

3. Management Policies and Guidelines for Tetlin National Wildlife Refuge

This document presents an overview of the management direction for the Tetlin National Wildlife Refuge. The primary sources of this management direction are the laws governing the National Wildlife Refuge System (Refuge System) and the regulations, policies, and other guidance, both national and regional, developed to implement these laws. Although each refuge is unique, it is only one piece of this system. The management direction presented here represents the common base for management of the Alaska refuges and identifies appropriate sideboards for management of individual refuges.

Some deviations from these region-wide management policies and guidelines are likely to appear in each comprehensive conservation plan, given differing establishing orders or refuge purposes. Any refuge-specific departures will be clearly described, along with supporting rationale, in each revised comprehensive conservation plan.

This document contains the following:

- Descriptions of the management categories and their associated general management intent.
- Policies and guidelines specific to each category.
- A table that displays activities, public uses, commercial uses, and facilities by management category.

The management category descriptions are not the same as those from the previous (1980s) round of comprehensive conservation plans which evolved over the course of the planning process. These management category descriptions will remain constant for all the plans unless a well-justified exception is warranted as described above.

Until the final revised comprehensive conservation plan is adopted for a refuge, if there is any conflict between the existing refuge plan and these management guidelines, the direction in the existing 1987 Plan will take precedence over that contained in these guidelines, unless the conflict is the result of changes in law, judicial rulings, or other non-discretionary guidance.

3.1 Management Categories

Five management categories, ranging from Intensive management to designated Wilderness, are used to describe management levels throughout the refuges in Alaska. Lands administered by Tetlin Refuge fall into three of these five management categories; Intensive, Moderate, and Minimal. A management category is used to define the level of human activity appropriate to a specific area of the Refuge. It is a set of refuge management directions applied to an area, in light of its resources and existing and potential uses, to facilitate management and the accomplishment of refuge purposes and goals. The Management Activities Table (Table3-2) shows those management activities, public uses, commercial uses, and facilities that may be allowed in each management category and under what conditions.

3.1.1 Minimal Management

Minimal management is designed to maintain the natural environment with very little evidence of human-caused change. Habitats should be allowed to change and function through natural processes. Administration will ensure that the resource values and environmental

characteristics identified in the comprehensive conservation plan are conserved. Public uses, economic activities, and facilities should minimize disturbance to habitats and resources. Ground-disturbing activities are to be avoided whenever possible.

Management actions in this category focus on understanding natural systems and monitoring the health of refuge resources. Generally, no roads or permanent structures are allowed (except cabins and trails). Temporary structures may be allowed in situations in which removal is planned after the period of authorized use and the site can be rehabilitated using plants native to the immediate area. Existing cabins may be allowed for administrative, public use, subsistence, or commercial or economic (e.g., guiding) purposes. New subsistence or commercial cabins may be authorized if no reasonable alternatives exist. Public use or administrative cabins may be constructed if necessary for health and safety.

Public use of the Refuge for wildlife-dependent recreation and subsistence activities is encouraged. Public use facilities are not generally provided. Mechanized and motorized equipment may be allowed when the overall impacts are temporary or where its use furthers management goals.

If a transportation or utility system, as defined in Section 1102 of the Alaska National Interest Lands Conservation Act (ANILCA), is proposed to cross an area in Minimal management, the authorization process would incorporate a corresponding comprehensive conservation plan amendment to change the management category in the affected area from Minimal management to Moderate or Intensive management, as appropriate.

Compatible economic activities may be allowed where the evidence of those activities does not last past the season of use, except as noted in the preceding discussion of cabins. The primary economic activities are likely to be guiding and outfitting of recreation activities such as hunting, fishing, hiking, river floating, and sightseeing. All economic activities and facilities require authorizations such as special use permits.

Alternatives for management direction for trails, routes, campsites, cabins, and other public use facilities on refuge lands under Minimal Management have been evaluated through this Plan. Final management direction will be determined by the preferred alternative identified in the Final Record of Decision.

3.1.2 Moderate Management

Moderate management is meant to allow compatible management actions, public uses, commercial uses, and facilities that may result in changes to the natural environment that are temporary, or permanent, but small in scale and that do not disrupt natural processes. The natural landscape is the dominant feature of Moderate management areas, although signs of human actions may be visible.

Management actions in the category of Moderate management will focus on maintaining, restoring, or enhancing habitats to maintain healthy populations of plants and animals where natural processes predominate. For example, logging and prescribed burning may be used to convert mature forests to earlier native seral stages to enhance browse for moose. In general, management facilities, both temporary and permanent, will be allowed for the purposes of gathering data needed to understand and manage resources and natural systems of the Refuge. Structures will be designed to minimize overall visual impact.

Public facilities provided in Moderate management will, while protecting habitats and resources, allow the public to enjoy and use refuge resources in low numbers over a large area, or they will encourage the short-term enjoyment of the Refuge in focused areas. The emphasis is on small facilities that encourage outdoor experiences. Facilities such as public use cabins, rustic campgrounds, kiosks, viewing platforms, trails, and toilets may be provided. Facilities will be designed to blend with the surrounding environment.

Compatible economic activities may be allowed where impacts to natural processes and habitats are temporary (e.g., small-scale logging where an earlier seral stage meets management goals; facilities in support of guiding and outfitting services such as tent platforms or cabins that encourage enhanced public use). All economic activities and facilities require authorizations such as special use permits.

3.1.3 Intensive Management

This category is designed to allow compatible management actions, public facilities, and economic activities that may result in alterations to the natural environment. In Intensive management areas, the presence of human intervention may be very apparent. Roads, buildings, and other structures are likely to be seen. Intensive management is applied to the smallest area reasonable to accommodate the intended uses. When Intensive management is proposed for an area, the specific purposes for its establishment will be described.

Natural processes or habitats may be modified through human intervention. Habitats may be highly modified to enhance conditions for one or more animal species. For example, water regimes may be artificially controlled to improve habitat for waterfowl.

High levels of public use may be accommodated and encouraged through modifications to the natural environment such as paving, buildings, developed campgrounds, and other facilities that could alter the natural environment in specific areas. Public facilities are designed to provide a safe and enjoyable experience of the natural environment and an increased understanding of refuge resources for a wide range of visitors. Facilities may accommodate a large number of visitors while protecting refuge resources from damage through overuse.

Compatible economic uses of refuge resources that result in alterations to the natural environment may be authorized in Intensive management areas. All economic uses are subject to the compatibility standard, must contribute to the purposes of the Refuge, and require official authorizations such as special use permits.

3.1.4 Special Management

Some refuges may contain or fall within Special Management designations. Such areas are managed within one of the categories described previously but may have additional management emphasis or requirements because of their status. There are two Special Management designations applicable to the Tetlin Refuge.

The Tetlin Refuge is one of 14 refuges in the country designated as a Land Management Research and Demonstration Area (LMRDA). The LMRDAs are intended to serve as centers of investigation, innovation, and instruction in wildlife and habitat management. The Tetlin Refuge LMRDA designation focuses on studies of the effects of wildland fire; oil, gas and mining development; subsistence uses; and increasing tourism on boreal forest habitat.

The Upper Tanana Valley, which includes the Tetlin Refuge, is a recognized “Important Bird Area” (IBA). The IBA designation carries no management requirements but recognizes the biological significance of the Upper Tanana Valley to migratory bird conservation.

3.1.4.1 Management of Selected Lands

The Service retains management responsibility for lands selected but not yet conveyed to Native village and regional corporations or to the State of Alaska. The appropriate Native corporation or agency of the State of Alaska will be contacted and its views considered prior to issuing a permit involving these lands. Fees collected for special use or right-of-way permits will be held in escrow until the selected lands are conveyed or relinquished. Management of these lands will be the same as for adjacent refuge lands.

3.2 Management Policies and Guidelines

Refuge management is governed by Federal laws such as the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd), as amended, (Refuge Administration Act); the National Wildlife Refuge System Improvement Act of 1997, an amendment to the Refuge Administration Act (P.L. 105-57) (Refuge Improvement Act); and ANILCA; by regulations implementing these laws; by treaties; by Service policy; and by principles of sound resource management—which establish standards for resource management or limit the range of potential activities that may be allowed on the Refuge.

The ANILCA authorizes traditional activities such as subsistence, the exercise of valid commercial fishing rights, hunting, fishing, and trapping in accordance with State and Federal laws. Under Service regulations implementing this direction, “[p]ublic recreation activities within the Alaska National Wildlife Refuges are authorized as long as such activities are conducted in a manner compatible with the purposes for which the areas were established” (50 CFR 36.31[a]). Such recreation activities include but are not limited to, sightseeing, nature observations and photography, hunting, fishing, boating, camping, hiking, picnicking, and other related activities. The Refuge Administration Act, as amended by the Refuge Improvement Act, defines “wildlife-dependent recreation” and “wildlife-dependent recreational use” as “hunting, fishing, wildlife observation and photography, or environmental education and interpretation” (16 U.S.C. § 668ee). These uses are encouraged and will receive emphasis in management of public use on refuges.

3.2.1 Management Emergencies

It may be necessary, when emergencies occur on the Refuge, to deviate from policies and guidelines discussed in the comprehensive conservation plan. Activities not allowed on the Refuge or under a specific management category, as shown in Table 3-2, may occur during or as a result of emergencies. For example, if naturally occurring or human-caused actions (e.g., landslides, floods, fires, droughts) adversely affect refuge resources, it may be necessary to undertake rehabilitation, restoration, habitat improvement, water management, fisheries enhancement, or other actions that would not otherwise be allowed to the same extent on the Refuge. Threats to human health and safety may also result during emergencies. In emergencies, the refuge manager is authorized to take prudent and reasonable actions to protect human life and to address immediate health, safety, or critical resource-protection needs.

3.2.2 Land Exchanges and Acquisitions

Under Section 1302 of ANILCA, and subject to certain restrictions, the Service may acquire by purchase, donation, or exchange any lands within the boundaries of Alaska refuges. Proposed land exchanges or acquisitions must benefit fish and wildlife resources, satisfy other purposes for which the Refuge was established, or be necessary to satisfy other national interests. The Service can also purchase conservation easements or enter into cooperative management agreements to meet these objectives.

