

Appendix E

Predator Management

This document outlines our current understanding of policy and the process we would have to follow to undertake predator management on Koyukuk/Nowitna Refuge.

The U.S. Fish and Wildlife Service (Service) is responsible for managing national wildlife refuges. As the responsible land manager for these refuges, the Service acknowledges that wolves and bears can significantly affect prey population levels. The Service considers predator management a legitimate conservation tool when applied in a prudent and ecologically sound manner and when other alternatives are not practical. When predator management proposals or actions are in conformance with laws, regulations, and agency policies that govern management of national wildlife refuges, they would be considered by the Service. (See sections 1.8 and 2.4.11 for further discussion.)

The low abundance of moose and high abundance of wolves were raised as issues in scoping meetings for this Comprehensive Conservation Plan. Responding to this, we have decided that we will use this appendix to outline the process necessary to consider individual predator management proposals. This would most likely be conducted in a subsequent detailed step-down plan and environmental analysis. We would consider guidelines prescribed by the legal and biological context to describe how such a step-down plan and environmental analysis could analyze a predator management proposal and what questions would likely need to be answered prior to authorizing a predator management program on a national wildlife refuge.

The Alaska Department of Fish and Game (ADF&G) is recognized as the agency with the primary responsibility to manage fish and resident wildlife populations within the State, including refuges, unless that management is superseded by federal law. ADF&G has developed specific processes regarding the implementation of predator management programs. Any proposals for a predator management program would be evaluated in cooperation with ADF&G to ensure that they are in substantial agreement with State wildlife management plans, unless they are formally determined to be incompatible with the purposes of the Refuge.

The Legal Context – What laws, regulations, and policies govern refuge decisions on predator management?

The principal federal statutes affecting our management of predators and their prey on refuges are the Alaska National Interest Lands Conservation Act (ANILCA); the National Wildlife Refuge System Administration Act, as amended, (Refuge Administration Act); and the National Environmental Policy Act (NEPA). We follow the regulations and policies which implement those laws. Key provisions of these laws that pertain to refuge decisions on predator management follow.

1. ANILCA –ANILCA established the Koyukuk/Nowitna National Wildlife Refuge and set forth the primary purposes for which it was established. One purpose is “to conserve fish and wildlife populations and habitats in their natural diversity...” Another is to provide, “in a manner consistent with” the conservation of wildlife populations in their natural diversity, “the opportunity for continued subsistence uses by local residents.” These purposes are described in section 1.4.1.

2. Refuge Administration Act, as amended in 1997, mandates that, in administering the National Wildlife Refuge System (System) and the purposes of each refuge, the Service shall “provide for the conservation of fish, wildlife, and plants, and their habitats” and “ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of

Americans.” Both the Refuge Improvement Act and ANILCA require uses of refuges be compatible with their purposes.

The Refuge Improvement Act does not diminish the authority, jurisdiction, or responsibility of the states to manage, control, or regulate fish and resident wildlife under state law.

In 2001, to implement provisions of the Refuge Administration Act, as amended, the Service established the Biological Integrity, Diversity, and Environmental Health Policy to describe the relationships among refuge purposes, the mission of the refuge System, biological integrity, diversity and environmental health of refuge resources, and resolution of the conflicts among them. Biological integrity is defined as the biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions, including the natural biological processes that shape genomes, organisms, and communities (601 FW 3.6B). The policy provides guidance on maintaining these elements of diversity and on restoring lost or degraded elements of integrity, diversity, and environmental health at the refuge scale and other appropriate landscape scales where it is feasible and supports the achievement of refuge purposes and the System mission. (601 FW 3.7D). Under this policy, the Service favors management that restores or mimics natural ecosystem processes or functions to achieve refuge purposes (601 FW 3.7E).

Wildlife populations, including predators and prey, are to be managed for natural densities and levels of variation using historical conditions as the frame of reference. Information on historic sources may be historical, archaeological, or other. Historical information can include the written and, in some cases, the pictographic accounts of Native Americans, explorers, surveyors, traders, and early settlers. Archaeological information comes from collections of cultural artifacts maintained by scientific institutions. We may obtain other data from a range of sources, including research, soil sediments, and tree rings (601 FW3.13 A).

The Biological Integrity, Diversity, and Environmental Health Policy requires that refuge managers:

- A) Identify the refuge’s purpose(s), legislative responsibilities, and roles within the ecosystem and the System mission.
- B) Assess the current status of biological integrity, diversity, and environmental health on the refuge through baseline surveys and studies.
- C) Assess historic conditions and compare them to the current conditions. This will provide benchmarks to evaluate the relative intactness of ecosystem functions and processes. This assessment should include the opportunities and limitations to maintaining and restoring biological integrity, diversity, and environmental health.
- D) Consider the refuge’s importance to refuge, ecosystem, national and international landscape scales of biological integrity, diversity, and environmental health.
- E) Consider the relationships among refuge purposes and biological integrity, diversity, and environmental health, and resolve conflicts among them.

