ENVIRONMENTAL ASSESSMENT

Platinum Creek Mine

2012/2013 Seismic Exploration Plan on Claims within the Togiak National Wildlife Refuge

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List of Acronyms and Abbreviations

ADF&G	Alaska Department of Fish and Game
ANILCA	Alaska National Interest Lands Conservation Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
4WD	Four-wheel drive
GMU	Game Management Unit
GPS	Global Positioning System
MBTA	Migratory Bird Treaty Act
mi2	square mile(s)
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
PCM	Platinum Creek Mine
psi	pounds per square inch
Refuge	Togiak National Wildlife Refuge
ROD	Record of Decision
Service	U.S. Fish and Wildlife Service
SHPO	State Historic Preservation Office
SUP	Special Use Permit
TERRA	Terrestrial for Every Region of Rural Alaska
USACE	U.S. Army Corps of Engineers
XS Platinum, Inc.	XS Platinum (also referred to as “Applicant”)

1.0 Purpose and Need for the Action

1.1 Purpose of this Environmental Assessment

The purpose of this environmental assessment is to analyze the potential impacts of the proposed seismic exploration on the environment of Togiak National Wildlife Refuge (Refuge) in order to provide adequate information to determine if a special use permit should be issued.

1.2 Need for Action

The U.S. Fish and Wildlife Service (Service) received a Special Use Permit (SUP) application from XS Platinum, Inc. (XS Platinum, Applicant) to conduct a geophysical exploration program on claims that are part of the Platinum Creek Mine (PCM) and are located within the Refuge. The geophysical exploration program would assist XS Platinum in determining the location of the paleofluvial stream channels and the depths to bedrock on the claims (XS Platinum 2011).

1.3 Background

The majority of the PCM lies outside of the Refuge; however the claims of interest extend within the Refuge. These PCM claims were originally owned and controlled by the Goodnews Bay Mining Company, a predecessor in title to XS Platinum, and although these claims were not mined as part of that company's operations, exploration drilling was conducted on these claims. Historic mining activity on the Salmon River and limited drilling in the area of the claims suggests that the alluvial gravel deposits containing platinum and gold continues southward beyond the current dredge mining limit. Of the aggregate number of placer claims currently owned by XS Platinum as part of the PCM, there are six claims covering the Salmon River (Salmon River Claims) and 16 claims extending towards Chagvan Bay (Chagvan Bay Claims) within the Refuge boundaries that predate the establishment of the Refuge. It is on these claims, within the Refuge, where the planned exploration work would occur (XS Platinum 2011). Most of these claims are located on Refuge owned lands, but submerged lands beneath any waters ultimately determined navigable are owned by the State of Alaska and would be part of the Cape Newenham State Game Refuge.

The geophysical exploration program would provide the Applicant necessary and valuable information for identifying resource targets for future drilling. Specifically, the geophysical exploration activities would allow the Applicant to identify the location and depths to bedrock and identify the location of the paleo-stream channel(s) on the Salmon River Claims and the Chagvan Bay Claims. Locating the paleo-stream channel(s) would allow the Applicant to incorporate this information into planning a second phase of the program, which would likely involve drilling into the paleo-stream channel(s) material to test for precious metal resources (XS Platinum 2011).

1.4 Decision to be Made

The Service will determine if the proposed action would or would not be a major federal action that could significantly affect the quality of the human environment. If the action would not significantly affect the quality of the human environment, a Finding of No Significant Impact (FONSI) would be issued.

If the Service determines that the selected alternative would significantly affect the quality of the human environment, then an Environmental Impact Statement (EIS) would be prepared before a decision could be made.

If the Service issues a FONSI, the Refuge Manager would issue a Special Use Permit to allow the seismic exploration to occur. A Compatibility Determination is not required for this action (603 FW 2.10).

1.5 Authorities

Operation and management of the Refuge is governed by a wide array of laws, treaties, and executive orders. Among the most important is the National Wildlife Refuge System Administration Act, as amended by the National Wildlife Refuge System Improvement Act. For the national wildlife refuges in Alaska, the Alaska National Interest Lands Conservation Act (ANILCA), as amended, provides key management direction. The following is a brief discussion of these laws. Additional descriptions of legal guidance can be found in the Refuge Comprehensive Conservation Plan (FWS 2009a).

Legal Guidance

The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, (16 U.S.C. 668-668ee, Refuge Administration Act) establishes a unifying mission for the Refuge System and a process for determining compatible uses of refuges. This act states, first and foremost, the mission of the National Wildlife Refuge System be focused on wildlife conservation. This act also identifies six priority wildlife-dependent recreation uses: hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

For national wildlife refuges in Alaska, the Alaska Native Claims Settlement Act of 1971 (ANCSA) and ANILCA of 1980, as amended (16 U.S.C 140hh-3233, 43 U.S.C. 1602-1784) provides key management direction. ANILCA sets forth the purposes of the refuge, defines provisions for planning and management, and authorizes studies and programs related to wildlife and resources, subsistence opportunities, recreation, and economic activities. Section 1110(b) of ANILCA provides for adequate and feasible access to inholdings, including valid mining claims, subject to reasonable regulations to protect the natural and other values of the land. Regulations addressing access to inholdings in conservation system units in Alaska are found in the Code of Federal Regulations (43 CFR 36.10).

Refuge Purposes

The portion of the Refuge designated as the Cape Newenham National Wildlife Refuge (southwest of the project area) in 1969 was given broad purpose, "… for the protection of wildlife and their habitat …" in Public Land Order 4583, dated January 23, 1969. Later ANILCA, specifically Section 303(6)(B), set forth the following major purposes for which the Refuge (including the former Cape Newenham National Wildlife Refuge) was established and shall be managed:

(i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);

(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 (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 (i), water quality and necessary water quantity within the refuge.

The Togiak Wilderness Area, within the Refuge, was created to secure an enduring resource of wilderness, to protect and preserve the wilderness character of areas within the National Wilderness Resource Preservation System, and to administer this wilderness for the use and enjoyment of the American people in a way that will leave it unimpaired for future use and enjoyment as wilderness (Section 2(a) of the Wilderness Act of 1964).

Refuge Vision

The vision of the Refuge is to "continue to be a healthy functioning ecosystem where fish and wildlife populations and their habitats exist in an environment primarily affected by the forces of nature. Current and future generations will have opportunities to participate in a variety of fish- and wildlife-dependent activities that emphasize self-reliance, solitude, and a close relationship with the environment. The public will gain an understanding of the refuge on natural, cultural, and scientific levels in order to appreciate the importance of its protection and preservation for future generations (FWS 2009a)."

Refuge Management

Although five management categories, ranging from Intensive Management to designated Wilderness, are used to describe management levels throughout the refuges in Alaska, only two management categories, Wilderness and Minimal Management, are applied to the Refuge (FWS 2009a). A management category is used to define the level of human activity appropriate to a specific area of the refuge. The PCM claims within the Refuge are within the area classified as Minimal Management (FWS 2009a). The Comprehensive Conservation Plan states that geophysical exploration and seismic studies may be authorized on lands designated as Minimal Management through the SUP process. Mining of hardrock minerals is only allowed on refuge lands on valid mining claims (FWS 2009a).

1.6 Issues to be Addressed

The Service has identified the following issues, framed below as questions that should be evaluated and answered prior to taking action (making a decision) with respect to this SUP request. The issues selected for analysis were determined by Service based on review of the Proposed Action.

- *Impacts on wildlife, plants, and habitats including noise impacts* – What would be the likely impacts of the Proposed Action on the wildlife, plants, and habitats of the refuge including associated noise and geophysical exploration activities? What would be the direct impacts as well as secondary impacts? Are there threatened, endangered or special trust species that could be affected by these activities?

- *Impacts on refuge users including noise impacts* – What would the likely impacts to subsistence users and other refuge users be from the activity?
- *Impacts to cultural resources* – How would the seismic exploration, including the digging of shot holes, impact cultural resources in the area? What mitigation measures are planned to minimize potential impacts to cultural resources?

2.0 Alternatives

This chapter describes the alternatives evaluated in this EA and provides a basis for comparison of environmental impacts to the resources described in Chapters 3 and 4. This EA analyzes one action alternative (Proposed Action) and the No Action alternative.