3.2.3 Land Protection Plans

Department of Interior and Service policies require development of a step-down plan, called a land protection plan, addressing priorities for habitat conservation within refuge boundaries. Land protection plans inform private landowners what land within refuge boundaries the Service would like to see conserved for fish and wildlife habitat. The plans do the following:

- Identify the private lands within the refuge boundary that the Service believes should be conserved.
- Display the relative protection priority for each parcel.
- Discuss alternative means of land and resource conservation.
- Analyze the impacts on local residents of acquisition.

The Service only acquires land from willing landowners. It is Service policy to acquire land only when other methods of achieving goals are not appropriate, available, or effective. Sometimes resource conservation goals can be met through cooperative management agreements with landowners or by similar means. The Refuge will work with all landowners to ensure that overall fish and wildlife and habitat values within the Refuge are conserved.

A land protection plan for the Refuge was completed in 2001 (USFWS 2001a).

A pre-acquisition environmental site assessment is required for all real property proposed for acquisition by the Service or for public domain lands returning to Service jurisdiction (Service Manual 341 FW 3).

3.2.4 Appropriate Refuge Uses and Compatibility

Comprehensive conservation plans include a review of the appropriateness and compatibility of existing refuge uses and of any planned future public uses.

3.2.4.1 Appropriate Refuge Uses

All uses of a national wildlife refuge over which the Service has jurisdiction must be determined to be appropriate uses under the Appropriate Refuge Uses Policy (Service Manual 630 FW 1). An appropriate use of a national wildlife refuge is a proposed or existing use on a refuge that meets at least one of the following four conditions.

- (1) The use is a wildlife-dependent recreational use as identified in the Refuge Improvement Act (hunting, fishing, wildlife observation and photography, and environmental education and interpretation).

- (2) The use contributes to fulfilling the refuge purpose(s), the Refuge System mission, or goals or objectives described in a refuge management plan approved after October 9, 1997, the date the Refuge Improvement Act was signed into law.
- (3) The use involves the take of fish and wildlife under State regulations.
- (4) The refuge manager has evaluated the use following guidelines in the Service Manual 603 FW 1.11 (listed below) and found it appropriate.
 - (a) Do we have jurisdiction over the use?
 - (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?
 - (c) Is the use consistent with applicable Executive orders, Department and Service policies?
 - (d) Is the use consistent with public safety?
 - (e) Is the use consistent with goals and objectives in an approved management plan or other document?
 - (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?
 - (g) Is the use manageable within available budget and staff?
 - (h) Will the use be manageable in the future within existing resources?
 - (i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?
 - (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality, compatible, wildlife-dependent recreation into the future?

This plan identifies those existing and proposed uses that are found appropriate and compatible. Draft compatibility determinations are included as Appendix E of this plan. The following uses have been found appropriate: commercial hunting services (guiding and outfitting), commercial air transporter services, scientific research, subsistence activities, and State of Alaska management activities. Appropriate use documentation is on file with the refuge headquarters and the Alaska Regional Office. If additional uses not addressed in this plan are proposed for the Refuge, the refuge manager will determine if they are appropriate uses following guidance in the Service Manual (603 FW 1).

3.2.4.2 Compatibility Determinations

The Refuge Administration Act states that “the Secretary [of the Interior] is authorized, under such regulations as he [or she] may prescribe, to... permit the use of any area within the [Refuge] System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he [or she] determines that such uses are compatible”

A compatible use is a proposed or existing wildlife-dependent recreation use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with nor detract from the fulfillment of the Refuge System mission or the purposes for which the national wildlife refuge was established. Economic uses must contribute to achieving refuge purposes and the Refuge System mission.

Compatibility determinations are not required for refuge management activities, except economic activities. They are also not required where statute directs mandatory approval of the activity, as in the case of facilities for national defense.

If a use is found to be incompatible, the Refuge would follow normal administrative procedures for stopping the action. If the use was a new use requiring a special use permit, the refuge manager would not issue a permit. If the use was an existing use already under permit, the refuge manager would work with the permittee to modify the use to make it compatible or would terminate the permit.

Ending incompatible uses that do not require a special use permit or other formal authorization, or that cannot be addressed by other Federal or State agencies, would require the Refuge go through the normal rule-making process. This would include publishing the proposed regulations in the *Federal Register* and providing opportunity for public comment.

Draft compatibility determinations for refuge uses are included in this draft comprehensive conservation plan. Public comments on the draft determinations will be addressed in the final determinations released with the final comprehensive conservation plan.

Compatibility determinations for existing hunting, fishing, wildlife observation and photography, and environmental education and interpretation must be re-evaluated with the preparation or revision of a comprehensive conservation plan or at least every 15 years, whichever is earlier. Refuge compatibility determinations for all other uses must be re-evaluated every 10 years or earlier if conditions change or significant new information relative to the use and its effects becomes available.

To review completed compatibility determinations for all refuges in Alaska, go to <http://alaska.fws.gov/nwr/planning/completed.htm>

Additional details on applying compatibility standards and completing refuge compatibility determinations are found in the compatibility regulations at 50 CFR (Parts 25, 26, and 29) and in the Service Manual (603 FW 2).

3.2.5 Mitigation

In the interest of serving the public, it is the policy of the Service, throughout the nation, to seek to prevent, reduce, or compensate for losses of fish, wildlife, and their habitats, and uses thereof, from land and water development. To that end, the Service developed a Mitigation Policy in 1981 that includes measures ranging from avoiding an activity that results in loss of such resources to seeking compensation by replacement of or substitution for resource loss.

The Service will promulgate regulations, develop stipulations, and issue permits to reduce or eliminate potential adverse impacts resulting from compatible activities that may be authorized under this plan. These regulations, stipulations, and permits would mitigate

impacts in a variety of means, as stipulated in the Mitigation Policy guidelines (Service Manual 501 FW 2.1). The means, in order of application, are as follows:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

When determining activities or uses are compatible, projects should be designed first to avoid adverse impacts. The Service generally does not allow compensatory mitigation on Refuge System lands. Only in limited and exceptional circumstances related to existing rights-of-way could compensatory mitigation be used to find a use compatible. The Service Manual (501 FW 2 and 603 FW 2) provides more information.

Mitigation may consist of standard stipulations such as those attached to right-of-way permits; special stipulations that may be attached to leases or permits on a site-specific basis; and site-specific, project-specific mitigation identified through detailed step-down management plans or the environmental assessment process. In all instances, mitigation must support the mission of the Refuge System and must be compatible with the purposes of the Refuge. The degree, type, and extent of mitigation undertaken would depend on the site-specific conditions present and the management goals and objectives of the action being implemented.

3.2.6 Cooperation and Coordination with Others

3.2.6.1 Federal, State and Local Governments

The Refuge will continue to work closely with those Federal, State, and local governments and agencies whose programs affect, or are affected by, the Refuge. State and local government input will be sought during the development of regulatory policies addressing management of the Refuge System (Executive Order 13083, “Federalism”). When possible, the Service will participate in interagency activities (such as joint fish and wildlife surveys and co-funded research), cooperative agreements, sharing data, and sharing equipment and/or aircraft costs to meet mutual management goals and objectives.

The Refuge and the State of Alaska will cooperatively manage fish and wildlife resources within the Refuge. The Master Memorandum of Understanding between the Service and the Alaska Department of Fish & Game, dated March 13, 1982, defines the cooperative management roles of each agency (see Appendix B). In this agreement, the Alaska Department of Fish & Game agreed to “recognize the Service as the agency with the responsibility to manage migratory birds, endangered species, and other species mandated by Federal law, and on Service lands in Alaska to conserve fish and wildlife and their habitats and regulate human use.” Correspondingly, the Service agreed to “recognize the (Alaska) Department (of Fish & Game) as the agency with the primary responsibility to manage fish and resident wildlife within the State of Alaska.” Further discussion of intergovernmental

cooperation regarding the preservation, use, and management of fish and wildlife resources is found in 43 CFR 24, “Department of the Interior Fish & Wildlife Policy: State and Federal Relationships.”

The Service does not require refuge compatibility determinations for State wildlife management activities on a national wildlife refuge pursuant to a cooperative agreement between the State and the Service where the refuge manager has made a written determination that such activities support fulfilling the refuge purposes or the Refuge System mission. When the activity proposed by the State is not part of a cooperative agreement or the State is not acting as the Service’s agent, a special use permit may be required, and a refuge compatibility determination will need to be completed before the activity may be allowed. Separate refuge compatibility determinations addressing specific proposals will be required for State management activities that propose predator management, fish and wildlife control (with the exception of emergency removal of individual rogue animals), reintroduction of species, nonnative species management, pest management, disease prevention and control, fishery restoration, fishery enhancement, native fish introductions, nonnative species introductions, construction of facilities, helicopter and off-road vehicle access, or any other unpermitted activity that could alter ecosystems on the Refuge.

The Service will cooperate with other State agencies such as the Department of Natural Resources and Department of Transportation and Public Facilities on matters of mutual interest and may enter into informal and formal management agreements.

3.2.6.2 Tribes and Native American Organizations

The Service’s Native American Policy (USFWS 1994) identifies general principles that guide the Service’s government-to-government relationships with tribal governments in the conservation of fish and wildlife resources. Additional guidance has been provided by Executive Order 13084, Consultation and Coordination with Indian Tribal Governments, issued May 14, 1998, and the Department of the Interior–Alaska Policy on Government-to-Government Relations with Alaska Native Tribes, issued January 18, 2001 (USDI 2001). The Refuge will maintain government-to-government relationships with tribal governments. The Refuge will also work directly with regional and village corporations and respect Native American cultural values when planning and implementing refuge programs.

3.2.6.3 Owners of Refuge Inholdings and Adjacent Lands

The Refuge will work cooperatively with inholders and adjacent landowners, providing information on refuge management activities and policies. The Refuge will consult periodically with them regarding topics of mutual interest; will respond promptly to concerns over refuge programs; and will participate in cooperative projects (e.g., water quality monitoring and fish and wildlife management).

