FINDING OF NO SIGNIFICANT IMPACT
Caribou Control on Kagalaska Island, Alaska Maritime
National Wildlife Refuge

The U.S. Fish and Wildlife Service (FWS) is proposing to initiate a caribou control project on Kagalaska Island consisting of re-occurring, refuge-coordinated, walk-in caribou control efforts beginning in 2015 These re-occurring efforts will eliminate caribou found on the island, prevent establishment of a resident caribou population, and provide information about the rate of incursion and demography of caribou dispersing to the island to improve subsequent control efforts.

An Environmental Assessment (EA) was prepared which compared Caribou Control on Kagalaska Island (Proposed Action) to the No Action Alternative (copy enclosed). Management action is necessary to slow the rate of range expansion to Kagalaska Island and prevent invasive caribou from becoming established and expanding their use across Kagalaska Island. Kagalaska Island is also designated wilderness and a new population of a non-native species will harm the wilderness character of the island.

The administrative review of this EA included sending an early draft version of the EA to administrators within the U.S. Fish and Wildlife Service, and to Alaska Department of Fish and Game and the Aleut Corporation. Comments from the administrative review were considered for the draft EA that was then released on the Alaska Maritime Refuge web site for a 30-day open period for public comments.

The FWS has selected Caribou Control on Kagalaska Island (Proposed Action) and determined the preparation of an Environmental Impact Statement (EIS) is not necessary. This alternative was selected over the No Action alternative because caribou control assures the natural integrity of Kagalaska is maintained while helping to fulfill the purposes for which the refuge was created. The action does not impact endangered and threatened species. Although caribou control operations could temporarily impact the wilderness quality of untrammeled, it protects the long-term quality wilderness characteristic of naturalness. The proposed action does not impact subsistence use.

An explanation of the No Significant Impact finding follows:

Finding of No Significant Impact

This determination is based upon consideration that the Proposed Action:

- Is not national or regional in scope, but will occur in a limited area.
- Does not create a risk to public safety.
- Will not have impacts on unique characteristics of geographic areas such as loss or destruction of historical, cultural and scientific resources, or disturb critical ecological areas; thus based on comments to the EA, the effects on the quality of the human environment from the Proposed Action are not highly controversial.
- Are not highly uncertain and do not involve unique or unknown risk.
- Will not establish a precedent for any future action with significant effects.
- Does not have cumulative effects.
- Complies with the Endangered Species Act and the Marine Mammal Protection Act (the proposed action will have no effect on Steller sea lions, sea otters, harbor seals, nor will it jeopardize any federally listed threatened or endangered species or their habitats).

• Will have no known irreversible or irretrievable commitments of resources identified by this assessment.
• Complies with federal laws and requirements imposed for the protection of the environment (invasive species eradication is consistent with the USFWS responsibility to manage and conserve migratory bird populations under the Migratory Bird Treaty Act conventions and other applicable laws including the Alaska National Interests Lands Conservation Act which gives legal purposes of the Alaska Maritime Refuge to conserve marine birds, other migratory birds, marine mammals and the habitats on which they rely).

Based on my review and evaluation of the enclosed Environmental Assessment and other supporting documentation, I have determined that Caribou Control on Kagalaska Island (Proposed Action) is not a major Federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969. Accordingly, preparation of an environmental impact statement on the proposed action is not required.

Alaska Regional Chief

Jan 7, 2015

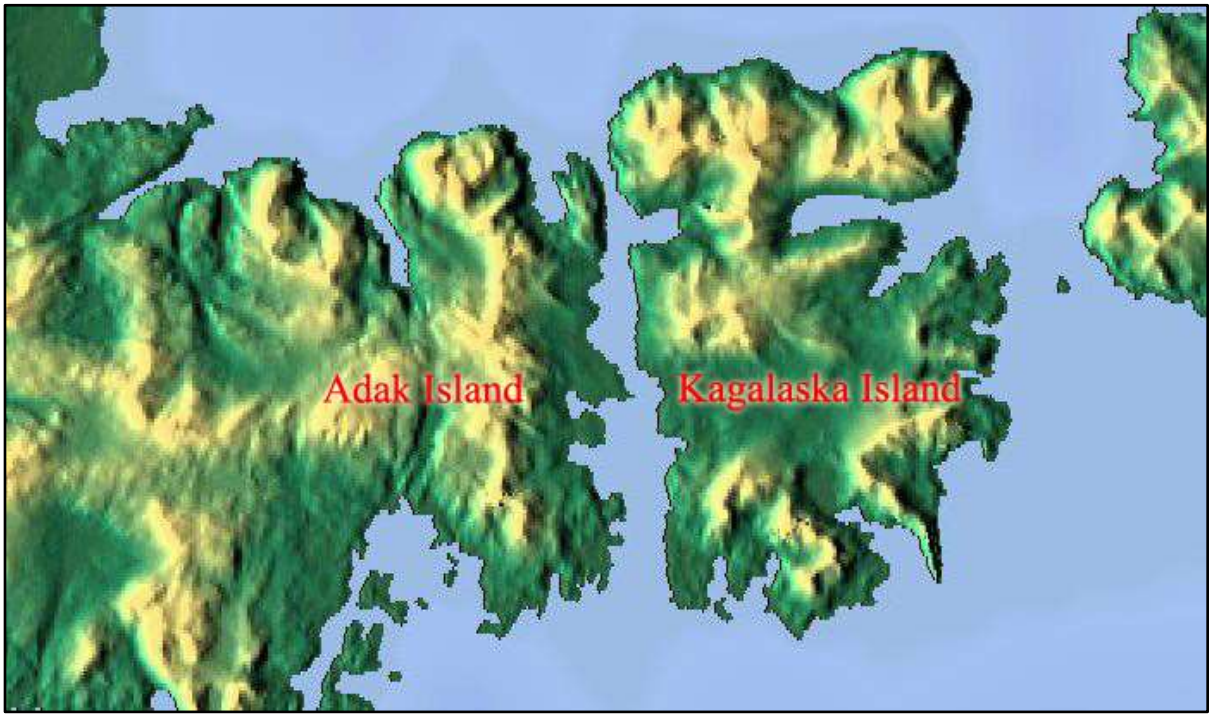
Date

Reference:
Environmental Assessment, dated December, 2014
Enclosure

Environmental Assessment of Caribou Control on Kagalaska Island, Alaska Maritime National Wildlife Refuge

Central Aleutian Islands, Alaska

December 2014



U.S. Fish and Wildlife Service
Alaska Maritime National Wildlife Refuge
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Environmental Assessment for Caribou Control on Kagalaska Island, Alaska Maritime National Wildlife Refuge

SUMMARY

The U.S. Fish and Wildlife Service (FWS) is proposing to initiate a caribou control project on Kagalaska Island consisting of re-occurring, refuge-coordinated, walk-in caribou control efforts beginning in 2015 These re-occurring efforts will eliminate caribou found on the island, prevent establishment of a resident caribou population, and provide information about the rate of incursion and demography of caribou dispersing to the island to improve subsequent control efforts. Additionally, caribou control on Kagalaska will alleviate risk of dispersal to other refuge islands east of Kagalaska. Information gained from re-occurring control will also be useful to evaluate the frequency of control needed to manage the threat of caribou invading Kagalaska Island. In May and June 2012, five caribou were shot on Kagalaska Island and four other caribou were observed. Current caribou numbers on Kagalaska are likely between 0 and 15 animals with ongoing bouts of immigration from Adak occurring at unknown frequency.

1. PURPOSE AND NEED FOR ACTION

1.1 Introduction

Alaska Maritime National Wildlife Refuge includes over 2,500 islands and headlands across much of coastal Alaska, including the Aleutian Islands. Kagalaska Island, in the central Aleutians, is experiencing an invasion by small numbers of caribou from an introduced population on nearby Adak Island. Caribou are not native to the central Aleutians and their presence will harm native species and wilderness character on Kagalaska. The FWS is considering an action to control caribou on Kagalaska Island to prevent them from establishing a resident breeding population on the island.

1.2 Background

Barren-ground caribou (hereafter “caribou”) calves from the Nelchina herd were captured, held in captivity and released on Adak Island (180,940 acres) (Fig. 1) in 1958 and 1959. At that time, Adak Island and its neighbor to the east, Kagalaska Island (29,355 acres) were within the Aleutian Island Reserve, a wildlife refuge designation. The Alaska National Interest Lands Conservation Act (ANILCA) had not yet passed to create what is now called Alaska Maritime National Wildlife Refuge.

Adak Island was home to a major naval base, with a large community associated with that base. The caribou were released at least in part to provide recreational hunting opportunities for military personnel stationed on Adak. Adak is 500 miles outside the native range of caribou, but the introduction was successful and the herd quickly became established on the island. During the

early years, when Adak Island had an Army Base and Naval Operating Base with between 1000 and 6000 people, sport hunting kept the herd to 200-400 animals. Since the closure of island's military base in 1997, sport hunting has not limited the herd. Ricca, et al. (2012b) estimated between 2512 and 2880 caribou on Adak Island in 2012. Table 1 lists Adak Island caribou population estimates based on surveys in recent years.