- F). Through the comprehensive conservation planning process, interim management planning, or compatibility reviews, determine the appropriate management direction to maintain and, where appropriate, restore biological integrity, diversity, and environmental health, while achieving refuge purposes(s).
- G). Evaluate the effectiveness of our management by comparing results to desired outcomes. If the results of our management strategies are unsatisfactory, assess the causes of failure and adapt our strategies accordingly.

3. National Environmental Policy Act (NEPA)

Predator management of wolves and/or bears on national wildlife refuges is action subject to National Environmental Policy Act (NEPA) requirements, which could require preparation of an environmental assessment (EA) or an impact statement (EIS). As part of NEPA compliance, the Service would evaluate predator management in a legal context, such as conformity with the purposes of the Refuge, the Refuge Administration Act, as amended, and the Service's Biological Integrity, Diversity, and Environmental Health Policy. NEPA and other laws, regulations, and policies would require a comprehensive analysis and public involvement process prior to implementing any predator management program. Additionally, as part of the NEPA process and documentation, we would evaluate the effects of proposed predator management actions on subsistence uses and needs as required by section 810 of ANILCA.

The Biological Context – What do we need to know about predators and prey to consider requests /proposals for predator management on the Koyukuk/Nowitna National Wildlife Refuge?

1. Consideration of requests/proposals for predator control on National Wildlife Refuges in Alaska:

The refuge manager is the primary Service representative who determines whether a proposed predator management program is consistent with the refuge purposes and the Biological Integrity, Diversity, and Environmental Health Policy, and other laws, regulations and policies. As described in the following text, the refuge manager would need to assess the status of predator and prey populations and their habitats in relation to their historical abundance and fluctuations. A thorough evaluation must be given to substantiate the intended benefits of any predator management efforts. Alternatives to direct control must be evaluated as a practical means of achieving management objectives. Where there is insufficient predator, prey, or habitat information to make such an assessment, population surveys or other biological studies will be needed. The Koyukuk/Nowitna National Wildlife Refuge is presently conducting some of these studies. The need for additional studies and availability of funds for such work will be assessed by the refuge manager.

The Service favors management that relies on natural ecosystem processes or functions to achieve refuge purposes. If prey densities are determined to be significantly reduced below historical levels as a result of predation (not including human harvest), and reduction of predators would be reasonably expected to benefit prey abundance, active management may be authorized. We would also need to evaluate whether habitat conditions have been or would be a limiting factor on prey populations before

implementing any active management to reduce predator populations. The Refuge would also coordinate with ADF&G to determine how a predator management program on the Refuge would affect current or future wildlife management plans in the region. The Refuge would consider the following questions, among others, to analyze a predator management proposal:

- What roles do the subject predator and prey have in contributing to the natural diversity of the Refuge? Are human influences, including landscape level changes such as global warming, altering that diversity? Are there other refuge purposes to consider?
- What are historical levels of predator and prey populations? Historic conditions are defined as the “composition, structure, and functioning of ecosystems resulting from natural processes that... were present prior to substantial human related changes to the landscape.” In many parts of Alaska, we would expect less than 100 years of information would be available for our analysis of historical levels.
- Humans have been and still are a part of the living and functioning landscape.
- Are habitat conditions significant in limiting prey abundance regardless of predator levels? Lack of cover, nutritional value of forage during key seasons, and abundance of trails favoring access by predators are examples of habitat conditions that could be significant for a season or a vulnerable prey age class. Assessing carrying capacity of a habitat is a daunting endeavor and may not be necessary. However, if a particular age and/or gender class of prey is considered most important to population recovery, habitat conditions affecting that age and/or gender class could be examined.
- Does the Refuge provide habitat of regional, national, or international significance for threatened, endangered, or other species of concern? Would predator management help in recovering these populations?

Requests received by the Service, from Regional Advisory Councils (RAC's) and subsistence users, for predator management on refuges assert that predation has reduced prey populations to the extent that it is difficult for subsistence users to provide for the nutritional and cultural needs of themselves and their families. Some RACs contend that meaningful subsistence harvests of moose and caribou from refuge lands are not being provided, and therefore, the refuge purpose of providing for continued opportunities for subsistence uses justifies predator management. As previously stated, for a predator management program to be authorized on a refuge, it would need to be consistent with the conservation of predators and prey in their natural diversity. Predators will not intentionally be reduced below a level consistent with the low-end of natural population cycles. The Service would not reduce predator populations solely to provide larger populations of prey species for hunters. To assess the issue of human impact on prey populations, the Refuge will likely consider the following questions.

- How does harvest by humans affect the prey population? Have levels of harvest, and their effects on the prey population, changed over time? Does this target specific age and/or gender classes to the detriment of the population?
- Have reductions in harvest by humans been attempted? Did the prey population respond?
- Have there been significant changes in local harvest of predators?

Implementation – Once these determinations and assessments are completed and a predator management program is initiated, associated actions and efforts would be monitored and evaluated by the Service and adjustments made as appropriate to meet program objectives. If the Service were to authorize predator management programs on refuges, we would either conduct the effort ourselves or cooperate with the State or private citizens as our agents. In either case, the action would be considered a refuge management activity and not subject to a compatibility determination.