

Draft Supplemental Environmental Assessment for Old Harbor Geotechnical Survey

2024-0134438-NEPA-001

September 2024

Prepared by

Kodiak National Wildlife Refuge
Kodiak, Alaska



Table of Contents

List of Acronyms.....	1
Chapter 1: Introduction, Purpose, and Need.....	2
1.1 Introduction	2
1.2 Background	2
1.3 Proposed Action	3
1.4 Purpose and Need for the Proposed Action.....	3
1.5 Scoping and Issues	3
Chapter 2: Alternatives.....	5
Alternative A – Applicants Proposed Action	5
Alternative B – No Action.....	5
Chapter 3: Affected Environment and Environmental Impacts.....	5
3.1 Introduction	5
3.2 Brown Bear.....	6
3.2.1 Affected Environment	6
3.2.2 Environmental Impacts.....	9
Chapter 4: Consultation and Coordination	11
4.1 List of Sources, Agencies and persons Consulted.....	11
4.1.1 Tribal Consultation	11
4.2 Public Outreach and Comment.....	11
4.3 ANILCA Requirements.....	12
4.4 List of Preparers	12
Chapter 5: References.....	13
Appendix A: Draft Compatibility Determination	
Appendix B: ANILCA 810 Summary Evaluation	
Appendix C: Project Map	

List of Acronyms

ADFG - Alaska Department of Fish and Game

ANILCA - Alaska National Interest Lands Conservation Act

CEQ - Council on Environmental Quality

EA - Environmental Assessment

FERC - Federal Energy Regulatory Commission

FRAS - Fiscal Responsibility Act

GPS - Geographic Positioning System

IDT - Interdisciplinary Team

Refuge - Kodiak National Wildlife Refuge

NEPA - National Environmental Policy Act

SEA - Supplemental Environmental Assessment

Chapter 1: Introduction, Purpose, and Need

1.1 Introduction

This Supplemental Environmental Assessment (SEA) is being prepared to evaluate the effects of a Special Use Permit request from the Alutiiq Tribe of Old Harbor and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (Service) (550 FW 3) regulations and policies. NEPA requires examination of the effects of proposed actions on the natural and human environment. This EA has been written in accordance with the Council on Environmental Quality (CEQ) issued a final rule, NEPA Implementing Regulations Revisions Phase 2 (CEQ Phase 2 NEPA regulations) published May 1, 2024, revising its regulations for implementing the NEPA, including to address amendments to NEPA made by the Fiscal Responsibility Act (FRA) of 2023.

Kodiak National Wildlife Refuge (Refuge) was established by Executive Order 8857 in 1941 “. . . for the purpose of protecting the natural feeding and breeding ranges of the brown bears and other wildlife on Uganik and Kodiak Islands . . .”

The Refuge was expanded in 1980 through the Alaska National Interests Lands Conservation Act (ANILCA). ANILCA Section 303 (5)(B) sets forth these purposes of the Kodiak National Wildlife Refuge:

- (i) to conserve fish and wildlife populations habitats in their natural diversity including, but not limited to, Kodiak brown bears, salmonoids, sea otters, sea lions and other marine mammals and migratory birds;
- (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; and
- (iv) 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.

1.2 Background

The Alutiiq Tribe of Old Harbor submitted a Special Use Permit application on June 7, 2024 to conduct geotechnical survey on Kodiak National Wildlife Refuge. This survey is in support of a proposed basin diversion hydroelectric plant under the Federal Energy Regulatory Commission (FERC) project number 13272 near the City of Old Harbor, Alaska. The applicant is unable to complete a Right-of-way application for the hydroelectric facility until the geotechnical survey is complete, informing them of the exact location for the facilities in trail. When all necessary information is gathered by the applicant, they will apply for a Right-of-Way to construct and operate the hydroelectric facility.

The FERC license was supported by an EA (FERC 2015) that is incorporated by reference. Some issues were identified that were outside of the scope of the FERC EA due to the newly proposed construction window in the winter and FERC's impact analysis being contingent on applicant produced plans for resources of concern such as bears and vegetation. This analysis will supplement the FERC EA to adequately cover the additional scope of work.

1.3 Proposed Action

The Alutiiq Tribe of Old Harbor is proposing to drill approximately 29 borehole samples utilizing a tracked drill rig. The proposed action would include a borehole approximately every 500 feet along the 10,150 foot penstock and tailrace alignment and increase in to every 25 feet along the intake site diversion wall. The proposed area geotechnical drilling would occur is approximately 158 acres. Boring would be done with Geoprobe 1028 track-mounted rig or similar machinery. Boreholes would be 6 to 8 inches in diameter and drilled to a depth range of 30 to 70 feet.

A two-inch intake hose would withdraw a maximum of 4,000 gallons per day of drilling using a pump with a rate of 30 gallons per minute. Water from the drilling operations would be directed to a small containment pool within uplands. No water from drilling operations would be directly discharged into creeks or existing water bodies.

The proposed action would occur from January 1, 2025 to April 30, 2025. The applicant predicts each borehole to take approximately two days to access and complete. The project is predicted to take two months to complete the 29 boreholes. The extended work window is to allow for weather delays as needed.

The proposed action would occur within the Seward Meridian in Township 34 South, Range 25 West in Sections 7, 17, 18, and 20; and in Township 34 South Range 26 West Section 12. The boreholes would start and end at approximately at 57.2464496°N, 153.3447344°W and 57.2320993°N, 153.3077541°W.

1.4 Purpose and Need for the Proposed Action

The purpose of the proposed action is to gather geologic data to inform the engineering specification and design for the proposed hydroelectric project in Old Harbor. The need for the proposed action is a result of insufficient geologic data for the hydroelectric facility project area.

1.5 Scoping and Issues

This supplemental EA was prepared in accordance with NEPA (42 USC 4321), and 40 CFR 1500-1508. During the internal scoping process, an interdisciplinary team (IDT) reviewed the proposed action and assessed any potential issues. The IDT determined which issues required further detailed analysis or which issues did not need additional review. The findings from the IDT are outlined in table 1 below. Resources issues identified for further analysis will be described in detail in chapter 3 and effects analyzed in chapter 4.

Issue	Further analysis required	Rational
Brown Bears	Yes	Brown bears were identified as a potentially impacted resource during scoping. The extent of potential effects and analysis is defined further in chapter 3 of this document.
Vegetation	No	Effects were adequately analyzed in the FERC EA section 3.3.3 and cover the affected environment and potential impacts from the proposed action.
Soils	No	Effects were adequately analyzed in the FERC EA section 3.3.1 and cover the affected environment and potential impacts from the proposed action.
Aquatic Resources	No	Effects were adequately analyzed in the FERC EA section 3.3.2 and cover the affected environment and potential impacts from the proposed action.
Birds	No	Effects were adequately analyzed in the FERC EA section 3.3.3 and cover the affected environment and potential impacts from the proposed action.
Visitor Use	No	Effects were adequately analyzed in the FERC EA section 3.3.5 and cover the affected environment and potential impacts from the proposed action.
Subsistence	No	Effects were adequately analyzed in the FERC EA section 3.3.8 and cover the affected environment and potential impacts from the proposed action.
Wildlife	No	Effects were adequately analyzed in the FERC EA section 3.3.3 and cover the affected environment and potential impacts from the proposed action.
Cultural Resources	No	Effects were adequately analyzed in the FERC EA section 3.3.6 and cover the affected environment and potential impacts from the proposed action. The survey efforts and consultation with the State Historic Preservation office (SHPO) adequately assessed the potential impacts to cultural resources.
Wetlands	No	Effects were adequately under the FERC EA section 3.3.1 and cover the affected environment and potential impacts from the proposed action.

Water Quality	No	Effects were adequately under the FERC EA section 3.3.2 and cover the affected environment and potential impacts from the proposed action.
Threatened and Endangered Species – Steller’s Eider	No	Effects were adequately under the FERC EA section 3.3.4 and cover the affected environment and potential impacts from the proposed action. The proposed action is in the vicinity of the species winter range however this proposed action would not have any effect to marine habitat. There would be no effect from the proposed action on Steller’s Eider.

Table 1. Analysis of issues identified during the internal scoping process

Chapter 2: Alternatives

Alternative A – Applicants Proposed Action

Under Alternative A the Refuge would issue a SUP to the Alutiiq Tribe of Old Harbor to conduct geotechnical drilling to survey an area of the Refuge for a proposed basin diversion hydroelectric project. The Tribe has proposed to drill approximately 29 boreholes along the length of the 158-acre survey area.

