

In reply refer to:
WAES

February 5 , 2001

Mr. Gregory Siekanic
Refuge Manager
U.S. Fish and Wildlife Service
Alaska Maritime National Wildlife Refuge
2355 Kachemak Bay Drive
Homer, Alaska 99603

Re: Amchitka Island Remedial/Removal Action

Dear Mr. Siekanic:

This document transmits the U. S. Fish and Wildlife Service's (USFWS) biological opinion based on our review of the proposed Amchitka Island Remedial/Removal Action, Amchitka Island, Alaska, and its effects on the threatened Aleutian Canada goose (*Branta canadensis leucopareia*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Concurrently, we considered the potential direct and indirect effects of the proposed project on Steller's eiders (*Polysticta stelleri*) that are known to winter along the Alaska Peninsula and Aleutian islands. Based on the project as proposed and best available scientific and commercial information on the biology, status, and life history of Steller's eider, we have concluded that this action is not likely to adversely affect the species because the activities associated will occur at a time of the year when the eider is not present and that the cleanup activities proposed will only temporarily disturb terrestrial habitats that are not known to be used by Steller's eiders.

This biological opinion is based on information provided in the Environmental Assessment (USFWS 2000a), the Biological Assessment for the proposed project (USFWS 2000b), the Amchitka Island Aleutian Canada goose survey conducted in June 2000 (DOE 2000), other relevant materials provided to this office during the course of this consultation, and the best available scientific and commercial information on the biology, status, and life history of the Aleutian Canada goose. In addition, other sources of information were also used in formulating this biological opinion. The complete administrative record for this consultation is on file at the Ecological Services Anchorage Field Office.

Consultation history

On August 3, 1999 the Aleutian Canada goose was proposed for delisting (64 FR 42058).

On June 2, 2000 we received a request for concurrence in your determination that issuance of a Special Use Permit to the Department of Energy to conduct a survey of Aleutian Canada geese within the project area on Amchitka Island would not likely adversely affect Aleutian Canada geese.

On June 9, 2000 we issued the requested Special Use Permit (No. 745000-023) to the Department of Energy.

June 11- 21, 2000. Amchitka Island Aleutian Canada Goose Survey was conducted by the Department of Energy.

August, 2000. We received the report on the Amchitka Island Aleutian Canada Goose Survey conducted by the Department of Energy (DOE 2000).

On November 21, 2000, we received your Biological Assessment for potential impacts on Aleutian Canada geese at Amchitka Island, Alaska (USFWS, 2000b).

In December 2000, we received the Remedial/Removal Action Environmental Assessment and Finding of No Significant Impact (USFWS, 2000a).

Description of the proposed action

In the long term, the purposes of the refuge would be enhanced by cleanup operations. Removing and remediating sources of contamination on Amchitka Island would facilitate maintaining natural diversity and healthy fish and wildlife populations, and the habitat they rely on. In addition, the natural landscape and setting of the refuge would be enhanced with the removal of DOE- and military-related structures.

Removing or remediating the primary (fuel, PCBs) and secondary (petroleum-contaminated soil) sources of contaminants on Amchitka Island would also eliminate all routes of possible exposure to those resources commercially fished and fish and wildlife resources obtained by subsistence.

Overview

The following overview description of the proposed action was taken from the EA (USFWS 2000a).

Amchitka Island is in the Aleutian Island archipelago and part of the USFWS's Alaska Maritime National Wildlife Refuge. Since World War II, portions of Amchitka have been used by the U.S. Departments of Defense (DOD) and Energy (DOE). The U.S. Army occupied the island from 1942 to 1950. The island was not occupied between 1950 and 1965. Between 1965 and 1971 the U.S. Atomic Energy Commission, predecessor to the DOE, conducted two underground nuclear tests on the island and assisted the DOD with a third. The U.S. Department of Navy (Navy) operated a radar facility there from 1987 to 1993, and the USFWS has periodically maintained a presence for Refuge management purposes.

The scope of this cleanup effort only covers the 60-plus contaminated sites (e.g. petroleum contamination, building debris, drilling mud wastes, unexploded ordnance) that have been discovered since 1993, for which the federal agencies listed below share varying levels of responsibility.

The involved Federal agencies and their respective scope of cleanup responsibilities are:

- DOE – All corrective actions are located on land associated with the Long Shot, Milrow and Cannikin sites, where underground testing of nuclear devices was conducted and at other locations where DOE carried out testing program support activities.
- Navy – All activities are associated with the Relocatable Over the Horizon Radar (ROTHR) facility demolition and environmental closeout.
- U.S. Army Corps of Engineers Alaska District (Corps) - Cleanup activities include the excavation and disposal and/or capping of petroleum-contaminated soil, and the collection/disposal of unexploded ordnance.
- USFWS - All activities are associated with demolishing buildings.

The Corps is performing its cleanup operations under the auspices of the Defense Environmental Restoration Program for Formerly Used Defense Sites, which requires the operation to be conducted consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The DOE is performing environmental remediation work on Amchitka as a CERCLA non-National Priority List site, and is being regulated by the State of Alaska under its rules at 18AAC75, *Oil and Hazardous Substances Pollution Control Regulations*. The Navy and USFWS are conducting its removal and remedial work under CERCLA. All cleanup activities would be performed in accordance with applicable or relevant and appropriate state and federal laws, regulations, requirements, policies and guidance, and the National Environmental Policy Act (NEPA).

To facilitate cleanup activities, the USFWS, USACE, DOE, and the Navy are entering into a Memorandum of Understanding (MOU). The purpose of the MOU is to ensure the timely preparation of the appropriate environmental documentation and to coordinate the investigation and cleanup of Amchitka Island. In addition the MOU will enhance coordination between federal agencies and minimize the costs and logistical difficulties associated with conducting work at such a remote location.

The Alaska Department of Environmental Conservation (ADEC) and the Aleutian/Pribilof Islands Association, Inc. (A/PIA) are entering into the MOU as participating agencies for the purpose of providing information in the NEPA process. In addition, ADEC is the primary regulatory agency for the chemically contaminated sites. A/PIA is a Tribal representative pursuant to a Memorandum of Agreement with each tribe in the Aleutian/Pribilof Region, and as a representative of government entities as outlined in the Presidential Memorandum of April 1994, *Government to Government Relations with Native American Tribal Governments*.

The USFWS is the lead agency for coordinating the NEPA compliance of the multi-agency cleanup effort, and prepared an environmental assessment (EA) to: (1) address the potential cumulative impacts associated with the wide scope of cleanup activities being proposed by the aforementioned federal agencies; and (2) facilitate the development of mitigation measures to be included in Special Use Permits issued to each action-agency. The EA will not technically evaluate the numerous and widely diverse cleanup alternatives contained in each agency's planning documents. The USFWS has already reviewed each agency's planning documents and evaluated numerous cleanup alternatives, and generally approves of each agency's cleanup approach.

