipment inside the hut. Cables to be buried between the vault containing the seismometer and the hut containing batteries and telemetry gear would vary in length according to characteristics of each site. Lengths would generally be 5 to 20 feet depending on the type of ground. In solid bedrock, vaults are located close to the huts and cable lengths are on the order of 5 feet. In looser bedrock or unconsolidated soils vaults are located farther from the huts, so that vibrations or "noise" generated by the huts (e.g. in high winds) will not be recorded by the seismometer, and a cable length of approximately 20 feet is desirable. Decisions about which cable length to be used would be made when stations are installed.

Upgrades for two of the existing sites (Patty Peak and Verdi) would involve installation of telemetry repeaters located inside existing NPS facilities. Antennas would be placed on the existing NPS towers and radios would be located inside the existing NPS huts. Also, a seismometer in a ground in a poly drum would be installed, as well as a buried cable between the drum and the NPS hut. These upgrades would increase the footprint of each site by about 7 square feet. At the other two sites, (Tana Glacier and Mt. Baldy), one hut mounted with solar panels (the same type as at new STEEP sites) would be installed. This would increase the footprint of each site by approximately 16 square feet. Additionally, one 3 foot diameter steel culvert, a solar panel array, and an antenna mast would be removed at the Tana Glacier and Mt. Baldy stations. Removal of this equipment would reduce the footprint of each site. AGI may upgrade other existing stations with replacement or additional equipment as needed. Upgrades at existing sites would involve the installation of telemetry repeaters (radios, antennas, and batteries all located within the hut).

There would also be 2 additional new sites on private lands that are not subject to NPS permitting. One site near McCarthy would have a new seismic station and very small aperture terminal (VSAT); a second site at Ultima Thule Lodge would have a VSAT only. VSAT is a satellite communications system for two way data transmission. The VSAT stations would be used to transmit real time seismic data to AEIC via the Internet. Individual seismic stations would transmit and/or relay their data to the VSAT sites where the signals are then routed onto the Internet and sent to AEIC in Fairbanks.

Seismic monitoring sites are intended to be permanent installations and would be operated and maintained indefinitely. It is recognized that advancements in technology may render the equipment at each site obsolete at some point in the future. Existing installations would be upgraded with newer equipment as needed to maintain the network, and obsolete equipment would be removed at those times. If station upgrades should reduce the footprint of the stations in the future, then sites would be restored (to original soil surfaces and slope angles) and revegetated passively.

Alternative C: Maximum Expansion of Seismic Monitoring Network

The long-term seismic monitoring plan under Alternative C would install, upgrade, operate and maintain all the proposed and existing seismic and VSAT stations described under Alternative B, as well as five additional seismic sites in the north part of WRST, for a total of 34 stations (32 in WRST). Two of the five additional seismic stations would be established in designated wilderness and one would be on the wilderness boundary. All five sites would be co-located with NPS radio repeater sites. Descriptions under Alternative B for determining final site locations, environmental clearance, installation, maintenance, site footprints, and equipment are applicable to Alternative C.

The five additional seismic stations proposed under Alternative C would be installed along the portion of the Denali/Totschunda Fault System that bisects the northeast corner of WRST and extends southeast toward Yakutat through Kluane National Park. One of the new stations that would be established with Alternative C, AEIC 08, would replace the existing station at Bancas Point (BCP). AEIC 08 would be co-located with an existing NPS radio repeater at Terrace Point. BCP would be decommissioned; the antenna mast, solar panels, and other equipment would be removed and the site restored.

PUBLIC INVOLVEMENT

The EA was released for 30-day public review and comment from April 6 to May 6, 2006. The EA was available online through the NPS Planning, Environment, and Public Comment (PEPC) public website. The park issued a press release announcing the availability of the EA and the public comment period on April 3, 2006. The news release was aired by radio stations in Valdez and Glennallen, Alaska, during the public comment period. No public meetings were scheduled, and none were requested by the public.

Written comments were received from the Department of the Army, U.S. Army Engineer District, Alaska; State of Alaska, ANILCA Implementation Program; National Parks Conservation Association (NPCA); and one private individual. The comments from the Department of the Army, State of Alaska, and NPCA required a formal NPS response (see errata for comments and NPS responses). No other comments were received.

DECISION

The NPS decision is to select Alternative B (NPS Preferred Alternative and Environmentally Preferred Alternative) along with the mitigating measures. No modifications of the alternative were made during or after the public comment period.

Mitigating Measures

The following mitigation measures apply to Alternative B.

