

## **4. Environmental Consequences**

### **4.1 Introduction**

The purpose of this chapter is to identify, describe, and compare the effects of implementing the alternatives for managing the Togiak National Wildlife Refuge. Current management provides the basis for comparing the effects of the action alternative. The effects on Refuge resources of management actions proposed by each alternative are assessed.

This section will first discuss any changes in management direction and how it affects activities and uses within the Refuge. It will then briefly touch on the physical, biological, and socioeconomic environment. Although all species and resources on the Refuge are important, many are not expected to experience any change as a result of implementing any of the alternatives. For that reason, not all Refuge species and resources are discussed in this chapter.

### **4.2 Changes in activities and uses**

Alternative 1 would eliminate the Cooperative Management category around Cape Peirce and place those lands into the Minimal Management category. This change from current management would not affect any activities or uses of the area. The original intent of this category was to recognize and facilitate coordinating with ADF&G on management of walrus. Uses and activities between the two categories is essentially the same.

Table 2.1 in chapter 2 compares the major differences in management direction between Alternative 1 and Alternative 2. Most of the topics listed were not addressed in the original plan (Alternative 2). Note that not all activities listed as “allowed” or “may be allowed” would necessarily occur within the life of the plan.

The revised management direction is not expected to significantly change uses and activities from what is occurring now. Snowmachines, airplane access, boating, and other means traditionally employed to access the Refuge would continue. Opportunities for subsistence uses, hunting, fishing, and other wildlife dependent recreation would continue.

The goals and objectives in Alternative 1 focus on providing information necessary to understand the natural processes affecting refuge resources and the impacts human activities have on the resources. Implementing the goals and objectives will strengthen refuge management and provide the scientific foundation necessary for managing the resources and human activities.

## 4.3 Physical, Biological and Socioeconomic Effects

### 4.3.1 *Physical Environment*

The alternatives in this Plan are not likely to have any effect on climate, landforms, geology, soils, water quality, oil and gas potential, or leaseable or saleable minerals. While there are a few placer mining claims within the Refuges, activity has been negligible, and is not expected to change during the life of this Plan.

### 4.3.2 *Biological Environment*

#### 4.3.2.1 *Effects on Vegetation*

The proposed action (Alternative 1) is not expected to have any effect on vegetation. The “no-action” alternative (Alternative 2) could impact vegetation if grazing of reindeer was permitted, although this could be mitigated through careful herd management.

***Cumulative Effects***—Global climate change and changes in populations and distribution of moose and caribou may cause changes to the species composition, vigor, and phenology of vegetation communities on the refuge.

#### 4.3.2.2 *Effects on Fish, Populations and Habitats*

The alternatives in this plan are not likely to have any effect on fish populations and habitats. The goals and objectives for fish and fish habitats developed in Alternative 1 are focused on understanding the factors necessary to continue supporting healthy populations and habitats. Both alternatives emphasize managing for natural population dynamics with minimum habitat modification.

***Cumulative Effects***—Global climate change may impact fish populations and habitats in the future.

The rainbow trout population appears to be capable of sustaining the current level of harvest, but increased sport and subsistence fishing effort has potential to affect the rainbow trout population. As discussed in section 3.4.2, additional management actions, primarily through the Board of Fish, have been enacted to reduce impacts of recreational fishing on rainbow trout. Ongoing monitoring of fish populations by USFWS and ADF&G should be adequate to detect and suggest necessary change to the management of these fish.

#### 4.3.2.3 Effects on Wildlife, Populations and Habitats

##### *Alternative 1*

The reclassification of lands at Cape Peirce from Cooperative Management to Minimal Management is not likely to impact wildlife, populations, and habitats.

The goals and objectives for wildlife and wildlife habitats developed in Alternative 1 are focused on understanding the factors necessary to continue supporting healthy populations and habitats. Both alternatives emphasize managing for natural population dynamics with minimum habitat modification.

***Cumulative Effects***—The 1988 reintroduction of caribou to the Nushagak Peninsula and more recent seasonal occupation of Mulchatna caribou on the Togiak Refuge will affect many species in the Bristol Bay and Kodiak Ecosystem. As caribou continue to return to their historic abundance and distribution throughout the region, lichen and plant communities are being naturally altered as they resume the role of supporting caribou populations. Both people and other animals that utilize caribou will be positively affected. Moose numbers also are increasing within the Togiak Refuge, most notably in the Togiak River drainage. This apparent expansion of range and increase in density will affect several species directly and indirectly. Direct impacts include alteration of browse species, namely willows, and creation of an enhanced prey base for brown bears and wolves. Indirect impacts could include increased predation by bears and wolves on caribou and increased productivity of scavengers.