2.1 Proposed Action

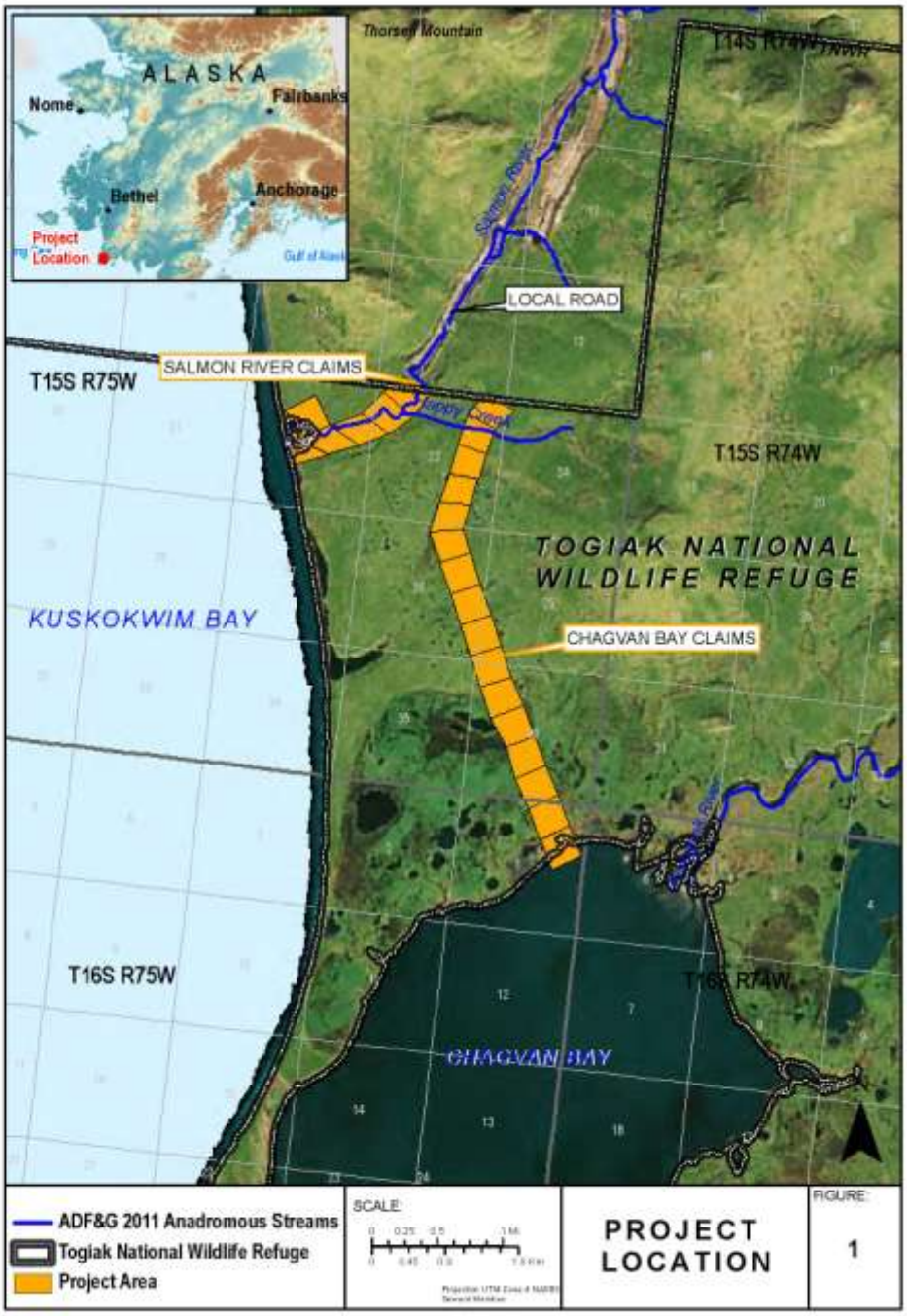
Geophysical exploration work would begin in winter 2012-2013 on claims located in the Refuge (**Figure 1**). Work would begin at the north end of the claims and would then proceed southward toward the mouth of the Salmon River (Salmon River Claims). Once work has reached the practical southern limit of the Salmon River Claims, the crews would begin seismic work on the claims leading to Chagvan Bay (Chagvan Bay Claims, XS Platinum 2011).

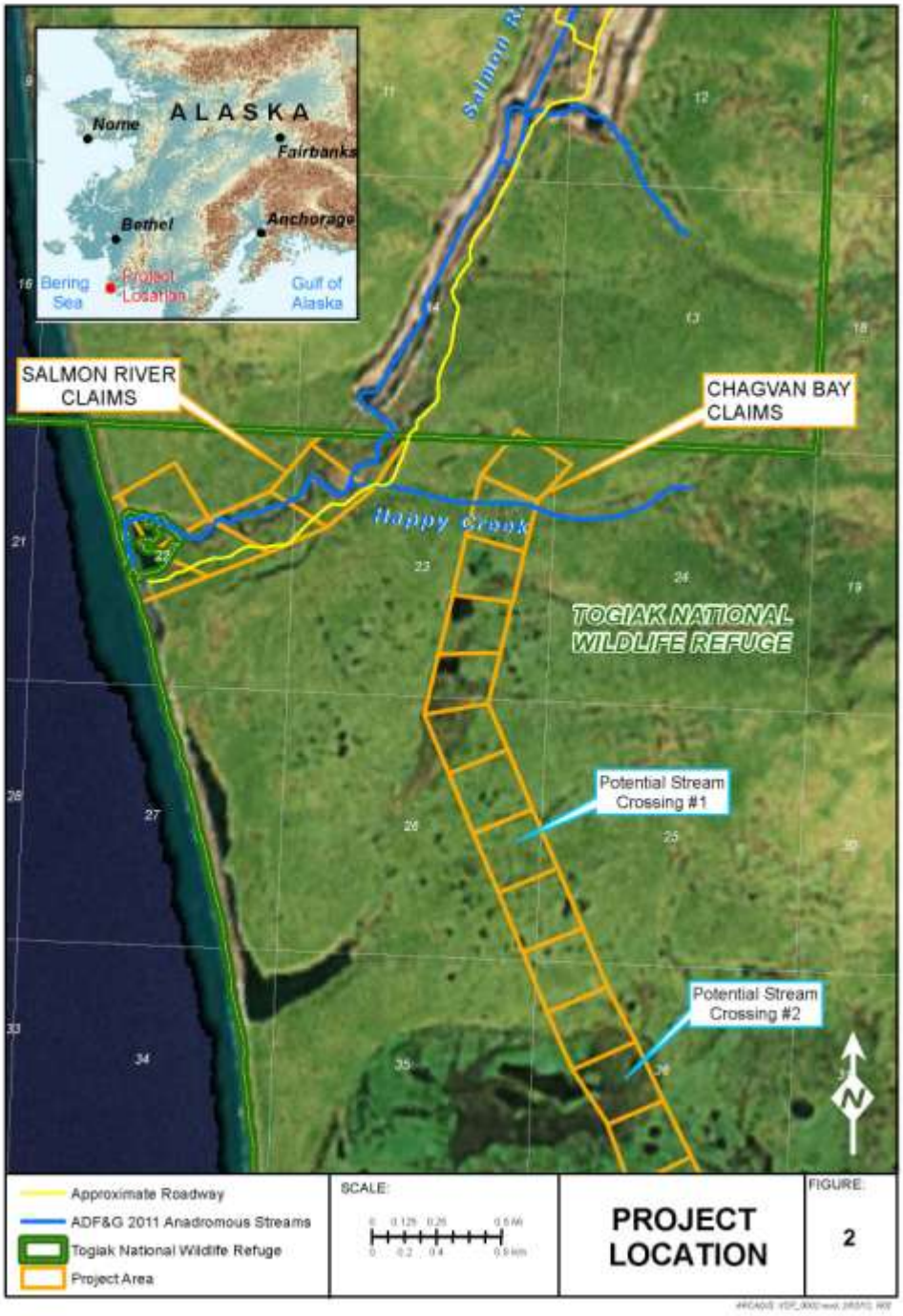
Along the Salmon River, a road exists within the Refuge to the Kuskokwim Bay (**Figure 2**). This road is used primarily by locals accessing the Salmon River and beaches along Kuskokwim Bay within the Refuge. The road would be used for vehicle access to the XS Platinum claims along the Salmon River and possibly some claims toward Chagvan Bay. Bulk fuel for vehicles would be located at the PCM and main fueling activity would occur at the PCM. If necessary, five gallon containers of fuel would be transported on vehicles for daily use (XS Platinum 2011). Most of XS Platinum's claims are located on Refuge owned lands, but submerged lands beneath any waters ultimately determined navigable, such as Salmon River, are owned by the State of Alaska and would be part of the Cape Newenham State Game Refuge. The Proposed Action would not include any new activities below the ordinary high water mark of fish bearing streams. Stream crossings include using the existing road crossing over Salmon River and two potential stream crossing shown in Figure 2. The Applicant will consult with the Alaska Department of Fish and Game (ADF&G) and apply for any necessary permits.