Topic	Mitigation Measures
Soils	The seismic stations would be anchored in such a way to avoid disturbing any soils present. Guy anchors would be driven into the ground between rocks. If necessary, holes no greater than ½ inch in diameter would be drilled into bedrock to facilitate the anchoring of guy lines. Seismic huts and drums would be located on barren locations when possible. Walking on the site and the temporary storage of supplies would be on barren ground or rock rather than on plants or soil. Helicopter landing zones, wherever possible, would be on snow or bare rock.
Vegetation	<p>The seismic station sites would be surveyed by qualified botanists prior to equipment installation for the presence of rare plant species as designated by the Alaska Natural Heritage Program. Where practical, all efforts would be taken to mitigate effects on rare plants by avoiding sites with such plants. Time would be allowed for questionable taxa to be reviewed by specialists so that correct determinations can be made and a report prepared. Helicopter landing zones, wherever possible, would be on snow or bare rock.</p> <p>Although very little vegetation is present at most of the proposed sites, where the surfaces of rocks are covered with lichen, disturbance of those rocks would be minimized. If rocks need to be moved, the surface rocks with lichen on them would be carefully set aside and rocks from underneath would be used. Rocks with lichens on them would be left lichen-side up and in their original location when possible. Where other plants are present, care would be taken to minimize disturbance (e.g., stepping on rocks where possible rather than on plants).</p>
Wildlife	<p>To the extent possible, installation and maintenance activities would be timed to avoid sensitive periods, such as nesting season. Aircraft would not fly over wildlife. If animals (e.g., Dall sheep or bears) are observed near the seismic station sites, flights would be rerouted or rescheduled in order to avoid or minimize disturbance. No helicopter flights would be made over Dall sheep habitat (above the 4000-foot contour north of the Chitina River) from August 5 through September 20.</p> <p>In addition to meeting all Federal Aviation Administration and NPS helicopter policy and aircraft requirements, mitigation common to all alternatives for both fixed wing and helicopter flight paths would include:</p> <ul style="list-style-type: none"> • Maintenance of a 1,500 foot vertical or horizontal clearance from traditional summer and calving or other habitats supporting reproduction as well as adult animals whenever feasible. This includes brown and black bear, moose, caribou, Dall sheep, and wolves. • Pilots shall not hover, circle, harass, or pursue wildlife in any way. • Where feasible, flight paths will avoid known Dall sheep breeding areas from May 15 through June 15. • A minimum quarter-mile clearance will be maintained from all active eagle nests. All nests are considered active from March 1 to May 31. Nests used for nesting activity are considered active through August 31.
Threatened & Endangered Species (Candidate for Listing)	<p>The following mitigation measures have been prescribed to avoid or minimize possible nesting disturbance to Kittlitz's murrelet, a candidate species, associated with human activity and helicopter use south of the St. Elias range:</p> <ul style="list-style-type: none"> • Helicopter landing zones will be approached from the north • Avoid helicopter flights and station installations near south-facing slopes • Overflights will be at altitudes greater than 1000 feet above ground level while avoiding ridges and potentially suitable nesting habitat • Flights will be up glacial valleys when transiting between proposed seismic station sites and bases of operation