Specific activities

Mobilization, Access, and Base Camp Operation

Equipment and personnel would likely be mobilized to Amchitka Island beginning in mid-May 2001 with work beginning the first week of June 2001. A combination of barges, support vessels, and aircraft would be used to transport equipment and personnel to the island. Each Federal agency would secure their own barge and vessel services; however, logistical complications may necessitate the need to share barge services. Constantine Harbor, with its existing mooring facilities, would become the primary location for supporting vessels. Most likely, crane-equipped barges would be off-loaded and loaded at the existing mooring facility. Nearby, a historically used barge landing area would possibly be used. The existing Baker Runway would occasionally be used by aircraft to transport supplies and personnel to and from the island. In rare circumstances, a C-130 cargo aircraft might be used for equipment/supply emergencies. A Conquest aircraft (10-passenger capacity) would be stationed on the Island for medical emergency transportation to Adak, Alaska.

An island-wide network of gravel roads exists on Amchitka Island and would be used to transport personnel and equipment to and from the project sites. The types of vehicles using the roads would likely include pickup trucks, dump trucks, excavators, bulldozers, all-terrain-vehicles, tank trucks, and tractor-trailer trucks. Selected sections of roadway would likely require some improvement (i.e., filling low spots and holes, grading, and contouring).

Base operations would be located at a temporary camp constructed on existing concrete slabs and/or pavement near the Baker and Charlie airstrips. Agency-shared office space, sleeping quarters, galley, wash rooms, and other support facilities would likely be transported to the Island and consist of trailers or weather-port tents erected on wooden platforms. The camp is expected to house approximately 100 people for 3 months. Historically used Constantine Springs would be used to supply the base camp with water. Water would be transported to the camp via a network of pipes laid on the ground surface and/or with water trucks equipped with water bladders. A septic system might be constructed to manage human wastes or the wastes would be transported off the island for disposal. If a septic system is installed, it would most likely consist of a mound leach field with associated tank and piping.

Diesel generators would be used to generate electrical power for the base camp. Fuel (e.g. gasoline, diesel, and motor oil) for the base camp generators and vehicles would be stored in

drums, fuel bladders, and/or aboveground storage tanks. Fuel tanks would be bermed to contain spilled fuel.

An incinerator would likely be used to burn perishable wastes and solid wastes would either be disposed of in the same landfill used for disposing project-generated wastes or stored in containers and shipped off-island for proper disposal.

Four satellite day-use camps would be established at remote work sites to support laborers. The facilities set up at each camp would include a portable toilet, office tent, generator and fuel. The camps would be located at MP 8 (borrow site), Drill Site D, a traveling camp moved from site-to-site, and at Bird Cape.

The type of heavy equipment to be used at the work sites includes: tracked excavators, rubber-tired front-end loaders, a road grader, a vibrating and sheep-foot roller, six-wheeled articulated (20-to-30 yards capacity) dump trucks, water tank truck, and bulldozers. All-terrain vehicles and pickup trucks would be used to transport personnel to and from the project sites. At the borrow site, a screening plant (including a conveyor system) would be set up to obtain fill material for site restoration activities.

Drilling Mud Pits Closure

DOE proposes to close 13 pits that were constructed to hold large quantities of drilling fluid produced from the drilling of large diameter bore holes as part of the nuclear testing program. The drilling fluid is a mixture of water and bentonite, a small quantity of diesel fuel, and other additives, combined to maintain the mud's necessary physical properties. In addition to the three test sites (Long Shot, Milrow, and Cannikin), three other sites were considered for testing but never actually utilized.

After researching several alternatives, the DOE proposes to construct caps on all of the mud pits to isolate the drilling mud from the environment. Under this approach, the standing water on the drilling mud pits would be pumped off and treated with carbon adsorption and discharged to the ground surface in accordance with applicable regulations. After the standing water has been removed, soil from an onsite borrow area and/or historically-used borrow area would be brought in and mixed with the drilling mud to stabilize the mud and create a mixture capable of supporting a geosynthetic cap. The on-site borrow areas would consist of previously-disturbed areas at each drill site. Additional soil would then be placed on top of the mixture and graded to promote surface water runoff. A 30-millimeter--thick liner would be placed on top of the soil and an additional layer of soil laid over the liner. After grading this top layer to promote surface water runoff, it would be seeded with a native seed mix to stabilize the soil.

Associated with the drilling mud pits are 15 shallow groundwater monitoring wells (20 to 30 feet deep) that would be plugged and abandoned. The plastic pipe casings would be cut off 5 feet below grade or at the groundwater level and the hole plugged with a bentonite slurry, in accordance with State of Alaska requirements.

Sewage Lagoon Closure

A two-celled sewage lagoon was constructed on Amchitka and first used by the U.S. Army during World War II. The lagoon was subsequently used by the Atomic Energy Commission and the Navy through 1993 and has not been used for wastewater treatment since September 30, 1993. The presence of polychlorinated biphenyls (PCBs) within the sediment of the lagoon was identified in 1993. As part of the ROTH facilities demolition and environmental closeout activities to be conducted on the island, removal of the PCB-impacted sediment is being proposed.

The approximate lagoon dimensions are 200 feet by 360 feet. The current water depth is less than 2 feet and the average sediment thickness in both cells is believed to be approximately 1.3 feet.

The proposed action plan for the lagoon sediment is to segregate and treat sediment containing PCB concentrations greater than 10 mg/kg (parts per million), but first the lagoon must be dewatered. Surface water would be pumped from the lagoon and discharged to the ground surface. No pretreatment to reduce dissolved PCBs would be necessary for most of the water to be removed because dissolved PCB concentrations in lagoon water are expected to be below 0.5 ug/L (parts per billion), which is the State of Alaska surface water clean up standard for PCBs. Suspended sediment, which may contain PCBs, might become an issue as the water level in the lagoon is lowered. In the event that sediment becomes suspended on the water during pumping, a filtration or sediment settling system would be employed to remove potentially contaminated sediment prior to discharge.

Wastewater containing PCB concentrations in excess of 0.5 ug/L may be generated during the process of treating lagoon sediment. The contaminated wastewater would be treated to reduce PCB concentrations to acceptable discharge levels, and discharged to the surrounding ground surface. Contaminated water would be collected in a temporary holding tank, pumped through a sand and bag filter system including an organo-clay filter, then through carbon treatment that includes bag filters.