3.2.6.4 Fish and Wildlife Service Jurisdiction over Waters within Tetlin Refuge

Where the United States holds title to submerged lands beneath waters within the Refuge, the Service has jurisdiction over certain activities on the water. In 1980, under ANILCA, the United States Congress established or expanded 16 national wildlife refuges. These areas of land and water may contain both navigable and non-navigable waters. Where waterbodies are non-navigable within the Refuge, the Service has management authority over most activities on water where adjacent uplands are federally owned. Where State of Alaska lands exist

beneath navigable waterbodies or where the State, a Native corporation, or a Native allottee owns the adjacent uplands within areas of the Refuge where the withdrawal process started after statehood, the Service's management authority is more limited.

The Service's statutory authority to manage these lands and waters comes from ANILCA; the Service manages these lands pursuant to the Refuge Administration Act. Under provisions of ANILCA, the Service manages the Federal subsistence program on all inland waters within and adjacent to the external boundaries of the Refuge (50 CFR 100.3[b]).

3.2.6.5 Other Constituencies

The Refuge will inform local communities, special interest groups, and others who have expressed an interest in or are affected by refuge programs about refuge management policies and activities. The Refuge will seek input from these constituents when issues arise that may affect how the Refuge is managed. When appropriate, local residents and other stakeholders will be asked to participate in refuge activities so their expertise and local knowledge can be incorporated into refuge management.

3.2.7 Ecosystem and Landscape Management

Species do not function alone; they function together in the environment as part of an ecosystem. Refuge resources will be managed by employing ecosystem management concepts. Individual species are viewed as integral to the diversity of those ecosystems and as such are indicators of the healthy functioning of the entire ecosystem. When the Service identifies species to use as indicators of the health of an ecosystem, it will do so through a rigorous peer-reviewed scientific process involving experts from other Federal agencies and the Alaska Department of Fish & Game.

Inventorying, monitoring, and maintaining comprehensive databases of selected ecosystem components are critical for making refuge management decisions and for ensuring proper long-term ecosystem stewardship. This includes regular and recurring monitoring of status and trends of ecosystem components such as fish, wildlife, plants, climatic conditions, soils, and waterbodies. All monitoring will employ appropriate disciplines, new technologies, and scientific capabilities whenever practical.

3.2.7.1 Air Quality

The Service's authorities for air quality management are included in several laws. The most direct mandates to manage air resources are found in the Clean Air Act.

The Service is required by the Clean Air Act to preserve, protect, and enhance air quality and air quality-related values on Service lands. Air quality-related values include visibility, plants, animals, soil, water quality, cultural and historical resources, and virtually all resources that are dependent upon and affected by air quality.

Class I air quality sites receive the highest level of protection. Very little deterioration is allowed in these areas, and the Federal land manager has an "affirmative responsibility" to protect air quality-related values on those lands. With the exception of three Class I air quality sites in designated Wilderness on the Alaska Maritime National Wildlife Refuge, all other lands managed by the Service in Alaska are classified as Class II and receive protection

through the Clean Air Act. Moderate deterioration, associated with well-managed growth, is allowed in Class II areas.

If air quality or related resources are at risk, the refuge manager will work with the Service's Air Quality Branch; the regional air quality coordinator; the Alaska Department of Environmental Conservation and other State, local, and Federal agencies; and the public, as appropriate, in developing an air quality management plan as outlined in the Service Manual (563 FW 2.8).

3.2.7.2 Water Resources (Hydrology) Management

Every national wildlife refuge in Alaska shares the common purpose of ensuring that water resources are maintained and protected. The ANILCA mandates that the Service safeguard water quality and necessary water quantity within refuges and to conserve fish and wildlife populations and habitats in their natural diversity.

Although the Service has reserved water rights sufficient to accomplish the purposes of the refuges, the Refuge Administration Act and the Service Manual (403 FW 1 through 3) direct the Service to obtain, to the extent practicable, water supplies of adequate quantity and quality for Service facilities, for refuge purposes and as trust resources, and to obtain the legal right to use that water through State laws, regulations, and procedures.

The Alaska Region of the Service conducted a water resources threats analysis (Harle 1994) for the purpose of guiding water resource investigations and protecting water resources by acquiring instream water rights. Based on the results of the threats analysis, the Service's regional office developed a strategic plan for systematically quantifying the surface water on refuges within Alaska (Bayha et al. 1997).

Using existing data, or through the collection of hydrologic and biologic data, the Service applies to the State of Alaska for appropriative water rights, for instream water reservations and for water withdrawals to meet the Service's needs. Establishing State water rights is only part of a management strategy to protect refuge resources and to understand ecosystem processes. Collection of hydrologic data allows the Service to accomplish the following:

- Plan flood-plain and riparian zone management.
- Estimate flow for ungauged streams within the Refuge.
- Supplement historical or current fisheries and wildlife studies.
- Detect and evaluate future natural or human-induced changes in the hydrologic system.
- Provide stream profile and velocity data for the design of fish weirs or other structures.
- Estimate the potential for future flooding and erosion.
- Analyze the impacts of proposed projects on stream flow and water supply.
- Provide a basis for decision-making about commercial operations on some important streams.
- Provide baseline water quality information.

All facilities and activities on refuges must comply with pollution-control standards set by Federal laws (e.g., the Clean Water Act 33 U.S.C. 1251 and the Safe Drinking Water Act 42 U.S.C. 300f); State laws where Federal law so provides; and the regulations, policies, and standards implementing these laws.

3.2.7.3 Visual Resource Management

Visual resource management has two primary purposes: (1) to manage the quality of the visual environment and (2) to reduce the visual impact of development activities. To accomplish these purposes, the Refuge will identify and maintain scenic values and will, within the constraints imposed by the comprehensive conservation plan, minimize the visual impacts of refuge development and uses. All activities and facilities on the Refuge will be designed to blend into the landscape to the extent practical. The Service will cooperate with other Federal, State, local, tribal, and private agencies and organizations to prevent significant deterioration of visual resources.

3.2.7.4 Cultural, Historical, and Paleontological Resources

The Service has long-term responsibilities for cultural resources on refuge lands. Cultural resources on refuge lands are managed under a number of laws, executive orders, and regulations, including the Antiquities Act; the National Historic Preservation Act, as amended; the Archaeological Resources Protection Act; the American Indian Religious Freedom Act; the Native American Graves Protection and Repatriation Act; Executive Order 11593, Protection and Enhancement of the Cultural Environment; Executive Order 13007, Indian Sacred Sites; and 36 CFR 800.

The 1980 amendments to the National Historic Preservation Act direct the Service to inventory and evaluate cultural resources for their eligibility for inclusion on the National Register of Historic Places. Pending a complete evaluation, all cultural resources will be considered potentially eligible for the National Register of Historic Places. All significant historic, archaeological, cultural, and paleontological resources on the Refuge will be protected and managed in accordance with Federal and State law.

Due to limited time, funding, and staffing, the Service has designated priorities in evaluating cultural resources on refuge lands. When funds become available, the Refuge will initiate inventories and evaluations as prioritized in the 1996 Tetlin Refuge Cultural Resource Guide. The cultural resource plan provides guidance for cultural resource management on the Refuge. It outlines legal mandates and considerations, reviews current information about resources, and establishes goals and objectives for the program. The cultural resource plan should be updated every five years. Sites determined to be eligible for the National Register will be protected with an appropriate cultural resources management plan.

To avoid causing impacts to any potential sites when development is proposed, a qualified archaeologist will investigate records and reported sites and will examine each area. Priority areas for future investigation identified in the 1996 Cultural Resource Guide include Scottie, Desper, and Moose-Chindagiekne creeks; Jatahmund, American Wellesley, Pickerel, and Deadman lakes; and the Cheslina River.

It is illegal to collect archaeological materials and/or paleontological remains on the Refuge without a permit. Historic aircraft and other World War II material will be managed in

accordance with the policy published December 20, 1985, in the *Federal Register* (FR 50:51952-51953). These materials may be collected on refuge lands only as authorized by a permit issued to a qualified organization or individual. Cultural resource research permits will only be issued to qualified individuals operating under appropriate research designs. The Refuge will encourage archaeologists, historians, ethnologists, and paleontologists from educational institutions and other government agencies to pursue their research interests on refuge lands as long as these research interests are compatible with refuge purposes. Research that collects data from threatened sites and minimizes disturbance to intact sites will be encouraged.

When any Federal undertaking—including any action funded or authorized by the Federal government and having the potential to directly or indirectly affect any archaeological or historic site—is planned, a consultation must be initiated with the State Historic Preservation Officer, under Section 106 of the National Historic Preservation Act. If sites that may be affected are found in the project area, their significance will be evaluated to determine their eligibility for inclusion in the National Register of Historic Places. For eligible sites, consultation will result in a course of action causing the least possible impact. Impacts may be minimized in a variety of ways, including relocation or redesign of a project, site hardening, mitigation through information collection, or cancellation of the project if no alternatives are feasible. To protect archaeological and historic sites, other uses may be precluded. Private interests proposing to conduct commercial uses on the Refuge will normally be required to fund studies necessary for consultation and for mitigation of impacts.

The Refuge will implement Executive Order 13007, Indian Sacred Sites, allowing access to identified sacred sites and avoiding adversely affecting the physical integrity of these sites. Where appropriate, the Service will maintain the confidentiality of sacred sites.

Further information on cultural resources management can be found in the Service Manual (614 FW 1 through 5) and the Cultural Resources Management Handbook (USFWS 1992).

3.2.8 Fish and Wildlife Habitat Management

3.2.8.1 Habitat Management

Habitats are managed in keeping with the purposes, goals, and objectives of a refuge. In Alaska, this means habitats are largely managed to maintain natural diversity and natural processes. However, in some cases, habitats are manipulated to maintain or improve conditions for selected fish and wildlife populations, to control invasive plant species, or to manage fire fuels on refuge lands. These habitat management and manipulation activities will be carried out in support of the purposes, goals, and objectives of the Refuge. Generally, refuges use the least intrusive management measures needed. Where practical and economically feasible, habitat management practices should maintain a natural appearance on the landscape. Habitat management practices, even those carried out for the benefit of a single species or small group of species, will, to the extent possible, maintain the natural diversity of native (indigenous) wildlife species and habitat types.