There are existing PCM roads outside of the Refuge; which would be used to transport personnel and equipment in four-wheel drive (4WD) vehicles to staging sites near the Refuge boundary for work on claims heading toward Chagvan Bay.

Beyond the staging areas and within the Refuge, geophysical equipment and workers would be transported using from existing roads via snowmachines pulling sleds. No snowmachines would be taken off-road until the tundra has frozen to a sufficient depth to prevent vehicles from impacting the surface. Sufficient freeze depth to avoid impacts to the tundra is estimated to be a minimum of three inches below surface (XS Platinum 2011). Appendix A includes a list of all vehicles that would be used in the operations and their associated weight and expected ground contact weight.

The PCM placer claims were surveyed by a Registered Minerals Surveyor in 1980 when they planned to patent the group claims. All claim corners were set by the surveyor using rebar with a 3½ inch aluminum cap. To assist XS Platinum in the visual location of surveyed claim corners, a 4 to 5 foot piece of rebar will be installed upon a 12 inch long, 4 inch by 4 inch painted wooden block would also be installed. This would allow XS Platinum to more easily locate the claim corners visually during the early winter conditions (XS Platinum 2011).


ALASKA
Nome
Fairbanks
Bethel
Anchorage
Project Location
Thorsen Mountain
T14S R74W
Salmon River
LOCAL ROAD
SALMON RIVER CLAIMS
T15S R75W
Kipnuk Creek
T15S R74W
TOGIAK NATIONAL WILDLIFE REFUGE
KUSKOKWIM BAY
CHAGVAN BAY CLAIMS
Chagvan River
T16S R75W
T16S R74W
CHAGVAN BAY
ADF&G 2011 Anadromous Streams
Togiak National Wildlife Refuge
Project Area
SCALE:
PROJECT LOCATION
FIGURE:
1


ALASKA
Nome
Fairbanks
Bethel
Anchorage
Bering Sea
Project Location
Gulf of Alaska
SALMON RIVER CLAIMS
CHAGVAN BAY CLAIMS
Happy Creek
TOGIAK NATIONAL WILDLIFE REFUGE
Potential Stream Crossing #1
Potential Stream Crossing #2
N
Approximate Roadway
ADF&G 2011 Anadromous Streams
Togiak National Wildlife Refuge
Project Area
SCALE:
PROJECT LOCATION
FIGURE:
2

The approximate area of the claims is 1.2 square mile (mi²), of which approximately 0.9 mi² is within the Chagvan Bay Claims and approximately 0.3 mi² is within the Salmon River Claims. The claim blocks are to be covered by survey lines substantially perpendicular to the claim side boundaries, which are approximately 1,312 feet wide and another perpendicular tie line through the center of the survey lines that would run in substantially a north/south direction. Using 410 foot line spacing (4.9 line miles/ square mile), the total line kilometers of survey and tie lines are estimated at approximately 4.0 line miles for claims along the Salmon River, and approximately 11.8 line miles for the claims to Chagvan Bay. Note that line spacing may be adjusted after raw field data is post-processed and reviewed by the geophysical survey contractor; however, the total distance of line miles surveyed are not expected to change. Seismic energy for the surveying would be provided from small explosive charges (1/3 to 1/2 pound) buried in hand-excavated or hand augered shot holes. These shot holes (approximately 888) are anticipated to be from three to 5 feet (1 to 1.5 meters) in depth. The electric blasting caps in the explosive charges would be detonated with a high voltage, capacitor-type blaster operated by an Alaskan certified blaster (XS Platinum 2011).

Field procedures would entail setting out the geophone cables in a straight line and then implanting the geophones (24 geophones per line). Shot points would be located within and off the ends of each cable. Once all the data is recorded, the geophone array would be picked up and moved to the next survey line, where the procedure would be repeated. Geophone spacing along the seismic cables would be at approximately 25 foot intervals. Each 24 geophone spread would record the small explosive shots located at different positions along the seismic cables. These shots enable layer thicknesses and bedrock depth calculations at each geophone location, which ultimately provides the high resolution geological information. Geophone spacing may be adjusted after the raw field data is post processed and reviewed by the geophysical survey contractor (XS Platinum 2011).

Positioning information such as line locations would be recorded in the field with Global Positioning System (GPS). Should absolute elevations be required, markers would be left in the field such that a survey crew can later establish detailed position locations and elevations (XS Platinum 2011).

Environmental Protection Measures

The following is a summary of the environmental protection measures that have been incorporated into the Proposed Action in an effort to reduce or eliminate impacts to the environment.

1. No vehicles (snowmachines) would be taken off road until the tundra has frozen to a sufficient depth (minimum of 3 inches) to lessen the vehicle impact of the vegetative mat/tundra. The Applicant would contact the Refuge Manager prior to commencement of activities to confirm that sufficient frost depth is met prior to initiating geophysical exploration activities and for guidance on snowmachine use to minimize vegetation damage, given the snow depth in place at the survey locations.

2. If stream crossings cannot be avoided, the following steps would be followed for stream crossings:
    - Crossing would occur only if there is sufficient ice to support equipment.
    - Crossings would be made from bank to bank in a direction that is substantially perpendicular to the direction of normal stream flow and at locations with gradual sloping banks.
    - Equipment would not enter open water areas of any watercourses.
3. An observer capable of identifying Steller's Eiders would be present and on the lookout for Steller's Eiders during any seismic activities that are conducted within ½ mile of Chagvan Bay from late July through October. In the event the observer notes the presence of Steller's Eiders, seismic work would be deferred until the eiders have voluntarily left the area (moved more than 1,640 feet [500 meters] offshore).
4. ADF&G Blasting Standards for the Protection of Fish would be adhered to near fish-bearing waters.
5. Shot holes located in jurisdictional wetlands would comply with USACE Nationwide Permit 6, including the applicable regional conditions, including:
    a. Regional Condition F – Equipment Standards: Heavy equipment working in wetlands or mudflats must be placed on mats, other measures (e.g. ice roads, compacts snow, low psi ground bearing weight) must be taken to prevent soil disturbance. Appendix A includes a list of all vehicles that would be used in the operations and their associated weight and expected ground contact weight.
6. Equipment servicing and main fueling for operations would occur off the Refuge at the PCM and would not occur within 100 feet of waterways. If necessary, five gallon containers of fuel would be transported on vehicles for daily use.
7. Any problems with wildlife (bear or other species) that occur would be reported immediately to the Refuge Manager. Any animal taken in defense of life or property must be reported to the Refuge Manager immediately. Alaska Department of Fish and Game requirements with regard to taking wildlife in defense of life or property must also be adhered to.
8. Workers would not be allowed to engage in consumptive activities (hunting, fishing, gathering).
9. In accordance with the Archeological Resources Protection Act (16 USC 470aa), the disturbance of archeological or historical sites and the removal of artifacts is prohibited. The excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archeological specimens or artifacts is prohibited. Should historic properties be encountered during project activities, work would stop and the Refuge Manager would be contacted with a phone call.

2.2 No Action Alternative

Under the No Action Alternative, a SUP would not be issued to XS Platinum. XS Platinum would not conduct seismic exploration activities on claims within the Refuge.

3.0 Affected Environment

This chapter provides an overview of the existing resource conditions that could be affected by the alternatives within the proposed project area. Only resources that were associated with issues that the Service identified as needing to be addressed (Section 1.4) are discussed in the following sections.

3.1 General Setting

The Refuge lies within the Bristol Bay and Kodiak Ecosystems, encompassing approximately 60,615 square miles of southwestern Alaska from the Kodiak Archipelago to the Refuge. The Refuge includes the southernmost part of Kuskokwim Bay area south of Bethel and the Yukon Delta National Wildlife Refuge. The Kanektok, Goodnews, and Togiak river systems are located in the Refuge and drain into the Kuskokwim and Bristol Bays. Salmon (*Oncorhynchus* spp.) and Dolly Varden (*Salvelinus malma*), which spawn in these rivers, are important components of the natural ecosystem and economy of the region. River freeze-up usually occurs between late October and late November. Located in the transitional climatic zone, annual snowfall in the refuge ranges from 60 to 150 inches (FWS 2009a).