Alternative B – Existing Conditions [No Action Alternative]

Under Alternative B the SUP would not be authorized and the geotechnical survey would not be conducted.

Chapter 3: Affected Environment and Environmental Impacts

3.1 Introduction

This section describes the existing environmental and socioeconomic settings in the action area along with the environmental consequences of the action on each affected resource. This SEA includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than minimal and therefore considered a potentially impacted resource or are otherwise considered important as related to the proposed action. Any

resources that will not be more than minimally impacted by the action and have been identified as not otherwise important as related to the proposed action have been dismissed from further analyses.

As such, those resources will not be further analyzed in this EA. This chapter assesses the direct, indirect, and cumulative impacts to the affected environment from each alternative outlined in chapter 3.

3.2 Brown Bears

3.2.1 *Affected Environment*

Kodiak brown bears (*Ursus arctos middendorfi*) are found throughout the Kodiak Archipelago occupying all available habitat types, are active from May-October, feed opportunistically- often with high proportions of vegetation, berries, and salmon in their diets-, and den from roughly October-May.

The proposed project area covers an area roughly 0.2 km², is low-elevation (≤ 300 m) rolling hills, densely vegetated with alder (*Alnus crispa sinuate*), salmonberry (*Rubus spectabilis*), grasses (e.g., *Calamagrostis canadensis*), and forbs (e.g., fireweed [*Epilobium angustifolium*], cow parsnip [*Heracleum lanatum*]) (Fleming and Spencer 2004). The upper reaches of the boring area abut steeper hillsides and canyons, and the lower reaches approach flatter wet sedge meadow or cottonwood-dominated habitat types. Anadromous streams are adjacent to the boring area and marine coastal areas are ~2 km away. Some human-use trails (four-wheeler or otherwise) area present below the lower limit of the boring area.

Bear use of the affected area is largely unknown; no GPS collar studies or aerial surveys have been conducted within the affected area. Recent (2008-2018) GPS collar data collected for studies in other locations (SW Kodiak, USFWS/Will Deacy [Deacy et al. 2016]; Sitkalidak Island, ADFG/Shannon Finnegan [Svoboda 2019]) show a small number of collared bears from those studies (n=1 Deacy, n=2 Finnegan) traveled to and did use space near the affected area in the non-denning season (figures 2, 3), but because the studies were not aimed at capturing use within the affected area or within the non-denning period the overall use and value of the area to bears more broadly is not known. No documented bear concentration areas are known to be within the affected area. The habitat is typical non-denning-season bear-use habitat on Kodiak. Berries, a primary bear food, are expected to be widely distributed within the affected area. Salmon, another primary bear food, may be found in streams adjacent to the boring area. Forbs and grasses within the affected area could be used by bears as food. Alder and other shrubs in the affected area could be used for cover and thermoregulation.

The proposed boring work (slated for January-April) is projected to occur during the period of denning for Kodiak bears (~October-May; Van Daele et al. 1990). No study has examined wintertime/denning use of the affected area by bears, and no wintertime bear locations have been obtained within the affected area from other studies. Published work on denning elsewhere in Kodiak documented bears denning from 91-1189 m (mean 457 m) in the Terror area and from 128-915 m (mean 665 m) in the Southwest area (Van Daele et al. 1990). Assuming similar denning conditions for the affected area (though bear denning is known to differ by location across the archipelago), dens could occur within the affected area as the lower elevational limits of dens in

other studies fall within the range of elevations for the boring area (~33-300m) and affected area (1.5-945 m). Many factors affect the quality of denning habitat for bears but slope is commonly considered in assessing den site selection. Bears in the Terror and Southwest study areas primarily used slopes over 30% (30-45% slopes 74% of the time in Southwest and >45% slopes 72% of the time in Terror). Seventy seven percent of the affected area comprises slopes less than 30%; twenty three percent of the area comprises slopes greater than 30%.

Bear abundance in the affected area is unknown. The USFWS and Alaska Department of Fish and Game survey eight survey areas within five survey regions across the Kodiak archipelago for bear abundance (Barnes and Smith 1998; figure 4). The boring area is in the eastern survey region encompassing the Kiliuda and Shearwater survey areas. The density of bears within the closest survey area (Kiliuda) was 239 ± 94 independent bears/1000 km² during the most recent survey in 2021. The estimated density of bears was within the management target for that area (230 [184-276 90% CI] independent bears/1000 km²) and the Kiliuda-area population is not currently a management concern (Alaska Department of Fish and Game 2002, Van Daele 2007, Erlenbach 2022).

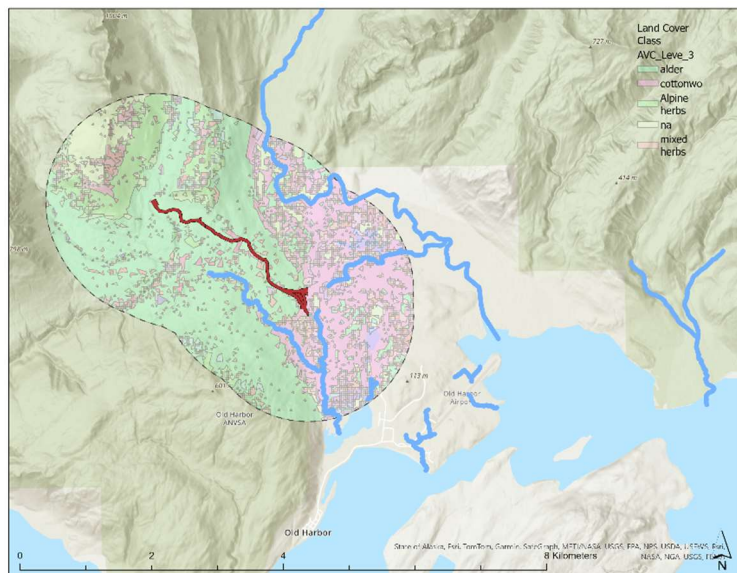


Figure 1. The proposed project area provided by the Alutiiq Tribe of Old Harbor and the Alaska Native Tribal Health Consortium); proposed affected area (dashed line approximately 1.6 km² around the boring area); anadromous streams adjacent to the boring area, and dominant habitats (Fleming and Spencer 2004) within the proposed affected area for the proposed Old Harbor Hydroelectric Project geotechnical survey efforts.

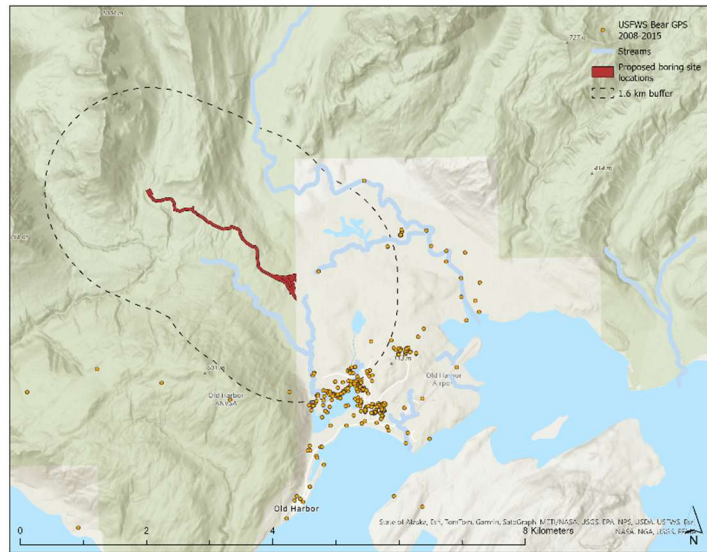


Figure 2. The proposed Old Harbor Hydroelectric Project geotechnical survey efforts boring area (red polygon), proposed affected area (dashed line), and brown bear GPS locations for one individual bear that used the area during Sept./Oct. 2010 while part of a study of bears in SW Kodiak (USFWS/Will Deacy; Deacy et al. 2016).