Habitat management and manipulation may be achieved by mechanical, chemical, and manual methods, including the use of fire, or by a combination of methods. Mechanical treatment could include mechanical removal, crushing, cutting, or mowing. When applicable, State and Federal guidelines for timber management will be followed. Mechanical treatment could also

include the construction of fish passages, fish ladders, fish barriers, water impoundments and structures such as fences or artificial nests, and raising or lowering of water levels to manage wildlife or waterfowl habitat. Riparian or aquatic habitat management and manipulation may be achieved by acquiring instream flow reservations or making beneficial water diversions.

Chemical treatment involves the use of chemicals to restore nutrient levels in a lake system (fertilization) for fisheries restoration, to reduce hazardous fuels, or to eliminate invasive plant and animal species, normally by killing them or destroying their ability to spread or prosper. Before chemical treatment is approved for use, the Refuge will analyze the need for action, the options for treatment, and the potential impacts of those options through the National Environmental Policy Act (NEPA) process. Pest control, including integrated pest management, is discussed in section 2.10.8.

Manual treatment could include the use of hand tools to remove, reduce, or modify plants or to modify habitats (e.g., removal of beaver dams).

Aquatic habitat modification may include activities and structures such as streambank restoration, passage structures, and fish barriers or obstacle removal that results in physical modification of aquatic or riparian habitats to benefit fish species. These activities would be undertaken to maintain or restore native fish populations and may require appropriate NEPA compliance and refuge compatibility determinations.

3.2.8.2 Fire Management

Fire management is the full range of activities necessary to conserve, protect, and enhance habitat and to maintain desired ecological conditions for the benefit of fish and wildlife. Fire management activities include preparedness, emergency suppression operations, wildland fire use, fire prevention, education, monitoring, research, prescribed fire, hazardous fuel reduction, and mechanical treatments. All activities will be conducted in accordance with refuge, Service, and Department of Interior policies and approved interagency and refuge-specific fire management plans. Additional guidance on fire management can be found in the Service Manual (621 FW 1 through 3).

Fire management plans provide the basis for integrating fire as a critical natural process into other refuge plans and activities at a landscape scale. The Tetlin Refuge Fire Management Plan (TNWR 2001) provides specific information on the application and management of fire on the Refuge. The Alaska Interagency Wildland Fire Management Plan provides a cooperative framework and operational guidelines for the suppression of wildland fires. The suppression of human-caused and unwanted wildland fires and the use of nature-caused wildland fires and prescribed fires as management tools are important management prerogatives.

Wildland Fire Suppression

Fire suppression activity is the work of confining, constraining, controlling, or monitoring a fire or portion of a fire to protect, prevent, or reduce the loss of identified values. Suppression takes place, with the highest priority being the safety of firefighters and the public, using the appropriate management response based on values to be protected. The Alaska Interagency Wildland Fire Management Plan, amended in October 1998, is the guiding document for suppression actions. The plan establishes four management options—critical, full, modified, and limited—that direct a range of wildlife fire management responses. Refuge lands have

been classified by fire management zones for limited, modified, full, or critical suppression, with all facilities mapped.

The Bureau of Land Management Alaska Fire Service (BLM/AFS) provides emergency suppression services on refuge lands in Alaska (Department Manual 620 DM 2), as directed by the refuge manager. Through a cooperative agreement with BLM/AFS, the State of Alaska Division of Forestry provides emergency suppression services on refuge lands in State protection zones, as directed by the refuge manager. Tetlin Refuge is located in the Tok Area Fire Management Zone with suppression services provided by the State of Alaska’s Department of Natural Resources, Division of Forestry.

Wildland Fire Use

Wildland fire use is the application of the appropriate management response to naturally ignited wildland fires to accomplish resource management objectives outlined in fire management plans. Wildland fires may be used to protect, maintain, and enhance natural and cultural resources and, as nearly as possible, wildland fires will be allowed to function in their natural ecological role. Optional management is described in the Refuge Fire Management Plan.

Prescribed Fire

Prescribed fires are ignited by management action to meet specific wildland fuel, vegetation, and habitat management objectives. Prior to each ignition, a written, approved plan outlining prescription conditions is required. Use of prescribed fires must also comply with the Alaska Enhanced Smoke Management Plan for Prescribed Fire. The plan provides guidance and direction concerning smoke issues related to prescribed fire.

Table 3-1. Alaska Interagency Wildland Fire Management Plan suppression options used within Tetlin Refuge

Fire Suppression Option	Intent	Policy
Critical	This option was established for the protection of cultural and historical sites, uninhabited private property, natural resource high-value areas, and other high-value areas that do not involve the protection of human life and inhabited property. Either broad areas or specific sites within a lower management option may be designated as Full Management.	Fires occurring within or immediately threatening this designation will receive aggressive initial attack dependent upon the availability of suppression resources.

Fire Suppression Option	Intent	Policy
Full	This option was established for the protection of cultural and historical sites, uninhabited private property, natural resource high-value areas, and other high-value areas that do not involve the protection of human life and inhabited property. Either broad areas or specific sites within a lower management option may be designated as Full Management.	Fires occurring within or immediately threatening this designation will receive aggressive initial attack dependent upon the availability of suppression resources.
Modified	The Modified management option is intended to be the most flexible option available to land managers/owners. The intent of the Modified management option is to provide a higher level of protection when fire danger is high, probability of significant fire growth is high, and probability of containment is low. A lower level of protection is provided when fire danger decreases, potential for fire growth decreases and the probability of containment increases. This option should reduce commitment of suppression resources when risks are low. This option also provides increased flexibility in the selection of suppression strategies when risks are high. The Modified option provides a management level between Full and Limited. Unlike Full management areas, the intent is not to minimize burned acres, but to balance acres burned with suppression costs and to accomplish land and resource management objectives. As stated in the original Alaska Interagency Fire Management Plan, Tanana-Minchumina Planning Area, "Lands placed in this category will usually be suited to indirect attack." The essential elements of this option are the evaluation and conversion dates, described below, and the WFSA process.	Fires occurring within this designation, before the conversion date, will receive initial attack (a situation similar to that under the Full option), dependent upon availability of suppression resources, unless otherwise directed by the land manager/owner(s) and documented by a WFSA. After the conversion date, the default action for all fires occurring within the Modified management option areas will be routine surveillance (a situation similar to that under the Limited option) to ensure that identified values are protected and that adjacent higher priority management areas are not compromised. Critical and Full management areas are higher priorities for suppression resources than Modified management areas.

Fire Suppression Option	Intent	Policy
<p>Limited</p>	<p>This category recognizes areas where the cost of suppression may exceed the value of the resources to be protected, the environmental impacts of fire suppression activities may have more negative impacts on the resources than the effects of the fire, or the exclusion of fire may be detrimental to the fire dependent ecosystem. The Limited management option reduces both long-term suppression risks and costs by reducing the frequency of large fires that may burn out of boundaries of Limited management regardless of the suppression effort. It also reduces current suppression costs and makes suppression goals more attainable in years of drought and intense fire activity. The Limited management option may also be chosen for areas where fire occurrence is essential to the biodiversity of the resources protected and the long-term ecological health of the land. Suppression actions may be initiated to keep a fire within the boundary of the management option or to protect identified higher value areas/sites. Site-specific areas that warrant higher levels of protection may occur within limited management areas. Appropriate suppression actions to protect these sites will be taken when warranted, without compromising the intent of the limited management area.</p>	<p>Wildland fires occurring within this designation will be allowed to burn under the influence of natural forces within predetermined areas while continuing protection of human life and site-specific values within the management option. Generally this designation receives the lowest priority for allocations of initial attack resources; however, surveillance may be a high priority.</p>

3.2.9 Fish and Wildlife Population Management

Conservation of habitat is a key element in maintaining the natural diversity of populations on the Refuge, and management of native fish and wildlife populations is an important component of maintaining healthy ecosystems. The Refuge will be managed in accordance with the purposes of the Refuge and consistent with the Policy on Maintaining Biological Integrity, Diversity, and Environmental Health of the National Wildlife Refuge System (Service Manual 601 FW 3) to ensure native species are managed in their natural diversity and abundance.

The Refuge will work with the State of Alaska to conserve fish and wildlife populations, recognizing that populations may experience fluctuations in abundance because of environmental factors and may require management actions for conservation purposes. The Refuge will be managed to maintain the genetic variability of wild, native fish stocks.

3.2.9.1 Wildlife Inventory and Monitoring Plan

To assess presence, relative abundance, distribution, and trends in populations of fish, wildlife, and plants, the Refuge completed a Wildlife Inventory and Monitoring Plan (I & M Plan)

(TNWR 1986). The I & M Plan describes objectives, justification, methods, management implications, geographic scale, report schedules, and database management for studies on species targeted for inventory and monitoring. The I & M Plan includes studies that address environmental parameters (e.g., weather) and hydrology, soils, and fire history to explain potential changes in the distribution, relative abundance, and populations of fish, wildlife and plants. The Refuge will update the I & M Plan every two years. Every five to eight years, the I & M Plan will be reviewed by the regional refuge biologist and other professional staff prior to final approval by the regional refuge chief.

3.2.9.2 Scientific Peer Review

Biologists, ecologists, botanists, and other refuge personnel conducting scientific investigations will adhere to refuge, regional, Service, and Department of Interior policies on scientific conduct, including scientific peer review. The overall goal of scientific peer review is to ensure that information collected, analyzed, interpreted, and reported to the public, and upon which policy and management decisions are based, meets established standards of the scientific community. To achieve this goal, study plans for projects longer than two weeks and reports to be disseminated to the public must be peer-reviewed. The region's peer review procedure is available upon request. The type and level of review shall be commensurate with the potential significance of the scientific information and its likely influence on policy and management actions.

3.2.9.3 Compliance with the Animal Welfare Act

The Animal Welfare Act of 1996, as amended, established legal standards for animal care and use. To prescribe methods and set standards for the design, performance, and conduct of animal care and use, research facilities and Federal agencies must establish an Institutional Animal Care and Use Committee (IACUC). Field studies conducted or authorized by refuge employees within the purview of the Animal Welfare Act will require review and approval of an IACUC. Any refuge study that involves an invasive procedure or that harms or materially alters the behavior of an animal under study should be reviewed and approved by an IACUC prior to implementing field work. Note that a scientific collection permit is also required from the Alaska Department of Fish and Game under 5 Alaska Administrative Code 92.033.