The excavation activities will generally involve the following tasks: transporting excavated equipment to the site; establishing secure work and decontamination zones; excavating contaminated sediment for thermal treatment, screening sediment for PCBs, and sampling, segregating, and temporary stockpiling material for treatment and back-filling. The volume of sediment to be removed and treated is estimated at 2,000 cubic yards. Bermed stockpiles would be placed on a geomembrane liner and covered with visqueen plastic sheeting to prevent contaminated runoff into the surrounding environment. Excavated sewage lagoon sediment would be thermally treated using an EPA-permitted mobile treatment unit. The treatment would reduce PCB concentrations to less than 1 mg/kg.

Treated lagoon sediment containing less than 1 mg/kg of PCBs would be replaced within the bermed lagoon containment area to form a minimum 2-foot-thick layer of fill over the unexcavated portion of the lagoon bottom. If the volume of treated material is insufficient to obtain a minimum 2-foot-thick layer above the remaining lagoon bottom, clean fill material would be imported to complete the buffer. Following construction of the 2-foot buffer, the lagoon would be stabilized by contouring the existing berms to the level of the imported buffer.

to prevent ponding of water. The leveled former lagoon area would be seeded with native grass to complete the stabilization. Temporary erosion measures, such as straw bales and silt fencing, would be used until vegetation becomes established.

Building Demolition and Debris Removal

The Navy proposes to demolish a series of buildings on Amchitka Island that were left standing when their ROTHM was closed in 1993. Approximately 47 buildings, numerous underground storage tanks, and miscellaneous antenna towers, poles and aboveground utility lines would be removed. In an agreement with the USFWS, the Navy would also demolish an additional eight buildings that the USFWS took ownership of when the Navy left the island in 1993 and when the Corps completed their building cleanup operation in 1986. A monofill would be constructed for disposing inert waste generated by building demolition activities and closed in accordance with ADEC monofill permit requirements.

The monofill site lies about one-half mile north of the north end of Charlie Runway. To minimize environmental impacts, the proposed location for the monofill is within the bounds of previously closed landfill cells. The general area bounded by the closed landfill cells is the only area on Amchitka Island that was previously permitted for disposal of general debris and incinerated camp waste. The last cell was closed in 1993 when the facilities at the base camp, receiver site, transmitter site, and port were mothballed.

The inert waste placed in the monofill would consist primarily of steel, wood, concrete, glass, building fluff, and miscellaneous metal. The total volume of inert waste would be approximately 64,300 cubic yards.

The majority of the facilities to be demolished would be converted to rubble before being transported by trucks to the disposal area. Bomber Road would be used to access the site. Rubble would be compacted between placing each lift and adequate cover would be provided to reduce voids and prevent wind blown debris. Drums and fuel tanks would be cleaned and dismantled or crushed before being placed in the monofill. A rodent eradication program would be developed if rats were encountered at the facility. Access routes and the area surrounding the monofill would be continuously maintained by collecting litter. Water would be sampled monthly to monitor any impacts the monofill might have on adjacent surface waters.

The monofill would be closed according to ADEC regulations. Approximately 18 inches of mineral soil and a top 6 inches of organic soil (i.e. tundra overburden) would be placed on the monofill. The cover material and drainage control features would be graded to prevent ponding and erosion, and to minimize the amount of water entering the landfill. After completion of the final cover, the area would be seeded with a seed mixture compatible with the Amchitka Island environment. The seeded area would be fertilized with a slow release fertilizer to assist the establishment of new vegetation. For a period of up to 5 years after closure, a post closure maintenance program would be implemented and include period site inspections and surface water monitoring scenarios.

Petroleum-Related Cleanup Activities

The DOE is proposing to close a “hot mix plant” that was historically used to prepare asphalt for paving operations. The DOE would remove and dispose off-island approximately 6,000 gallons of liquid tar currently being stored in two underground storage tanks (USTs). The empty tanks would be cleaned and filled with native soil.

The Corps has identified 14 sites found to contain some petroleum compounds that may require some form of remedial activity. The Corps proposed plan considers various alternatives for addressing contamination at these sites and identifies the preferred approach. Four of the 14 sites may be candidates for conducting removal activities: Fox Runway Petroleum, Oil, and Lubricants (POL) pipeline; Clevenger Lake motor pool, Jones Lake generator building; and FIDO pump station POL pipeline.

Gasoline contamination near Fox Runway is restricted to a few cubic yards of soil in a 3-foot by 3-foot depression near the junction of two fuel pipelines southwest of the runway. Removing the contamination would involve excavating the soil and transporting it off-site to a permitted treatment and disposal facility. The excavation would be then backfilled with clean soil and revegetated to minimize erosion.

The approach that would be employed at the Clevenger Lake motor pool area would be similar to the approach at the Fox Runway site. They would differ primarily in scale; contamination at this site appears to impact at least 10 cubic yards of soil. The soil is contaminated with diesel, heavy oil, and metals, and appears restricted to a surface area of less than 100 square feet. It is likely that shallow ground water contaminated with gasoline would be encountered during soil removal. This water would be pumped and treated to further reduce the potential for contaminant migration from the site.

Remnants of the Jones Lake generator building facility consist of a square concrete pad and a 4-foot-deep, water-filled pit that apparently once held an underground storage tank. Removal activities would involve excavation of highly diesel-contaminated soils in the vicinity of a pit, treatment of contaminated water encountered in the excavation, and backfilling and revegetation of the excavated area. The excavated soils would be transported off-island to a permitted treatment and disposal facility.

The contamination east of the FIDO pump station is limited to gasoline-contaminated sediment below a pipeline crossing. Contamination at this site is limited in extent and not easily accessible. Any remedial action would require crossing approximately 200 feet of undisturbed ground and excavating the streambed.

The Navy is proposing to remove and dispose of numerous heating fuel storage tanks, associated piping, and ancillary equipment. The largest removal activities would be centered on the fuel storage facilities adjacent to Kirilof Wharf. The wharf area contains two gasoline fuel storage tanks (10,000 and 30,000 gallons capacity), one truck fuel stand, three fuel storage tanks (2,500 to 35,000 barrels capacity), and a network of aboveground pipelines. Other aboveground storage tanks (ASTs) are located near the south hanger, fire station, airfield lighting vault, and other base camp structures and at the receiver and transmitter sites.

All materials would be disposed of in the Amchitka monofill or become the property of the contractor for salvage. Tank work would include draining the tanks; collecting, containing, and transporting the contents and or contaminated residuals to an approved disposal site; cleaning the tanks and associated piping; purging, venting, and vapor freeing the tanks; and excavating and removing the USTs and associated piping.

POL-contaminated soils are suspected to be present at former Navy UST and AST locations, fill stands, along pipeline alignments, and at various other Navy locations. Soils contaminated above cleanup levels (albeit undefined) would be removed and remediated or disposed of off site.