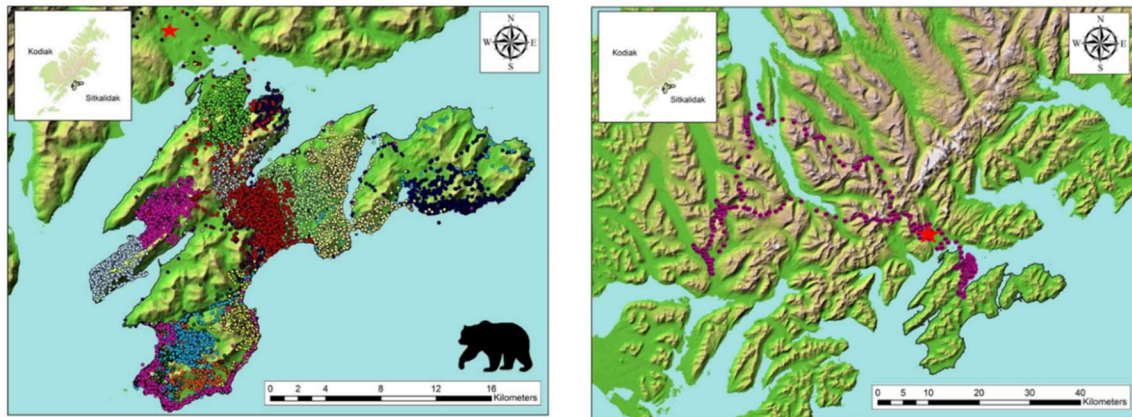


Figure 3. Left: Brown bear GPS locations for multiple individuals from Sitkalidak Island study (ADFG/Shannon Finnegan), January to December 2018, showing two individuals who used areas adjacent the boring area; proposed boring site shown by red star. Right: Brown bear GPS locations for one individual (B607) in the same study, June-Nov. 2018, who used areas adjacent to the boring site; proposed boring site shown by red star. Images from Svoboda 2019.

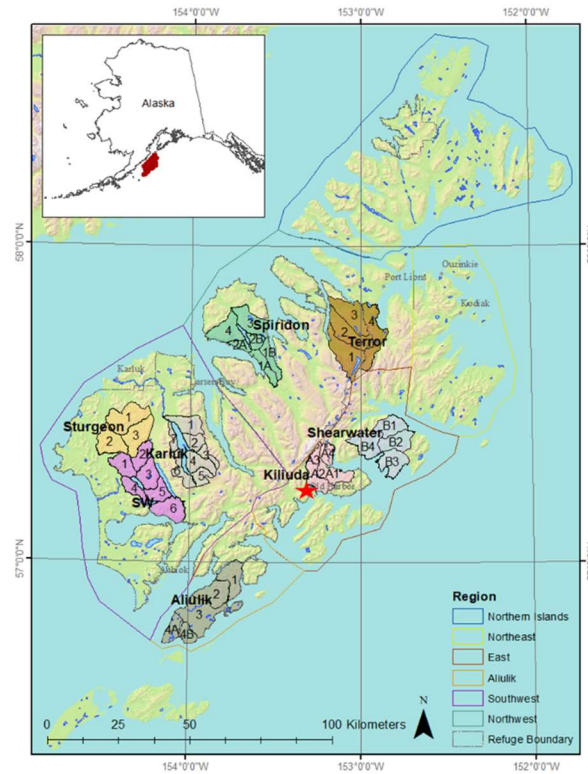


Figure 4. USFWS/ADFG intensive aerial survey bear population monitoring regions and survey areas. The proposed boring area (red star) occurs within the Eastern brown bear aerial survey region which encompasses the Kiliuda and Shearwater brown bear survey areas.

3.2.2 Environmental Impacts

Alternative A - Proposed Action

Direct Effects

Potential effects within the boring area are: damage to bear habitat (vegetation that reduces food and cover) and damage to denning sites (vegetation/soil disruption that makes denning sites unusable, etc.) by construction or use of roads/access sites. Introduction of invasive species to disturbed sites could also impact future bear habitat. Losses of food or shelter can increase the energetic expenditure of bears, with effects on body condition, and when substantial, reductions in cub production (Robbins et al. 2012). The presence of a thick-enough snow layer that minimizes disturbance would mitigate against some of the potential vegetative and soil effects impacting bear food, cover, and shelter habitat within the boring area. The area affected directly by drilling and on the ground action is small, and substantial similar habitat exists undisturbed nearby, resulting in minor temporary impacts to bears.

Indirect Effects

In addition to direct effects on the landscape that could impact bears, aircraft, drill-rig, pump, and all-terrain vehicle operation and human presence introduce the potential for noise and visual impacts, all of which can cause behavioral and physiological responses in bears (Woodruff et al. 2022) within the boring area. Non-denning bears may flee with minor and temporary impacts as they avoid or depart the area. Denning bears remaining in the area could have changes in stress hormone levels (Keay et al. 2006) or elevated heart rate (Ditmer et al. 2015) as a result of disturbance, or be displaced by disturbance to seek out alternative den locations (Swenson et al. 1997). Increased heart rate or increased activity related to relocating a den can elevate energetic expenditure which can decrease body composition; decreased body composition of animals can decrease over-winter survival and in maternal females can also affect cub survival (Hilderbrand et al. 2000). Relocation of a den, especially early after cubs have been born, can result in the death of cubs (Amstrup and Gardner 1994, Swenson et al. 1997, Rode et al. 2018, Woodruff et al. 2022). Behavioral reactions of denning bears depend on individual bear comfort levels, the period within the denning window, den characteristics, distance to the den, noise levels, and for aircraft altitude and type of aircraft. Impacts to denning bears that do not relocate are likely minor and temporary, detectable in those bears within the noise-disruption area but not affecting the broader population and lasting approximately 2 months during boring. Impacts to denning bears that relocate can be minor and temporary, assuming non-maternal bears that find suitable denning alternatives without expending significant energy stores, or can be intermediate and long-term, if reproductive output diminishes for affected maternal females.

The noise and visual impacts are expected to extend beyond the boring area. Industrial activities can be detected in artificial polar bear dens 2 km from activity (MacGillivray et al. 2003). Identifying the potential affected area as the project area plus a 1.6 km buffer on all sides would account for the area potentially affected by changes to the ambient noise environment; that area is approximately 18.5 km² from 1.5 to 945 m elevation. Effects of noise within the additional area would be the same as within the boring area- minor and temporary, but possibly intermediate and long-term for maternal females that relocate and lose cubs. As the helicopter has the opportunity to affect the greatest area, limiting that overflight-area of the helicopter to a consistent path could minimize the extent of noise disturbance to denning bears.

Cumulative Effects

Increased access resulting from road construction could increase bear hunting in the area and affect the local population in future years. Cumulative effects include past road or trail construction near the area that may have increased human access, future changes in berry production or abundance of salmon as a result of climate change, and future increased human access as a result of newly constructed roads or trails. Future actions resulting from the results of these geotechnical survey efforts, such as the construction of hydroelectric structures in the area could also impact bears. Direct effects of drilling actions would occur within the proposed boring area footprint, but indirect effects of drilling actions (e.g., noise disturbance as a result of machinery, helicopter, human presence) will extend beyond the survey footprint. Industrial development work with denning polar bears follows a 1.6-km buffer around dens guideline to mitigate for potential noise disturbance to bears (MacGillivray et al. 2003, USFWS 2016). Though there are differences between polar bear dens and brown bear dens, and between sources of noise with various industrial applications, applying a 1.6-km buffer around the boring site to represent the ‘affected area’ is a conservative

means of accounting for potential noise disturbance using the best available science. Assuming a roughly 1.6 km² buffer around the boring polygon, the affected area covers 18.5 km², from 1.5 to 945 m in elevation.

Effects to the broader population of bears on the Kodiak archipelago (estimated around 3,500 animals) are expected to be minimal, as no evidence suggests that the affected area is a critical habitat area supporting an above average concentration of bears. Expected summertime bear abundance in the ~18 km² affected area based on densities observed in the nearby Kiliuda survey area is four independent animals. Wintertime use of the area is unknown.

Alternative B - No Action

Under the No Action Alternative, the proposed activities would not take place and there would be no negative effects to bears associated with this alternative.

Chapter 4: Consultation and Coordination

4.1 List of Sources, Agencies and Persons Consulted

4.1.1 Tribal Consultation

Consultation with Alutiiq Tribe of Old Harbor and Old Harbor Native Corporation was initiated on August 12, 2024. The Refuge received letters of support from tribes and corporations within the Kodiak archipelago. These letters stated there were no concerns with impacts on the resources in the proposed project area.