Fig. 1. Adak and Kagalaska Islands is in the central Aleutian Islands.

Year	# Caribou
1993	750
1994	975
1995	1268
1996	1648
1997	2142
1998	900
2005	2751
2012	2696

Table 1. Recent estimates of caribou numbers on Adak Island, by year, based on surveys.

Currently, a portion of Adak Island is conveyed to the Aleut Corporation and the remainder is a part of Alaska Maritime National Wildlife Refuge. Kagalaska Island (29,355 acres) is entirely within the refuge.

Caribou are not native to the central Aleutian Island and Kagalaska Island but are able to swim across the narrow strait between Adak and Kagalaska Islands. The distance across the 8-mile-long channel between Adak and Kagalaska Island ranges from a few hundred yards to less than 2 miles. Refuge staff and others reported caribou sign (e.g. shed antlers, feces, beds, tracks, trails) on Kagalaska beginning in the late 1990's.

1.3 Purpose and Need for Action

The purpose of this EA is to evaluate options for the management of caribou expanding their range onto Kagalaska Island.

Section 303(1)(b) of ANILCA describes the first major purpose for which Alaska Maritime Refuge was established and shall be managed "to conserve fish and wildlife populations and habitats in their natural diversity. . .". (See Section 1.4 for additional authorities). The need for action is to assure that the natural integrity of Kagalaska Island is maintained.

Caribou grazing has adverse impact on native plant communities and natural integrity on Adak Island, especially depletion of lichens. Management action is necessary to slow the rate of range expansion to Kagalaska Island and prevent invasive caribou from becoming established and expanding their use across Kagalaska Island. Kagalaska Island is also designated wilderness and a new population of a non-native species will harm the wilderness character of the island.

Non-native caribou or reindeer populations on islands can increase to a level when forage, mainly reindeer lichen during winter, becomes limiting (see Section 4.2. Terrestrial Vegetation). Lichens then decline along with the biological communities that depend on them, and may take a long time to recover after depletion caused by caribou or reindeer grazing (Klein 1968, 1987; Pegau 1968). Similar to Adak Island caribou, introduced reindeer have had adverse impacts on natural biodiversity on some refuge islands. A recent study (Ricca 2013) found that significant alteration of plant communities and soil nitrogen cycling that has already occurred on Adak and Atka islands has not yet occurred on Kagalaska Island where native ecosystem processes appear to be still intact.

Remote Alaska islands compete unfavorably as a hunter destination compared to mainland opportunities, and typically demand is inadequate to be used to regulate herd population. Sport hunting regulations limit the timing and take of caribou on Adak Island – only two bulls total may be taken per hunter per regulatory year and no bulls may be taken January 1- August 9. Presently there is no season and no bag limit on Kagalaska Island, but few, if any, hunters know caribou exist there. The island is only accessible by boat, limiting the level of sport hunting. Sport harvest on Adak or Kagalaska Island is not sufficient to prevent a new breeding population of caribou on Kagalaska Island.

One FWS employee and several U.S.D.A. Wildlife Services employees surveyed parts of Kagalaska Island for four days in late May and early June 2012 (Stevens and Smith 2012). Five caribou (one bull, four cows) were shot on Kagalaska Island during the survey to prevent establishment of a new island population. No other caribou were seen, although caribou tracks, feces and hair were relatively abundant on the south side of the island.

A caribou survey of Adak and Kagalaska Islands was conducted on 18 and 25 June 2012 using a helicopter (Ricca, et al. 2012, 2014). During the survey, a single group of 3 adults and 1 calf (< 3 weeks old) was observed on June 18. The calf represents the first known caribou reproduction on Kagalaska Island. No caribou were detected on the June 25 Kagalaska Island survey.

It is unclear how often caribou swim over to Kagalaska Island from Adak Island, how long they stay, and how often cows are calving there. For example, in 2003, no caribou were observed on

Kagalaska Island during aerial surveys (Williams and Tutiakoff 2005), but caribou and caribou sign was frequently spotted from the ground during 2011 (Ricca, et al. 2012). These parameters should be characterized to help improve and refine caribou control efforts over the long-term.

Caribou are finding their way to Kagalaska Island. In this case, the species meets all three criteria for an invasive species as defined by Kolar and Lodge (2001): a species introduced by humans to areas outside its native range, able to establish a self-sustaining population there, and able to spread from point of introduction and becomes more abundant. The presence of caribou on the island damages native plant communities and ecosystems and diminishes wilderness character. If allowed to continue, the caribou population is likely to grow on Kagalaska Island, causing further harm. To fulfill the FWS legal mandate set by ANILCA to preserve natural diversity, and to maintain wilderness character as required under the Wilderness Act, we need to consider the action of caribou control on Kagalaska Island.

1.4 Authority

The primary authorities for this action are ANILCA, the Wilderness Act, and the National Wildlife Refuge Administration Act as amended by the National Wildlife Refuge Improvement Act. Under ANILCA, refuge managers are instructed to “conserve fish and wildlife populations and habitats in their natural diversity - - -”. Another purpose under ANILCA is to “fulfill international treaty obligations ---” which includes the Migratory Bird Treaty Act. The presence of caribou on Kagalaska Island would potentially diminish migratory bird use of the island by certain species due to changes in plant communities and vegetation structure. Kagalaska Island is designated as wilderness. The Wilderness Act requires federal wilderness stewards to not only generally avoid certain activities (commercial enterprise, motorized vehicles, and more) but also requires managers to consider and maintain the wilderness character of wilderness units. Wilderness character includes several qualities, one of which is naturalness. The naturalness of the wilderness is diminished by the presence of non-native caribou on the island. The National Wildlife Refuge System Administration Act, as amended by the Refuge Improvement Act directs wildlife refuge managers to manage for the biological integrity, diversity, and health of refuge units. All three laws give authority for the action and guide refuge decisions on the issue.

These laws and other regulations and policies listed below limit, to some degree, FWS decision-making discretion if the proposed action is implemented.

Executive Order
EO 13112 on Invasive Species (February 3, 1999)

Federal Law
National Invasive Species Act of 1996 (16 U.S.C. 4701)

Federal Regulations
Title 50 CFR Part 31, Section 14 – Official animal control operations.

FWS Policy
601 FW 3 Biological integrity and diversity and environmental health (2001)
701 FW 5 Collections, Donations and Disposals, 5.8 Donation and Disposal Procedures

Refuge Manual
7 RM 14 Pest Control

2 PROPOSED ACTION AND ALTERNATIVES

NEPA requires the consideration of alternatives. This section outlines two alternatives to manage caribou populations on the Kagalaska Island.

2.1 No Action Alternative

Under this alternative, no management action will happen regarding the control of caribou on Kagalaska Island. It is highly likely that the caribou population would become permanently established on the island and would increase to densities similar to what now exist on adjacent Adak Island. Plant communities would become significantly altered. The FWS would consider opportunities for monitoring of both caribou and other plant and animal species and communities but the work would be done opportunistically. We would also search for caribou and caribou sign on islands east of Kagalaska Island, such as Little Tanaga and Great Sitkin under the expectation that caribou may move to additional islands in stepping-stone fashion (Ricca et al. 2012) as the population increased on Kagalaska Island. Subsistence hunting would be unlikely to occur at a meaningful level due to the abundant caribou adjacent to a human population on Adak. Sport hunting as regulated by the Alaska Department of Fish and Game would theoretically be a caribou management tool. However, while there could be some low level of sport hunting on Kagalaska Island it is unlikely to occur at a high level as there are no communities, airports, roads, lodging, or other infrastructure available whereas nearby Adak Island does in addition to relatively more abundant caribou. Sport hunting on the much more accessible Adak Island is not sufficient to suppress the caribou population to low levels.

2.2 Caribou Control On Kagalaska Island (Proposed Action)

The purposes of the proposed action alternative are to:

Repeatedly reduce or eliminate caribou on Kagalaska Island using Refuge staff, Refuge volunteers, Refuge contractors or other personnel acting on behalf of the Refuge.
Monitor the incursion of caribou to Kagalaska Island and gather information on timing, numbers, age and gender of caribou on Kagalaska Island to inform managers and allow continued refinement of optimal control strategies such as frequency and timing.

Beginning in the summer of 2015, and continuing into the future, the Refuge proposes to implement caribou control on Kagalaska Island in compliance with ANILCA, Wilderness Act, and Administration Act mandates. One or more trained staff/volunteers/contractors will be taken ashore (landing below mean high tide and outside refuge and Wilderness boundary) reusing motorized inflatable skiff or other suitable watercraft and use center-fire rifles adequate to kill caribou. Shooters will carry a two-way hand held radio, a GPS unit, and spare clothing appropriate for weather. Depending on the number of animals expected and personnel

availability, they may camp on the island in some years. The refuge research vessel Tiglax, charter vessel, or other means, may support them.

No motorized vehicles or mechanized transport (both generally prohibited by the Wilderness Act) would be used on the island (e.g., within Wilderness boundaries). Motorized skiff access would take place below tide line, which is outside Refuge and Wilderness boundaries. Firearms are not motorized equipment. Refuge staff have conducted a Minimum Requirements Analysis in compliance with agency policies associated with the Wilderness Act.