3.2 Plants and Soils

Plant Communities

Restoration Science & Engineering (2011) delineated potential jurisdictional wetlands and waters of the U.S. and classified habitat types within and adjacent to the PCM, including the project area. The most dominant terrestrial habitat type along the Salmon River Claims is Open Willow Shrub, with pockets of Crowberry Tundra and Sedge Willow Tundra. The most dominant terrestrial habitat type along the Chagvan Bay Claims includes Wet Sedge Meadow Tundra and Lowland Sedge-Moss Bog, with pockets of Crowberry Tundra, Bluejoint Shrub, and Bluejoint Herb.

Wetlands

Along the Salmon River Claims, most of the area is mapped as upland with a few small areas mapped as shrub-emergent wetlands (PSS1/EM1B, Restoration Science & Engineering 2011). The area within the Chagvan Bay Claims is mostly mapped as wetlands (Restoration Science & Engineering 2011). The wetland classifications with the Chagvan Bay Claims are emergent (PEM1F), emergent-scrub shrub (PEM1/SS1B, PEM1/SS1C), and scrub shrub-emergent (PSS/EM1B).

Invasive Species

An invasive species survey has not been completed within the project area; however the Restoration Science & Engineering (2011) wetlands report for the PCM did not note or document the presence of any invasive or noxious weeds within the study area. Because the project area is undisturbed it is unlikely that there are invasive species within the project area; however it is possible that there are invasive species established adjacent to the project area in disturbed areas within the PCM.

Soils

Soils within the Chagvan Bay Claims vary from well-drained mineral soil to poorly drained peat. In general, the soils are commonly found to be moderately acidic (pH 5-6) and mesic. Tundra soils range from moderately acidic to neutral and the substrate is often composed of poorly drained, fine-textured mineral soils with a surface organic mat. Excessively drained alluvial sands and gravels or loams are found along the Salmon River (Restoration Science & Engineering 2011).

3.3 Wildlife

The diverse geology and climate within the Refuge influence the occurrence and diversity of vegetation and wildlife within the refuge. The Refuge is home to at least 283 species of wildlife, including 31 land mammal species, 201 species of birds, and 33 species of fish (FWS 2009a). The project area is located within the southwestern corner of the Refuge and is not likely to provide habitat for all species that inhabit the refuge, especially during the winter months. The following sections provide information on wildlife use of the project area during the winter months.

Mammals

Vegetation within the project area may provide habitat for the following common mammal species that are known to occur within the Refuge: caribou (*Rangifer tarandus*), brown bear (*Ursus arctos*), fox (*Vulpes vulpes*), hares (*Lepus americanus*), and other small mammals.

Caribou have been observed in the general vicinity, south and southeast of the project area during the month of October, near the southern end of Chagvan Bay, Cape Newenham, and Cape Pierce (FWS 2011a). Caribou breed in the fall, with the peak of the rut occurring in late September and early October. While the project area is not in proximity to a rutting area, spring calving has been observed near Chagvan Bay (FWS 2011a).

Brown bears are typically dormant during the winter months, but this dormancy is not the same as a true hibernation, meaning that the bear can be aroused and awaken. Denning times can vary depending on location, snow levels, and temperature. The Refuge participated in the Kuskokwim Mountain Brown Bear study, in which the study bears tend to enter their dens in November and emerge between March and June (Collins, et al. 2005; Kovach, et al. 2006).

Birds

The southern boundary of the project area borders Chagvan Bay, which is an important breeding ground for many species of birds; however this area is not an active breeding ground from October to January. Although, the end of the fall migration of birds from southwest Alaska may extend into the middle of October. It is likely that the diversity and abundance of avian species in the project area declines from October to January.

An aerial survey of Emperor Geese (*Chen canagica*) and other waterbirds in Southwestern Alaska was conducted near the project area on September 29, 2009 (FWS 2009a). All species of waterbirds and marine mammals were counted with emphasis on Emperor Geese, Canada Geese (*Branta canadensis*), and Steller's Eider (*Polysticta stelleri*). Additionally, bird monitoring was completed within the Refuge, specifically Cape Peirce, which is located approximately 10 to15 miles south of Chagvan Bay, from mid-April to mid October (FWS 2000). These surveys provide insight to what avian species may occur in the vicinity of the project area during the proposed geophysical exploration activities (October to January). These species are listed in **Table 1**.

Table 1 Number of Avian Species Observed at Chagvan Bay and Cape Pierce in the Fall of 1999 and 2009

Species	Chagvan Bay[1] 2009	Cape Peirce[2] 1999	
Survey Date	September 29	October 1 – 7	October 8 -15
Pacific Brandt (*Branta bernicla nigricans*)	26	8.9	--
Black Scoter (*Melanitta nigra*)	11	--	--
Canada Goose	190	103.6	--
Emperor Goose (*Chen canagica*)	--	3.6	0.9
Goose species	--	865.0	
Common Eider (*Somateria mollissima)*	55	--	35.1
Harlequin Duck (*Histrionicus histrionicus*)	--	2.3	--
Greater Scaup (*Aythya marila)*	2,165	--	--
Large Gull	138	--	--
Glaucous-winged Gull (*Larus glaucescens*)	--	192.1	17.3
Black-legged Kittiwake (*Rissa tridactyla*)	--	168.4	5.6
Mallard (*Anas Platyrhynchos*)	515	--	--
Northern Pintail (*Anas acuta*)	1,114	--	--
Pelagic Cormorant (*Phalacrocorax pelagicus*)	17	0.1	--
Red-breasted Merganser (*Mergus serrator)*	92	1.6	5.7
Small Gull	1	--	--
Steller's Eider	1,425	--	--
Surf Scoter (*Melanitta perspicillata*)	2	1.3	0.1
White-winged Scoter (*Melanitta fusca)*	261	--	--
Black-billed Magpie (*Pica hudsonica*)	--	0.7	--
Common Raven (*Corvus corax*)	--	9.4	0.4
Black-capped Chickadee (*Poecile atricapillus*)	--	1.0	0.3
Snow Bunting (*Plectrophenax nivalis*)	--	0.9	2.9

Notes:
1 FWS 2009b: Numbers are individuals observed
2 FWS 2000: Numbers represent average number of birds per day

In addition, the following birds are common within the Refuge during the winter months and may also occur within the project area during the proposed activities: Spruce Grouse (*Falcipennis canadensis*), Willow Ptarmigan (*Lagopus lagopus*), Boreal Owl (*Aegolius funereus*), Boreal Chickadee (*Poecile hudsonica),* Red-breasted Nuthatch (*Sitta canadensis*), American Dipper (*Cinclus mexicanus*), Pine Grosbeak (*Pinicola enucleator*), and Common Redpoll (*Carduelis flammea*).

Sensitive avian species (other than federally threatened and endangered species discussed below) that may be in the area during the winter months include McKay's Bunting (*Plectrophenax hyperboreus*) and the Black Scoter. The McKay's Bunting is uncommon but occasionally is observed with Snow Buntings. A sensitive shorebird species that may migrate through the area is the Bristle-thighed Curlew (*Numenius tahitiensis*). These species are considered sensitive and are included on one or more of the following sensitive species lists: the Audubon Society's Alaska WatchList, American Bird Conservancy Green List, Bureau of Land Management Sensitive Species List, and The Nature Conservancy NatureServe ranking (ADF&G 2006).

Fish

A review of the Alaska Department of Fish and Game *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* indicates that the Salmon River, located in the project area, is mapped as anadromous and provides spawning habitat for the following salmon species: pink, chum, coho, chinook, and sockeye (ADF&G 2011a). The river also provides rearing habitat for coho and sockeye. In addition, the Happy River, a tributary of Salmon River that is located within the project area, is also an anadromous water and provides rearing habitat for coho (**Figure 1**). The smaller streams south of Happy Creek that cross the Chagvan Bay Claims are not identified as fishbearing for anadromous or resident fish (ADF&G 2012).

Federally Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973 was enacted to protect threatened and endangered species and to provide a means to conserve their ecosystem. The ESA defines "endangered" as, "… any species which is in danger of extinction throughout all or a significant portion of its range…" §3(6). "Threatened" is defined as, "… any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range…" §3(19). The ESA is administered by the Service and the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service (NOAA Fisheries, formerly the National Marine Fisheries Service [NMFS]). The Service has primary responsibility for terrestrial and freshwater species, while the responsibilities of NOAA Fisheries are mainly marine wildlife.