Ordnance and Explosive Disposal

The preliminary findings of a Corps engineering evaluation and cost analysis (EE/CA) indicate that 19 locations on Amchitka Island are known or suspected of having unexploded ordnance (UXO) and/or ordnance and explosives (OE). Eight sites are known to have UXO and OE: Mile 7 base camp; the practice bombing and strafing range; Bird Cape; the South Bight rock quarry; the bomb dispersal area; the chemical warfare area; the napalm area; and the St. Makarius Bay landfill site. OE items occurring at Bird Cape include 81 millimeter (mm) mortar rounds, 37 mm projectiles, and M17 signal flares. At the South Bight rock quarry the following OE items exist: 25-lb fragmentation bomb residues; firesticks; small arms residue; hand grenade fuse. Items at the other sites include hand grenades, small arms ammunition, a napalm bomblet, remnants of a 250 pound dropped bomb, and 20 mm projectiles.

Eleven sites on Amchitka Island would be investigated further by conducting geophysical surveys in the field: the Ivakin Point mortar range; the Jones Lake area; artillery range; the artillery range; combat ranges. Six sites require no further action: the bomb ready area; anti-aircraft battery sites; Kirilof Point; former magazine locations; the DAB (undefined) area; and aircraft bone yard.

All UXO/OE sites are accessible using the existing road system. However, the ranges to be geophysical surveyed are accessible only by foot.

UXO and OE disposal operations would be performed under the direction and supervision of the senior UXO supervisor (SUXOS), who would be charged with ensuring that the appropriate disposal procedures were followed. The unexploded ordnance safety officer (UXOSO) would monitor compliance with established safety procedures, and in the event of non-compliance, is vested with the authority to stop or suspend operations. Disposal operations would begin at the work site only after the SUXOS and UXOSO verified that all non-essential personnel and wildlife were clear of the area at the appropriate distance for the OE item being detonated.

In most cases, OE and OE-related items believed to contain explosives would be disposed of in place using donor explosives that would render the item inert. Small arms ammunition, however, might be collected and disposed of off site. When destroying ordnance items, the contractor would employ engineering controls to minimize impacts to the surrounding area. These usually include tamping or covering the ordnance item with sandbags to reduce ejection

material and to keep the detonation from carving out a large hole. Any hole made from digging or detonations would be back-filled and tamped. Prior to priming the demolition charges, all avenues of ingress would be physically blocked by guard personnel. Radio communications would be maintained between all involved parties at all times. Upon completion of the disposal operation, two members of the disposal team would visually inspect the disposal shot, and one would perform a visual inspection of the disposal site(s). The second person would standby at a safe distance and would be prepared to render assistance in the event of an emergency. Upon completion of this inspection, and provided that there are no residual hazards, the SUXOS would authorize access to the area.

Site Restoration and Demobilization

Most site restoration activities would revolve around grading and contouring all disturbed ground surfaces, covering the surface with soil suitable to support vegetation growth, and seeding the soil surface. The selected seed mix used on Amchitka Island would promote the establishment of native plant species. Disturbed slopes equal to and greater than 1:2 would also be covered with jute matting to promote revegetation and prevent erosion. Drainage control features would also be constructed at selected locations to arrest potential soil erosion. For example, diversion ditches would be constructed around the drilling mud pits to prevent erosion at the base of the caps. The diversion ditches outlet would have a rock apron energy dissipator constructed at its outlet to prevent erosion.

The entire base camp facility would be dismantled and transported back to its point of origin. The only feature to remain would be the leach field constructed to treat camp-generated gray wastewater.

Cleanup activities on Amchitka Island are expected to conclude in September 2001. Barges and other vessels and aircraft would be used to transport equipment, support facilities, waste, and personnel from the island.

Status of the species

Species Description

The Aleutian Canada goose is a small, island)nesting subspecies of Canada goose. Morphologically (in form), it resembles other small Canada goose subspecies, but nearly all Aleutian Canada geese surviving past their first winter have a distinct white neck ring at the base of a black neck. Other distinguishing characteristics include an abrupt forehead, separation of the white cheek patches by black feathering along the throat in most individuals, and a narrow border of dark feathering at the base of the white neck ring. The Aleutian Canada goose is the only subspecies of Canada goose whose range once included both North America and Asia (Amaral 1985). It formerly nested in the northern Kuril and Commander islands, in the Aleutian Archipelago and on islands south of the Alaska Peninsula east to near Kodiak Island. The species formerly wintered in Japan, and in the coastal western United States south to Mexico. The majority of the current nesting range occurs within U.S. Fish and Wildlife National Wildlife Refuge lands in the Aleutian Islands.

Migration Areas and Winter Range

Most Aleutian Canada geese that nest in the Aleutian Islands winter in California, primarily on agricultural lands where they feed on grass, waste beans, and grain, including corn and sprouting winter wheat (Woolington et al. 1979, Dahl 1995, Springer and Lowe 1998). They arrive on the wintering grounds in mid–October, apparently flying directly from the breeding grounds in Alaska to the west coast of North America. Some geese stop in the Crescent City area in coastal northwest California, but most continue on to the vicinities of Colusa in the Sacramento Valley and Modesto in the northern San Joaquin Valley. The lands used by Aleutian Canada geese near Colusa, California are primarily privately owned farms and Reclamation District (local government) land. The 733–acre Butte Sink National Wildlife Refuge in the Colusa area is actively managed to attract geese and other waterfowl.

Small numbers of Aleutian Canada geese from the Aleutian Islands stop near El Sobrante on lands owned by a public utility in north San Francisco Bay in late fall and early winter before continuing on to Modesto. The number of birds observed at El Sobrante has steadily declined in recent years from a high of 140 geese in 1985 to a low of 8 birds in 1997. Twenty–one Aleutian Canada geese were observed there in early 1998 (Dunne 1998).

By mid–December nearly all Aleutian Canada geese are near Modesto, California where they winter primarily on two privately owned ranches and on the adjacent San Joaquin River National Wildlife Refuge. In previous years, a large proportion of geese from the Modesto area would periodically shift southward to the nearby Grassland Ecological Area near Los Banos and Gustine. The lands in the Grassland Ecological Area are owned by the Fish and Wildlife Service, State of California and private duck hunting clubs. Recently, up to several thousand geese have been using night roosts on private duck hunting clubs in this area.

Small numbers of wintering Aleutian Canada geese have been occasionally observed in northwestern California near Crescent City, on the Humboldt Bay National Wildlife Refuge, and on the Eel River bottoms (P. Springer, pers. comm.). Six hundred Aleutian Canada geese wintered in the Crescent City area in 1997–1998 (Fisher 1998).