Meat salvage will be handled in accordance with Fish and Wildlife Service policy (701 FW 5. Collections, Donations, and Disposals) Key sections of that policy include:

> A. Donations. As a general rule, the recipients of donations should arrange to pick up and be responsible for transporting the donated items from the refuge. Recipients may be charged, as appropriate, for capture and delivery.
>
> **C.** Disposal of Products of Animal Control Activities or Accidental Death may occur in accordance with 50 CFR 12.33.
>
>> **(1)** Animal products resulting from control activities, confiscation, or accidental death, which meet requirements of health and sanitation, may be disposed of in accordance with guidelines of paragraph 5.8D below as appropriate. Permits and authorizations must be obtained no matter what the circumstance of acquisition of material. Public relations or health considerations may require, however, that animal remains be burned or buried. This would be particularly true if evidence of disease were present.
>>
>> **(2)** The facility manager may require that carcasses of accidentally or intentionally killed animals (of wildlife control activities) be left or distributed where they can be utilized by scavenger species such as eagles or vultures.

Each animal killed will be examined briefly with the sex, estimated age, location, date, and any notable features recorded. Over time, this information will help us better understand the rate of immigration, preferred areas of use, timing of immigration, and age/sex of immigrating animals. Also, we will, over time, be able to refine our control strategies related to control frequency, duration, season, and possibly other factors. The effect of control is not likely to be self-sustaining because of conditions (presence of caribou on Adak Island) outside the treatment area (Kagalaska Island).

2.3 Other Alternatives Not Considered Further

Preventing dispersal to Kagalaska Island with fencing. There is no caribou fencing on either Adak or Kagalaska Island. To approach effectiveness, an eight-mile (at least) caribou-proof fence would have to be constructed on either Kagalaska or Adak islands. Besides the high cost of initial construction on either remote island, it would be necessary to regularly inspect and repair the fence to maintain effectiveness. Besides the logistical problems, the fence alternative also requires preventing caribou from swimming around the fence and designing a barrier that would not allow caribou to go over the fence in areas where snow drifting occurs. The relevant portions

of both Adak and Kagalaska Islands are federally designated wilderness, which would generally preclude construction of a fence even if it were feasible to construct and maintain. A minimum requirements assessment is necessary to determine if the FWS could construct inside either Wilderness Area. Because of logistical constraints, Wilderness concerns, and unlikely efficacy at keeping caribou off of Kagalaska Island, the action of constructing and maintaining a caribou fence to prevent caribou from accessing Kagalaska Island will not be considered further.

Trapping, netting or other capture methods to remove caribou from Kagalaska Island and transporting live to Adak Island. This alternative requires greater expense and effort than using lethal control as proposed in the Proposed Action. The work would likely be done in the summer months and could be complicated by the presence of calves. Trapping, netting, or other capture methods would require getting physically closer to the caribou than would the proposed action. The effort required to get physically adjacent to each individual animal would increase the cost and decrease the probability of success. Capture and transport would cause animal stress and may result in death and injury of caribou. Transport to Adak may not result in a net loss of caribou on Kagalaska Island because individuals transported may return to Kagalaska Island. Animals tranquilized and released are not fit for human consumption for a period of time. The length of time varies with the dose of the drug and the drug used. Sport and subsistence hunting in the area of release on Adak would need to be suspended, or else animals captured must be marked clearly, so hunters could avoid them. Trapping, netting, or other capture methods plus transportation of live animals would require motorized vehicles such as helicopters for approaching the animals and/or vehicles with trailers for transporting live animals. A minimum requirements assessment is necessary to determine if the FWS could use motorized vehicles inside either Wilderness Area. This alternative will not be considered further.

Hazing. Visual and auditory frightening devices are temporary and largely ineffective in deterring deer (Belant et al. 1996, Belant et al. 1998, Curtis et al. 1997, Gilsdorf et al. 2003, Gilsdorf et al. 2004a, Koehler et al. 1990, Roper and Hill 1985). Deterring caribou inland and away from the east Adak Island coastline, or turning caribou back from Kagalaska Island using motion-activated propane cannons, inflatable scarecrows, other devices, or repellents is not practical considering the long coastal pathway of invasion, the inclement Aleutian weather, and other factors. A minimum requirements assessment is necessary to determine if the FWS could use these devices inside the Wilderness Area. Hazing caribou will not be considered further.

Eliminating the source population on Adak Island. Eliminating or greatly reducing the caribou population on Adak Island would likely slow the rate of range expansion to Kagalaska Island and would lessen impacts of caribou on both islands. A previous EA, not finalized, proposed removing caribou from Adak Island (EA for Removal of Introduced Caribou, Adak, Alaska 1994). Currently Adak Island has mixed land ownership, with large portions of the island owned and managed by the Aleut Corporation and not under refuge administration. There is also an established tradition of caribou hunting under state regulations on Adak Island as well as the existence of the town of Adak itself, many of whose residents use Adak caribou as a meat supply. Elimination of all caribou on Adak or greatly reducing the number of caribou on Adak Island is beyond the scope of this assessment. This alternative will not be considered further in this document.

Biological control such as introducing caribou diseases or large predators to Kagalaska Island. There is not enough information about Kagalaska Island caribou to determine if introducing a non-native predator or biological agent (e.g. chronic wasting disease, brucellosis,

tuberculosis, rabies) onto Kagalaska Island would be effective, but it is highly unlikely. Examples of similar control strategies being successful at controlling ungulate invasive species are rare or poorly documented. Biological agents pose a risk of unintentionally spreading to Adak and affecting that herd too. Introducing a non-native predator to the island would be counter to refuge mandates as defined by ANILCA and the Refuge Administration Act. A minimum requirements assessment is necessary to determine if the FWS could use motorized vehicles inside the Wilderness Area This alternative will not be considered further.

Interference of reproduction using sterilants or reproductive inhibitors. There are no chemosterilants registered for use on caribou or reindeer. The only registered chemosterilant for deer must be manually injected. On Kagalaska Island, this would require capturing the caribou using traps, nets or chemical immobilization at least twice so it can be manually injected with the active ingredient. Use of the sterilants would require getting physically adjacent to each live animal on the island such as with a helicopter. A minimum requirements assessment is necessary to determine if the FWS could use motorized vehicles inside the Wilderness Area. Also, live caribou would continue to cause damage to native species even after being treated, if such treatment were possible. This alternative will not be considered further.

2.4 Decision To Be Made

Based on the analysis documented in this Environmental Assessment and supporting documents, the Regional Chief of Refuges for the FWS Alaska Region will determine whether or not to initiate lethal caribou control on Kagalaska Island within Alaska Maritime National Wildlife Refuge, and whether or not preparation of an Environmental Impact Statement (EIS) is necessary. If the Regional Chief determines that an EIS is not necessary, a Finding of No Significant Impact (FONSI) would be prepared, which would highlight the alternative selected for implementation.

3 AFFECTED ENVIRONMENT

3.1 History And Description Of Island

Kagalaska Island (29,355 acres and 62.1 miles of coastline) is located in the central Aleutian Islands, in the Andreanof Group. It is a glaciated mountainous island with an extinct volcano.

The island is between Adak Island to the west and Little Tanaga Island to the east. Kagalaska Island is separated from nearby Adak by a distance varying from a few hundred yards to 2 miles across 8 miles of coastline. Kagalaska Island is uninhabited by humans and provides breeding habitat for seabirds, waterfowl, land birds, salmon and other wildlife.

Native people, known today as Aleut or Unungan, occupied the central Aleutian Islands, including Kagalaska Island prior to Russian contact, but the island had no permanent settlements at the time of the Alaska Purchase in 1867. Kagalaska Island was included in the Aleutian Island Reserve established in 1913 during Alaska territorial days. Kagalaska Island was incorporated into Alaska Maritime National Wildlife Refuge in 1980 by ANILCA with five purposes,

including “to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals”. The island was designated as wilderness at the same time.

No native terrestrial mammals were known to inhabit any of the Aleutian Islands west of Umnak prior to Russian contact. After Russian contact, red foxes, arctic foxes, Norway rats, roof rats, mice and several kinds of livestock, including reindeer and caribou were introduced to many islands and persist there today. Non-native arctic foxes were eradicated from Kagalaska Island in 1997 (Ebbert 1999).

Caribou occur naturally on some small mainland portions of the refuge in the Chukchi Sea and Bering Sea Units. There is also a resident caribou herd on Unimak Island. Caribou were introduced to Adak in 1958 and 1959 when 23 calves were transplanted from the Alaska mainland (from the Nelchina herd) at the request of the military, which had a base on Adak Island (Jones 1966). The goal was to establish a controlled breeding population of caribou on Adak Island for recreational hunting by base residents. Early Adak Island caribou management objectives were to maintain the herd at a post-season population level of 200-250 animals. Prior to the closure of the Adak military base, the annual caribou harvest was more than 130 animals. Some military personnel were transported to recreational cabins and camps around the island by marine vessel and picked up at the end of a hunt. Prior to base closure, caribou mostly ranged the southern and western part of the island. Hunting them required planning, transportation by boat, or long pack trips from the limited road system. Today hunters on Adak cruise coastal areas in boats to spot caribou, or use ATVs or trucks on established roads or trails to places where they hike to hunt. A recent survey counted between 2,512 and 2,880 caribou on Adak Island (Ricca, et al. 2012). In recent times, caribou are more commonly found near Adak town than in the past.