A review of the Service's federally listed species indicates that there are two listed species that may occur near the project area; the Steller's Eider, listed as threatened

under the ESA, and the Kittlitz's Murrelet (*Brachyramphus brevirostris*), listed as a candidate species for protection under the ESA.

The Steller's Eider is shown as present on the Service's endangered species map in Goodnews Bay (just north of the project area) and Chagvan Bay (FWS 2011b). Groups of Steller's Eiders have been observed in Chagvan Bay during the month of October (FWS 2009b). Nesting habitat for the Kittlitz's Murrelet is mapped just south of Chagvan Bay on the Service's endangered species map (FWS 2011b). Additional information on the Steller's Eider and Kittlitz's Murrelet is provided in the following sections.

Steller's Eider

On June 11, 1997, the Alaska-breeding population of the Steller's Eider was listed as threatened based on the contraction in the species' breeding range in Alaska and the resulting increased potential vulnerability of the remaining breeding population to extirpation (Federal Register 62(112):31748-31757).

The Steller's Eider is the smallest of four eider species, with both sexes averaging about two pounds in weight. The Alaska breeding population nests primarily on the Arctic Coastal Plain, although a very small subpopulation remains on the Yukon-Kuskokwim Delta. After breeding, Steller's Eiders move to marine waters where they undergo a complete molt, including simultaneous replacement of their flight feathers. Individuals remain flightless for about three weeks, but the overall period of flight feather molt for the species lasts from late July until late October, with subadults molting first, followed by adult males and then adult females (Petersen 1981 as cited in FWS 2002a). Steller's Eiders (presumably including members of both the Alaska-breeding and Russian-Pacific populations) molt in a number of locations in southwest Alaska, but the largest numbers concentrate in four areas along the north side of the Alaska Peninsula: Izembek Lagoon, Nelson Lagoon, Port Heiden, and Seal Islands (Gill et al. 1981; Petersen 1981; Metzner 1993 as cited in FWS 2002a). Molting areas where large numbers concentrate tend to be characterized by extensive shallow areas with eelgrass (*Zostera marina*) beds and intertidal sand flats and mudflats where Steller's Eiders forage on marine invertebrates such as molluscs and crustaceans (Petersen 1980, 1981; Metzner 1993 as cited in FWS 2002a). After molting, many Steller's Eiders disperse to the Aleutian Islands, the south side of the Alaska Peninsula, Kodiak Island, and as far east as Cook Inlet, although thousands may remain in the lagoons used for molting unless freezing conditions force them to move to warmer areas.

When the Alaska-breeding population of the Steller's Eider was listed as threatened, the factors causing the decline were unknown. Factors identified as potential causes of decline in the final rule listing the population as threatened (62 FR 31748) included predation, hunting, ingestion of spent lead shot in wetlands, and changes in the marine environment that could affect Steller's Eider food or other resources. Since the listing, other potential threats, such as exposure to oil or other contaminants near fish processing facilities in southwest Alaska, have been identified, but the causes of decline and obstacles to recovery remain to be poorly understood. As a result, the

early recovery tasks will therefore involve research to identify threats and evaluate their impacts on the viability of the population (FWS 2002a).

Kittlitz Murrlet

The Kittlitz's Murrelet is a small diving seabird of the alcid family, closely related to puffins and auks. They are year-round residents of Alaska and far-northeast Russia. The entire North American population, and most of the world's population, inhabits Alaskan coastal waters discontinuously from Point Lay in northwest Alaska south to the northern portions of southeast Alaska (FWS 2002b).

The October 2011 Candidate Notice of Review determined that the threats to the Kittlitz's Murrelet are "moderate in magnitude and imminent" (FWS 2011c. The Kittlitz's Murrelet population has shown a significant decline range-wide. Studies have shown a 74 to 84 percent decline in population over the past 10 to 20 years. The current estimated population in Alaska is 16,700 birds (FWS 2006). Poor nest success could be the underlying reason for the population decline, and if it is occurring rangewide, the population would be expected continue to decline (FWS 2011c).

3.4 Subsistence

ANILCA established the Refuge, among other conservation system units, and one of the purposes of the act, and of the refuge, is to provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so (ANILCA sec. 101(c)). Subsistence is therefore regarded as a way of life rather than just an activity. The meanings of subsistence are based on family traditions, religion, relationships with particular places, and a preference for natural foods (FWS 2009a).

Subsistence, as defined by ANILCA, is the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing for personal or family consumption; and for customary trade (16 U.S.C. § 3113).

Several communities rely on the resources of the Refuge for subsistence purposes, including Platinum and Goodnews Bay, which are the communities that are located near the project area. A wide variety of subsistence activities occur year round on or near the Refuge, and other activities last a short time, depending on the resource (FWS 2009a). The primary subsistence use areas within the Refuge are the Kanektok, Goodnews, Osviak, Matogak, Igushik, and Togiak rivers (FWS 2009a). The communities of Platinum and Goodnews Bay utilize the Goodnews Bay river system for traditional subsistence fishing (Wolfe et al. 1984 as cited in Wolfe et al. 1989). The project area is not in proximity to any of these primary subsistence use areas.

Salmon, non-salmon fish species, large land mammals such as moose and caribou, and wild plants comprise 80 to 90 percent of all subsistence resources harvested by residents of communities within and adjacent to Refuge. The remaining 10 percent is mainly comprised of small land mammals, marine mammals, various bird eggs and bird species, and marine invertebrates (Coiley-Kenner et al. 2003 as cited in FWS 2009a).

In 2009, 36 Goodnews Bay residents held commercial fishing permits for salmon and herring roe fisheries. Many residents also engage in trapping. Subsistence use of salmon, seal, Pacific walrus, birds, berries, moose, and bear is an integral part of the lifestyle (ADCCED 2011). In 2009, eight Platinum residents held commercial fishing permits. Subsistence activities are also an important part of the lifestyle. Salmon and seal are the staples of their diet (ADCCED 2011).

Subsistence use maps that include the community of Platinum suggest a harvest pattern similar to that of Goodnews Bay, but subsistence fishing sites have not been mapped specifically for the Platinum community (FWS 2009a). Most subsistence fishing for the community of Goodnews Bay in the Goodnews River is for char (*Salvelinus alpines*), whitefish (*Coregonus nasus*), Arctic grayling (*Thymallus arcticus*), and rainbow trout (*Oncorhynchus mykiss*). This fishing occurs within the lower 10 to 15 miles of the river, which is located outside of the project area (Wolfe et al. 1984 as cited FWS 2009a; Wolfe 1987 as cited FWS 2009a). From late May through early July, chinook, chum, sockeye, and pink salmon are taken with gill nets along the shore of Goodnews Bay. Salmon are also harvested a short distance up the Goodnews River with drift, set, or seine nets. Most salmon are taken with subsistence nets in Goodnews Bay before commercial season begins (Wolfe 1987 as cited in FWS 2009a). Small quantities are taken throughout the summer from commercial nets in the ocean or the river (Wolfe 1987 as cited in FWS 2009a). Trips are made upriver in summer to gather firewood, hunt beaver and birds, and harvest freshwater fish. In late summer, coho salmon are harvested in the river, and berries are gathered along the shores. Day trips are also made upriver to collect firewood and to harvest Arctic ground squirrel and waterfowl. Some hunters make longer trips far upriver for moose. After the river freezes, trips are made to gather firewood and to hunt small game and the occasional moose. Trapping occurs throughout the area. Jigging through the ice for char, round whitefish, Arctic grayling, and rainbow trout occurs throughout the winter until breakup (Wolfe et al. 1984 as cited FWS 2009a).

Moose hunting, berry picking, firewood-gathering, and the gathering of other plants are primarily fall activities (FWS 2009a). The caribou hunt season dates for Game Management Unit (GMU) 18, Goodnews is August 1 to March 15 (ADF&G 2011b). Moose are also hunted in the general area of the project area during the month of September (RM620 Permit Hunt, ADF&G 2011b). As fall progresses, Dolly Varden, lake trout, Arctic char, rainbow trout, round whitefish, Arctic grayling, and pike are targeted; as lakes begin to freeze, jigging through the ice for these fish is common. Animals hunted include ptarmigan, ground squirrel, and brown bear (FWS 2009a). In 1991, the community of Platinum reported one brown bear harvest and in 1992 the community reported four brown bear harvests (ADF&G 2011c). Trapping for fox, mink, wolf, beaver, otter, wolverine, and lynx occur during the winter months.