Small numbers of Aleutian Canada geese also occasionally appear in other areas, especially during migration. The most frequent of these areas include Willapa Bay in south coastal Washington, the Willamette Valley in Oregon, Humboldt Bay and vicinity in northern California, and the Sacramento–San Joaquin Delta in San Francisco Bay, California. See Springer and Lowe (1998) for a more thorough discussion of the distribution of Aleutian Canada geese and factors affecting their distribution.

The small numbers of geese that breed in the Semidi Islands, Alaska, winter exclusively in coastal Oregon near Pacific City. These birds forage during the day on pastures at two privately owned dairies and roost at night on Haystack Rock in the Oregon Islands National Wildlife Refuge or on the ocean. Since fall, 1996, small numbers of geese that nest in the Aleutian Islands have wintered with the Semidi Islands geese in Oregon. In winter 1997/1998, about 20 geese from the Aleutians wintered with the Semidi Islands geese (D. Pitkin, U.S. Fish and Wildlife Service, pers. comm.).

On the northward migration in spring, most Aleutian Canada geese stage near Crescent City, where the birds roost nightly on Castle Rock, part of Humboldt Bay National Wildlife Refuge. Some geese also roost on nearby Prince Island, which is owned by the Tolowa Indians, and on Goat Rock, a unit of the Oregon Islands National Wildlife Refuge, just north of the California/Oregon border. During the day birds graze on privately owned farms in the Smith River bottoms and on lands owned and managed by the State of California. In recent years, Aleutian Canada geese have been departing the Crescent City area increasingly early in spring and spending several weeks feeding in privately owned pastures in the New River area in south coastal Oregon near the town of Langlois. These birds roost at night on offshore islands that are part of the Oregon Islands National Wildlife Refuge. In the spring of 1998, about 10,000 Aleutian Canada geese were observed in the Langlois area (Fisher 1998).

Reasons for Decline

The decline of the Aleutian Canada goose was primarily the result of the introduction of Arctic foxes (*Alopex lagopus*) and, to a lesser extent, red foxes (*Vulpes vulpes*) to its breeding islands for the purpose of developing a fur industry. Between 1750 and 1936, Arctic and red foxes were introduced to more than 190 islands within the breeding range of the Aleutian Canada goose in Alaska (Bailey 1993). Several life cycle stages of the goose, including eggs, goslings and flightless, molting geese are vulnerable to predation by foxes. The decrease of Aleutian Canada geese on Agattu Island between 1906, when they were termed the most abundant bird (Clark 1910), and 1937, when only a few pairs were observed (Murie 1959), attests to the precipitous nature of their decline. At the time of its listing as endangered in 1967, its known breeding range was limited to Buldir Island, a small, isolated island in the western Aleutian Islands (Jones 1963). There is a record that Arctic foxes were introduced to Buldir Island in 1924, but this is either incorrect or the introduction failed to establish a population (Bailey 1993).

Hunting throughout its range in the Pacific Flyway, especially on the migration and wintering range in California, and loss and alteration of habitat on its migration and wintering range also contributed to the subspecies' decline. Hunting was likely a limiting factor when populations were low.

Recovery Actions

In response to reduced population levels, we classified the Aleutian Canada goose as endangered on March 11, 1967 (32 FR 4001). Congress afforded additional protection with passage of the Endangered Species Act of 1973. At the time of its listing, data on which to base a population estimate of Aleutian Canada geese were limited. Boeker (in Kenyon 1963) speculated during a 1963 expedition that only 200–300 birds were on Buldir Island. We believed breeding birds to be confined to that one island, and the migration routes and wintering range were unknown. A study was initiated on Buldir and birds were marked to evaluate migration routes and wintering areas (Woolington 1978). A spring count at a principal migration stopover near Crescent City, California in 1975 revealed 790 individuals (Springer et al. 1978).

We subsequently found small breeding groups of Aleutian Canada geese on Kiliktagik Island in the Semidi Islands south of the Alaska Peninsula in 1979 (Hatch and Hatch 1983), and on Chagulak Island in the central Aleutians in 1982 (Bailey and Trapp 1984).

We approved a recovery plan for the Aleutian Canada goose in 1979 and revised it in 1982 and 1991 (USFWS 1991). We began recovery activities in 1974 (Byrd et al. 1976). Important features of the recovery program in Alaska and the western U.S. included: banding of birds on the breeding grounds to identify important wintering and migration areas; closure of principal wintering and migration areas to hunting of all Canada geese; acquisition, protection and management of important wintering and migration habitat; removal of foxes from potential nesting islands; propagation and release of captive Aleutian Canada geese on fox-free nesting islands in the Aleutians; and translocation of molting family groups of wild geese from Buldir Island to other fox-free islands in the Aleutians.

Establishment of closed areas for hunting Canada geese, has contributed to the recovery of the Aleutian Canada goose. Six closed areas for Aleutian Canada geese currently exist, including: islands in Alaska west of Unimak Island, beginning in 1973; northwestern California, the Modesto area and the Colusa area, beginning in 1975; and the Pacific City area and central and south coastal Oregon beginning in 1982. In addition, closures of Canada goose hunting in northwestern Oregon and southwestern Washington beginning in 1985 to protect dusky Canada geese (*B. c. occidentalis*) have provided protection for Aleutian Canada geese. Occasionally, hunters kill a few Aleutian Canada geese that are using habitats outside of the closed hunting areas.

Initial population increases of Aleutian Canada geese were likely in response to hunting closures in California and Oregon to protect the geese during migration and during winter. However, a substantial increase in numbers was dependent on re-establishing geese on former nesting islands. Release of captive-reared birds on fox-free islands in the Aleutians was largely unsuccessful due to low survival rates. Once the number of geese on Buldir Island was large enough, we initiated translocation of wild geese from Buldir Island to other fox-free islands. This approach was much more successful and the release of captive-reared birds was phased out.

As new breeding colonies became established in the Aleutian Islands, the number of Aleutian Canada geese increased rapidly. Annual rates of increase between 1975 and 1989 ranged from 6 to 35 percent, and by winter 1989/1990, the peak winter count reached 6,300 geese. We reclassified the Aleutian Canada goose from endangered to threatened in 1990 (55 FR 51106, December 12, 1990).

Since the subspecies was downlisted to threatened in 1990, the overall population of Aleutian Canada geese has sustained a strong increase in numbers. The most recent and highest population estimate of Aleutian Canada geese from the Aleutian Islands is of birds from their staging area near Crescent City in spring 2000. This preliminary estimate suggests that the Aleutian Canada goose population is now about 37,000 individuals (D. Woolington, U.S. Fish and Wildlife Service, pers. comm.). Since 1990, the annual rate of growth of the population, based on peak counts of birds in California, has averaged about 20 percent. The overall annual

growth rate of the population since recovery activities began in the 1970s has been about 14 percent (M. Fisher, U.S. Fish and Wildlife Service, pers. comm.).