3.2.9.4 Marking and Banding

These activities include fish and wildlife capture, marking, banding, radio-collaring, release, tracking, and other information-gathering techniques. Cooperation with appropriate partners, including the Alaska Department of Fish & Game, will be stressed, and specific protocols will be followed, taking advantage of all appropriate disciplines and new technologies wherever possible.

3.2.9.5 Threatened or Endangered Species

The Refuge will consult with the U.S. Fish & Wildlife Service Ecological Services field office on actions that may affect listed, proposed, or candidate species or designated or proposed critical habitat. These actions include refuge operations, public use programs, private lands and Federal Assistance activities, promulgating regulations, and issuing permits (USFWS 1973, Section 7 Consultation Handbook 1998).

3.2.9.6 Reintroductions

In general, a species may be introduced on a refuge only if that species is native to the Refuge (i.e., a reintroduction). However, each of the management alternatives allow one exception to this management direction that allows the Alaska Department of Fish and Game to continue stocking rainbow trout as a fishery enhancement project at Hidden Lake, which is within the Refuge. The Rationale for this exception is explained in section 2.4. Definitions of native and nonnative species are found in the Glossary (see Appendix H).

Reintroductions can be useful tools for restoring species to natural ranges and reestablishing a refuge's natural fish, wildlife, and habitat diversity. Reintroductions would require appropriate NEPA compliance; a review to ensure consistency with the Policy on Maintaining Biological Integrity, Diversity, and Environmental Health of the National Wildlife Refuge System; an ANILCA Section 810 determination; and a refuge compatibility determination. Reintroductions also require extensive coordination with adjacent landowners and with the State of Alaska. In evaluating the project, the cause(s) of the extirpation should be evaluated and management actions taken to alleviate the cause(s) prior to reintroduction.

The environmental requirements of the species and the ecological dynamics of the area proposed for the reintroduction need to be thoroughly reviewed prior to a reintroduction. Some factors to consider include behavior, diseases, general ecology of the species, habitat requirements, inter- and intra-species competition, life history, genetics, management practices, population dynamics, and predators. Consideration should be given to whether there have been significant habitat changes since the species' extirpation (e.g., is the area still within the species' natural range?).

3.2.9.7 Fish and Wildlife Control

These activities involve the control, relocation, and/or removal of native species, including predators, to maintain natural diversity of fish, wildlife, and habitats. These management actions may be employed with species of fish and wildlife within their original range to restore other depleted native populations. These activities are subject to appropriate NEPA compliance, an ANILCA Section 810 determination, and a refuge compatibility determination.

Predator management includes the relocation, removal, sterilization, and other management of native predators to accomplish management objectives. The Service considers predator management to be a legitimate conservation tool when applied in a prudent and ecologically sound manner and when other alternatives are not practical. The key requirements are that a predator-management program be ecologically sound and biologically justified. In keeping with the Service's mandate to first and foremost maintain the biological integrity, diversity, and environmental health of fish and wildlife populations at the refuge scale, a predator population will not intentionally be reduced below a level consistent with the low end of natural population cycles (see Service Manual 601 FW 3).

A predator-management program requires appropriate NEPA compliance, an ANILCA Section 810 determination, and, if conducted by other than the Service or an agent of the Service, a refuge compatibility determination. Alternative management actions must be evaluated prior to pursuing direct predator-control activities. Any proposal to allow or implement a predator-management program on national wildlife refuges in Alaska will be subjected to public review and closely coordinated with the Alaska Department of Fish &

Game, local communities, tribal governments, and adjacent landowners and/or managers. Predator-management activities must be monitored and evaluated for effectiveness and resource impacts.

Normal environmental education and population-management activities—such as trapper education programs and regulation changes that allow for increased harvests of predatory animals by licensed trappers and hunters—are not considered to be “predator management.” The control or extirpation of nonnative predators is not considered to be “predator management” (see section 3.2.9.8).

3.2.9.8 Management of Nonnative, Invasive, and Pest Species

In general, nonnative species (including feral domestic animals) are not compatible with refuge purposes or with Refuge System policies. When a nonnative species (fish, wildlife, or plants) occurs on a refuge, the Service may control or eliminate that species. Where a population of a nonnative species has already been established on a refuge and this population does not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the Refuge, the species may be managed as part of the Refuge’s diverse ecosystems.

Pests are defined as those organisms (vertebrates, invertebrates, plants, and microorganisms and their vectors) that are detrimental to fish, wildlife, human health, fish and wildlife habitat, or to established management goals. Pests also include noxious weeds and other organisms that are classified as pests by law (Administrative Manual 30 AM 12).

Invasive species are nonnative species whose introduction causes or is likely to cause economic or environmental harm, or harm to human health. The Federal government is prohibited by Executive Order, law, and policy from authorizing, funding, or carrying out actions that are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere (Service Manual 620 FW 1). Refuge managers conduct habitat management activities to prevent, control, or eradicate invasive species using techniques described through an integrated pest management plan or other similar management plan. Refuge integrated pest management planning will address the advantages and limitations of potential techniques, including chemical, biological, mechanical, and cultural techniques. Management of invasive species on refuges is guided by the National Strategy for Invasive Species Management and conducted within the context of applicable policy (Service Manual 620 FW 1).

By definition, invasive species cause significant impacts to the land and water resources or to the species of plants and animals that use these habitats. To manage invasive plants, the Refuge will include weed inventories as part of all habitat inventories. The Refuge will review the proposed action’s potential to introduce or spread invasive plants and will take measures to reduce the hazards (e.g., require weed-free feed for pack animals).

Introduced vertebrates (e.g., fox and rats) may also adversely affect wildlife populations, particularly in island ecosystems where species historically occurred without vertebrate predators. Presence of these invasive species may interfere with attainment of refuge purposes and management goals.

Pests on refuges may also be controlled to prevent damage to private property, and routine protection of refuge buildings, structures and facilities is addressed in refuge policy (Refuge Manual 7 RM 14).

The Refuge will coordinate with other landowners and agencies and use integrated pest management practices to enhance the detection, prevention, and management of invasive species and other pests. Use of chemical control measures on refuge lands requires regional office review and approval of a pesticide-use proposal (Administrative Manual 30 AM 12 and Refuge Manual 7 RM 14).

Tetlin Refuge initiated a baseline inventory of nonnative plant species in 2005. Following the completion of this inventory, strategies for long-term monitoring and management of these species will be included in various step-down plans.

3.2.9.9 Disease Prevention and Control

Certain disease organisms, viruses or vectors of disease (e.g., rabies or parasites) may threaten human health or the health and survival of native wildlife or plant species. These threats may be managed or eliminated after consideration of all reasonable options and consultation with the State of Alaska and other concerned parties. This will normally only occur when severe resource damage is likely or when public health or safety is jeopardized. Wherever possible, an integrated approach to pest management will be used in accordance with the Service's Administrative Manual (30 AM 12) and Refuge Manual (7 RM 14). If chemical controls are used, a pesticide-use proposal must be approved.

3.2.9.10 Fishery Restoration

Fishery restoration is any management action that increases fishery resources to allow full use of available habitat or to reach a population level based on historical biologic data. Although the goal of restoration is self-sustaining populations, situations may exist in which some form of fishery management or facilities could continue indefinitely.

Where fishery resources have been severely adversely affected, the Refuge will work with the State of Alaska, local tribes, and other partners to restore habitats and populations to appropriate, sustainable conditions. Restoration emphasis will focus on strategies that are the least intrusive to ecosystems and do not compromise the viability or genetic characteristics of the depleted population. This may include regulatory adjustments and/or evaluations of escapement goals.

3.2.9.11 Fishery Enhancement

Fishery enhancement is any management action or set of actions that is applied to a fishery stock to supplement numbers of harvestable fish to a level beyond that which could be naturally produced based on a determination or reasonable estimate of historic levels. This could be accomplished by stocking barren lakes, providing access to barren spawning areas (fish passages), constructing hatcheries, outstocking in productive systems, or fertilizing rearing habitat.

Refuge management priorities will focus on conserving naturally diverse ecosystems. Fishery enhancement facilities for the purpose of artificially increasing fish populations normally will not occur within any management category. However, ADF&G will be allowed to continue

periodic restocking of Hidden Lake with rainbow trout to maintain this road-accessible recreational fishery enhancement project, which has been in operation since 1982. Otherwise, only small scale stocking projects involving native species will be considered.

Additional proposals for fishery enhancement projects will be subject to the provisions of NEPA regulations, an ANILCA Section 810 determination, and a refuge compatibility determination. In addition, any additional fishery enhancement project must be consistent with the Service's Policy on Maintaining Biological Integrity, Diversity and Environmental Health of the National Wildlife Refuge System. Only temporary fishery enhancement facilities may be authorized in Minimal Management areas.

3.2.10 Subsistence Use Management

Providing the opportunity for continued subsistence use by local residents is one of the purposes of every national wildlife refuge in Alaska except the Kenai National Wildlife Refuge, as stated in Title III of ANILCA. Title VIII of ANILCA further provides that rural Alaska residents engaged in a subsistence way of life be allowed to continue using resources within refuges for traditional purposes. These resources include fish and wildlife, house logs and firewood, and other plant materials (berries, bark, etc.). Many aspects of subsistence management are addressed outside of refuge comprehensive conservation plans. The Federal Subsistence Board, through its rule-making process, addresses seasons, harvest limits, and customary and traditional use determinations. The Federal board has established Regional Subsistence Advisory Councils to provide for meaningful public input to the rule-making process.

The Refuge will work with others to monitor subsistence harvest. The Refuge will supplement the State's ongoing harvest and resource monitoring programs to provide additional information on the status of fish and wildlife populations harvested for subsistence uses. This monitoring is intended to identify potential problems before populations of fish and wildlife become depleted and to ensure preference is given to subsistence users as required by law. All information the Refuge gathers through subsistence monitoring will be shared with local State fish and game advisory committees, tribes, and other entities. Refuge staff attend various subsistence-related meetings, including those of local fish and game advisory committees and Regional Subsistence Advisory Councils, and provide information on the status of subsistence resources and management.