Directly adjacent to the project area, locals use the road that parallels Salmon River (Figure 2) to access the beach, where they collect clams and gather driftwood. They also use the road to access areas to hunt geese in late May and September. Berry picking also occurs in ericaceous tundra habitat near the beach in late summer and early fall. Ice fishing occurs near Chagvan Bay, but only occurs every three or four years to allow the fish population to recover (Moyle pers. comm. 2011).

3.5 Cultural Resources

The Refuge has been inhabited for 9,000 years (FWS 2009a). Coastal occupation began as early as 6,000 years ago but becomes prominent by 2,500 years ago. Protected bays and anadromous streams have been the center for human use for the last 3,000 years. Almost 200 sites are recorded on the Refuge with another 50 known from adjacent lands. Research in Chagvan Bay has identified nine prehistoric and early historic sites spanning 2,000 years of occupation, extending into the early 1900's. Sites include large villages with houses and middens, small hamlets, graves, and fishing and hunting camps. Just north of Chagvan Bay, seven prehistoric/early historic sites are known on the lower Salmon River. These sites include camps, village sites with house pits and middens, and graves. Two of the sites are eligible for conveyance to the Calista Corporation. Additional sites almost certainly exist along the river, and may exist in upland areas between Chagvan Bay and the Salmon River.

3.6 Priority Public Uses

The Refuge provides opportunities for all of the "Big Six" wildlife-dependent recreational activities (priority public uses), including: hunting and fishing, wildlife observation and photography, and education and interpretation (FWS 2009a). In the vicinity of the project area, public use is limited to local subsistence activities described above in Section 3.4. This use includes collecting clams, gathering firewood, berry picking, hunting, and fishing (Moyle, pers. comm. 2011). During the winter, public use near the project area becomes even more limited. Occasionally, ice fishing occurs near Chagvan Bay (Moyle, pers. comm. 2011).

4.0 Environmental Consequences

This chapter provides the scientific and analytic basis for the comparisons of the alternatives in terms of their impacts. It describes the potential changes to the resources described in the Chapter 3 due to the implementation of the Proposed Action and No Action alternatives.

Environmental consequences are described in terms of direct, indirect, and cumulative impacts. Direct impacts are those that are caused by the action and occur at the same time and place. Indirect impacts are those that are caused by the action, but occur later in time or are further removed in distance, and are still reasonably foreseeable. The line between direct and indirect impacts is often vague and therefore these impacts are described together. Cumulative impacts are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.

Impacts are described in terms of context (site-specific, local, or regional), duration (short-term [0-5 years] or long-term [5+ years]) and intensity (negligible, minor, moderate, or major). The thresholds of change for intensity of an impact are defined as:

- Negligible – the impact is at the lowest levels of detection;
- Minor – the impact is slight, but detectable;
- Moderate – the impact is readily apparent; and
- Major – the impact is a severe or adverse impact or of exceptional benefit.

Actions considered in the cumulative impacts analyses include the past, current, and future mining operations at the PCM. Platinum was discovered by locals in the streams draining Red Mountain in 1926 and 1927. Additional discoveries were made in subsequent years and a claim-staking rush ensued, followed by several small-scale mining operations. The Goodnews Bay Mining Company constructed a bucket-line dredge on the property in 1937. Claims were consolidated, and from 1940 until about 1976, and the Goodnews Bay Mining Company was the sole operator in the area. The Goodnews Bay platinum mine produced about 650,000 troy ounces of platinum metal concentrate from placer deposits in the Salmon River Valley. The Goodnews Bay Mining Company assets were sold in 1979 and the dredge was renovated and operated intermittently in the early 1980's. XS Platinum acquired the placer property in 2007 and is the current placer operator (Calista 2010). Currently, XS Platinum has begun evaluating and processing the gold and platinum resources within historic mining waste materials. Should XS Platinum receive a SUP to conduct the geophysical exploration program on Salmon River and Chagvan Bay claims, the next reasonably foreseeable future action associate with these claims would be drilling into the paleo-stream channels (XS Platinum 2011).

Other reasonably foreseeable actions considered in the cumulative impact analysis include potential impacts due to climate change.

4.1 Plants and Soils

Proposed Action

Direct and Indirect Impacts

Disturbance to vegetation would be limited to the advancement of approximately four inch diameter shot holes to a depth of approximately 3 to 5 feet (1 to 1.5 meters) below the vegetative mat. Approximately 888 shot holes (approximately 226 shots within the Salmon River Claims, and approximately 662 within the Chagvan Bay Claims) would be hand excavated or hand augured. Each shot hole would be backfilled with the cuttings, leaving no permanent surface disturbance.

The Proposed Action would be conducted between October and January of 2012-2013, and would not begin until the tundra has frozen to approximately 3 inches below the surface, a depth the Refuge believes to be sufficient to reduce impacts to the surface from snowmachines and cargo sleds. The Applicant would consult with the Refuge Manager to ensure the tundra is frozen prior to commencement of activities. In addition, the seismic contractor would check each seismic line for depth to frozen ground using a slide hammer penetrometer or similar tool. Snowmachines would be used for transportation to further limit the potential for compression of the underlying vegetative mat. No materials would be removed from the site and any soil displaced by the shot would be packed back into the shot hole.

Depth of snow cover is also an important factor in protecting damage to the vegetative mat. The project area is windswept and much of the snow accumulation is limited to the height of the vegetation (Moyle pers. comm. 2011). An adequate amount of snow depth that would protect the vegetative mat from proposed equipment would be the at the Refuge Manager's discretion. The Applicant would consult with the Refuge Manager prior to commencement of proposed activities.

Executive Order 13112, Invasive Species, requires federal agencies to: prevent the introduction of invasive species, detect and respond to and control populations of invasive species, monitor invasive species populations, provide restoration of native species and habitat conditions, conduct research and develop technologies to prevent the introduction of invasive species, promote public education on invasive species, and cannot authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species.

The Proposed Action would not require the restoration of habitat with a seed mix. In addition, the hand auger(s) would be cleaned and disinfected prior to any use in the project area to verify no noxious or invasive plants or plant materials are transported between uses of the auger(s). Therefore, the spread of noxious or invasive plants to the project area is not anticipated.

E.O. 11990 directs federal agencies to avoid, to the extent possible, the short- and long- term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Much of the project area is mapped as

wetlands and therefore avoidance of wetlands is not practicable. Impacts to wetlands (disturbance to the vegetative mat) would be reduced through the timing of the work (October through January). However, die back of vegetation is possible where equipment has traveled over that may result in erosion or future short-term changes to soil moisture. Any work within jurisdictional wetlands would be completed under and in accordance with the U.S. Army Corps of Engineers (USACE) Nationwide 6 Permit, Survey Activities. Minor impacts to wetlands associated with digging shot holes are anticipated to be minimal, short-term and no long term impacts are anticipated.

Cumulative impacts:

The existing, developed PCM includes approximately 1,200 acres of converted/non-wetland area (Restoration, Science, & Engineering 2011), which is presumably areas that were at one time vegetated with natural vegetation and are now bare/developed or consist of vegetation with successional species (e.g. willows). Should XS Platinum receive the SUP and in the future drill within the Salmon River and Chagvan Bay Claims, it is anticipated that operations would occur in the winter and therefore impact to soils and vegetation is anticipated to be limited to the area of the drill and be minor along the travel routes. Potential impacts from climate change are not anticipated to impact soil and plant communities within the project area.

Because the Proposed Action would result in minor impacts to the plants and soil, cumulative impacts to plants and soils associated with Proposed Action are also anticipated to be limited.

No Action Alternative

Under the No Action Alternative the geologic exploration program would not occur and there would be no impacts to plants and soils. Conditions of plants and soils would remain as described in Chapter 3, Affected Environment.

4.2 Wildlife

Proposed Action

Direct and Indirect Impacts:

Impacts to wildlife as a result of the Proposed Action are anticipated to be short-term and minor due to the low use by wildlife of the project area during the winter months and the minimal impact that would occur to wildlife habitat under the Proposed Action. There may be minor impacts to wildlife that may use the project area during the winter months such as various avian species discussed in Chapter 3, caribou, and possibly brown bears. Should these species occur within or adjacent to the project area, they may be temporarily displaced by noise associated with equipment and blasting. As a result, individuals may shift movement patterns and move to adjacent undisturbed habitat. This impact would be minor, localized and temporary and would not result in impacts at a population level.