Several current cooperative state, local, and Refuge management efforts are anticipated to have positive impacts on the expansion and growth of moose and caribou populations and associated subsistence and recreational hunting opportunities within and adjacent to the Refuges. Management of these populations will continue to be conducted through cooperative step-down management plans as necessary. Currently, cooperative management plans include the Nushagak Peninsula Caribou Herd Management Plan (USFWS 1994) and the draft Moose Management Plan (USFWS 2000).

#### 4.3.2.4 Effects on Threatened or Endangered Species

There are no effects on threatened or endangered species anticipated as a result of actions proposed in this plan (see Section 7 Compliance in appendix B).

### **4.3.3 Human Environment**

#### **4.3.3.1 Effects on Refuge Management**

##### *Alternative 1*

The reclassification of refuge lands at Cape Peirce from Cooperative Management to Minimal Management will have no impact on Refuge resources or public uses, as the management of lands and uses are comparable between the two categories. Cooperative agreements with the State of Alaska, Native organizations, and others would be possible regardless of the management category. The emphasis on cooperative management in this area was primarily a response to the State of Alaska's interest in management of walrus. Prior to 1972, the State of Alaska managed walrus in Alaska. With passage of the Marine Mammal Protection Act (MMPA) in 1972, the Federal government assumed management authority in US waters. ADF&G resumed management between 1976 and 1979. In 1983, the State considered reinitiating a return of marine mammal management. In 1988, shortly after the original CCP was approved, the ADF&G informed the Service that it would not pursue this goal. Walrus are currently managed by the Service's Division of Marine Mammal Management with the cooperation of the Eskimo Walrus Commission and ADF&G. This management does not depend on the classification of these Refuge lands. Reclassification of these lands will bring classification in line with other refuge lands in Alaska, and simplify public and agency understanding of management on these lands.

##### *Alternative 2*

Continuing to use the Cooperative Management category on the Togiak Refuge may result in unnecessary public confusion about the purpose and general management direction of these lands.

#### **4.3.3.2 Effects on Local Population and Economy**

No proposed Refuge management actions are likely to affect the populations of any of the communities surrounding the Refuge. The economy of the region is a mixed cash-subsistence economy. The cash economy is well developed, is dominated by commercial fishing, and has substantial support from tourism and government employment.

Chapter 3 has a discussion of the economic value of goods and services provided by the Refuge. Table 3-8 summarizes the economic significance of activities associated with the Refuge at 20.4 million dollars. Most of the value is associated with commercial fishing, with recreational fishing a distant second. Most of the value is derived from the salmon produced within

the Refuge and the natural fish habitat the Refuge provides. Both alternatives emphasize protecting the natural environment and are not expected to have much influence on any changes to the value of goods and services provided.

***Cumulative Effects***—Fisheries will continue to be the driving force behind the local economy, village lifestyles, and visitors' attraction to the region. Substantial variations in the availability of fish for subsistence, recreational or commercial fishermen are likely to have the most significant effect on the local economy. Normal cyclical variations in salmon survival, state harvest restrictions, and the prices paid for commercially caught fish are the strongest influences on the local economy.

#### ***4.3.3.3 Effects on Subsistence Opportunities***

Alternative 1 would continue to provide opportunities for subsistence use of Refuge resources at the same level as Alternative 2. Any restrictions on subsistence uses would be implemented by the Federal Subsistence Board or through state regulations. Providing opportunities for continued subsistence uses by local residents, consistent with conserving fish and wildlife populations, is one of the purposes of Togiak Refuge.

#### ***4.3.3.4 Effects on Recreation Opportunities***

Alternative 1 would continue providing recreation opportunities at the same level as Alternative 2. Alternative 2 would continue management of recreation according to the Public Use Management Plan developed in 1991. That plan provided guidance for managing guided and unguided recreation use within the Refuge, including use of the Kanektok, Goodnews, and Togiak rivers. It called for an evaluation to determine if regulation of use was needed when unguided use levels approached or exceeded guided use levels. During the past few years, those levels have been approached, and alternatives for managing these rivers are discussed in Chapter 2 of the attached Public Use Management Plan. The effects of implementing those alternatives are discussed in Chapter 4 of the Public Use Management Plan.

#### ***4.3.3.5 Effects on Wilderness Values***

The Togiak Wilderness Area remains in a relatively pristine character with the vast majority of it unchanged from when it was designated Wilderness. Under current management (Alternative 2), increased recreation use of the major rivers within the wilderness area has had short-term and localized impacts on opportunities for solitude and naturalness (this is being addressed in chapter 2 of the Revised Public Use

Management Plan attached to this Conservation Plan). Under Alternative 1, the Revised Public Use Management Plan would also address these localized impacts.

Wilderness values outside designated Wilderness would be maintained by applying the Minimal Management and Cooperative Management categories to the remainder of the Refuge under Alternative 2. Changing the Cooperative Management category to Minimal Management under Alternative 1 would not diminish protection of wilderness values for the Cape Peirce area.