Following careful review of all available scientific and commercial data, we concluded the threats that caused the population of Aleutian Canada geese to decline no longer pose a risk to the continued survival of the subspecies. A sustained recovery has occurred during the last three decades as a result of removal of foxes from nesting islands in Alaska, translocating birds to fox-free islands, closure of wintering and migration areas to hunting, and conservation and management of wintering and migration areas. This recovery indicates that the subspecies as a whole is no longer endangered or likely to become endangered in the foreseeable future throughout a significant portion of its range. Therefore, the species no longer meets the Act's definitions of endangered or threatened. Under these circumstances, removal from the list of threatened and endangered wildlife is appropriate.

As a result of the tremendous increase in the population size of the Aleutian Canada Goose and after reviewing the recovery objectives and consulting with recognized experts on April 9, 1998 (63 FR 17350), we published a Notice of Status Review on the Aleutian Canada goose and notified the public of our intent to propose the removal of the subspecies from the threatened species list. Our proposed rule to delist the Aleutian Canada goose was published August 3, 1999 (64 FR 42058). In the August 3, 1999, proposed rule (64 FR 42058) and associated notifications, we invited all interested parties to submit comments or information that might contribute to the final delisting determination for this subspecies. The public comment period ended November 1, 1999. Subsequently, a final rule to remove the Aleutian Canada goose from the list of endangered and threatened species has been drafted and signed, and it is awaiting publication in the *Federal Register*.

Environmental baseline

When preparing a biological opinion, under 50 CFR 402.14, the Service is responsible for evaluating the "effects of the action", i.e., direct and indirect effects together with effects of activities that are interrelated or interdependent, on federally-listed species. These effects become additive to the environmental baseline.

The "environmental baseline" section of Service biological opinions summarizes the effects of past and present human and natural phenomena on the current status of threatened and endangered species and their habitat in an action area. The "environmental baseline" section establishes the base condition for natural resources, human usage, and species usage in an action area which would be used as a point of comparison for evaluating the effects of an action.

Status of the Species on Amchitka

Dewhurst (1988) summarizes a history of Amchitka Island relevant to Aleutian Canada geese chronologically from prehistory through 1988. Foxes were introduced to Amchitka Island in 1921 and increased rapidly to where a harvest was conducted in 1925 (Dewhurst 1988). A fox-farming village was established on the island and the fox population swelled to over 4,000 animals. Geese probably disappeared within a few years of fox introduction. The village was destroyed in WWII to prevent aid and comfort to the enemy. The last harvest of fox on Amchitka Island took place during the winter of 1946-1947.

The Norway rat was reportedly introduced during WWII (Brechtbill 1977) and its numbers rapidly built to where they impacted ground-nesting birds. The USFWS initiated fox and rat eradication using poison in 1951 and continued through 1957. Foxes were eliminated from the island and the rat population was substantially decreased. Feral dogs and cats introduced during the war were eliminated along with the foxes. The bald eagle population declined during the poisoning but had reportedly recovered by 1959 (Kenyon 1961, cited in Dewhurst 1988).

Efforts to relocate the Aleutian Canada goose to Amchitka Island are summarized in Scharf (1994). Seven Aleutian Canada geese were sighted on Amchitka Island in July 1961 (Jones 1963). A remnant population was discovered the following year nesting on nearby Buldir Island (Jones 1963). A goose propagation facility was established on Amchitka Island in 1976 to promote acclimatization and imprinting. The effort to reestablish a population on Amchitka failed initially due to heavy predation by bald eagles and failure of the birds to successfully complete the winter migration. Successive attempts at recolonization using combinations of pen-reared birds and wild birds resulted in the first successful nesting at Nizki-Alaid islands. The rearing facility was closed in 1981 because the wild population at Buldir had grown sufficiently to allow for translocations from that remnant breeding population. Translocations of geese to Amchitka Island occurred in 1976 (Scharf 1994), but it was not apparent that birds had begun nesting there when the species was down-listed from Endangered to Threatened status in December 1990 (USFWS 1990).

Broods of Aleutian Canada geese sighted in 1993 were the first indication that there was successful nesting on Amchitka Island. Surveys by the USFWS in 1994 found two nest cups that had been used at least 3 different years, confirming nesting on Amchitka Island. Both nests appeared to have successfully produced broods. Three additional pairs were observed faithful to territories suggesting nesting in 1993. Several pairs with broods had been previously reported on the northwest end of Amchitka Island near Infantry MP 30, but no geese were observed there during the 1994 survey (Scharf 1994).

Small flocks of non-breeding geese also were observed near the Baker airstrip runway during the 1994 survey. Half of the sightings near the airport were associated with the runway or associated taxiways where the geese were observed to loaf on the tarmac.

The DOE conducted a survey of Aleutian Canada geese in June 2000 in areas of Amchitka Island where remedial activities are scheduled to take place in 2001 (DOE 2000). The area surveyed extended from approximately MP 2.2 through MP 21 along Infantry Road. Three nests and two areas of goose concentrations were found within the project footprint. Milepost

locations of the sightings were a concentration of geese around the airport, a nest at MP 2.5, a concentration of geese at MP 10.5, a nest at MP 18.7, and nest at MP 21.0.

Nest designated ACG1 near MP 2.5 of Infantry Road was found approximately 50 feet (15 meters) west of the access road to the Milrow Site emplacement hole and pad area. Nest ACG2 near MP 18.7 of Infantry Road was found approximately 33 feet (10 meters) east of the access hole and drill pad area of Drill Site F. Nest AGC3 near MP 21 of Infantry Road was found in the drill pad area between two concrete pads at Drill Site E. Coordinates of the respective nest sites located in 2000 by the DOE are listed in the following table.

In addition to the three nests that contained 3, 7, and 6 eggs respectively, a maximum count of approximately 80 geese were seen on the east end of the island near the airport and up to 30 near the Cannikin site at MP 10.5. Nesting geese can exhibit strong philopatry to previously used nesting sites and the probability of geese nesting in the same locations in 2001 is high. While this survey included those areas that would be directly affected by the proposed action it did not survey ancillary areas such as the landing strip and barge landing in Constantine Harbor for nesting geese, where the USFWS found one nest cup in 1994. In total, it is believed that possibly up to several hundred individuals utilize the island during migration, and several dozens may be present during the nesting season. It is not known how many of these actually nest on the island or how many non-breeding individuals utilize the area in summer for feeding and loafing.

Environmental baseline

When preparing a biological opinion, under 50 CFR 402.14, the Service is responsible for evaluating the “effects of the action”, i.e., direct and indirect effects together with effects of activities that are interrelated or interdependent, on federally-listed species. These effects become additive to the environmental baseline.