The noncommercial gathering by local rural residents of fruits, berries, mushrooms, and other plant materials for subsistence uses and of dead standing or down timber for firewood is allowed without a special use permit. Harvest of live standing timber for house logs, firewood, or other uses is allowed, although specific requirements vary by size and location. See 50 CFR 36.15 for specific details. Timber stocks subject to subsistence use will also be monitored to ensure they remain available over the long term.

Under Section 816 of ANILCA, refuge lands may be closed to the taking of fish and wildlife if closure is deemed necessary for reasons of public safety or administration, or to ensure the continued viability of particular populations of fish or wildlife. Emergency closure to subsistence taking generally would occur only after other consumptive uses competing for the resources were restricted or eliminated.

3.2.10.1 Access for Subsistence Purposes

Access to refuge lands by traditional means will be allowed for subsistence purposes in accordance with Section 811 of ANILCA, subject to reasonable regulation (50 CFR 36.12). Traditional means include snowmachines, motorboats, dog teams, and other means of surface transportation traditionally used by local rural residents engaged in subsistence activities. Use of these traditional means of travel will be in compliance with State and Federal law in such a manner to prevent waste of harvested resources or damage to the Refuge and to prevent herding, harassment, hazing, or driving of wildlife.

A traditional use determination completed and approved as part of the Tetlin Refuge Public Use Management Plan (USFWS 1997a) found the use of all-terrain vehicles (ATVs), three-wheelers, four-wheelers, tracked vehicles, or other off-road vehicles (ORVs) was very limited and that these vehicles were not traditionally used for subsistence purposes on the Refuge. Boats and highway vehicles were identified as the primary modes of transportation in the area (USFWS 1997a).

3.2.10.2 Section 810 Evaluations

The Refuge will evaluate the effects of proposed activities on subsistence use to ensure compliance with Section 810 of ANILCA. The Refuge will work with the Federal Subsistence Board, Regional Subsistence Advisory Councils, local fish and game advisory committees, tribes, Native corporations, the Alaska Department of Fish & Game, and other appropriate local sources to determine whether a proposed activity would “significantly restrict” subsistence uses. If the Refuge determines that a proposal would probably result in adverse effects to subsistence use, the Refuge would follow the requirements identified in Section 810 before making a final decision on the proposal.

3.2.11 Public Access and Transportation Management

3.2.11.1 Snowmachines, Motorboats, Airplanes, and Nonmotorized Surface Transportation

Section 1110(a) of ANILCA allows the use of snowmachines (during periods of adequate snow cover and frozen river conditions), motorboats, airplanes, and nonmotorized surface transportation methods for traditional activities and for travel to and from villages and homesites. Such access shall be subject to reasonable regulations to protect the natural and other values of the Refuge (43 CFR 36.11). Specific areas may be closed, in accordance with these regulations, to such uses. The refuge manager is responsible for determining when snow cover is adequate to protect the underlying vegetation and soil from damage by snowmachine use.

3.2.11.2 Off-Road Vehicles

The regulations at 43 CFR 36.11(g) restrict the use of off-road vehicles within refuges. The definition of off-road vehicles in 50 CFR 36.2 excludes snowmachines but includes air boats and air-cushion vehicles along with motorized wheeled vehicles. Off-road vehicles may be allowed only on designated routes or areas within Intensive and Moderate management areas or by special use permit.

As part of the Tetlin Refuge Public Use Management Plan (USFWS 1997a), it was determined the use of air boats and air cushion vehicles would result in extensive impacts to nesting

waterfowl within the Refuge. As a result, it was determined no area of the Refuge should be designated for the use of these vehicles.

3.2.11.3 Helicopters

The use of a helicopter in any area other than at designated landing areas pursuant to the terms and conditions of a permit issued by the Service, or pursuant to a memorandum of understanding between the Service and another party, or involved in emergency or search and rescue operations is prohibited (43 CFR 36.11(f)(4)).

Helicopter landings for volcano monitoring, geologic hazards evaluations, and fisheries and wildlife management activities may be authorized under special use permit or other authorization, subject to site-specific stipulations. Helicopter landings for initial-attack fire suppression must comply with operational guidance in the Alaska Interagency Wildland Fire Management Plan.

3.2.11.4 Access to Inholdings

Section 1110(b) of ANILCA ensures adequate and feasible access, for economic or other purposes, across a refuge for any person or entity that has a valid inholding. An inholding is defined as State-owned or privately-owned land, including subsurface rights underlying public lands, valid mining claims, or other valid occupancy that is within or effectively surrounded by one or more conservation system units. When a right-of-way permit is necessary under this provision (e.g., construction of permanent or long-term facilities), the Service will review and process the application in accordance with regulations at 43 CFR 36 and 50 CFR 29. Such permits are subject to terms and conditions as specified in the regulations.

3.2.11.5 Temporary Access

43 CFR 36.12(a)(2) defines temporary access as “limited, short-term (i.e., up to one year from issuance of the permit) access which does not require permanent facilities for access to State or private lands.” Temporary access is limited to survey, geophysical, exploratory, or other temporary uses of nonfederal lands and where access is not otherwise provided for in 43 CFR 36.10 or 43 CFR 36.11.

The Refuge will evaluate applications for temporary access across the Refuge and shall issue a permit with the necessary stipulations and conditions to ensure that the access granted is compatible with the purposes for which the Refuge was established, that it complies with the provisions of Section 810 of ANILCA, and that it ensures that no permanent harm will result to refuge resources.

3.2.11.6 Subsistence Access

See Access for Subsistence Purposes under Subsistence Use Management (section 3.2.10.1).

3.2.11.7 Transportation and Utility Systems

Transportation and utility systems include roads, highways, railroads, airports, pipelines, electrical transmission lines, communication systems, and related structures and facilities reasonably and minimally necessary for the construction, operation, and maintenance of such systems (Section 1102 of ANILCA). Anyone seeking to acquire a right-of-way across refuge lands for a transportation or utility system must, consistent with 43 CFR 36, file an application

with the regional office. Regulations at 43 CFR 36 and 50 CFR 29 establish specific procedures and time constraints for application review, compliance with NEPA, decision-making, and appeals.

The Service will decide whether to approve or disapprove that portion of a transportation or utility system that would cross refuge lands.

A right-of-way for a transportation or utility system across refuge lands can be granted only if the system meets the compatibility standard, the criteria outlined in Section 1104(g)(2) of ANILCA, and the regulations at 43 CFR 36.7(a)(2), and if there is no economically feasible and prudent alternative route for the system. If approved, permits issued for a transportation or utility system will contain terms and conditions as required under regulations at 43 CFR 36.9(b) and 50 CFR 29.21 through 29.24. Additional special requirements apply to rights-of-way for pipelines issued under the Mineral Leasing Act of 1920 (30 U.S.C. 185), Section 1107(c) of ANILCA, and regulations at 43 CFR 36.9(d).

When considering an application for a transportation or utility system, the authorization process would incorporate a corresponding comprehensive conservation plan amendment to update the desired management category(s) of the affected area if the system were to be approved.

3.2.11.8 State Transportation Planning

Federal transportation planning regulations require each State to develop a long-range statewide transportation plan in consultation and coordination with other government agencies and the public. In Alaska, transportation projects nominated for funding are evaluated and ranked by the Alaska Department of Transportation and Public Facilities. When appropriate, the Refuge will participate in the State transportation planning process and provide input regarding environmental considerations of proposed projects affecting refuge lands and resources. See Appendix D of this plan for a discussion of State-identified potential transportation and utility systems that cross refuge lands.

3.2.11.9 RS 2477 Rights-of-Way

The State of Alaska asserts numerous claims to roads, trails, and paths across Federal lands under Revised Statute 2477 (RS 2477), a section in the Mining Act of 1866 that states, “The right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted.” RS 2477 was repealed by the Federal Land Policy and Management Act of 1976, subject to valid existing claims.

Assertion and identification of potential rights-of-way does not establish the validity of these claims nor the public’s right to use them. The validity of all RS 2477 rights-of-way will be determined on a case-by-case basis, either through the courts or by other legally binding document. The State of Alaska has identified seven routes on Tetlin Refuge it asserts may be claimed as rights-of-way under RS 2477 (see Table D-1 and Appendix D).

3.2.11.10 17(b) Easements

Section 17(b) of the Alaska Native Claims Settlement Act of December 18, 1971, authorizes the Secretary of the Interior to reserve easements on lands conveyed to Native corporations to guarantee access to public lands and waters. Easements across Native lands include linear

easements (e.g., roads and trails) and site easements. Site easements are reserved for use as temporary campsites and to change modes of transportation.

The Service is responsible for administering those public easements inside and outside refuge boundaries that provide access to refuge lands. Service authority for administering 17(b) easements is restricted to the lands within the easement. The size, route, and general location of 17(b) easements are identified on maps filed with conveyance documents. Conveyance documents also specify the terms and conditions of use, including the acceptable periods and methods of public access. See Appendix D for additional information.

3.2.11.11 Navigation Aids and other Facilities

Section 1310 of ANILCA authorizes reasonable access to and operation and maintenance of existing air and water navigation aids, communications sites, and related facilities. It authorizes existing facilities for weather, climate, and fisheries research and monitoring subject to applicable laws and regulations. It also provides for reasonable access to and operation and maintenance of facilities for national defense and related air and water navigation.

New facilities shall be authorized only after consultation with the head of the Federal department or agency undertaking the establishment, operation, or maintenance and in accordance with mutually agreed to terms and conditions.

3.2.12 Recreation and Other Public Use

Public recreation activities compatible with refuge purposes are authorized unless specifically prohibited (50 CFR 36.31). Compatible recreation uses of the Refuge will continue. The Refuge Administration Act identifies compatible hunting, fishing, wildlife observation and photography, and environmental education and interpretation as priority public uses. These uses are encouraged and will receive emphasis in public use management.

Both consumptive (e.g., hunting, fishing, and trapping) and nonconsumptive (e.g., wildlife observation and photography) recreation uses are appropriate. Some recreational uses are incidental to others. For example, camping and hiking may be related to hunting, fishing, wildlife photography, or other recreational uses.