Wilderness Values	<p><i>Solitude and Naturalness</i> Guidelines set forth by the Helicopter Use Policy for WRST (NPS, 2005b) would be followed. In planning flight paths, all feasible measures would be undertaken to avoid and/or minimize impacts to backcountry users. Planned flight routes would be sent for approval by the park superintendent and maintained by the park dispatcher. Travel routes would be as efficient as possible to minimize flights over conflict areas.</p> <p>Sensitive areas, including high public use areas and high resident use areas, would be avoided by aircraft when feasible. Helicopter altitude and horizontal distances would be maintained according to the park helicopter use policy. Helicopter use could be shared between AEIC and NPS at sites that are co-located with radio repeaters to cut down on helicopter intrusions in wilderness.</p> <p>With remote “state-of-health” monitoring capability, typically the type of malfunction which may occur at a site is known before embarking on a helicopter flight for maintenance of a station. Since problems can be diagnosed beforehand, the number of flights needed to perform maintenance, as well as the amount of time required at each site to perform the necessary repairs, is minimized.</p> <p><i>Visual Resources</i> Where possible, the antenna on the seismic stations would be installed in such a way so as not to protrude beyond the silhouette/horizon of the nunatak or ridge. Antennas would be painted with appropriate colors to blend in with each environment. The huts are painted gray in order to blend into most landscapes. The gray color was selected when the huts were designed, by the Alaska Volcano Observatory, as the most neutral color that would best blend in to a variety of steep, rocky, alpine settings. The color of the drums (yellow) cannot be changed; however, the small portion (~ 6 inches) of the drum that is exposed above the surface would be covered with a pile of rocks gathered from the vicinity of the station, or with rocks that were excavated from the hole that is dug for the vault.</p> <p><i>Visitor Experience</i> Signs would be posted on the station equipment explaining its purpose and listing a person to contact if visitors who happen upon the site have any questions. Use of helicopters during hunting season in areas of known hunting would be avoided. Flight paths would avoid known wilderness users and areas where users are known to concentrate or visit frequently. Sites 107, 108, 109, 114, and 119 are close to airstrips where equipment may be staged by fixed wing aircraft, thereby reducing the length of helicopter flights required to install the stations. This would reduce the area of the park to be overflowed and the total amount of flight time, thereby reducing noise intrusions on visitors.</p>
Cultural Resources	<p>Archeological site clearance would be conducted prior to installation of equipment. An archaeologist would be onsite to monitor for cultural resources during ground altering activities. If archaeological features are encountered during equipment installation, work would cease immediately; the park superintendent and cultural resource specialist would be notified. The archaeological site would be documented, avoided, and the documentation submitted to the agency for a determination of eligibility to the National Register of Historic Places. Depending on the nature and boundaries of the site, the seismic station would be moved a minimum of 50 feet away from the archaeological site.</p>

Rationale for the Decision

Alternative B: Expand Seismic Monitoring Network will satisfy the purpose and need of the project better than the other two alternatives. Of the three alternatives analyzed, Alternative B balances the need for increased scientific research and monitoring with wilderness protection; and effectively addresses the need for expanded monitoring to assess the possibility of future large earthquakes in the St. Elias range. A plurality of government agencies, including AEIC, the U.S. Geological Survey, the Alaska Division of Geological and Geophysical Surveys, and the Alaska Division of Homeland Security and Emergency Management agree that WRST and its surrounding environs are the most likely source of the next large earthquake (magnitude 7 to 8) that will occur in south central Alaska. All of these agencies have called for increased seismic monitoring in WRST.

Alternative A: No Action is the environmentally preferred alternative. Alternative A was not selected because it would not balance the need for increased scientific research. Even though the existing seismic monitoring network in south central already includes 17 existing seismic stations in WRST, including 15 existing stations in designated wilderness, all 17 seismic stations would remain in operation regardless. While Alternative A would have the fewest environmental effects, Alternative B, with additional seismic stations in wilderness, combined with recurring helicopter use for installation and recurring maintenance, will detract somewhat from wilderness values; however, the stations have a small footprint, and can be easily removed, if desired, with restoration of environmental and wilderness values.

Alternative C: Maximum Expansion of Seismic Monitoring Network was not selected because it would require increased helicopter use in wilderness for station installations and recurring maintenance, and the greatest level of environmental effects of the alternatives evaluated in the EA.

The EA evaluated the effects of Alternative B on a range of environmental and wilderness values. The greatest adverse impacts on any of these features would be moderate and temporary adverse impacts on wilderness solitude and naturalness associated with helicopter activity during seismic station installation and maintenance; and minor long-term adverse impacts on wilderness solitude and naturalness associated with the physical presence of the seismic stations.

Alternative B was also subjected to the wilderness Minimum Requirement-Minimum Tool (MRMT) analysis by the National Park Service; this analysis was found to support the decision to implement Alternative B.

The NPS believes that the conclusions in the EA and wilderness MRMT regarding the environmental effects of the proposed action support its decision to issue this finding of no significant impact.

Significance Criteria

The preferred alternative does not conflict with any of the following significance criteria (40 CFR Section 1508.27). Therefore, Alternative B will not have a significant effect on the human environment.

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. The EA evaluated the effects of Alternative B on soils, vegetation, wildlife, threatened and endangered species (candidate for listing), wilderness values, cultural resources, seismic monitoring and hazard forecasting. The greatest adverse impacts on any of these features would be moderate and temporary adverse impacts on wilderness solitude and naturalness associated with helicopter activity during seismic station installation and maintenance; and minor long-term adverse impacts on wilderness solitude and naturalness associated with the physical presence of the seismic stations. The greatest beneficial impacts on any of these features would be minor long-term beneficial impacts on seismic monitoring and hazard forecasting. There would be no significant restriction of subsistence uses.