4.2 Public Outreach and Comment

Publishment of this draft EA initiates a 15-day public comment period. Comments can be submitted by email at kodiak@fws.gov, or mailed to the address below. The Refuge is requesting substantive comments from the public regarding the proposed action and the Refuge's assessment of the potential impact in the draft Supplemental Environmental Assessment. The Refuge also is requesting comments on the draft compatibility determination (appendix A) attached to this document. Project information may be obtained from the Refuge at <https://www.fws.gov/refuge/kodiak>, by emailing a specific information request kodiak@fws.gov or by mailing a letter requesting specific information to:

Kodiak National Wildlife Refuge
ATTN: Supplemental Environmental Assessment for Old Harbor
Geotechnical Survey
1390 Buskin River Road
Kodiak, AK 99615-6899

4.3 ANILCA Requirements

A draft ANILCA Section 810 analysis is included with this document for public review located in Appendix A. The analysis will be finalized with the final EA.

4.4 List of Preparers

Name	Title	Office
Danielle Fujii-Doe	Acting Refuge Manager	Kodiak National Wildlife Refuge
Natalie Fath	Visitor Services Manager	Kodiak National Wildlife Refuge
Joy Erlenbach	Wildlife Biologist	Kodiak National Wildlife Refuge
Robin Corcoran	Wildlife Biologist	Kodiak National Wildlife Refuge
Kevin Van Hatten	Fisheries Biologist	Kodiak National Wildlife Refuge
Jeremy Karchut	Regional Archaeologist	Division of Visitor Services – Regional Office
Jacob Adams	Archaeologist	Division of Visitor Services – Regional Office
Nic Lucore	Conservation Planner	Division of Natural Resources – Regional Office

Chapter 5: References

- ADFG. 2002. Kodiak Archipelago Bear Conservation and Management Plan. Alaska Department of Fish and Game, Anchorage, USA.
- Amstrup, S. C., and C. Gardner. 1994. Polar Bear Maternity Denning in the Beaufort Sea. *The Journal of Wildlife Management* 58:1–10.
- Barnes, V. G., and R. B. Smith. 1998. Estimates of Brown Bear Abundance on Kodiak Island, Alaska. *Ursus* 10:1–9.
- Deacy, W., W. Leacock, J. B. Armstrong, and J. A. Stanford. 2016. Kodiak brown bears surf the salmon red wave: direct evidence from GPS collared individuals. *Ecology* 97:1091–1098.
- Ditmer, M. A., J. B. Vincent, L. K. Werden, J. C. Tanner, T. G. Laske, P. A. Iaizzo, D. L. Garshelis, and J. R. Fieberg. 2015. Bears Show a Physiological but Limited Behavioral Response to Unmanned Aerial Vehicles. *Current Biology* 25:2278–2283.
- Erlenbach, J. A. 2022. Report on the Shearwater and Kiliuda IAS survey areas, 2021. Memorandum, US Fish and Wildlife Service, Kodiak, Alaska.
- FERC. 2015. Environmental Assessment: Old Harbor Hydroelectric Project—FERC Project No. 13272-004. Federal Energy Regulatory Commission Office of Energy Project Division of Hydropower Licensing, Washington, D.C., USA.
- Fleming, M. D., and P. Spencer. 2004. A vegetative cover map for the Kodiak Archipelago, Alaska. US Geological Service, Alaska Science Center, Anchorage, Alaska, USA.
- Hilderbrand, G. V., C. C. Schwartz, C. T. Robbins, and T. A. Hanley. 2000. Effect of hibernation and reproductive status on body mass and condition of coastal brown bears. *Journal of Wildlife Management* 64:178–183.
- Keay, J. M., J. Singh, M. C. Gaunt, and T. Kaur. 2006. FECAL GLUCOCORTICOIDS AND THEIR METABOLITES AS INDICATORS OF STRESS IN VARIOUS MAMMALIAN SPECIES: A LITERATURE REVIEW. *Journal of Zoo and Wildlife Medicine* 37:234–244.
- MacGillivray, A. O., D. E. Hannay, R. G. Racca, C. J. Perham, S. A. MacLean, and M. T. Williams. 2003. Assessment of industrial sounds and vibrations received in artificial polar bear dens, Flaxman Island, Alaska. Final report to ExxonMobil Production Co., JASCO Research Ltd. and LGL Alaska Research Associates, Inc., Victoria, British Columbia and Anchorage, Alaska, USA.
- Robbins, C. T., M. Ben-David, J. K. Fortin, and O. L. Nelson. 2012. Maternal condition determines birth date and growth of newborn bear cubs. *Journal of Mammalogy* 93:540–546.
- Rode, K. D., J. Olson, D. Eggett, D. C. Douglas, G. M. Durner, T. C. Atwood, E. V. Regehr, R. R. Wilson, T. Smith, and M. St. Martin. 2018. Den phenology and reproductive success of polar bears in a changing climate. *Journal of Mammalogy* 99:16–26.

- Svoboda, N. 2019. Wildlife Restoration Multi-Year Grant Interim Performance Report: Resource use and distribution of Roosevelt elk and Kodiak brown bears on Afognak and Raspberry Islands. Wildlife Restoration Multi-Year Grant Interim Performance Report, Alaska Department of Fish and Game, Juneau, Alaska.
- Swenson, J. E., F. Sandegren, S. Brunberg, and P. Wabakken. 1997. Winter den abandonment by brown bears *Ursus arctos*: causes and consequences. *Wildlife Biology* 3:35–38.
- USFWS. 2016. Intra-service biological opinion for issuance of 2016–2021 Beaufort Sea Incidental Take Regulations. U.S. Fish and Wildlife Service, Fairbanks, Alaska, USA. U.S. Fish and Wildlife Service, Fairbanks, Alaska, USA.
- Van Daele, L. J. 2007. Population dynamics and management of brown bears on Kodiak Island, Alaska. Dissertation, University of Idaho, College of Graduate Studies.
- Van Daele, L. J., V. G. Barnes, and R. B. Smith. 1990. Denning Characteristics of Brown Bears on Kodiak Island, Alaska. *Bears: Their Biology and Management* 8:257–267.
- Woodruff, S., E. Andersen, R. Wilson, L. Mangipane, S. Miller, K. Klein, and P. Lemons. 2022. Classifying the effects of human disturbance on denning polar bears. *Endangered Species Research* 49:43–56.

Appendix A

Draft Compatibility Determination

Draft Compatibility Determination for Old Harbor Geotechnical Survey, Kodiak

National Wildlife Refuge

Refuge Use Category

Other Uses

Refuge Use Type(s)

Project- Old Harbor Geotechnical Exploration

Refuge

Kodiak National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

Kodiak National Wildlife Refuge (Refuge) was established by Executive Order 8857 in 1941 “. . . for the purpose of protecting the natural feeding and breeding ranges of the brown bears and other wildlife on Uganik and Kodiak Islands . . .”

The Refuge was expanded in 1980 through the Alaska National Interests Lands Conservation Act (ANILCA). ANILCA Section 303 (5)(B) sets forth these purposes of the Kodiak National Wildlife Refuge:

- (i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited, to Kodiak brown bears, salmonids, sea otters, sea lions, and other marine mammals and migratory birds;
- (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 purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and
- (iv) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in subparagraph (i), water quality and necessary water quantity within the refuge.”

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as 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 (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

No

What is the use?

The Alutiiq Tribe of Old Harbor (Tribe) is proposing to conduct geotechnical drilling to survey an area of the Refuge for a proposed basin diversion hydroelectric project. The Tribe has proposed to drill approximately 29 boreholes along the length of the 158-acre survey area.

Is the use a priority public use?

No

Where would the use be conducted?

The proposed action would occur within the Seward Meridian in Township 34 South, Range 25 West in Sections 7, 17, 18, and 20; and in Township 34 South Range 26 West Section 12. The boreholes would start and end at approximately at 57.2464496°N, 153.3447344°W and 57.2320993°N, 153.3077541°W. The proposed geotechnical work would occur roughly within a 158-acre area on the Refuge that is in the anticipated construction corridor for the hydroelectric project.

Refer to Map 1 (attached) for a map of the project area for proposed geotechnical drilling

When would the use be conducted?

January 1, 2025 to April 30, 2025. The applicant predicts each borehole to take approximately two days to access and complete. The project is predicted to take two months to complete the 29 boreholes. The extended work window is to allow for weather delays as needed.