The “environmental baseline” section of Service biological opinions summarizes the effects of past and present human and natural phenomena on the current status of threatened and endangered species and their habitat in an action area. The “environmental baseline” section establishes the base condition for natural resources, human usage, and species usage in an action area which would be used as a point of comparison for evaluating the effects of an action.

Environmental Quality

Amchitka Island has been part of the National Wildlife Refuge System since 1913 and provides habitat for a diversity of fish and wildlife species. The island has also been used for a variety of military and defense activities since WWII including underground nuclear testing and cold war surveillance. As a result, there are nearly 75 defense-related contaminated sites and 60 abandoned structures and facilities left on Amchitka. The sludge in the sewage lagoon has polychlorinated biphenyls (PCB's) in concentrations up to 456 ppm (Navy 1997). For low occupancy areas such as Amchitka, the Toxic Substances Control Act (TOSCA) requires removal and proper disposal of non-liquid PCB remediation waste (eg. PCB sewage sludge) with PCB levels above 25 ppm (40 CFR 761.61). Moreover, State of Alaska regulations require that the top foot of soil of PCB contaminated sites be cleaned up to less than 1 ppm (ADEC 1999, 18 AAC 75.341). The drilling mud pits on Amchitka Island have diesel range organics (DRO) in

concentrations up to 58,000 ppm (DOE 1999). State of Alaska regulations require cleanup or a risk assessment of sites that have concentrations of DRO greater than 230 ppm be conducted on Amchitka Island (ADEC 1999, 18 AAC 75.341)

In addition, much of the areas surrounding the base camp, runways, and other structures at the southeastern end of the island have already been disturbed from past military activities. Vegetation and underlying peat layers have been stripped to expose bedrock in gravel extraction areas and wetland communities have been filled for the disposal of dredged spoils and solid waste. Although vegetation has recovered in much of the disturbed area, some of the sites that were stripped to mineral substrate remain sparsely vegetated, despite initial seeding and fertilization.

Effects of the action

The effects of the action refers to the direct and indirect effects of the action on the species or its critical habitat. The effects of the action will be evaluated together with the effects of other activities that are interrelated or interdependent with the action. These effects will then be added to the environmental baseline in determining the proposed action's effects to the species or its critical habitat (50 CFR Part 402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

Both direct and indirect impacts could potentially affect the Aleutian Canada goose population on Amchitka Island. Specifically, reproductive success and survival of adults could be adversely impacted by project-induced activities (e.g. noise, human presence, and increased predation). Nesting Canada geese exhibit a strong philopatry to previous nesting locations and those surviving birds that nested in 2000 may return to the same location in 2001. This assumption is principal to estimating the consequences of the proposed action and when proposing avoidance and minimization measures.

Consequences of the clean-up action could include:

1. Reducing nesting success by causing birds to abandon initial nesting attempts due to disturbance.
2. Reducing nesting success and possibly adult survival by causing nesting birds to relocate to less protected sites within established territories due to disturbance at project sites.
3. Increasing the potential of predation by gulls, ravens, and bald eagles on eggs, goslings, and adults by disturbance, nest abandonment and displacement and by attracting the attention of predators to the nesting areas (assuming scare devices are used for geese).
4. Causing direct mortalities of the Amchitka population through collisions with vehicles and or aircraft. □ □

Personnel are expected to be active in the project footprint surveyed by DOE in 2000 (MP 2.5 – 21.0 of Infantry Road), at Bird Cape, near Constantine Harbor, and near the Base Camp/airport area from mid-May through mid-September 2001. Aleutian Canada geese on Amchitka Island are expected to arrive in mid-April and begin nesting in early May. Construction personnel are expected to be on site while geese are relocating established nest sites and young adults are seeking new sites. Nevertheless, we believe that the consequences of the proposed action would probably have negligible impact on the species as a whole, but it may have temporary adverse consequences on the fledgling Amchitka population. As a worse case scenario, the proposed action could (in concert with natural predation) adversely affect and possibly eliminate successful nesting of Amchitka Island birds for the 2001 breeding year. However, we do not believe that this will occur because the actual footprint of the cleanup activities together with those areas that may be indirectly impacted make up a relatively small proportion of the island.

Nesting habitat on Amchitka Island does not appear to be limited, however we do not know if Aleutian Canada geese have unknown preferences for certain areas within similar appearing habitat. If Aleutian Canada geese have microhabitat preferences for nesting sites that are only found within the project area, then the impacts of this project will be more severe. If geese do not have such microhabitat preferences, then nesting habitat on Amchitka Island does not appear to be limiting and the potential impacts to nesting birds within the project footprint will only be a temporary setback to the Amchitka Island population's continued growth.

During the 2000 DOE survey significant numbers of geese were observed flocked near the airport and the Cannikin site at MP 10.5. These flocks were likely composed mostly of non-breeding birds. Many probably were migrating farther west to nesting areas in the Near Islands and this is likely to be the case, particularly for those birds sighted on Amchitka in April and May. During spring migration the birds, particularly the females, are feeding voraciously to build energy after the flight from California and before they need to lay eggs. Reducing the feeding time of these birds through harassment or hazing is likely to adversely affect their fitness.

We believe any action-induced indirect loss of the Amchitka population through reduced nesting success or predation, or direct loss through collision with vehicles or aircraft would be additive (additional mortality sources being disease, pollution, accident, or accidental take by sport hunting). With few exceptions (i.e. the Semidi Islands group), Aleutian Canada geese winter as mixed stock in the San Joaquin Valley. As such, we would usually be unable to determine whether birds that died on the mixed-flock wintering grounds were of the Amchitka population. Thus, the potential and additive loss to the Amchitka population as a result of this action, will likely remain speculative.

Critical Habitat

Critical habitat has not been designated for the Aleutian Canada goose, therefore impacts of the proposed action on critical habitat is not a consideration.

Cumulative effects

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The entirety of Amchitka Island is within the boundaries of the Alaska Maritime National Wildlife Refuge and thus under Federal ownership. Therefore, we cannot foresee any future State, tribal, local or private actions that are reasonably certain to occur that would not involve a Federal nexus, thus cumulative effects are not relevant in this circumstance.

Conclusion

After reviewing the current status of the Aleutian Canada goose, the environmental baseline for the action area, the cumulative effects, and the effects of the proposed action, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the species. This conclusion is based on the fact that the Aleutian Canada goose population has increased dramatically since the species was originally listed and, as of December, 2000, totals about 37,000 individuals with an annual rate of growth of about 14 percent. The potential impact of the proposed project affects only a small portion of Amchitka Island and is temporary in duration. The number of birds nesting on Amchitka Island is low, and the total number of birds utilizing the island represents no more than one percent of the total population. We recognize that there will be some displacement of birds by the proposed project and associated cleanup activity which may result in the failure of some goose nests and in a small number of mortalities. However, we do not believe that these effects will be great enough to manifest themselves at the population level.