The Migratory Bird Treaty Act (MBTA) of 1918 prohibits the "take" of any migratory bird or any part, nest, or egg of any such bird. "Take" is defined as to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner" (16 U.S.C. 703). While the Proposed Action may overlap a week or two with the tail end of the avian fall migration, impacts to migratory bird species are anticipated to be minor and short-term in duration due to the timing of the Proposed Action (October to January) and due to the minimal and temporary nature of direct disturbance to vegetation (habitat). Threatened and endangered avian species are discussed below.

Direct impacts to fish and fish habitat are anticipated to be low. The Proposed Action would not cross any fish-bearing waters, other than using existing road crossings over Salmon River. Additionally, the ADF&G blasting standards and setbacks to fish-bearing waters would be followed to ensure that discharge of explosives would not produce an instantaneous pressure change greater than 2.7 pounds per square inch (psi) in the swim bladder of a fish (ADF&G no date).

Threatened and Endangered Species:

Kittlitz's Murrelet

The Kittlitz's Murrelet nesting habitat is located south of Chagvan Bay, which is outside of the project area but within the general vicinity of the project. Kittlitz's Murrelet would not be nesting during the proposed timeframe of the Proposed Action (October to January) and the Proposed Action would not result in any short-term or long-term impacts to nesting habitat. Therefore, the implementation of the Proposed Action would have "no effect" on the Kittlitz's Murrelet.

Steller's Eider

Steller's Eider may be present in Chagvan Bay (**Figure 1**) during the operations of the Proposed Action. Steller's Eiders present in Chagvan Bay during the time of the Proposed Action may be molting (losing and replacing feathers). Molting requires a lot of energy and flight is not possible until new wing feathers grow in, both of which make the Steller's Eider vulnerable to disturbance during the molting period.

Impacts of the Proposed Action to Steller's Eider can be grouped into the following general categories:

- Disturbance from the physical presence of snowmachines and survey crew; and
- Disturbance from the noise generated from snowmachines and explosives.

Disturbance from physical presence of snowmachines and survey crew

Tolerance to human disturbance varies by species and exposure to human activities. Steller's Eiders are generally tolerant of and can habituate to occasional disturbance by exposure to human activity during winter, but observations during winter abundance-distribution surveys suggest that they are more wary than many other species of sea ducks (COE 200a; 2000b; 2000c as cited in MMS 2006). An observer, capable of identifying Steller's Eider, would be present during any seismic activities conducted within a ½ mile of Chagvan Bay from late July through October. In the event the observer notes the presence of Steller's Eider, no seismic activity would occur within ½ mile of the Chagvan Bay, thereby essentially eliminating disturbance to Steller's Eider from physical presence of snowmachines and survey crew.

Disturbance from the noise generated from snowmachines and explosives

Noise disturbance from the operation of snowmachines and blasting may cause Steller's Eider to become more alert and evasive, thereby reducing foraging time and efficiency while increasing energy devoted to swimming and escape. Disturbance may also result in flocks moving to suboptimal habitats where they are less secure from predators. Excessive alert or avoidance behavior, or annual declines in the population of molting birds are indications of adverse reactions to disturbance (FWS 1990). Again, no seismic work would occur within a ½ mile of Chagvan Bay should the observer identify Steller's Eider. Implementation of this environmental protection measure minimizes disturbance to Steller's Eider from the noise generated from snowmachines and explosives.

It is determined that activities associated with the Proposed Action *are not likely to adversely affect* Steller's Eiders because of the implementation of environmental protection measures to avoid or minimize potential impacts.

Cumulative Impacts

The existing PCM includes approximately 1,200 acres of converted/non-wetland area (Restoration, Science, & Engineering 2011) which is presumably developed areas that at one time provided habitat to wildlife and now are likely bare/developed or consist of vegetation with successional species (e.g. willows) and provide less quality habitat, if any, to wildlife.

The timing of the Proposed Action may result in minor, short-term impacts to wildlife, such as possible temporary displacement from noise). Cumulatively, the Proposed Action would result in minor incremental impacts to wildlife and wildlife habitat. Due to the large size and undisturbed nature of the surrounding area, the Proposed

Action would result in short-term impacts to wildlife habitat and would not likely result in substantial additional cumulative impacts to wildlife.

The 2010 State of the Birds (North American Bird Conservation Initiative, U.S. Committee 2010) indicates that birds in coastal arctic/alpine habitats show intermediate levels of vulnerability to the effects of climate change. Vulnerability of arctic and alpine birds is primarily due to their long-distance migrations, their obligatory use of these biomes, and the exposure of many arctic and alpine habitats to effects of climate change (North American Bird Conservation Initiative, U.S. Committee 2010). While the project area is near an area where Steller's Eider may be molting during part of the timeframe for the Proposed Action, the Proposed Action is not near breeding, over-wintering, or critical habitat for the Steller's Eider. Due to the Proposed Action's implementation of environmental protection measures to avoid or minimize potential impacts to Steller's Eider, cumulative impacts also *are not likely to adversely affect* Steller's Eiders.

No Action Alternative

Under the No Action Alternative, the geophysical exploration program would not occur and therefore wildlife conditions described in Chapter 3 would remain the same.

4.3 Subsistence (ANILCA Section 810 Evaluation)

As a result of the passage of the ANILCA in 1980, subsistence uses by rural Alaska residents must be considered in the development of management policies and plans on all federal lands in Alaska. ANILCA provides for the "the continuation of the opportunity for subsistence uses by rural resident of Alaska, including both Natives and non-Natives, on the public lands."

Section 810 of ANILCA requires an evaluation of many federal management actions on federal public lands for their effects on subsistence uses and needs. If the federal agency determines that the activity will "significantly restrict subsistence uses," state and local entities must be notified, and additional findings are required. The federal agency must determine that: 1) the significant restriction is necessary, 2) the proposed activity involves the minimum amount of public land necessary to accomplish the purpose of the activity, and 3) reasonable steps will be taken to minimize adverse impacts on subsistence uses and resources.

Proposed Action

Direct and Indirect Impacts:

– **Effects on Subsistence Resources**

Noise and an increase in human activity associated with exploration activities under the Proposed Action may result in minor, short-term disturbance to wildlife that are hunted for subsistence use (including caribou, brown bear, fox), should they be in proximity to the project area, and may temporarily displace these wildlife to adjacent undisturbed habitat. This impact would occur at the individual level and would not

result in an impact at the population level. The Proposed Action is not anticipated to have any impact on fish populations or fish habitat.

– Effects on Access to Subsistence Resources

Access to the Goodnews Bay River system, where much of the subsistence practices occur in the area, would not be impacted by the Proposed Action. Near the project area, the road along the Salmon River is used primarily by locals accessing the Salmon River and beaches along the shoreline south to Chagvan Bay. The road likely provides access to subsistence activities such as clamming, gathering driftwood, berry picking, and geese hunting (Moyle pers. comm. 2011).

This road would also be used during proposed project activities and may not be conducive for local use while project activities are occurring due to public safety reasons. However, the proposed timing of the activity is not during primary subsistence harvesting activities.

– Increased Competition for Subsistence Resources

The Proposed Action would require a small, temporary workforce that would be present from approximately October to January. The workforce would not be allowed to engage in consumptive activities such as hunting, fishing, and gathering. The Proposed Action would not result in a new, permanent workforce in the project region. Additionally, the Proposed Action would not include the construction of new roads or trails that could result in an increased accessibility to subsistence resources. Therefore, the Proposed Action is not anticipated to increase competition for subsistence resources in the project area.

Cumulative Impacts

The existing PCM has certainly had impacts on subsistence resources and uses in the area based on the disruption evident to both upland and aquatic habitats. The level of these impacts is difficult to quantify since the mine has been in existence since the 1930's. Impacts to subsistence uses and resources from the proposed action would be a minor increase above the current situation.

Conclusion

Because of the timing of the activity and level of subsistence uses occurring in the project area during the proposed time frame, the Proposed Action is not likely to result in a significant reduction in subsistence use as a result of direct or indirect impacts on the resource or habitat, changes in availability of the resource, or limitations on access to the resource. The Proposed Action is not likely to increase competition for any subsistence resource.