How would the use be conducted?

The Alutiiq Tribe of Old Harbor is proposing to drill approximately 29 borehole samples utilizing a tracked drill rig. The proposed action would include a borehole approximately every 500 feet along the 10,150 foot penstock and tailrace alignment and increase in to every 25 feet along the intake site diversion wall. The proposed area geotechnical drilling would occur is approximately 158 acres. Boring would be done with Geoprobe 1028 track-mounted rig or similar machinery. Boreholes would be 6 to 8 inches in diameter and drilled to a depth range of 30 to 70 feet. A two-inch intake hose would withdraw a maximum of 4,000 gallons per day of drilling using a

pump with a rate of 30 gallons per minute. Water from the drilling operations would be directed to a small containment pool within uplands. No water from drilling operations would be directly discharged into creeks or existing water bodies.

A Special Use Permit will be required for the proposed geotechnical work. A separate Special Use Permit will be required for air transportation (helicopter use).

An Alaska Department of Fish and Game Fish Habitat Permit will be required for the proposed geotechnical work.

Why is this use being proposed or reevaluated?

This geotechnical survey is being proposed by the Alutiiq Tribe of Old Harbor so the Tribe can gather subsurface information from locations along the proposed access trail and penstock alignment to inform the design of the penstock, trail, and basin-diversion intake to meet engineering and safety specifications associated with the construction of a proposed hydroelectric facility.

Availability of Resources

Applicable administrative costs may include both direct and indirect costs such as: Salaries and associated employee expenses related to evaluation of the proposed use (including a compatibility determination, and compliance with the National Environmental Policy Act of 1969, as amended [42 U.S.C. 4321-4347]) and development of the Special Use Permit (SUP). A SUP is a special use permit issued by the refuge manager which authorizes an activity restricted by law or regulation on a national wildlife refuge;

- Salaries and associated employee expenses related to on-the-ground oversight of the use to ensure that SUP requirements (including general and special SUP conditions, and compatibility stipulations) are followed and the use remains compatible;
- Salaries and associated employee expenses related to traffic control and law enforcement;
- Salaries and associated employee expenses related to monitoring of the actual effects of the use on natural and cultural resources, and general public use;
- Travel;
- Supplies and equipment; and
- An applicable portion of Refuge overhead costs.

To the extent that the Alutiiq Tribe of Old Harbor may provide some of these services (e.g., through contracts with independent third parties acceptable to the Service), these costs and associated fees would be reduced. Consistent with the Refuge Revenue Sharing Act (16 U.S.C. 715s) any fee revenues collected from this use would

be deposited into the U.S. Treasury Department's National Wildlife Refuge Fund for redistribution to refuges to help offset the costs of administering specialized uses (Expenses for Sales) and for payments in-lieu of taxes to counties or other local governments (Refuge Revenue Sharing).

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

The effects and impacts of the proposed use to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the proposed use. This CD includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an “affected resource.” Geology, soils, wetlands, visitor use and experience, and subsistence will not be more than negligibly impacted by the action and have been dismissed from further analyses.

Short-term impacts

Fish, Wildlife, and Their Habitats

As stated above, one of the main purposes of the Refuge is “to conserve fish and wildlife populations and habitats in their natural diversity.” Additionally, another purpose of the refuge is to “fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats.” We anticipate the following impacts to fish, wildlife and their habitats:

Short term and localized impacts to fish, wildlife, and their habitats within the Refuge from disturbances are anticipated, such as vegetation trampling, habitat destruction, and removal or temporary displacement and/or disturbance to wildlife in the area where the geotechnical survey work is occurring.

Foot traffic, vehicles, and equipment traffic can unintentionally bring terrestrial and aquatic invasive species to the proposed project area. Soil disturbance from foot traffic, vehicles, and equipment traffic will occur, particularly at the proposed borehole areas, which can increase the potential for invasive species establishment. Vectors include aircraft, vehicle tires, equipment tracks, clothes, and shoes.

The geotechnical work would be located on the East Fork of Mountain Creek, which is a small tributary joining Barling Creek near the high tide point. The lower portions of the East Fork run subsurface for large portions of the year, making the upper sections inaccessible to fish during the low flow periods. Surveys show little use of this stream

by anadromous fish. The Alutiiq Tribe of Old Harbor would be required to obtain an Alaska Department of Fish and Game Fish Habitat Permit.

The proposed timeframe of January 1, 2025 to April 30, 2025 would be outside the vast majority of bird species nesting season in the region. Common bird species in the area would be willow and rock ptarmigan, bald eagle, belted kingfisher, black-billed magpie, northwestern crow, common raven, black-capped chickadee, Pacific wren, American dipper, golden-crowned kinglet, pine grosbeak, red crossbill, and pine siskin. None of these are a listed species and none are designated Birds of Conservation Concern (BCC) 2021 (USFWS Migratory Bird Program). The Refuge conducted annual aerial surveys from 1963-2007 and five bald eagle nests were located within the Old Harbor area. Eagle nests can be used for decades and in the 2015 Old Harbor Hydroelectric Project Environmental Assessment, it was noted in 2011 that there were two active bald eagle nests within the project area. One nest was located in a live cottonwood tree in the Big Creek drainage and a second nest was located in a live cottonwood tree in the Lagoon Creek drainage.

Bears

Potential effects within the boring area are: damage to bear habitat (vegetation that reduces food and cover) and damage to denning sites (vegetation/soil disruption that makes denning sites unusable, etc.) by construction or use of roads/access sites. Introduction of invasive species to disturbed sites could also impact future bear habitat. Losses of food or shelter can increase the energetic expenditure of bears, with effects on body condition, and when substantial, reductions in cub production (Robbins et al. 2012). The presence of a thick-enough snow layer that minimizes disturbance would mitigate against some of the potential vegetative and soil effects impacting bear food, cover, and shelter habitat within the boring area. The area affected directly by drilling and on the ground action is small, and substantial similar habitat exists undisturbed nearby, resulting in minor temporary impacts to bears.

In addition to direct effects on the landscape that could impact bears, aircraft, drill-rig, pump, and all-terrain vehicle operation and human presence introduce the potential for noise and visual impacts, all of which can cause behavioral and physiological responses in bears (Woodruff et al. 2022) within the boring area. Non-denning bears may flee with minor and temporary impacts as they avoid or depart the area. Denning bears remaining in the area could have changes in stress hormone levels (Keay et al. 2006) or elevated heart rate (Ditmer et al. 2015) as a result of disturbance, or be displaced by disturbance to seek out alternative den locations (Swenson et al. 1997). Increased heart rate or increased activity related to relocating a den can elevate energetic expenditure which can decrease body composition; decreased body composition of animals can decrease over-winter survival and in maternal females can also affect cub survival (Hilderbrand et al. 2000). Relocation of a den, especially early after cubs have been born, can result in the death of cubs (Amstrup and Gardner 1994, Swenson et al. 1997, Rode et al. 2018, Woodruff et al.

2022). Behavioral reactions of denning bears depend on individual bear comfort levels, the period within the denning window, den characteristics, distance to the den, noise levels, and for aircraft altitude and type of aircraft. Impacts to denning bears that do not relocate are likely minor and temporary, detectable in those bears within the noise-disruption area but not affecting the broader population and lasting approximately 2 months during boring. Impacts to denning bears that relocate can be minor and temporary, assuming non-maternal bears that find suitable denning alternatives without expending significant energy stores, or can be intermediate and long-term, if reproductive output diminishes for affected maternal females.

The noise and visual impacts are expected to extend beyond the boring area. Industrial activities can be detected in artificial polar bear dens 2 km from activity (MacGillivray et al. 2003). Identifying the potential affected area as the project area plus a 1.6 km buffer on all sides would account for the area potentially affected by changes to the ambient noise environment; that area is approximately 18.5 km² from 1.5 to 945 m elevation. Effects of noise within the additional area would be the same as within the boring area- minor and temporary, but possibly intermediate and long-term for maternal females that relocate and lose cubs. As the helicopter has the opportunity to affect the greatest area, limiting that overflight-area of the helicopter to a consistent path could minimize the extent of noise disturbance to denning bears.

Effects to the broader population of bears on the Kodiak archipelago (estimated around 3,500 animals) are expected to be minimal, as no evidence suggests that the affected area is a critical habitat area supporting an above average concentration of bears. Expected summertime bear abundance in the ~18 km² affected area based on densities observed in the nearby Kiliuda survey area is four independent animals. Wintertime use of the area is unknown.