3.2 Climate

Kagalaska Island climate is maritime and subject to frequent, violent storms with high winds that can make boating dangerous. Summer storms can be milder, but dense fog is common and can obscure views, making traveling on and around the island confusing. Rain and fog can make visibility poor enough to prevent reliable detection of quietly grazing caribou. Annual precipitation can exceed 70 inches.

3.3 Terrestrial Vegetation

Kagalaska Island is treeless and vegetation is classified as maritime tundra (Amundsen 1977). The high uplands and mountain slopes support a variety of lichens, mosses, and low-growing alpine plants. The lowlands are covered with tall herbaceous meadows. Kelp grows offshore and algae covers rocky intertidal areas. Succulent herbs grow just above mean high tide on beaches to a typical grass hummock zone, which continues inland as elevation increases. Lichen community is found in lowland patches, along streams, and on thinner soils of steeper slopes and often interspersed with crowberry.

3.4 Freshwater Resources

Freshwater lakes, potholes, and streams occur on Kagalaska Island, especially in the glaciated valleys near the coast. There are four pink salmon streams and two sockeye streams identified on Kagalaska Island. Streams supporting both sockeye runs and the largest pink salmon run on the island flow to Quail Bay. Bergsland (1959) reported the Native name of another stream on the West side of the island translated as “has red salmon”, and his informant said seals go up hear to the lake in the middle of the island.

3.5 Terrestrial mammals - Caribou

Caribou are one of Alaska’s most abundant and widely distributed big game animals. In modern times, caribou became absent in the Eastern Aleutian Islands except on Unimak Island or where their domestic variety, reindeer, were stocked. Mainland caribou are an important subsistence resource and also provide recreational hunting opportunity. The Adak caribou population size appears to be independent of harvest.

On the mainland, caribou are typically migratory, commonly traveling miles between summer range and winter range. Mainland caribou herds move almost continuously, reducing the duration of grazing pressure on local forage and likelihood of overgrazing (Skoog 1968). Seasonal caribou movements on Adak are not well understood. Adak Island has supported a breeding population of caribou since the 1960’s after the first caribou were introduced in 1959. No caribou or reindeer were ever stocked on Kagalaska Island.

As the Adak Island herd increases so will the incursion of caribou onto Kagalaska Island. Some habitat on Adak is marginal wintering habitat for caribou, and may motivate caribou to swim the channel in search of higher quality forage. Bull caribou are more likely to wander and swim the channel from Adak initially, but with increased grazing pressure on Adak, cows cross also. Eventually, a new caribou herd will become established on the smaller island and expand rapidly in the absence of predators such as bears or wolves, or increased harvest by hunters. Kagalaska Island herd will increase and eventually impact of winter forage, especially lichens.

Caribou are primarily grazers, with the majority of their diet comprised of sedges, horsetail, cranberry, blueberry, arctic willow, cottonsedge, Labrador tea, bog birch and leatherleaf. Caribou are largely dependent upon lichens (especially *Cladonia spp*) to survive during winter throughout most of their range, but can subsist on a diet without lichens if other plants, such as trees and shrubs, are available. Graminoids (grasses) may be a key component that enables persistence for island caribou (Klein 1968, Leader-Williams 1988, Ricca 2013). Free ranging caribou on the mainland choose winter range mainly based on the availability of lichen forage. Caribou need water during summer and eat snow in the winter. A critical time for caribou is when open water is frozen and before the early snows. Lichens are necessary and important then because of their greater moisture-retaining ability compared to other plants. Caribou seek lichens as long as snow covers the ground, but are less essential during late spring when herbaceous green vegetation is present.

3.6 Marine Mammals and Endangered Species

All marine mammals in the United States are protected under the Marine Mammal Protection Act (MMPA), and some species receive additional protection under the Endangered Species Act (ESA). Marine mammals commonly found in the waters immediately surrounding Kagalaska Island include sea otters, harbor seals, and Steller sea lions. Whales and porpoises also occur offshore Kagalaska Island, but environmental consequences to these species are outside the scope of this assessment because they have an extreme low probability of being present near the island or effected by the proposed action.

Endangered or threatened species using marine waters adjacent to the island include Steller sea lions and sea otters. The marine environment surrounding Kagalaska Island is in the southwest Alaska Distinct Population Segment (DPS) of the northern sea otter (*Enhydra lutris kenyoni*). The DPS is listed as threatened under the Endangered Species Act (ESA).

Steller sea lions aggregate during summer on the northern shore of Kagalaska Island, at the base of steep cliffs. National Oceanic and Atmospheric Administration conducts ship aerial and ship-based surveys of Steller sea lions in Alaska (Fritz, et al. 2013). On June 21, 2008, NOAA counted 42 adults and juveniles (non-pups) on Kagalaska Island, 52 on June 25, 2009, and 0 on July 11, 2011.

3.7 Birds

There are 155 species of birds, including 34 species that are primarily Asiatic, which have been recorded on adjacent Adak Island. Bald eagles are abundant throughout the Aleutians. Rock ptarmigan, various waterfowl species, and many passerines also nest on Adak Island. Kagalaska Island avifauna is likely very similar to that on Adak. While no nesting records exist for Kittlitz's murrelets on Kagalaska Island, it likely provides breeding habitat and Kittlitz's murrelets are known to nest on adjacent Adak Island. The Aleutian Islands have been identified as a Globally Important Bird Area (American Bird Conservancy and Audubon).

3.8 Cultural Resources

Cultural resources on the Refuge are archaeological artifacts associated with seasonal Aleut encampments and food processing sites, village sites and midden sites. Cultural resources also include locations with significant historical events and may have associated artifacts. A third type of cultural resource on the Refuge is designated Wilderness. Cultural resource protection is required on all refuges.

3.8.1 Prehistoric

Little is known about Kagalaska Island, either archaeologically, or through historical documentation (Stein 1977). Archaeological sites occur on all of the larger Aleutian Islands, though no specific recent archeological work has been conducted on Kagalaska Island, and a complete survey of archaeological sites on the island was not found at the time of this analysis. Bank (1971 in Stein 1977) reported only five sites on Kagalaska Island. These sites may have

been associated with more apparent extensive use of nearby Adak Island by Native people. The proposed action will not degrade or damage archeological sites.

3.8.2 Historic

There was some use of Kagalaska Island by American troops during WWII and relics of that time occur on the island. No damage or disruption of historic features will occur if the proposed action is implemented.

3.8.3 Wilderness

Wilderness is defined by the Wilderness Act of 1964 as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain . . . Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

Wilderness areas are managed to preserve wilderness character, including prevention of degradation of naturalness by a human-caused introduction of a species far outside its natural range. In some cases, there is a need for agency action that may impair wilderness character. The Wilderness Act actions that impair one or more qualities of wilderness character may be allowed under certain circumstances. FWS policy requires the evaluation of proposed actions within wilderness to, in the extent possible, the action has the least impact as measured against the benchmark of conditions generally prevailing at the time of congressional designation. The FWS has prepared a minimum requirements analysis evaluating wilderness implications of both no action and the proposed action. Neither the proposed action nor the no action alternatives involve any activities generally prohibited under the Act. However, the action must still be analyzed to weigh both benefits and negative impacts to wilderness character. Agency policy directs wilderness managers to conduct a minimum requirements analysis which considers not just generally prohibited activities but also impacts to wilderness character which can include things such as a unit's untrammeled qualities, its naturalness, and its opportunities for providing primitive and unconfined recreation.

4 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

4.1 Issues Identified

Issues that were identified by the FWS as important in the decision making process regarding caribou control on Kagalaska Island are: 1) which alternative would best meet refuge mandates under ANILCA, particularly the mandate to conserve fish and wildlife populations and their habitats in their natural diversity; 2) which alternative would best meet wilderness stewardship mandates; and 3) which alternative would best maintain the biological integrity, diversity, and health of the refuge as directed by the Refuge Administration Act. No impacts of caribou control activities, as proposed, would be expected on physical resources such as soil, water and air. This chapter analyzes and compares the effects anticipated under each alternative.

4.2 No Action Alternative

Under the No Action alternative, caribou on Kagalaska Island have potential to increase either through immigration or by reproduction. A Kagalaska Island herd is unlikely to decrease through emigration since caribou forage resources are presently superior on Kagalaska Island compared to Adak Island. Caribou have little incentive to emigrate from habitat safe from exposure to human hunters and disturbance back to areas with a higher caribou density, greater competition for food and mates, and greater human disturbance. Caribou would continue to use the relatively undisturbed Kagalaska Island, perhaps occasionally leaving the island to search for potential mates on adjoining islands

Under the No Action alternative, the ANILCA purpose for the refuge to conserve fish and wildlife purposes in their natural diversity would be harmed. Caribou would continue to be present on Kagalaska Island and the population would almost certainly increase. Native plant communities would be altered and there would likely be some changes in bird use or abundance. While the No Action alternative would not involve activities normally prohibited by the Wilderness Act, wilderness character, particularly the element involving naturalness, would be harmed by the continued and increasing presence of caribou. The Refuge Administration Act's direction to protect biological integrity, diversity, and health is closely related the Refuge's establishing purpose under ANILCA. The No Action alternative would tend to diminish the refuge's biological integrity as a non-native species would be allowed to remain and indeed would increase in population and ecosystem influence over time.