There is often a fine line between subsistence and recreation use (e.g., berry picking). Subsistence uses are addressed under Subsistence Use Management (section 3.2.10). When it is necessary to restrict the taking of fish and wildlife on a refuge to protect the continued viability of such populations, the taking of fish and wildlife for nonwasteful subsistence uses on refuges shall be accorded priority over the taking of fish and wildlife for other purposes, in accordance with Title VIII of ANILCA.

The Refuge will be managed to provide recreation experiences in generally natural wildland settings. Recreation use would be managed consistent with the designated management area category. Intensive and Moderate management areas will be managed for greater concentrations of visitors than will be Minimal management areas. The Refuge will manage all recreation use to avoid crowded conditions and to minimize adverse effects to cultural resources, fish and wildlife, and other special values of the Refuge. "Leave No Trace" will be the standard.

The least intrusive means of managing use will be employed. Education will be the primary management tool for recreation management, using brochures, maps, signs, and personal contacts. However, if voluntary methods fail, other actions may be taken. Actions that may be taken to manage recreation include limiting commercial guiding and outfitting; regulating use and access subject to the provisions of Section 1110(a) of ANILCA; and recommending changes in State and/or Federal fishing, hunting, and/or trapping regulations. When necessary, recreation opportunities may be seasonally or otherwise restricted to minimize user conflicts and protect the natural or other values of a refuge.

Any restrictions on public use will follow the public participation and closure procedures at 50 CFR 36, 43 CFR 36, or other applicable regulations. State management actions available through the Master Memorandum of Understanding (see Appendix B) and other State management tools will also be used where mutually desirable.

A Public Use Management Plan (also known as a Visitor Services Plan: USFWS 1997a) has been prepared for Tetlin Refuge. This plan will be revised following approval of this comprehensive conservation plan. More specific management plans may be prepared for areas of relatively concentrated use.

3.2.13 Public Use Facilities

Facilities may be provided to support certain recreation and other public uses. Recreation facilities may be located on refuge lands and at administrative sites. Visitor centers and highly developed environmental education and interpretive sites may be located off refuge lands at administrative sites or other appropriate locations. Public use facilities may include roads, trails, boat launch sites, airstrips, campgrounds, interpretive sites, environmental education sites, visitor centers, public use cabins, visitor contact facilities, and signs.

All new buildings (e.g., visitor centers, restrooms, public use cabins, and visitor-contact buildings), some recreation facilities (e.g., fishing platforms), and additions and alterations to existing buildings will comply with current accessibility standards. Other non-building recreation facilities (e.g., campgrounds, trails) are not currently covered under these standards, although access for the disabled will be considered in the design of new or upgraded facilities. As funds are available, existing buildings will be updated to meet these standards.

The level of development and appearance of facilities will be appropriate for the management category of the area in which they are located. More intensive and sophisticated facilities will be constructed in the Intensive management category; more rustic and rudimentary facilities will occur in the other management categories.

3.2.13.1 Cabins

Special use permits are required for subsistence and commercial cabins. Management of existing cabins and review of proposals for construction of new cabins for traditional uses will be in accordance with the Service's cabin regulations (50 CFR 36.33) and regional cabin policy. Private recreation-use cabins will not be authorized.

Public use cabins are intended to provide the public with unique opportunities to enjoy and use the Refuge. They also help ensure public health and safety in bad weather and emergencies.

Three administrative cabins are available for public use by permit under a first-come, first-served reservation request system. Requests can be made for up to five consecutive days and not more than 120 days in advance. Because these are administrative cabins, refuge management activities take priority over public uses; therefore, requests do not guarantee use of a cabin. However, in the past the Refuge has made, and will continue to make, every effort to keep cabins available for public use during the peak summer and fall use seasons.

3.2.13.2 Temporary Facilities for the Taking of Fish and Wildlife

Per Section 1316 of ANILCA, the Refuge will allow the use of temporary campsites, tent platforms, shelters, and other temporary facilities and equipment directly and necessarily related to the taking of fish and wildlife, provided these facilities are not detrimental to refuge purposes. Special use permits may be issued for tent frames, caches, smokehouses, and other facilities. Appropriate stipulations will be included in the special use permits to ensure protection of refuge resources.

The following criteria will be considered in evaluating applications for temporary facilities:

- Where feasible, they will be located in a manner to not displace or compete with existing public uses.
- They will be located away from the vicinity of existing cabins.
- They will be located on sites that are not currently popular campsites.
- They will be located to minimize displacement of wildlife.

The following conditions may be imposed on temporary facility special use permits:

- The time of occupancy will coincide with the State and/or Federal hunting, fishing, and/or trapping season for the species for which the temporary facility is being used.
- At the end of the specified occupancy, tents and other readily portable materials will be removed.
- To the extent feasible, temporary structures will be built with materials that blend into and are compatible with the surrounding landscape.
- To the extent feasible, temporary facilities will be screened from water and located so that they are as unobtrusive as possible when viewed from trails and areas of significant public use.

3.2.14 Outreach

Outreach is two-way communication between the Refuge and the public to establish mutual understanding, promote public involvement, and influence public attitudes and actions. The Refuge will continue to take advantage of partnership opportunities in providing these services, including working with the Alaska Natural History Association; Alaska Public Lands Information Centers; Friends of Alaska National Wildlife Refuges; local, State, and other Federal agencies; local schools; tribal governments; Alaska Native organizations; and others.

Use of outreach as a management tool is key to the success of many of the management activities outlined in this plan. Two outreach activities—environmental education and interpretation—are included in the six priority public uses identified in the Refuge Improvement Act and are purposes identified in ANILCA for which Tetlin Refuge was established. Many other activities are also available for use by the refuge staff in its outreach

program, which may be developed in more detail as a step-down management plan. All outreach activities must be continually evaluated to determine whether they fulfill refuge management goals and objectives. The Refuge will ensure that these services are available to all segments of the public, including those with disabilities and those who speak languages other than English.

Refuge staff will work with the news media, attend public meetings and workshops, develop Internet home pages, invite the public to the Refuge (open houses), and foster one-on-one communication.

3.2.15 Commercial-Use Management

Commercial uses are activities involving use of a refuge or its resources for a profit. Subsistence uses are not included in commercial uses. Refer to section 3.2.10 for policies related to subsistence.

Except for mining on valid claims under the 1872 Mining Law (of which there are none on Tetlin Refuge lands), other activities where specific property rights are held by entities other than the Federal government, or where specifically exempted by law, all commercial uses must comply with both NEPA and the compatibility requirements of the Refuge Administration Act. A written authorization (such as a special use permit) is required to conduct commercial activities on any refuge. Compliance with NEPA and a refuge compatibility determination will be required prior to deciding whether to authorize a commercial use. Prior to authorizing any economic use of a natural resource, the refuge manager must determine that each use, except for proposed activities authorized by ANILCA, contributes to the achievement of refuge purposes or the Refuge System mission (50 CFR 29.1).

3.2.15.1 Commercial Recreation Services

Air-taxi and water-taxi operators, wildlife-viewing guides, tour operators, recreational fishing guides, big-game hunting guides, and others providing recreation services are required, under 50 CFR 27.97, to obtain special use permits to operate on refuge lands. Where the number of special use permits is limited, refuge managers will award permits competitively (50 CFR 36.41). Special use permits require compliance with all applicable laws and regulations (e.g., United States Coast Guard licensing regulations). Permit stipulations ensure that camps; travel methods; storage of food, fish, and game meat; and activities are compatible with refuge purposes and reduce the potential for impacts to resources and to other refuge users. If problems arise relating to commercial recreation activities—such as disturbance of active nests, conflicts with subsistence use, chronic incidence of bears getting into food, or violations of State or Federal regulations—the Refuge may modify or terminate use under the special use permit stipulations. The Refuge will monitor the number and type of guides and outfitters operating in the Refuge and the number of clients and will, if necessary, further regulate use.

Currently the only commercial recreation service limited by the Refuge is big-game guiding. Tetlin Refuge contains three big-game guide areas. Permits are awarded by a competitive process for a period of five years and may be renewed noncompetitively for another five years, after which time the Service's regional competitive process begins again. Guides are permitted to harvest a limited number of animals each year and must follow a number of permit stipulations as required by regulation, Service policy, and their permit prospectus. Under Section 1307 of ANILCA, local preference is provided for all new commercial visitor services

except guiding for recreational hunting and fishing. Regulations defining local preference are at 50 CFR 36.37.

3.2.15.2 Mineral Exploration and Development

Oil and Gas Assessment

Geological and geophysical studies, including subsurface core sampling and seismic activities, require special use permits with site-specific stipulations that ensure compatibility with refuge purposes and consistency with the management objectives of this plan. Decisions to allow exploration will be made on a case-by-case basis.

Oil and Gas Leasing

Oil and gas leasing may be allowed only in Intensive management areas. Oil and gas leasing will not be authorized until completion of the following:

- An assessment of potential
- A national interest determination
- A refuge compatibility determination, where applicable
- A comprehensive conservation plan amendment

During this process, the Service will seek the views of State and local governments and other interested parties, in accordance with Section 1008(b)(2) of ANILCA.

If leasing is authorized, lease holders will be subject to Federal leasing regulations (43 CFR 3100) and appropriate State regulations. Leases will be subject to stipulations on access, seasonal use, and site restoration; operators would be required to use technology that minimizes impacts on fish, wildlife, and habitat. The Refuge will work closely with leaseholders to minimize adverse effects of mineral exploration and extraction on refuge resources and recreation opportunities.

Sand, Gravel, and Other Common Variety (Saleable) Minerals

Common variety minerals—such as sand, gravel, stone, limestone, pumice, pumicite, cinders, and clay—may be sold pursuant to the Materials Act of July 31, 1947 (30 U.S.C. 601 and 602), as amended. Regulations are found at 43 CFR 3600. Disposal is also authorized under the Refuge Revenue Sharing Act (16 U.S.C. 715s). Also see 612 FW 1 of the Service Manual. Extraction may be authorized, where compatible, in Intensive management areas to support construction and maintenance projects on or near refuge lands if no reasonable material sites exist off refuge lands.