Several species in the western Aleutians (i.e. sea otter, bald eagle, peregrine falcon, pelagic cormorant, green-winged teal, rock ptarmigan, Pacific cod and rock greenling) have been found to contain contaminants such as polychlorinated biphenyls (PCB's), selected trace metals (mercury, lead, cadmium, and selenium), and/or polycyclic aromatic hydrocarbons (PAH) (USFWS, 2000c, Anthony et al. 1999, Estes et al. 1997, White and Riseborough 1977). Many of these same contaminants are known to occur on Amchitka in elevated amounts (Crayton 2000). The proposed project will remove or make unavailable contaminated material currently present on the island, and may help to reduce the contaminant burdens in many of the above-listed species. We believe that the take caused by the proposed project will be offset by the long-term benefits of the project to Aleutian Canada geese, as well as to other species.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to

listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the USFWS as the lead agency for the proposed action or any cooperating agency participating in the proposed action so that they become binding conditions of any grant or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. The USFWS has a continuing duty to regulate the activity covered by this incidental take statement. If the USFWS (1) fails to assume and implement the terms and conditions or (2) fails to require any applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the applicant must report the progress of the action and its impact on the species to the Ecological Services Anchorage Field Office as specified in the incidental take statement [50 CFR 402.14(i)(3)].

Amount or extent of take anticipated

The Service anticipates that up to **14 birds and 6 clutches of eggs** may be taken as a result of this proposed action. The incidental take is expected to be in the form of harassment. This incidental take is anticipated because the proposed activities may temporarily displace or disturb the birds utilizing Amchitka Island during the months that the cleanup activities will occur. It is expected that this disruption will not eliminate the birds utilization of the island but it may displace the birds from areas they may have traditionally used.

The Service anticipates that up to **12 breeding adult** Aleutian Canada geese may be taken as a result of this proposed action. The incidental take is expected to be in the form of harm. This incidental take is anticipated because the proposed activities may disrupt and possibly eliminate their preferred nesting habitat on the island temporarily during the months that the cleanup activities will occur. It is expected that this disruption will not eliminate nesting on the island, but it may displace the birds from areas they may have traditionally used. However, once the cleanup activities have ceased and the area is revegetated, it is expected that the species will benefit from having a cleaner environment for nesting and brood rearing. The anticipated level of take was derived by multiplying the actual number of nests found during the 2000 survey of the proposed project footprint (3 nests) by a factor of 2. We believe this is a reasonable multiplication factor that accounts for 1) population growth since the last site survey, 2) detection of less than 100% of all nests during the site survey, 3) disruption of nesting birds outside of the project footprint (area within the site survey).

The Service anticipates that up to **6 clutches** of eggs may be completely or partially destroyed as a result of this proposed action. The incidental take is expected to be in the form of killing. This incidental take is anticipated because it is likely that some nesting and incubation of eggs may be initiated prior to or during the proposed cleanup activities. Because nest are often well hidden, it

is possible that some will be destroyed by the demolition of unexploded ordinance, the demolition of structures, and the movement of equipment during the cleanup activities.

Finally, the Service anticipates that up to **2 individual birds** may be taken as a result of collisions with structures and/or mechanized equipment, and/or as a result of mortality brought about through disturbance (eg. predation that is facilitated by human disturbance). The incidental take is expected to be in the form of direct or indirect lethal take. This incidental take is anticipated because the proposed action will involve numerous personnel and their associated equipment and it is likely that some birds will be incidentally taken as a result of collisions that cannot be prevented. We note that the Service believes that the occasional flushing of birds, when such flushing does not result in a reduction of survival or fitness of the birds, does not rise to the level of take.

Effect of the take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the Aleutian Canada goose given the size of the species' population and its continued rate of increase of 14 percent per year.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of Aleutian Canada geese by the proposed action:

1. Minimize impacts to Aleutian Canada geese during all phases of this proposed project.
2. Monitor the potential impacts of clean up activities on Aleutian Canada geese.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the USFWS as the lead agency for the proposed action or any cooperating agency participating in the proposed action must comply with the following terms and conditions, which implement the reasonable and prudent measures described above, and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. The following terms and conditions shall implement Reasonable and Prudent Measure No. 1.
 - 1.1 All participating state, federal and tribal entities shall adhere to the Management Plan for the Protection of Aleutian Canada Geese on Amchitka Island as interpreted by the FWS representative on the island (DOE 2001, attachment A).

1.2 FWS personnel must ensure that all participants in clean up and oversight activities are instructed on the protection measures for Aleutian Canada geese as stated in the Management Plan for the Protection of Aleutian Canada Geese on Amchitka Island (DOE 2001, attachment A).

1.3 Access to non-work areas would be limited to authorized personnel. Driving off established roads would be prohibited, especially on those roads and trails whose road surfaces have become revegetated.

1.4 Speed limits would be posted at 25 mph (or another reasonable speed limit to be determined) in areas of goose concentrations or nesting sites along Infantry Road to reduce the potential of vehicles colliding with geese.

1.5. Site restoration plans would include grading, contouring, and seeding disturbed ground surface with an Aleutian Island-compatible seed mix.

2. The following terms and conditions shall implement Reasonable and Prudent Measure No. 2.

2.1 Harm of Aleutian Canada geese during project operations shall be monitored. Aleutian Canada geese that have been injured or killed by project activities shall be immediately reported to the Alaska Maritime NWR personnel on the island. Dead Aleutian Canada geese shall be salvaged and kept frozen until they can be transferred to the Service. The Service shall cooperate with parties finding injured Aleutian Canada geese to help facilitate their transportation to rehabilitation facilities if such action is deemed warranted.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

Project personnel should take all practical precautions to avoid flushing geese. In instances where flushing of geese is unavoidable, project personnel shall take measures to minimize the instances of repeated flushing of the same geese.

Reinitiation Notice

This concludes formal consultation on the proposed action. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action that may

affect listed species or critical habitat in a matter or to an extent not considered in this biological opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion; or (4) a new species not covered by this opinion is listed or critical habitat designated that may be affected by this action.

In instances where the amount or extent of incidental take is exceeded, any operations causing such take should cease pending reinitiation.

If you have any questions concerning this biological opinion, please contact Field Supervisor Ann Rappoport at (907) 271-2787, or Endangered Species Biologist Greg Balogh at (907) 271-2778.

Sincerely yours,

Ann G. Rappoport
Field Supervisor

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