Terrestrial Vegetation: The No Action alternative would lead to significant damage to terrestrial vegetation. In particular, lichen beds would be impacted and eventually would be either eliminated or greatly reduced on the island. Ricca (2013) describes intact lichen mats on Kagalaska Island in comparison their decimation on Adak and Atka islands. Overall on Kagalaska Island, plant communities and soil nitrogen cycling remain unaltered by invasive caribou. Grazing ungulates tend to prefer certain species and certain habitat types for foraging and these preferred habitats would be the most severely damaged by the presence of caribou. On Hagemeister Island, a range survey by the Soil Conservation Service in 1987 found that grazing by introduced reindeer had caused severe lichen depletion and poor range conditions (Swanson and La Plant 1987). On St. Paul Island in the Pribilof Islands (Bering Sea), 26 reindeer were stocked by 1911. At the time, the island had abundant lichen beds. There were no reindeer predators and hunting was not allowed. By 1935 the herd numbered 2,000 and by 1950 the herd crashed to 8 reindeer before beginning to grow again. On St. Matthew Island, in the Bering Sea, Klein (1968) documented the buildup and crash of reindeer on that island. These are published examples of damage caused by feral reindeer (same species as caribou) or population boom followed by a population crash on remote Alaskan islands. Similar habitat damage caused by

high populations and subsequent population crashes of caribou following massive vegetation changes could occur on Kagalaska Island and other refuge islands should a caribou population become established.

Fresh Water: There may be some degradation of fresh water resources under the No Action alternative as caribou populations build over time. Trampling, erosion, nutrient disruption, and other negative impacts to fresh water resources can occur if caribou population increases on Kagalaska as observed on other islands.

Terrestrial Mammals: Caribou and Norway rats are the only terrestrial mammals on the island and neither is native. Under the No Action alternative, caribou populations would continue to increase with the potential for catastrophic die-offs in severe winters due to starvation on depleted habitat.

Marine Mammals: The No Action alternative is not likely to significantly affect marine mammals using island beaches and adjacent waters. There could be some minor disturbance caused by an increased caribou population.

Birds: Some ground nesting birds (Lapland longspurs, rock sandpipers) could have nests crushed by grazing caribou in areas heavily used by caribou and as caribou numbers increase on the island. Changes to the plant communities would likely lead to changes in bird use and productivity, but the magnitude is unknown.

Cultural Resources: Under the No Action alternative, there would be disturbance and erosion related to caribou use and vegetation changes that could damage cultural resources.

Prehistoric Resources: The No Action alternative would lead to disturbance and erosion related to caribou use and vegetation changes that could damage prehistoric resources.

Historic Resources: The No Action alternative is not likely to significantly affect historic resources on the island.

Wilderness: Wilderness impacts are addressed separately in a minimum requirements analysis. The No Action alternative would lead to a degradation of wilderness character as non-native caribou maintained their presence on the island and increased their population.

Endangered Species: The No Action alternative is not likely to affect the listed species known to use the island area since both are marine mammals with terrestrial use limited to beaches and other areas immediately adjacent to the ocean.

4.3 Caribou Control on Kagalaska Island (Proposed Action)

Terrestrial Vegetation: Under the Proposed Alternative, there would be either no damage or very limited damage to terrestrial vegetation as caribou would not be allowed to become permanently established on Kagalaska Island and would not be able to use Kagalaska Island as a stepping stone to other nearby islands. Lichen beds would remain intact. Plant communities would remain intact. The natural diversity and biological integrity of the island would remain

intact.

Fresh Water: Caribou control could impose minor physical alterations to wetland plant communities through human trampling of aquatic vegetation and disturbance to saturated soils while humans are traveling on the island. With the very low density of caribou shooters in the action alternative, impacts associated with either trampling or disturbance would likely be inconsequential and would reduce the future trampling by caribou.

Terrestrial Mammals: Under the Proposed Action alternative, caribou would be periodically controlled after they emigrated from Adak Island. At any given moment the caribou on Kagalaska Island would likely range from zero animals to ten, with no opportunity for herd increase. Caribou control is not expected to impact Kagalaska Island's other non-native terrestrial mammal - Norway rats.

Marine Mammals: Steller sea lions and sea otters are not expected to interact significantly with caribou on Kagalaska Island. While traversing sea otter habitat in small watercraft as when going or coming from shore during the Proposed Action, the watercraft operator will conform to the procedures described in the "Boat Operation Guidance to Avoid Disturbing Sea Otters". Participants will be reminded not to harass sea otters at any time. None of the activities of the Proposed Action is likely to effect sea otters (see Appendix A). Firing rifles upon caribou on Kagalaska Island and watercraft vessel noise are not expected to result in Level A or Level B harassment of any marine mammals as defined by the Marine Mammal Protection Act (MMPA).

Steller sea lions aggregate on the beach at the base of steep cliffs on a northern shore of Kagalaska Island, easily avoidable and inaccessible by foot. There is no chance of localized disturbance to marine mammals under the Proposed Action alternative from the occasional human activity of hiking across the island and discharging a firearm. Since most of the island and most of the caribou habitat is not along the shoreline, Steller sea lions, if present on the island during control operations will be easily avoided. Staff will be directed to avoid disturbance to hauled-out marine mammals and to avoid discharging a firearm in a way that could cause marine mammal disturbance. Firing of rifles or watercraft noise is not likely to effect Endangered Species Act (ESA) listed Steller sea lions. Caribou control will have no effect on Steller sea lion critical habitats.

Birds: There would no effect on birds under the Proposed Action alternative. Kagalaska Island would continue to provide healthy bird habitat and the action would avoid degradation caused by an increased presence of caribou.

Cultural Resources: Under the Proposed Action alternative, there would be no effect on cultural resources, including both prehistoric and historic resources. Grazing-induced accelerated erosion threatening cultural resources would not occur.

Prehistoric Resources: Under the Proposed Action alternative, there would be no effect on cultural resources, including both prehistoric and historic resources.

Historic Resources: Under the Proposed Action alternative, there would be no effect on cultural resources, including both prehistoric and historic resources.

Wilderness: Wilderness impacts are addressed separately through a minimum requirements analysis. Controlling a non-native species (caribou) in wilderness areas to reduce impact on native species is consistent with preservation of wilderness character, particularly by maintaining the natural qualities of the island. Some negative impacts to wilderness character may occur because of the control action (presence of people, discharge of firearms) but they are offset by the positive impacts of maintaining healthy and natural ecosystems. Prevention of the establishment of a new breeding population is often the best way to protect wilderness from invasive species.

Endangered Species: The Proposed Action alternative is not likely to have any effect on endangered species. There would be a slight chance of localized disturbance to listed sea otters or sea lions under the Proposed Action alternative from the occasional human activity of hiking across the island and discharging a firearm. The disturbance is likely to be absent or very limited since most of the island and most of the caribou habitat is not along the shoreline. The sound of a center-fire rifle could conceivably produce a local and minor disturbance to marine mammals nearby but this is unlikely as most shots are likely to be at least 100 meters inland and the direction of the discharge is most likely to be inland in near-shore situations. Staff will be directed to avoid disturbance to hauled-out marine mammals and to avoid discharging a firearm in a way as to cause marine mammal disturbance.

4.4 Subsistence (ANILCA Section 810 Evaluation)

ANILCA (Section 810) requires federal land managers to identify whether a proposed land management action has potential to significantly restrict subsistence uses and consult with local subsistence users to minimize such restrictions. If the proposed action is not likely to result in significant restrictions on subsistence uses, no further activities are required for compliance with this section. Caribou control on Kagalaska (Proposed Action) does not restrict subsistence uses on Kagalaska Island. See the Appendix B: ANILCA Section 810 Evaluation.

5 CUMULATIVE EFFECTS

The Refuge drafted an Environmental Assessment to remove caribou from Adak Island in 1995. The EA draft was presented to the public and agencies, and comments were considered. A draft Finding of No Significant Impact was drafted but never signed by the Regional Director. No alternative presented in the EA was taken by the FWS because the land status of Adak Island and Adak community was uncertain.

The FWS is currently developing two separate NEPA compliant documents regarding the cattle management or removal on two other refuge islands. These Environmental Impact Statements are scheduled to be available in draft form to the public in the fall 2014.

6 LIST OF PREPARERS

Steve Ebbert, Wildlife Biologist, Alaska Maritime National Wildlife Refuge is responsible for writing the draft EA and preparing it for distribution.

Steve Delehanty, Refuge Manager, Alaska Maritime National Wildlife Refuge is responsible for editing and agency distribution the draft EA.

Marianne Aplin, Visitor Center Manager, Alaska Maritime National Wildlife Refuge is responsible for editing, public involvement and public distribution of draft EA.