#### ***4.3.3.6 Effects on Cultural Resources***

##### ***Alternative 1***

The reclassification of lands from Cooperative Management to Minimal Management is not expected to have impacts on cultural resources on the refuge. Goals and objectives for managing cultural resources would strengthen protection of these resources over Alternative 2.

##### ***Cumulative Effects***

Under all alternatives, cultural resources may be at risk of damage, primarily from public use activities. Areas around Kagati, Goodnews, and Togiak Lakes, Cape Peirce, and all major river drainages are likely to include significant cultural resources but have not been adequately assessed. Under either alternative, assessments would be done on high use areas, and mitigation measures would be developed prior to implementing any on-the-ground activities.

#### ***4.3.4 Relationship Between Short-Term Uses of the Environment and Long-Term Productivity***

Under either alternative the primary short-term uses of the Refuges would be subsistence and recreation. Monitoring and regulation of harvested fish and wildlife populations by ADF&G and the Service will ensure the long-term productivity of fish and wildlife populations. None of the short-term uses described in the alternatives would affect the long-term productivity of the ecosystem.

#### ***4.3.5 Irreversible and Irretrievable Commitment of Resources***

The irreversible commitment of resources means that nonrenewable resources are consumed or destroyed. Examples include the destruction of cultural resources by other management activities and mineral extraction that consumes nonrenewable minerals.

The irretrievable commitment of resources represents trade-offs (opportunities forgone) in the use and management of natural resources. Irretrievable commitment of resources can include the expenditure of funds, loss of production, or restrictions on resource use.

Decisions made in a comprehensive conservation plan do not represent actual irreversible or irretrievable commitment of resources. A conservation plan determines the kinds and levels of activities appropriate within the laws establishing the Refuge. A decision to irreversibly or irretrievably commit resources occurs in the following circumstances:

- When the Service makes a project- or site-specific decision
- At the time Congress acts on a recommendation to establish a new conservation system unit such as Wilderness or to include a river in the Wild and Scenic River System

Mineral leasing development would not be allowed within the Refuge under any of the management categories used within the Refuge. Therefore, these resources could not be irreversibly committed unless the Plan was amended. Wilderness and river-related values are protected by the management categories applied to the Refuge and would not be irretrievably lost or committed under any of the alternatives. Limits on the level of guided use within the refuge would be an example of an irretrievable commitment of resources. None of the alternatives proposes any change in the level of guided use being provided on the Refuges.

#### **4.3.6 Environmental Justice**

Federal agencies are required to identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations (Executive Order 12898; 1994, amended 1995). This includes health risks and other effects on people who rely principally on fish or wildlife for subsistence. As described in Chapter 3, communities associated with the Refuges are rural, contain many low-income households, and engage in subsistence uses. The nature of the proposed action—revision of the Conservation Plan for the Refuge—is very different from proposals often associated with environmental justice issues (e.g., siting of polluting facilities). Neither alternative proposed in the Environmental Impact Statement would place a disproportionate weight of any adverse effects on low-income or

minority populations. Maintaining high-quality habitat and healthy populations of fish and wildlife, maintaining water quality, and providing opportunities for subsistence are legislated purposes of the Refuge. Thus, the Service cannot compromise these values and their associated uses under any management alternative. While the alternatives contain slightly different approaches to meeting the purposes, neither would favor activities or projects that could direct negative impacts toward low-income or minority populations.

#### **4.3.7 ANILCA Section 810 Evaluation**

Section 810 of ANILCA requires an evaluation of the effects on subsistence uses for any action to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands.

Chapter 3 of this document describes current uses of the Refuge for subsistence, and Chapter 4 describes anticipated effects of each alternative on those subsistence uses. Because this is a long-range programmatic plan that describes possible changes in management direction for the Refuge, it does not propose any site-specific development nor allow any new types of uses or development that could pose risks to subsistence uses of the Refuge. Neither alternative contains actions that would reduce subsistence uses because of direct effects on the resource or of adverse effects on habitat or that would increase competition for resources.

Neither alternative would change the availability of resources by altering their distribution, migration, or location. The general goal is to maintain and/or restore habitat and maintain populations in their natural diversity.

Finally, the alternatives would not reduce, by either physical or legal barriers, subsistence uses because of limitations on access to harvestable resources. Adoption of either alternative would not result in a significant restriction of subsistence uses.

The impacts of increasing public use on the Kanektok, Goodnews, and Togiak Rivers on subsistence opportunity is evaluated in the ANILCA Section 810 Evaluation for the Revised Public Use Management Plan which can be found in Chapter 4 Environmental Consequences of that plan, located in the second part of this document.