(2) The degree to which the proposed action affects public health or safety. The proposed action would not have adverse effects on public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. Known unique characteristics are WRST and the Wrangell-St. Elias Wilderness. The number of seismic stations in designated wilderness would increase from 15 to 25. There would be moderate and temporary adverse impacts on wilderness solitude and naturalness associated with helicopter activity during seismic station installation and maintenance; and minor long-term adverse impacts on wilderness solitude and naturalness associated with the physical presence of the seismic stations.

(4) The degree to which effects on the quality of the human environment are likely to be highly controversial. The effects on the quality of the human environment are not likely to be highly controversial. A total of four public comments were received on the EA; the public comments do not indicate that a high level of public controversy exists.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. The degree or possibility that the effects on the human environment would be highly uncertain or would involve unique or unknown risks is extremely remote. There are 17 existing seismic stations in WRST, many of which were in operation prior to establishment of WRST.

(6) The degree to which the action may establish a precedent of future actions with significant effects or represents a decision in principle about a future consideration. The degree or possibility that the action may establish a precedent of future actions with significant effects or represents a decision in principle about future considerations is extremely remote.

(7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.* The action would enhance current capabilities for seismic monitoring and hazard forecasting. The action is not related to other actions of individual insignificance that would amount to cumulatively significant impacts on the environment.

(8) *Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.* There are no features in the project area listed in the National Register of Historic Places. There are no known features in the project area eligible for listing in the National Register of Historic Places. The degree or possibility that the action may cause loss or destruction of known scientific, cultural, or historic resources is extremely remote.

(9) *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.* The action includes mitigation to avoid adverse impacts on nesting habitat and activity of Kittlitz's murrelet, a candidate for listing. The degree or possibility that the action may adversely affect this species is remote.

(10) *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.* The action would not cause a violation of any Federal, State, or local law or requirements for environmental protection.

FINDINGS

The levels of adverse impacts to park resources anticipated from the selected alternative will not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or that are key to the natural or cultural integrity of the park.

The selected alternative complies with the Endangered Species Act, the National Historic Preservation Act, and Executive Orders 11988 and 11990 for floodplains and wetlands. There will be no restriction of subsistence activities as documented by the Alaska National Interest Lands Conservation Act, Title VIII, Section 810(a) Summary Evaluation and Findings.

The NPS has determined that the selected alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement is not needed and will not be prepared for this project.

Errata

May 19, 2006

NPS RESPONSE TO PUBLIC COMMENTS

A 30-day public comment period was provided for the EA from April 6 to May 6, 2006. Four written public comments were received during the public comment period. Substantive comments were received from the Department of the Army, U.S. Army Engineer District, Alaska; State of Alaska ANILCA Implementation Office; and National Parks Conservation Association. Substantive comments are those that modify the existing alternatives, propose new alternatives not previously considered, supplement, improve, or modify the impact analysis, or make factual corrections. These comments did not change the EA conclusions about the effects of the proposed action or other alternatives. The paraphrased comments and the NPS responses follow.

Department of the Army Comment: Based on our review of the information provided in your EA, and available to us, we are unable to determine if the proposed work described would occur in a water of the U.S., including wetlands, under DA jurisdiction. Your EA stated that the proposed seismic station sites would not be located in or adjacent to any wetlands. Please provide rationale for this conclusion. A Department of the Army authorization may be required if you propose to place dredged and/or fill material into waters of the U.S., including wetlands or perform work in navigable waters of the U.S.

Response to Department of the Army: *New seismic stations will be situated on sites that are above 4475 feet in elevation; near the tops of peaks, on nunataks within icefields, or near the tops of ridges to achieve clear lines of sight over long distances for data telemetry between stations; and on ground that is dry, predominately rocky, and free of vegetation, preferably on bedrock, to enable higher quality recordings of seismic signals. Wetlands or sites near water are unsuitable for installation of seismic stations and were not selected. Seismic instruments cannot be placed in wet soils because the ground is too unstable to support the installations and allow clear recordings of seismic signals. Ground disturbing activities will be limited to small excavations for the seismic station footprint. About 10 cubic feet of rock or soil materials will be generated by the excavations which will be used to partially bury the huts, cables, or level a pad beneath the huts. The excavated material will not be disposed of outside of the immediate site of construction.*