Heather Renner, Supervisory Wildlife Biologist, Alaska Maritime National Wildlife Refuge is responsible for editing the draft EA.

7 ACRONYMS AND ABBREVIATIONS

ANILCA: Alaska National Interest Lands Conservation Act
CCP: Comprehensive Conservation Plan for Alaska Maritime National Wildlife Refuge
EA: Environmental Assessment
EIS: Environmental Impact Statement
FWS: United States Fish and Wildlife Service
FONSI: Finding of No Significant Impact
NEPA: National Environmental Policy Act
Refuge: Alaska Maritime National Wildlife Refuge
Refuge Improvement Act: National Wildlife Refuge Improvement Act

8 COORDINATION, CONSULTATION, AND COMPLIANCE

As a Federal agency, the FWS must comply with provisions of the National Environmental Policy Act (NEPA). An environmental assessment is required under NEPA to evaluate reasonable alternatives that would meet stated objectives and to assess the possible impacts to the human environment. The environmental assessment serves as the basis for determining whether implementation of the proposed action would constitute a major Federal action significantly affecting the quality of the human environment.

The planning process has been conducted in accordance with National Environmental Policy Act Implementing Procedures, Department of Interior and FWS procedures, and has been performed in coordination with the affected public. A 30-day public review and comment period for the Draft Environmental Assessment was open from October 1-31, 2014. Press releases announcing the availability of the plan were sent to local media outlets. The EA was posted on the Refuge's website for the duration of the public comment period. Paper copies were made available at the refuge office during the public comment period. Notice of the availability of the plan was sent to The Aleut Corporation, the City of Adak, Atka Village, and to the Alaska Department of Fish and Game.

9 LIST OF AGENCIES CONTACTED

The following agencies were contacted during preparation of the EA:
Alaska Department of Fish and Game
The Aleut Corporation
City of Adak Alaska

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11 Appendix A: Endangered Species Section 7 Consultation (Sea otters)

Intra-Service Section 7 Biological Evaluation Form - Region 7

Originating Person: Steve Ebbert, Wildlife Biologist Date Submitted: 27 Aug 2014

Telephone Number: 907-235-6546

I. **Service Program and Geographic Area or Station Name:**
Alaska Maritime National Wildlife Refuge

II. **Flexible Funding Program** (e.g. Joint Venture, etc) if applicable:
N/A

III. **Location:** Location of the project:
Kagalaska Island, Central Aleutian Islands (approx. 51° 47' 35" N, 176° 20' 39" W).

IV **Species/Critical Habitat**: List federally endangered, threatened, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area.

Endangered and threatened species using marine waters adjacent to Kagalaska Island include Steller sea lions and sea otters. This consultation is specific to sea otters.

The marine environment surrounding Kagalaska Island is in the southwest Alaska Distinct Population Segment (DPS) of the northern sea otter (*Enhydra lutris kenyoni*). The DPS is listed as threatened under the Endangered Species Act (ESA), and the listed population and all other sea otter populations are protected under the Marine Mammal Protection Act (MMPA).

V. **Project Description:** Describe proposed project or action or, if referencing other documents, prepare an executive summary (attach additional pages as needed):

See attached Draft Environmental Assessment of Caribou Control on Kagalaska Island, Alaska Maritime National Wildlife Refuge.

Beginning in the summer of 2015, and continuing into the future, the Refuge proposes to implement caribou control on Kagalaska Island in compliance with ANILCA, Wilderness Act, and Administration Act mandates. One or more trained staff/volunteers/contractors will be taken ashore (landing below mean high tide and outside refuge and Wilderness boundary) by motorized inflatable skiff or other suitable watercraft and use center-fire rifles adequate to kill caribou. Shooters will carry a two-way hand held radio, a GPS unit, and spare clothing appropriate for weather. Depending on the number of animals expected and personnel availability, they may camp on the island in some years. The refuge research vessel Tiglax, charter vessel, or other means, may support them.

No motorized vehicles or mechanized transport (both generally prohibited by the Wilderness Act) would be used on the island (e.g., within Wilderness boundaries). Motorized skiff access would take place below tide line, which is outside Refuge and Wilderness boundaries. Firearms are not motorized equipment. Refuge staff have conducted a Minimum Requirements Analysis in compliance with agency policies associated with the Wilderness Act.

VI. **Determination of Effects:**

(A) Description of Effects: Describe the action(s) that may affect the species and critical habitats listed in item IV.

Sea otters are not expected to interact significantly with caribou on Kagalaska Island. The presence of caribou in low numbers, as presently occurs, or the complete absence of caribou on the island, which has certainly been the case prior to caribou introduction on Adak Island in 1959, has no known impact on sea otters.

While traversing sea otter habitat in small watercraft as when going or coming from shore during the Proposed Action, the watercraft operator will conform to the procedures described in the "Boat Operation Guidance to Avoid Disturbing Sea Otters". Participants will be reminded not to harass sea otters at any time.

None of the activities of the Proposed Action is likely to impact sea otters.

VI. **Determination of Effects (continued):**

(B) Determination: Determine the anticipated effects of the proposed project on species and critical habitats listed in item IV. Check all applicable boxes and list the species (or attach a list) associated with each determination.

Determination

No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. **No concurrence from ESFO required.** ___X___

May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals of listed species and/or designated critical habitat. **Concurrence from ESFO required.** _____

May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species and/or designated critical habitat. **Formal consultation with ESFO required.** _____

May affect but Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project may affect, but is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Concurrence from ESFO optional.** _____

Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Conference with ESFO required.** _____

Signature _____ Date 26 August 2014
[Supervisor at originating station]

Reviewing Ecological Services Office Evaluation (check all that apply):

A. **Concurrence** X **Nonconcurrence** _____

Explanation for nonconcurrence (if applicable):

B. Formal consultation required _____
List species or critical habitat unit

C. Conference required _____
List species or critical habitat unit

D. Notes: No effects to sea otters are expected when boat operator prevention protocols are observed.

Name of Reviewing ES Office Anchorage Fish and Wildlife Field Office

Signature Kimberly J Kline Date September 2, 2014

Revised 4/2013

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13 Appendix B: ANILCA Section 810 Evaluation

Alaska Maritime National Wildlife Refuge
Evaluation of the Effects on Subsistence Uses and Needs
(ANILCA Section 810 Evaluation)

Caribou Control on Kagalaska Island

The U.S. Fish and Wildlife Service, acting for the Secretary, is required by Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) to evaluate the effects on subsistence uses and needs in determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands on national wildlife refuges in Alaska. The evaluation of effects of this proposed action or use on subsistence uses and needs is documented below. If this evaluation concludes a finding that the proposed action would result in significant restriction to subsistence uses, and we wish to proceed, we must initiate further procedural requirements of Section 810.

Proposed Action/Use:

The Service is proposing to initiate a caribou control project on Kagalaska Island consisting of regular, refuge-coordinated, walk-in caribou control efforts beginning in 2014 on Kagalaska Island. These re-occurring efforts will eliminate caribou found on the island, prevent establishment of a resident caribou population, and provide information about the rate of incursion and demography of caribou dispersing to the island to improve subsequent control efforts. Additionally, caribou control on Kagalaska will alleviate risk of dispersal to other refuge islands east of Kagalaska. Information gained from annual control will also be useful to evaluate the relative priority of Kagalaska caribou and other proposed invasive species control projects. There were four caribou on Kagalaska Island observed during a survey in 2012. Current caribou numbers on Kagalaska are likely between 0 and 15 animals with ongoing bouts of immigration from Adak occurring at unknown frequency.

Evaluation:

1. Subsistence Resources, Uses and Needs in the Affected Area:

In the Aleutians, residents have traditionally used the following types of resources: marine resources, including fish, (salmon, halibut, cod, etc.); marine mammals (Stellar sea lions, sea otters, harbor seals); intertidal resources such as sea urchins, razor clams, butter clams, cockles, mussels, and chitons, crab and shrimp. Plants harvested include berries (blueberries, salmonberries, mossberries, strawberries, and lingenberries), wild celery (petrusky), wild rice (*Fritillaria camschatcensis*) giant kelp, and fiddlehead ferns. Birds are harvested, including ducks, geese, or ptarmigan. Eggs are collected primarily from gull colonies. On Adak, introduced caribou also are harvested by local residents. Adak is considered rural by the Federal Subsistence Board for subsistence purposes. There is no known subsistence hunting on Kagalaska Island.

2. Effect of Proposed Action or Use on Subsistence Uses and Needs.

Is there likely to be a reduction in subsistence uses due to:

- Direct impacts on the resource, habitat, or increased competition for resources?
  No
- Changes in availability of the resource caused by alteration in their distribution, migration, or location?
  No
- Limitations on access to harvestable resources, such as by physical or legal barriers?
  No

3. Availability of other lands for the purpose sought to be achieved.

Are there other lands that have a reasonable geographic and resource based relationship for the purpose to be achieved by the proposed action, are available within the proposed time frame, are in appropriate ownership in Alaska and are not designated for land uses which would preclude the proposed action?