Water Quality

Another purpose of the Refuge is to ensure water quality. The applicant has proposed a maximum water withdraw of 4,000 gallons per day. Their proposal decreases impacts to water quality by discharging sediment laden water into upland rather than back into surface waters. Increased turbidity would occur from the proposed action but impacts would be minor and short term, returning back to initial conditions after construction has completed.

Due to the use of aircraft, vehicles, and equipment associated with the proposed geotechnical survey work, there may be a low incidence of fuel spills that occur on the Refuge that may temporarily impact water quality in the localized area of the spill.

Leave-no-trace practices are promoted by the Refuge. Improper management of human waste and littering with toilet paper may occur during the proposed geotechnical survey work. Deposition of solid human waste within 100 feet of the ordinary high water mark of any wetland, lake, pond, spring, river or stream, while prohibited by regulation, is a potential impact within the survey area.

Cultural Resources

In the 2015 Old Harbor Hydroelectric Project Environmental Assessment, the Alutiiq Museum and Archaeological Repository conducted a reconnaissance level investigation in 1997 along the project boundary for cultural resources. Additional cultural surveys were conducted in 2009, 2010, and 2011. In 2015, the Old Harbor Hydroelectric Project was reviewed by the USFWS Regional Cultural Resources staff and they concurred with the previous surveys and findings. In 2024, the USFWS Regional Cultural Resources staff reviewed the Special Use Permit application and GIS files for the proposed geotechnical survey that the Alutiiq Tribe of Old Harbor submitted. The USFWS Regional Cultural Resources staff determined that the geotechnical project footprint was within the 2015 Environmental Assessment for the Old Harbor Hydroelectric Project footprint, the type of terrain the project is occurring in falls within the previous consultation area, therefore this resulted in a finding of no historic properties affected per 36 CFR 800.4(d)(1) of the National Historic Preservation Act.

Long-term impacts

Vegetation

Long term impacts such as vegetation trampling and habitat destruction may occur in the proposed geotechnical area. The proposed helicopter usage would require crews to clear vegetation around the boring sites, leaving a 50-foot radius for the helicopter to land. These areas would be disturbed during the geotechnical work but are not expected to leave long term impacts, since the sites will gradually recover over time from disturbance.

Invasive Species

Invasive species that are known to occur on or near the Refuge are Canada thistle, orange hawkweed, fall dandelion, oxeye daisy, and common tansy. The loss of vegetation and habitat destruction during the proposed geotechnical work could impact future wildlife use of the area and result in the establishment and spread of invasive plant species on Refuge lands.

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 15 days in conjunction with the public comment period for the Draft Supplemental Environmental Assessment for Old Harbor Geotechnical Survey. The public will be made aware of this opportunity to comment through emails and/or letters to local Tribes, municipal governments, and the State of Alaska; publication in the Kodiak Daily Mirror; and announcements on social media platforms. A hard copy of his document will be available at the Kodiak Refuge headquarters in Kodiak and will be

made available electronically on the Refuge website <https://www.fws.gov/refuge/kodiak>. Concerns expressed during the public comment period will be addressed in the final Compatibility Determination.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

- Stipulations necessary to ensure compatibility include obtaining and complying with a special use permit, which also contains required special conditions.
- The helicopter company will also need to apply for a special use permit for air transportation, which also contains required special conditions.
- The Permittee is responsible for ensuring that all persons working for the Permittee and conducting activities allowed by the permits are familiar with and adhere to the conditions of the special use permits.
- The special use permits herein granted is only for the specific use described and may not be construed to include the further right to authorize any other use within the area unless approved in writing by the Service.
- The Permittee is responsible for obtaining all necessary State and Federal permits and submitting copies to the Refuge Manager prior to the start of any work associated with the proposed geotechnical survey.
- All bulk hazardous material and all hazardous waste containers are not allowed in the project area.
- All trash and non-petroleum solid waste generated during survey work, construction, or production facilities will be hauled off the Refuge and disposed of in accordance with 18 AAC 60 (Solid Waste Regulations) and with 18 AAC 62 (Hazardous Waste Regulations).
- All hazardous wastes (as defined by the Resource Conservation and Recovery Act of 1976, as amended) will be transported and disposed in accordance with regulation requirements and shall not be stored in the permit area.
- Any problems with wildlife shall be reported immediately to the Refuge Manager. The Permittee, contractors, and employees shall not feed wildlife. Wildlife shall not be harassed or intentionally approached closely enough to disrupt the animal's activity or to endanger human life. There shall be no taking of any animal except in the case of defense of life and property. In the case of a defense of life and property taking, the Permittee shall immediately

contact the Alaska Department of Fish and Game and the Refuge Manager and salvage those parts of the animal required by State regulations.

- Disturbance and destruction of eagle nests or nesting trees is prohibited. Activities are prohibited within 1/4-mile of an established nest tree.
- The Permittee shall be responsible for keeping the project area clean. All trash, survey lath, trail markers and other debris shall be picked up and properly disposed of during the job. Improper management of human waste and littering is prohibited.
- The Permittee shall comply with the provisions of the Archeological Resources Protection Act (16 U.S.C. 470(a) (a)). The disturbance of archeological or historical sites and the removal of artifacts from Federal land are prohibited. In the event that cultural resources are found during the project, a localized work halt shall be initiated. This will be followed immediately by telephone contact to the Refuge Manager, and concurrent contact with the State Historic Preservation Officer (SHPO), to evaluate the significance of any findings and establish any protective measures that may be necessary.
- The Permittee's employees or contractors are prohibited from hunting, fishing, and trapping when access to the area is obtained by vehicle use of the permit, or any other road not open to the general public.
- The Permittee's employees or contractors are required to comply with existing State and Federal regulations.

Justification

Based on available science and best professional judgement, the Service has determined that the Other-Geotechnical at Kodiak National Wildlife Refuge, in accordance with the stipulations provided here, would not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose of the Kodiak National Wildlife Refuge.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

November 1, 2034

Literature Cited/References

- Amstrup, S. C., and C. Gardner. 1994. Polar Bear Maternity Denning in the Beaufort Sea. *The Journal of Wildlife Management* 58:1-10.
- Ditmer, M. A., J. B. Vincent, L. K. Werden, J. C. Tanner, T. G. Laske, P. A. Iaizzo, D. L. Garshelis, and J. R. Fieberg. 2015. Bears Show a Physiological but Limited Behavioral Response to Unmanned Aerial Vehicles. *Current Biology* 25:2278-2283.
- Hilderbrand, G. V., C. C. Schwartz, C. T. Robbins, and T. A. Hanley. 2000. Effect of hibernation and reproductive status on body mass and condition of coastal brown bears. *Journal of Wildlife Management* 64:178-183.
- MacGillivray, A. O., D. E. Hannay, R. G. Racca, C. J. Perham, S. A. MacLean, and M. T. Williams. 2003. Assessment of industrial sounds and vibrations received in artificial polar bear dens, Flaxman Island, Alaska. Final report to ExxonMobil Production Co., JASCO Research Ltd. and LGL Alaska Research Associates, Inc., Victoria, British Columbia and Anchorage, Alaska, USA.
- Robbins, C. T., M. Ben-David, J. K. Fortin, and O. L. Nelson. 2012. Maternal condition determines birth date and growth of newborn bear cubs. *Journal of Mammalogy* 93:540-546.
- Rode, K. D., J. Olson, D. Eggett, D. C. Douglas, G. M. Durner, T. C. Atwood, E. V. Regehr, R. R. Wilson, T. Smith, and M. St. Martin. 2018. Den phenology and reproductive success of polar bears in a changing climate. *Journal of Mammalogy* 99:16-26.

- Swenson, J. E., F. Sandegren, S. Brunberg, and P. Wabakken. 1997. Winter den abandonment by brown bears *Ursus arctos*: causes and consequences. *Wildlife Biology* 3:35–38.
- USFWS. 2008. Revised Comprehensive Conservation Plan and Environmental Impact Statement: Kodiak National Wildlife Refuge. U.S. Fish and Wildlife Service, Region 7, Division of Conservation Planning & Policy, Anchorage, AK
- USFWS. 2021. Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Woodruff, S., E. Andersen, R. Wilson, L. Mangipane, S. Miller, K. Klein, and P. Lemons. 2022. Classifying the effects of human disturbance on denning polar bears. *Endangered Species Research* 49:43–56.