State of Alaska Comment: The EA does not discuss subsistence activities that might be occurring in areas where the new seismic monitoring stations would be located. The Alaska National Interest Lands Conservation Act (ANILCA), Section 810 analysis only provides general statements regarding areas where subsistence hunting occurs in the park unit and refers readers to other Service documents for more information about subsistence uses. Although we don't believe this proposal poses any potential conflicts with subsistence uses, as a general rule we question the adequacy of an 810 analysis that does not present at least general information about subsistence activities in area(s) affected by the proposed action. In this case, referring readers to 1986 General Management Plan (GMP), the 1988 Wilderness Environmental Impact Statement (EIS), and the WRST Subsistence Plan, which is updated annually, is problematic for three reasons: (1) some reviewers may not have access to these documents; (2) the GMP and

Wilderness EIS are dated and don't contain subsistence use data collected since they were published in 1986 and 1988, respectively, and (3) the Subsistence Plan is essentially an ongoing record of actions taken by the WRST Subsistence Resource Commission pursuant to its mandates, and contains little, if any, specific information about areas used for subsistence purposes within the park unit. We recommend that future 810 analyses be strengthened by including at least a short description of the subsistence activities, if any, occurring in the affected areas.

Response to State of Alaska: The Section 810 analysis presents the best available information. We appreciate your concurrence with our assessment that this proposed action does not pose any potential conflicts with subsistence uses. You are correct in pointing out that the WRST general management plan and wilderness environmental impact statement are dated and do not contain subsistence use data.

National Parks Conservation Association Comment: As included in the EA, The Wilderness Act section (4) clearly states that exceptions for certain activities, such as structures, are allowed "for the administration of the area as wilderness" as necessary for protecting wilderness. More specifically, section 4(c) on prohibitions states, "except as necessary to meet the minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motor boats, no landing of aircraft, no other form of mechanized transport, and no structure or installation within any such area." NPCA reads nothing in the EA that leads us to believe that the administration of the area as Wilderness depends on these additional seismic installations. And, therefore, no new installations should be permitted under The Wilderness Act.

Additionally, section 4(b) states "each agency administering the any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for other purposes for which it may have been established as also to preserve its wilderness character.

In reviewing enabling language and the guiding purposes for the establishment of Wrangell-St. Elias National Park & Preserve, Section 201(9) of ANILCA directs that Wrangell-St. Elias will be managed for the following reasons: 1.) To protect habitat and wildlife populations; 2.) To maintain the scenic beauty unimpaired for future generations; 3.) To provide reasonable access for recreational wilderness activities and 4.) To provide for subsistence use by local residents where such uses are traditional. Nowhere in the enabling language does it mention that the park was established for scientific or research purposes. The purposes of the park, as set forth in ANILCA, do not depend on these new seismic installations.

Try as we might, NPCA searched for language that would allow these new structures in Congressionally designated Wilderness, but could not find any. As such, we find ourselves opposing the AEIC proposal for 10 new seismic stations (106,107, 108, 109, 114, 115, 116, 119, 123, & 124) as part of STEEP on the basis that all the proposed locations exist in designated Wilderness. The combination of the proposed 10 new stations in designated Wilderness, upgrades to existing stations, and new stations on private property or parkland outside of

designated Wilderness will increase the amount of stations to 27 in wilderness or wilderness-suitable lands. The installation of new stations, upgrades to existing stations and access for regular maintenance, will require a significant increase in helicopter use. As exemplified in Alternative C. of your alternative analysis, helicopter activity will increase to a minimum total of 91 roundtrips for installation and three trips a year for maintenance. These actions compromise wilderness resources and wilderness values for which the park was created and will severely impact the visitor experience.

Response to National Parks Conservation Association: Title I of ANILCA sets out the purposes of conservation system units established by ANILCA, which include any unit in Alaska of the National Park System (Wrangell-St. Elias National Park and Preserve) and National Wilderness Preservation System (Wrangell-St. Elias Wilderness), as follows:

In order to preserve for the benefit, use, education, and inspiration of present and future generations certain lands and waters in the State of Alaska that contain nationally significant natural, scenic, historic, archaeological, geological, scientific, wilderness, cultural, recreational, and wildlife values, the units described in the following titles are hereby established (ANILCA Section 101(a)).

It is the intent of Congress in this Act to preserve unrivaled scenic and geological values associated with the natural landscapes;...to preserve wilderness resource values and related recreational opportunities including but not limited to hiking, canoeing, fishing, and sport hunting, within large arctic and subarctic wildlands and on freeflowing rivers; and to maintain opportunities for scientific research and undisturbed ecosystems (ANILCA Section 101(b)).

The NPS believes that its decision to permit additional seismic stations in the Wrangell-St. Elias Wilderness is appropriate. Our rationale for making this decision is provided in the wilderness Minimum Requirements Decision Guide worksheets contained in Appendix D of the environmental assessment.