No

4. Alternatives which would reduce or eliminate the proposed action from lands needed for subsistence purposes.

Are there other ways to accommodate the proposed action (not other sites) that are reasonable, physically & technically possible, economically feasible, and capable of reducing or eliminating the proposed action from lands needed for subsistence purposes?

No

(If any of the questions are yes, explain.)

Finding:

Based on review and evaluation of information indicated above and in the supporting references indicated below, I have determined that the proposed use (action) will not result in a significant restriction of subsistence uses.

Agency Decision:

A finding of no significant restriction in subsistence uses complete the Section 810 requirements. The proposed action or use may be authorized.

Supporting References:

Fall, James A. Amy Paige, Vicki Vanek, and Louis Brown. 1998. Subsistence harvests and uses of birds and eggs in fours communities of the Aleutian Islands area; Akutan, False Pass, Nelson Lagoon, and Nikolski. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 243. Juneau.

Veltre, Douglas W. and Mary J. Veltre. 1981. Resource Utilization in Unalaska, Aleutian Islands, Alaska. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper Number 58. Contract 82-0790.

Veltre, Douglas W. and Mary J. Veltre. 1983. Resource utilization in Atka, Aleutian Islands, Alaska. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper Number 88. Contract 83-0496.

Wolfe, Robert J. and Amy W. Paige, Cheryl l. Scott. 1990. The subsistence harvest of migratory birds in Alaska. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 197. Juneau.

Alaska Policy Manual, U.S. Fish and Wildlife Service

Alaska Maritime National Wildlife Refuge, Final Comprehensive Conservation Plan, Environmental Impact Statement, Wilderness Review. Record of Decision signed August 26, 1988.

Alaska National Interest Lands Conservation Act (ANILCA), 1980.

Service Manual - Region 7, U.S. Fish and Wildlife Service

Subsistence Management for Federal Public Lands in Alaska, Final., 1992

Alaska Policy Manual, U.S. Fish and Wildlife Service

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Subsistence Management for Federal Public Lands in Alaska, Final., 1992

Signature:

Refuge Manager

8-28-14
Date

14 Appendix C: Minimum Requirement Decision Guide (MRDG)

ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE

WORKBOOK

"...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act..."

-- The Wilderness Act of 1964

Project Title: Caribou Control on Kagalaska Island, Alaska Maritime NWR

MRDG STEP 1

Determine if Administrative Action is Necessary

Description of the Situation

What is the situation that may prompt administrative action?

Recent visits since 2010 have confirmed the presence of caribou on Kagalaska Island. In 2012, refuge staff and their contractors discovered 5 caribou (one bull, four cows) on the island and shot them. Days later, 4 more caribou were spotted on the island (3 cows, one calf) but not taken.

The Service is proposing to initiate a caribou control project on Kagalaska Island consisting of regular, refuge-coordinated, walk-in caribou control efforts beginning in spring of 2014 on Kagalaska Island. These re-occurring efforts will provide information about rate of incursion and demography of caribou dispersing to the island to efficiently improve subsequent control efforts. Additionally, caribou control on Kagalaska will alleviate risk of dispersal to other refuge islands east of Kagalaska. Information gained from annual control will also be useful to evaluate the relative priority of Kagalaska caribou and other proposed invasive species control projects.

The purpose of the action is to eliminate non-native caribou on Kagalaska Island, keep them from spreading to other nearby islands, and collect information about the rate of incursion of caribou on Kagalaska. Controlling caribou on Kagalaska relieves one environmental threat and protects the natural biodiversity of the island. The action helps to "preserve wilderness character" - a primary mandate in the Wilderness Act. Collecting information about the demography of caribou invading Kagalaska, and the rate invasion occurs, will help us develop a strategy to minimize the impact on Wilderness character and refuge resources.

Options Outside of Wilderness

MINIMUM REQUIREMENTS DECISION GUIDE WORKBOOK

". ..except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act. .."

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Project Title: {Caribou Control on Kagalaska Island, Alaska Maritime NWR

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IOptions Outside of Wilderness

Can action be taken outside of wilderness that adequately addresses the situation?

☐ YES

☑ NO **EXPLAIN & COMPLETE STEP 1 OF THE MRDG**

Explain:

Eliminating or greatly reducing the caribou population on Adak Island would likely slow the rate of range expansion to Kagalaska Island and would lessen impacts of caribou on both islands. However, much of the preferred habitat for caribou on Adak Island where other action would be needed is also wilderness. A previous EA, not finalized, proposed removing caribou from Adak Island (EA for Removal of Introduced Caribou, Adak, Alaska 1994). Currently Adak Island has mixed land ownership, with large portions of the island owned and managed by the Aleut Corporation and not under refuge administration. There is also an established tradition of caribou hunting under state regulations on Adak Island as well as the existence of the town of Adak itself, many of whose residents use Adak caribou as a meat supply. Elimination of all caribou on Adak or greatly reducing the number of caribou on Adak Island is beyond the scope of this assessment.

Criteria for Determining Necessity

Is action necessary to meet any of the criteria below?

A. Valid Existing Rights or Special Provisions of Wilderness Legislation

Is action necessary to satisfy valid existing rights or a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that ***requires*** *action? Cite law and section.*

☐ YES ☑ NO

Explain:

[Can action be taken outside of wilderness that adequately addresses the situation?

Elves

Explain:

EXPLAIN 8: COMPLETE STEP 1 OF THE MRDG

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and section.

El YES

Explain:

ElNo

B. Requirements of Other Legislation

Is action necessary to meet the requirements of other federal laws? Cite law and section.

☑ YES ☐ NO

Explain:

The Executive Order 13112 of February 3, 1999 titled *Invasive Species* Section 2 (2) directs Federal agencies to prevent the introduction, detect and respond rapidly to, and control populations the of invasive species in any work they authorize, fund, or carry out.

Section 303(1)(b) of ANILCA describes the first major purpose for which Alaska Maritime Refuge was established and shall be managed "to conserve fish and wildlife populations and habitats in their natural diversity. . .". (See Section 1.4 for additional authorities). The need for action is to assure that the natural integrity of Kagalaska Island is maintained.

National Invasive Species Act of 1996 (16 U.S.C. 4701)

Title 50 CFR Part 31, Section 14 – Official animal control operations.

601 FW 3 Biological integrity and diversity and environmental health (2001)

C. Wilderness Character

Is action necessary to preserve one or more of the qualities of wilderness character including: Untrammeled, Undeveloped, Natural, Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation, or Other Features of Value?

UNTRAMMELED

☐ YES ☑ NO

Explain:

13. Requirements of Other Legislation

Is action necessary to meet the requirements of other federal laws ? Cite law and section.

Explain:

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UNTRAMMELED

III YES E] NO

Explain:

UNDEVELOPED

☐ YES ☑ NO

Explain:

NATURAL

☑ YES ☐ NO

Explain:

A wilderness area should be managed as to preserve its natural conditions, including prevention of degradation of naturalness by a human-caused introduction far outside it's natural range. Preserving this quality ensures that indigenous species, patterns, and ecological processes are protected.

UNDEVELOPED

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SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

☐ YES ☑ NO

Explain:

OTHER FEATURES OF VALUE

☐ YES ☑ NO

Explain:

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

[1 YES E} NO

Explain:

OTHER FEATURES OF VALUE

El 'YES E] NO

Explain:

Step 1 Decision

Is administrative action necessary in wilderness?

Decision Criteria	Summary Responses
A. Existing Rights or Special Provisions	Action IS NOT necessary to meet this criterion.
B. Requirements of Other Legislation	Action IS necessary to meet this criterion.
C. Wilderness Character	
Untrammeled	Action IS NOT necessary to meet this criterion.
Undeveloped	Action IS NOT necessary to meet this criterion.
Natural	Action IS necessary to meet this criterion.
Outstanding Opportunities	Action IS NOT necessary to meet this criterion.
Other Features of Value	Action IS NOT necessary to meet this criterion.

Is administrative action necessary in wilderness?

☑ YES

EXPLAIN & PROCEED TO STEP 2 OF THE MRDG

☐ NO

Explain:

Caribou grazing has adverse impact on native plant communities and natural integrity on Adak Island, especially depletion of lichens. Management action is necessary to prevent invasive caribou from becoming established and expanding their use across Kagalaska Island. If unchecked, caribou on Kagalaska will increase to a level that threatens the island's natural biodiversity. Naturalness, a character of Wilderness established by the Wilderness Act (1967), will degrade as Kagalaska caribou increase because caribou, and effects on the environment, are not natural to the island. Caribou on Kagalaska represent "trammeling" by humans because humans stocked caribou on Adak as an exotic game animal, but caribou did not occur on Kagalaska when that island was designated wilderness in 1980.

Non-native caribou or reindeer populations on islands can increase to the level when forage, mainly reindeer lichen during winter, becomes limiting. Lichens then decline along with the biological communities that depend on them, and may take a long time to recover after depletion caused by caribou or reindeer grazing. Similar to Adak caribou, introduced reindeer have had adverse impacts on natural biodiversity on some refuge islands. Remote Alaska islands compete unfavorably as a hunter destination compared to mainland opportunities, and typically demand is inadequate to be used to regulate herd population.