Appendix B

ANILCA Section 810 Summary Evaluation

Alaska National Interests Lands Conservation Act

Section 810 Summary Evaluation

I. INTRODUCTION

This section was prepared to comply with Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). It summarizes the evaluations of potential restrictions to subsistence activities which could result from the proposed geotechnical study during the survey period of January 1, 2025 to April 30, 2025.

II. THE EVALUATION PROCESS

ANILCA Section 810 of ANILCA requires the U.S. Fish and Wildlife Service (Service) to determine “whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands”, it must evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs. If the refuge determines that significant restrictions are to occur, they must follow the section 810 notice and hearing requirements. The Refuge may proceed with an action that would significantly restrict subsistence uses only if it first determines:

- Such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands,
- The proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and
- Reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions."
- Gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to section 805;
- Gives notice of, and holds, a hearing in the vicinity of the area involved; and

The evaluation and findings required by section 810 are considered in this analysis. Determining that significant restrictions to subsistence uses that may result in any of the alternatives in the assessment, the following factors were considered:

- A reduction in subsistence uses due to factors such as direct impacts on the resource, adverse impacts on habitat, or increased competition for the resources.
- A reduction in the subsistence uses due to changes in availability of resources caused by an alteration in their distribution, migration, or location.
- A reduction in subsistence uses due to limitations on the access to harvestable resources such as physical or legal barriers.

III. PROPOSED ACTION ON FEDERAL LANDS

The Alutiiq Tribe of Old Harbor is proposing to drill approximately 29 borehole samples utilizing a tracked drill rig. The proposed action would include a borehole approximately every 500 feet along the 10,150-foot penstock and tailrace alignment and increase in to every 25 feet along the intake site diversion wall. The proposed area geotechnical drilling would occur is approximately 158 acres. Boring would be done with Geoprobe 1028 track-mounted rig or similar machinery. Boreholes would be 6 to 8 inches in diameter and drilled to a depth range of 30 to 70 feet.

A two-inch intake hose would withdraw a maximum of 4,000 gallons per day of drilling using a pump with a rate of 30 gallons per minute. Water from the drilling operations would be directed to a small containment pool within uplands. No water from drilling operations would be directly discharged into creeks or existing water bodies.

The proposed action would occur from January 1, 2025 to April 30, 2025. The applicant predicts each borehole to take approximately two days to access and complete. The project is predicted to take two months to complete the 29 boreholes. The extended work window is to allow for weather delays as needed.

The proposed action would occur within the Seward Meridian in Township 34 South, Range 25 West in Sections 7, 17, 18, and 20; and in Township 34 South Range 26 West Section 12. The boreholes would start and end at approximately at 57.2464496°N, 153.3447344°W and 57.2320993°N, 153.3077541°W.

IV. AFFECTED ENVIRONMENT

Subsistence practices in the project area primarily occur in the spring, summer, and fall outside of the proposed work timeline. The harvest of wild resources are determined by the availability of the species through different times of the year. As outlined in the Refuge Comprehensive Conservation Plan (CCP), subsistence use by residents of the Kodiak Archipelago is described in a number of technical reports by the Alaska Department of Fish and Game, including a complete list of species present and subsistence uses within the proposed project area (USFWS 2008, Sill, Keating, and Neufeld 2021). The people most affected by this project live in the community of Old Harbor, Alaska.

According to the Refuge CCP (2008), most subsistence fishing likely occurs off the Refuge and under state regulations. Deer, elk, goat, and bear hunting occur both on and off Refuge lands (USFWS 2008). There are federal subsistence hunting regulations for elk, deer and brown bear, however, only deer and bear subsistence hunting occur in the proposed project area. All mountain goat hunting occurs under state regulations (USFWS 2008). The majority of brown bears harvest by Old Harbor residents occurs in April. Some of the project area overlaps with reported hunting locations for brown bear and deer by residents (Sill, Keating, and Neufeld 2021).

The following table shows the seasons and limits for the species most often used for subsistence in the area of Old Harbor, Alaska.

Alaska State Hunting & Trapping Seasons & Limits		
Brown Bear (Fall)	One bear every four regulatory years by permit (includes spring hunt)	Oct 25 – Nov 30
Brown Bear (Spring)	One bear every four regulatory years by permit (includes fall hunt)	Apr 1 – May 15

Deer	Three deer total	Aug 1 – Sept 30 (Bucks Only) Oct 1 – Dec 31 (Any Deer)
Goat	One goat by permit	Aug 20 – Oct 25 Nov 1-Jan 31 (RG476-Old Harbor)
Federal Subsistence Hunting Seasons & Limits (Kodiak Refuge Lands Only)		
Brown Bear	3 permits for the community of Old Harbor	Dec 1 – Dec 15 & Apr 1 – May 15
Deer	4 deer	Aug 1 –Jan 31 Oct 1-Jan 31 (antlerless only)
Migratory Bird Hunting Seasons & Limits (Oct 8 – Jan 22 for all)		
Ducks	7 per day, 21 in possession	No more than 2 canvasback per day, 6 in possession
Sea Ducks (residents)	10 per day, 20 in possession	Steller's and spectacled eiders closed statewide. Buffleheads and goldeneyes are not considered sea ducks. Trumpeter Swans are closed statewide.
Subsistence Migratory Bird Harvest Seasons & Limits (Apr 2 – Aug 31)		
Seabirds & eggs	No limit.	Apr 2–Jun 30 & Jul 31–Aug 31
All other birds & eggs	No limit.	Apr 2 – Jun 20 & Jul 22 – Aug 31
Alaska State Sport Fishing Seasons & Limits (Fresh Water)		
King Salmon	≥ 20 inches – 2 per day, 2 in possession, Annual limit of 5 fish.	Year Round.
King Salmon	< 20 inches – 10 per day, 10 in possession	Year Round.
Other Salmon	≥ 20 inches (combination of all species) – 5 per day, 10 in possession.	Year Round
Other Salmon	< 20 inches – 10 per day, 10 in possession	Year Round
Rainbow/Steelhead Trout	2 per day, 2 in possession	Only 1 of which may be ≥ 20 inches. Annual limit of 2 fish.
Dolly Varden & Arctic Grayling	10 per day, 10 in possession	Year Round
Other Species	No limit	Year Round
Alaska State Sport Fishing Seasons & Limits (Salt Water)		
King Salmon	2 per day, 2 in possession.	No annual limit.
Other Salmon	5 per day, 10 in possession.	No annual limit.

Rainbow/Steelhead Trout	2 per day, 2 in possession	Only 1 of which may be ≥ 20 inches. Annual limit of 2 fish.
Dolly Varden	10 per day, 10 in possession	Year Round
Lingcod	2 per day, 4 in possession	Jul 1 – Dec 31
Sharks	1 daily, 1 in possession	Annual limit of 2
Spiny dogfish	5 daily, 5 in possession	
Halibut	2 per day, 4 in possession	Feb 1 – Dec 31
Rockfish	5 per day, 10 in possession	
King Crab		CLOSED
Dungeness Crab	6 ½ inches or more. Males only. 12 per day, 12 in possession	Males only.
Tanner Crab	5 ½ inches or more. Males only. 6 per day, 6 in possession.	July 25 – Feb 10
Alaska State Subsistence Fishing Seasons & Limits		
Fisheries, besides those listed below	No limit	Jan 1 – Dec 31
Lingcod		Jul 1 – Dec 31
Herring	500 pounds per calendar year	Jan 1 – Dec 31
Federal Subsistence Fishing Seasons & Limits (Federal waters only)		
Fisheries, including salmon	No limit	Year round

Evaluation:

Geotechnical Survey Work: Survey activities would be required to occur between January 1, 2025 to April 30, 2025 and would only last one season. The geotechnical survey work as proposed would include drilling boreholes every 25-500 feet along the proposed access route from the community of Old Harbor to the proposed construction site. Each borehole would be 3 to 7 inches wide and 30 to 70 feet deep. A drilling rig will be used to drill each borehole. The drill rig has tracks to allow it to move along the route. If and when the vegetation becomes too thick or elevation too steep for the rig to move using its tracks, the Tribe is proposing to move the drilling rig and crew via helicopter. The impassable borehole sites would be accessed from Old Harbor via an overland route by helicopter. Helicopter flights during the proposed geotechnical survey work would cause disturbance to wildlife and people using the area. Although survey work may require helicopter flights, they are not expected to change the distribution or movements of wildlife significantly long-term. Flights would overlap with the times of the year where there could be disturbance to denning bears and bears emerging from their dens. In general, activities associated with the proposed geotechnical work would be noticeable to area users due to the proximity to the community of Old Harbor.