4.4 Cultural Resources

Proposed Action

Direct and Indirect Impacts

Prior to commencement of the Proposed Action, a cultural resource survey would be conducted by a qualified archaeologist under contract to XS Platinum to determine if there are any unidentified cultural resources in the project area. In the event that cultural resources are located in the project area, their locations would be recorded and provided to the Service, and in agreement with the Service Regional Historic Preservation Officer, an appropriate buffer around the resource(s) would be implemented so that shot holes are sited to avoid impacts to the identified cultural resource(s). In compliance with Section 106 of the National Historic Preservation Act and 36 CFR 800, the Service will consult with the State Historic Preservation Office (SHPO) regarding the Proposed Action and seek an appropriate determination of effect.

Ground disturbance would be limited to the advancement of approximately four inch diameter shot holes to a depth of approximately 3 to 5 feet (1 to 1.5 meters) below the vegetative mat. No further surface disturbance is anticipated from the blast. Approximately 888 shot holes (approximately 226 shots within the Salmon River Claims, and approximately 662 within the Chagvan Bay Claims) would be hand excavated or hand augured. Should historic properties be encountered during operations, work would be stopped and the Service and SHPO would be contacted by telephone.

A cultural site near the project area has been impacted by past mining activities (under a different operator than the Applicant) and possibly local use of the area. Increased activity of the project area has the potential to increase impacts to this cultural site and others; however due to the timing of the Proposed Action (winter) and limited number of crew (10) associated with the Proposed Action, indirect impacts are unlikely and not anticipated. Crew members would be advised of known cultural sites, including those, if any, identified in the planned survey, and educated on their sensitivity and the requirement to avoid them.

Cumulative Impacts

There are no known cultural resources on the PCM claims on the refuge although there are sites in the vicinity. There are no previously reported impacts to cultural resources and therefore no known past impacts to historic properties; however should the planned cultural resources survey identify historic properties on the PCM, the Applicant would consult with the Service and a mitigation plan would be developed and followed, as needed.

Increased coastal storms may be associated with climate change, and as a result cultural sites located on the coast, such as those in the project area, could be impacted.

Due to the Proposed Action's implementation of environmental protection measures (avoidance of identified cultural sites and winter timing of activities), as well as the small scale of the project (10 crew members and limited snow machines), the Proposed Action is not anticipated to impact historic properties and therefore cumulative impacts to cultural resources are not expected to occur.

No Action Alternative

Under the No Action Alternative the geophysical exploration program would not occur and there would be no ground disturbance or potential to impact cultural resources.

4.5 Priority Public Uses

Proposed Action

Direct and Indirect Impacts

Due to the timing of the Proposed Action (October – January) and the public's low use of the project area during this timeframe for hunting and fishing, wildlife observation and photography, and education and interpretation, minimal to no impacts to public priority uses are anticipated as a result of the Proposed Action.

Cumulative Impacts

The existing PCM, other than the Salmon River and Chagvan Bay claims, is located outside of the Refuge, and therefore does not impact public priority uses. Impacts associated with climate change are not anticipated to impact priority public uses in the vicinity of the project area. The Proposed Action is anticipated to have minimal to no impacts to public priority uses and therefore any incremental cumulative impact is also anticipated to be minimal.

No Action Alternative

Under the No Action Alternative the geophysical exploration program would not occur. There would be no impacts to public priority uses.

5.0 Finding Of No Significant Impact

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

FINDING OF NO SIGNIFICANT IMPACT

Seismic Surveys on XS Platinum Mining Claims - Togiak National Wildlife Refuge, Alaska

The U.S. Fish and Wildlife Service (Service) is responding to a request by XS Platinum Inc. (the applicant) to conduct a seismic exploration program on valid mineral claims in the Togiak National Wildlife Refuge (Refuge). These claims consist of 22 parcels totaling 776 acres. The claims extend along the lower Salmon River within the refuge from the current off-refuge mine site to Kuskokwim Bay, and along a corridor that leads to Chagvan Bay. None of the claims are within the Togiak Wilderness Area. This geophysical exploration program would provide the applicant the information for identifying resource targets for future test drilling to further assess the mineral potential of the claims. Specifically, the geophysical exploration activities would allow the applicant to identify the location and depths to bedrock and identify the location of the paleo-stream channel(s) on the Salmon River Claims and the Chagvan Bay Claims. Locating the paleo-stream channel(s) would allow the Applicant to incorporate this information into planning a second phase of the program, which would likely involve drilling into the paleo-stream channel(s) material to test for precious metal resources. The seismic work is scheduled to be conducted in the winter 2012/13 timeframe. An Environmental Assessment (EA) has been prepared and adopted by the U.S. Fish and Wildlife Service. The EA is hereby adopted by reference.

The proposed action has been selected for implementation.

Alternatives Considered

Two alternatives were considered in the EA, the Proposed Action and the No Action Alternative. Since the Applicant has a valid mineral claim and a right to develop that claim, the No Action Alternative is presented for comparison purposes.

Government to Government Consultation and State of Alaska Review

Letters were sent to two local tribal governments on August 19, 2011 notifying them of the proposed action and inviting the tribes to provide input into the decision. The tribes did not express an interest in participating. The State of Alaska was provided a draft of the EA for comment. The State had no overall objections to the proposed action. Minor comments were resolved prior to finalizing the EA.

Analysis of Impacts

The EA provides an analysis of the impacts of implementing the proposed seismic exploration project as well as the impacts of not implementing the project (the No Action Alternative). These impacts are summarized in Chapter 4, Environmental Consequences.

The direct, indirect, and cumulative impacts were evaluated in terms of intensity, duration, and context, and were assigned one of four impact levels (negligible, minor, moderate, or major). The evaluation was done for plants and soils, wildlife and wildlife habitat including endangered species, subsistence resources and use, cultural resources and priority public uses.

Impacts to plants and soils are anticipated to be minor. Impacts to wildlife and wildlife habitat are expected to be minor. No impacts to minor impacts are expected for subsistence resources and use. The proposed action is anticipated to have minimal to no impacts to priority public uses. No impacts to cultural resources are expected to occur. A cultural resource survey is to be conducted prior to implementation of the proposed action and a National Historic Preservation Act Section 106 permit will be required prior to the issuance of a Special Use Permit.

No significant effects were identified in the analysis.

Conclusions

Based on review and evaluation of the information contained in the EA, I have determined that there will be no significant individual or cumulative impacts to the human environment, within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. I have determined that the proposed action is not a major Federal action. Accordingly, the Service is not required to prepare an environmental impact statement.

Paul Liedberg
Refuge Manager

Feb. 13, 2012
Date

6.0 Government Consultation

Refuge staff sent letters to the Platinum Traditional Village Council and the Native Village of Goodnews Bay on August 19, 2011 inquiring about their interest in government to government consultation on the proposed project. There was no response from either village relative to the request.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, requires federal agencies to consult with federally recognized tribal governments during the National Environmental Policy Act (NEPA) process. The Service initiated government-to-government consultation with the local federally-recognized tribal entities near the project area, including Platinum Traditional Village Council and Native Village of Goodnews Bay.

7.0 List of Preparers

The following table lists the individuals that facilitated in the preparation of this document and the responsibilities of each member. ARCADIS personnel were responsible for drafting the EA and Service personnel provided some data and reviewed the work product for accuracy and completeness.

Table 2 List of Preparers

Name	Title	Responsibility
Service		
Maggi Arend	NEPA Coordinator	Coordination and EA Review
Paul Liedberg	Refuge Manager	EA Review
Tevis Underwood	Refuge Deputy Manager	EA Review
Patrick Walsh	Refuge Biologist	Wildlife and Subsistence Review
Judy Jacobs	Biologist	Threatened and Endangered Species, Section 7 Consultation of the Endangered Species Act
Debbie Corbett	Regional Historic Preservation Officer	Cultural Resources, Section 106 of National Historic Preservation Act
ARCADIS U.S., Inc.		
Glenn Ruckhaus	Project Manager	Project Management
Rachel Cruz	Assistant Project Manager/NEPA Specialist	Project Management, Project Coordination, Technical Review, Subsistence Analysis
Molly Birnbaum	Senior Scientist	Senior Review
Cecily Foo	Biologist	Plants and Soils, Wildlife, Public Priority Uses
Gina Stevens	Project Assistant	Word Processing, Document Production

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Appendix A

Equipment List

Proposed Action Equipment List

Equipment	Weight	PSI
Snowmachine	550 pounds[1]	0.5[2]
Snowmachine sled	275 pounds[3]	0.12

1 Estimated weight based on 2010 popular snowmachines.
2 American Council of Snowmobile Association 2011
3 Estimate based on Otter extra large sled. Empty sled weighs 75lbs