Step 1 Decision

is administrative action necessary in wilderness?

Decision Criteria Summan Resgonses

A. Existing Rights or Special Provisions Action IS NOT necessary to meet this criterion.

B. Requirements of Other Legislation Action IS necessary to meet this criterion.

C. Wilderness Character

Untrammeled Action 18 NOT necessary to meet this criterion. Undeveloped Action IS NOT necessary to meet this criterion. Natural Action IS necessary to meet this criterion. Outstanding Opportunities Action IS NOT necessary to meet this criterion. Other Features of Value Action IS NOT necessary to meet this criterion.

Is administrative action necessagy in wilderness?

E YES EXPLAIN & PROCEED TO STEP 2 OF THE MRDG

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Project Title: Caribou Control on Kagalaska Island, Alaska Maritime NWR

MRDG STEP 2

Determine the Minimum Activity

Other Direction

Is there "special provisions" language in legislation (or other Congressional direction) that explicitly ***allows*** *consideration of a use otherwise prohibited by Section 4(c)?*

AND/OR

Has the issue been addressed in agency policy, management plans, species recovery plans, or agreements with other agencies or partners?

☑ YES — **DESCRIBE DOCUMENTS & DIRECTION BELOW**

☐ NO

Describe Documents & Direction:

FWS Wilderness Stewardship Policy - 610 FW 2
2.16 How does the Service conserve wildlife and habitat in wilderness?
B. Major ecosystem processes including wildfire, drought, flooding, windstorms, pest and disease outbreaks, and predator/prey fluctuations may be natural ecological and evolutionary processes.
(1) We will not interfere with these processes or the wilderness ecosystem's response to such natural events unless necessary to accomplish refuge purposes, including Wilderness Act purposes, or in cases where these processes become unnatural. Examples of unnatural conditions are:
(d) The spread of alien species.
(2) In such cases, we encourage the restoration and maintenance of biological integrity and wilderness character.
(3) All decisions and actions to modify ecosystems, species population levels, or natural processes must be:
(a) Required to respond to a human emergency, or
(b) The minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including Wilderness Act purposes. In addition, such decisions and actions must:
(i) Maintain or restore the biological integrity, diversity, or environmental health of the wilderness area;
2.19 May the Service control invasive species, pests, and diseases in wilderness?
A. We may control invasive species, pests, or diseases when:
(1) We have demonstrated that they have degraded or there is a high probability they will degrade the biological integrity, diversity, environmental health, or wilderness character of a wilderness area;
(3) We have demonstrated that they pose a significant threat to the health of fish, wildlife, plants, or their habitats.

MRDG STEP 2

Determine the Minimum Activity

Other Direction

is there "special provisions" language in legislation (or other Congressional direction) that explicitly allows consideration of-a use otherwise prohibited by Section 4(0)?

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A. We may control invasive species, pests, or diseases when:

(1) We have demonstrated that they have degraded 0r there is a high probability they will degrade the biological integrity, diversity, environmental health, or wilderness character of a wilderness area; (3) We have demonstrated that they pose a significant threat to the health of

fish, wildlife, plants, or their habitats.

Components of the Action
What are the discrete components or phases of the action?

Component X	*Example: Transportation of personnel to the project site*
Component 1	Transportation of personnel to the project site
Component 2	Transportation of equipment and material to site
Component 3	Tools used at project site
Component 4	Condition of site after project
Component 5	
Component 6	
Component 7	
Component 8	
Component 9	

Proceed to the alternatives.

Refer to the **MRDG Instructions** regarding alternatives and the effects to each of the comparison criteria.

Components of the Action

What are the discrete components or phases of the action ?

Component X

Example: Transportation of personnel to the project site

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Proceed to the alternatives.

Refer to the MRDG Instructions regarding alternatives and the effects to each of the comparison criteria.

MRDG Workbook: STEP 2

Project Title: Caribou Control on Kagalaska Island, Alaska Maritime NWR

MRDG Step 2: Alternatives

Alternative 1: No Action

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

Under this alternative, no management action will happen regarding the control of caribou on Kagalaska Island.

Under the No Action Alternative, caribou on Kagalaska has the potential to increase either through immigration or by reproduction. A Kagalaska herd is unlikely to decrease through emigration since caribou forage resources is presently superior on Kagalaska compared to Adak Island. Caribou have little incentive to emigrate from habitat safe from exposure to human hunters and disturbance back to areas with a higher caribou density, greater competition for food and mates, greater human disturbance. Caribou would continue to use the relatively undisturbed Kagalaska Island, perhaps occasionally leaving the island to search for potential mates on adjoining islands.

Project Title: Caribou Control on Kagalaska Island, Alaska Maritime NWR

MRDG Step 2: Alternatives

Alternative 1: [No Action

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?

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occasionally leaving the island to search for potential mates on adjoining islands.

Component Activities
How will each of the components of the action be performed under this alternative?

	Component of the Action	Activity for this Alternative
X	*Example: Transportation of personnel to the project site*	*Example: Personnel will travel by horseback*
1	Transportation of personnel to the project site	No transportation of personnel to the project site.
2	Transportation of equipment and material to site	No transportation of equipment or material to the project site.
3	Tools used at project site	No tools used at the site.
4	Condition of site after project	Caribou may continue to spread uncontrolled within the wilderness.
5		
6		
7		
8		
9		

Component Activities

How will each of the components of the action be performed under this alternative?

Component of the Action Activity for this Alternative

X Example: Transportation of personnel to the project site Example: Personnel will travel by horseback

1 Transportation of personnel to the project site No transportation of personnel to the project site.

N0 transportation of equipment or material to the

. - I I llul IDI 2 Transportation of equlpment and materlal to SIte project Site

3 Tools'used at project site No tools used at the site.

Caribou may continue to spread uncontrolled within

Appendix D: Response to Comments Received on Draft Environmental Assessment

We received a total of 18 comments to the draft Environmental Assessment, 17 comments from members of the public and one comment from the Alaska Department of Fish and Game. Below is a characterization of the comments along with a summary of how the agency considered the comments.

The comments from members of the public fell into the following six broad themes.

1. *Some commenters mistakenly believed we were proposing caribou control on Adak Island or wanted us to know of the importance of Adak Island caribou to local residents and the Adak economy. Or, some commenters made management recommendations for the Adak caribou herd.* We are not proposing any caribou control or other action on Adak Island. We agree that any management decisions regarding caribou on Adak would require a separate planning process which recognizes the importance of the caribou to local residents and the local economy.

2. *Some commenters felt we should leave the caribou alone to colonize and populate Kagalaska Island or suggested that the caribou be captured and moved to another island.* We disagree as this would not fulfill federal directives to manage for native species and natural diversity. Nor would it be compliant with agency invasive species policies. Moving the caribou would be a much more complex and expensive operation and require considerably more wilderness disturbance through helicopter operations and possibly motorized vehicle use.

3. *Some commenters offered support for the project.* Thank you for the comment.

4. *Some commenters offered their assistance to conduct the control operation.* Thank you for your offer.

5. *Some commenters stressed the importance of salvaging meat from any caribou killed.* The proposed action follows agency policy in allowing meat salvage but not requiring it, recognizing that it is not always feasible or economically reasonable to salvage meat or other products from animal control activities. It may sometimes be reasonable to salvage meat and sometimes it may not be reasonable.

6. *One commenter supported the action and offered recommendations for supporting the proposed action through additional scientific paper citations.* We have incorporated these suggestions into the final EA.

The comments from the State of Alaska included some generally positive remarks as well as four specific recommendations or points of agency disagreement.

1. *The EA should include an examination of how non-native ungulates will be treated across the refuge system and particularly on the Kodiak archipelago.* This is beyond the scope of this EA which is specific to Kagalaska Island. The Kodiak National Wildlife Refuge Comprehensive Conservation Plan includes management considerations for non-native ungulates on Kodiak NWR.

2. *The Fish and Wildlife Service must review the project through the Institutional Animal Care and Use Committee.* While IACUC review is mandatory for research projects involving animal handling, it is not necessary for management actions such as caribou control on Kagalaska Island.

3. *The Fish and Wildlife Service is required to obtain a permit from ADF&G prior to this or any similar operation.* We will apply for a permit as a communication tool to encourage agency cooperation and mutual support. We look forward to receipt of a permit which authorizes the action from the state's perspective and clarifies state priorities. Occasionally, federal laws and the USFWS mission come into conflict with state laws and state missions. These circumstances, while regrettable, are an understandable outcome of two separate conservation agencies, each with their own distinct mandates. On national wildlife refuges, we seek to work collaboratively with the state to mutually benefit both organizations as much as possible. However, in cases of conflict, we are required to comply with governing federal laws on national wildlife refuges and cannot be required to comply with a state permit which includes conditions unacceptable to fulfilling our agency's mission.

4. *The Fish and Wildlife Service must salvage all edible meat from any animals taken under this control action, and we will require this as a condition of a state permit.* The proposed action follows federal policy in allowing meat salvage but not requiring it, recognizing that it is not always feasible or economically reasonable to salvage meat or other products from animal control activities. It may sometimes be reasonable to salvage meat and sometimes it may not be reasonable.