The spring federal subsistence brown bear hunt begins Apr 1, which coincides with a portion of the proposed survey work period. The federal subsistence deer hunting season goes through January 31, which coincides with a portion of the proposed survey work period.

Vegetation harvest mostly occurs outside of the proposed survey work period and occurs outside of the proposed project work area as reported by resident of Old Harbor (Sill, Keating, and Neufeld 2021).

The majority of federal subsistence fishing for salmon species occurs from July through September, therefore there would be minimal disturbance to subsistence salmon fishing.

V. SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on existing subsistence activities, three evaluation criteria were analyzed relative to existing subsistence resources that could be impacted. The evaluation criteria are as follows:

1. The potential to reduce important subsistence fish and wildlife populations by (a) reductions in numbers, (b) redistribution of subsistence resources, or (c) habitat losses;
2. What affect the action might have on subsistence fisher or hunter access; and
3. The potential for the action to increase fisher or hunter competition for subsistence resources.

The proposed survey work sites are within areas used for subsistence and the helicopter flights would cross areas being used for subsistence activities.

1. The potential to reduce populations: Habitat damage or destruction due to the proposed geotechnical survey work would cause isolated disturbance to wildlife, but not incur population scale reductions to wildlife species.
2. Restriction of access: Habitat damage or destruction due to the proposed geotechnical survey work would occur, impacting short-term subsistence uses in the area. During the proposed survey work period there may be restricted access to project areas.
3. Increase in competition: Disturbance to vegetation or wildlife movements in and adjacent to the project area may result in short-term impacts to competition for subsistence uses in the area. Due to the survey work period, there may be restricted access to project areas, increasing competition in other areas for subsistence uses.

The potential to reduce populations:

1. The proposed actions are not expected to cause a significant decline of wildlife species in the affected areas.
2. The proposed actions are not expected to cause a significant displacement of subsistence resources in the affected areas.

The effect on subsistence access:

The proposed actions are not expected to significantly restrict current subsistence use patterns.

The potential to increase competition:

The proposed actions are not expected to significantly restrict or increase competition for subsistence resources on federal public lands within the affected area

VI. AVAILABILITY OF OTHER LANDS

The proposed action is in support of a project that would occur in a specific footprint on the Refuge. Deviation to other lands would not be possible while still carrying out the applicant's purpose for the project.

VII. ALTERNATIVES CONSIDERED

No alternatives exist that would reduce or eliminate the use of FWS public lands needed for subsistence purposes. The proposed action needs to occur in the exact location and alternatives could not deviate from the affected area.

VIII. FINDINGS

No proposed or foreseen significant restrictions to subsistence uses is envisioned for this project.

Acoustical impacts could affect individuals or families around the proposed geotechnical survey work. Increased survey work traffic and helicopter use may displace some wildlife from normal habitat, but this effect would be short-term.

Supporting Documents:

USFWS. 2008. Kodiak National Wildlife Refuge Comprehensive Conservation Plan. U.S. Fish and Wildlife Service, Record of Decision, Comprehensive Conservation Plan. Internet website: <https://ecos.fws.gov/ServCat/Reference/Profile/111020>

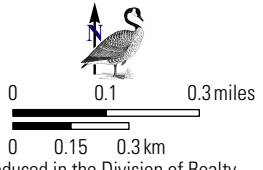
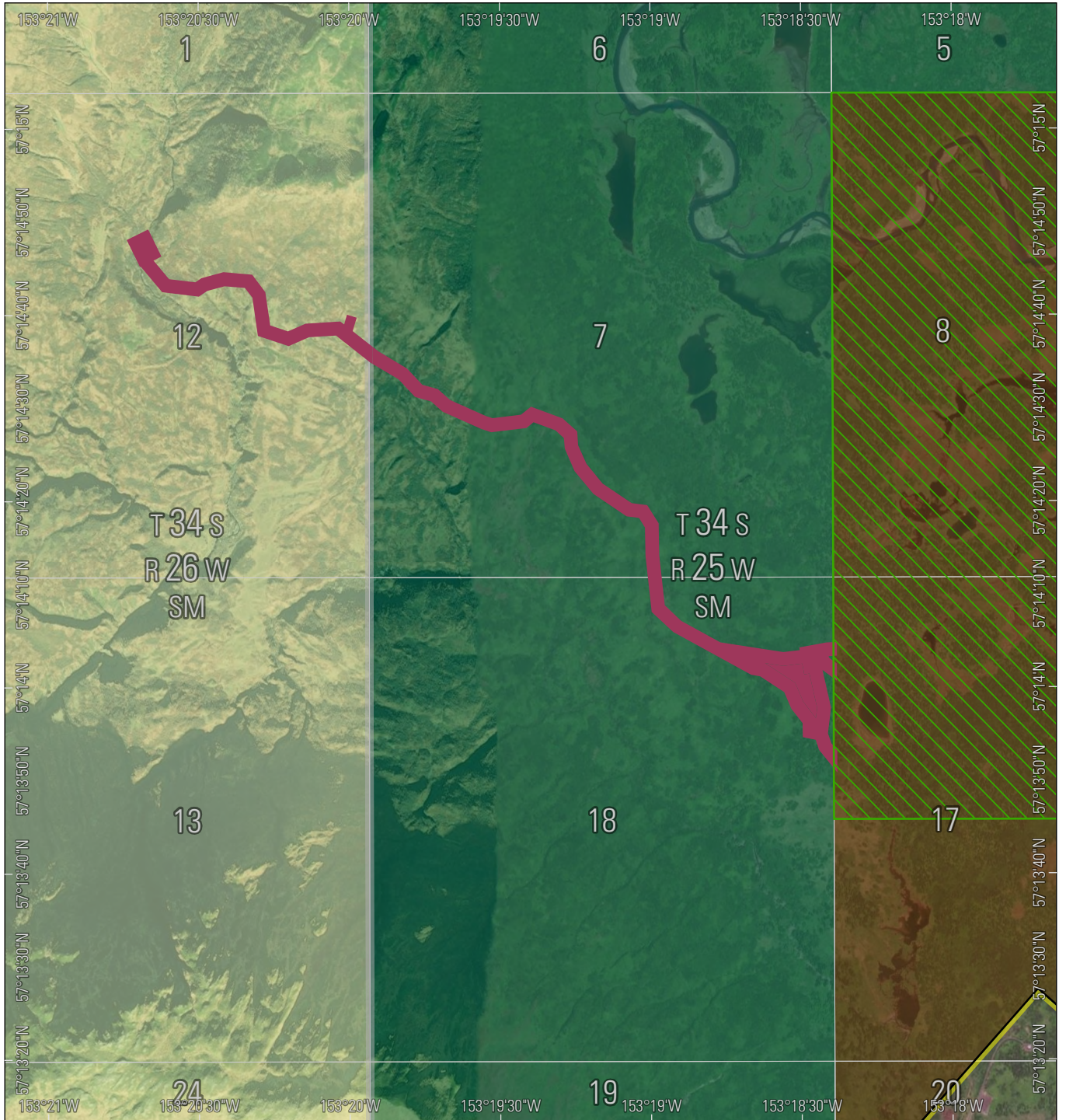
ADFG. 2021. Harvest and Use of Wild Resources in Akhiok, Old Harbor, and Larsen Bay, 2018. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper no. 477, Anchorage, Alaska, USA.

Appendix C
Project Map



U.S. Fish & Wildlife Service
Kodiak National Wildlife Refuge
Alaska

Old Harbor Geotechnical Survey



- Project Area
- Village Corporation - conveyed
- USFWS - withdrawn
- U.S. Conservation Easement
- USFWS - acquired
- Kodiak NWR Boundary

Produced in the Division of Realty
 Anchorage, AK
 Base Map Source: ESRI, Inc.
 Map Date: Aug. 28, 2024
 Map ID #: 09-0227

*The State of Alaska has a Conservation Easement on USFWS Acquired Lands and also the U.S. Conservation Easement.