Other Mineral Leasing

In general, mineral leasing is not allowed on refuge land. Geothermal leasing is not allowed on refuges under Section 1014(c) of the Geothermal Steam Act (30 U.S.C. 1014). Coal mining is also prohibited, subject to valid existing rights, under Section 16 of the Federal Coal Leasing Amendment Act of 1975 (30 U.S.C. 201 Notes) and the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1272; 43 CFR 3400.2). In specific cases of national need, however, mineral exploration, development, or extraction may be permitted under Section 1502 of ANILCA. The President must determine that the national need for the mineral

activity outweighs the other public values of the land. Any recommendation by the President would take effect only after enactment of a joint resolution by Congress.

3.2.15.3 Commercial Fishing and Related Facilities

Under Section 304(d) of ANILCA, the Service will continue to allow individuals with valid commercial fishing rights or privileges to operate on the Refuge. The use of campsites, cabins, motor vehicles, and aircraft on the Refuge in support of commercial fishing is subject to reasonable regulation. Section 304(d) provides for restricting commercial fishing rights if the use is determined to be inconsistent with refuge purposes *and* to be a “significant expansion of commercial fishing activities . . . beyond the level of such activities during 1979.” The Service recognizes that fishery levels are cyclic and will take that into consideration when applying the 1979-level criteria. Any new fishery and related facilities and equipment will have to meet the compatibility standard.

Based upon available information, commercial fishing did not occur within what is now Tetlin Refuge before or during 1979. Local residents are known to have bartered and traded fish with trappers, traders and gold prospectors in the early 1900s, but these activities were part of a subsistence lifestyle and were not pursued for cash profit. Even taking into consideration that fishery levels are cyclic, the lack of evidence to suggest commercial fishing occurred prior to 1979 leads the Refuge to conclude that any future commercial fishing activity should be considered a significant expansion of this activity.

Aquaculture and mariculture support facilities may be allowed in Intensive management, subject to provisions of State and Federal laws. Seafood processing plants will not be allowed.

3.2.15.4 Commercial Harvest of Timber and Firewood

Commercial harvest of timber and firewood will only be authorized under a special use permit and when necessary to fulfill overall refuge management objectives. Within Moderate and Minimal management categories, commercial harvest of timber and firewood to accomplish management objectives will only occur when an approved refuge fire management plan identifies the need to reduce fuel loads in an area. Applicable Federal and State of Alaska guidelines for timber management will be followed.

3.2.15.5 Commercial Gathering of Other Resources

Commercial gathering of other resources (e.g., antlers or mushrooms) requires a special use permit under 50 CFR 27.51 and is allowed in Intensive and Moderate management.

3.2.15.6 Commercial Filming and Recording Activities

It is Service policy to provide refuge access and/or assistance to firms and individuals in the pursuit of commercial visual and audio recordings when they are compatible with refuge purposes or the mission of the Refuge System. Commercial films, television production, or sound tracks made within refuges for other than news purposes require a special use permit or authorization (43 CFR 5.1).

Commercial filming or recording activities such as videotaping, audio taping, and photography for the purpose of advertising products and services are subject to an A/V Production Permit (Refuge Manual 8 RM 16).

Permits are not required for still photography on refuge lands open to the general public, including commercial still photography, so long as no models or props that are not a part of the site's natural or cultural resources or administrative facilities are used (16 U.S.C. 4601-6d[c]).

3.2.15.7 Other Commercial Uses

Generally, other commercial uses such as grazing, agriculture, and hydroelectric power development will not be allowed. The Refuge will retain existing management direction from the 1987 Plan, which does not allow hydroelectric power development on refuge lands. See section 3.2.11 for transmission lines, pipelines, and other rights-of-way mentioned in Title XI of ANILCA.

3.2.16 Environmental Contaminants Identification and Cleanup

One goal of the Refuge Administration Act is to maintain the biological integrity, diversity, and environmental health of the Refuge System. In support of this goal, the Service studies environmental contaminants that may threaten trust species (i.e., those species for which the Service has primary jurisdiction) and other resources of the Refuge. This work will continue as new concerns are identified and as funding allows.

An assessment of known or suspected contaminants threats within the Refuge is ongoing as part of the national Contaminants Assessment Process. During comprehensive conservation plan revisions, existing information will be reviewed, and an assessment of potential contaminants threats will be entered into an electronic database. A contaminant assessment report will also be prepared.

When contaminants are identified on refuge lands, the Service will initiate discussions with the responsible party or parties to remedy the situation. If the Service caused the contamination, funds will be sought to define the extent and type of the contamination and to remedy it. Appropriate environmental regulations—including the Resource Conservation Recovery Act, Comprehensive Environmental Response and Compensation Liability Act, Oil Pollution Act of 1990, and State of Alaska regulations (e.g., 18 AAC 75)—would be followed during remediation work.

All spills of petroleum products and hazardous materials must be reported to the Alaska Department of Environmental Conservation and to the National Response Center. Incidents also need to be reported to the U.S. Fish & Wildlife Service Regional Spill Response Coordinator. The Refuge will refer to the U.S. Fish & Wildlife Service Region 7 Spill Response Contingency Plan and other relevant plans when responding to spills.

3.2.17 Administration of Tetlin National Wildlife Refuge

3.2.17.1 Administrative Sites and Visitor Facilities

Administrative sites include temporary and permanent field camps, residences, offices, and associated storage, communication, and transportation facilities. The type of administrative site and level of development will be consistent with the management intent of the management category in which they are constructed. Administrative field camps or other administrative facilities within the Minimal Management category will only be allowed when required to meet management objectives, when no reasonable alternative sites exist, and when

the facilities are essential to protect the health and safety of employees. New facilities would only be the minimum required to meet long-term needs.

Fuel storage or other hazardous material storage in conjunction with administrative sites will meet all Federal and State requirements for spill containment and storage.

Under Section 1306 of ANILCA, the Secretary of the Interior may establish administrative sites and visitor facilities, either within or outside the boundaries of a conservation system unit, in accordance with the unit's management plan and for the purposes of ensuring the preservation, protection, and proper management of the unit. Section 1306 further states that to the "extent practicable and desirable, the Secretary shall attempt to locate such sites and facilities on Native lands in the vicinity of the unit."

Department of Interior guidelines, developed in 1995 and implementing Section 1306, require that prior to initiating a search for an administrative site or visitor facility, site-selection criteria be developed, with public input, and all proposals be evaluated according to the site-selection criteria. If it is determined that Native lands satisfy the site-selection criteria and are desirable and practicable for the intended use, the highest ranked Native lands shall be selected as the preferred site, subject to a specific site evaluation. If no Native lands satisfy the site-selection criteria, the highest ranked parcel will become the preferred site. Public comments will be considered prior to making a final decision.

Applicability of Refuge Regulations to Off-Refuge Administrative & Visitor Facility Sites

Under 50 CFR 36.1(c), the Service is authorized to enforce regulations concerning public safety and protection of government property, and State of Alaska fish and wildlife regulations, on administrative and visitor facility sites that may be held in fee or less-than-fee title and are either inside or outside the approved boundaries of any Alaska national wildlife refuge.

Examples of such facilities administered by the Refuge include the Tetlin Refuge Visitor Center, Deadman Lake Campground, Lakeview Campground, Northway Bunkhouse, and the Tetlin Refuge main office in Tok.

3.2.17.2 Refuge Management Plans

Some management programs are addressed in sufficient detail in the comprehensive conservation plan to be integrated directly into the budgetary process. For other programs, it may be necessary to prepare step-down management plans to implement general strategies identified in this plan. Additional information on the step-down planning process can be found in 602 FW 3 of the Service Manual.

The following step-down management plans for Tetlin Refuge are required:

Station Safety Plan	Completed; annual review
Land Protection Plan	Completed 2001; next review scheduled for 2015
Fire Management Plan	Completed 2001; next review within three years of the Conservation Plan's approval
Wildlife Inventory and Monitoring Plan	Completed 1986; next review within two years of the Conservation Plan's approval
Public Use Management Plan/Visitor Services Plan	Completed 1997; next review within one year of the Conservation Plan's approval
Fisheries Management Plan	Completed 1990; next review within two years of the Conservation Plan's approval
Spill Prevention Plan	Completed 2004; next review 2008

In addition, the following optional step-down management plans have been or should be developed:

Cultural Resource Management (Guide) Plan	Completed 1996; next review scheduled for 2011 (15 years after completion of initial plan)
Habitat Management Plan	To be completed within five years of the Conservation Plan's approval
Aircraft Incident Plan	To be completed by 2008; annual review

3.2.18 Alaska Mineral Resource Assessment Program

Section 1010 of ANILCA requires that all Federal lands be assessed for their oil, gas, and other mineral potential, although Section 304(c) prohibits new hardrock mining on refuges. Mineral assessment techniques that do not have lasting impacts—such as side-scanning radar, trenching, and core drilling—may be allowed throughout the Refuge. Special use permits issued to other government agencies or their contractors for assessment work would include stipulations to ensure that the assessment program is compatible with refuge purposes. For example, stipulations may limit access during nesting, calving, spawning, or other times when fish and wildlife may be especially vulnerable to disturbance.

3.3 Management Categories Table

3.3.1 Introduction

This table lists activities, public uses, commercial uses, and facilities by management category. In some cases, it provides very specific guidance (such as for highway vehicles). In other cases

(such as for research and management facilities), the direction is general. While facilities may be allowed in all management categories, the types of facilities and how they would be constructed and operated vary widely by management category. The descriptions of the management categories reflect a clear distinction in the level of action, type of action, and constraints that may be placed on activities or development within the management categories. They should be used to reflect the desired future condition of the area when site-specific proposals are being evaluated. Activities allowed or authorized within the different categories will be managed differently depending on the management category in which they occur.

3.3.2 Definitions for Management Categories Table

The following are definitions for terms used in the table.

Allowed—Activity, use, or facility is allowed under existing NEPA analysis, appropriate use findings, refuge compatibility determinations, and applicable laws and regulations of the Service, other Federal agencies and the State of Alaska.

May be allowed—Activity, use, or facility may be allowed subject to site-specific NEPA analysis, an appropriate use finding (when required), a specific refuge compatibility determination (when required), and compliance with all applicable laws and regulations of the Service, other Federal agencies and the State of Alaska.

May be authorized—Activity, use or facility may be allowed; a special use permit or other authorization is required.

Not allowed—Activity, use or facility is not allowed.

The following terms are used:

NEPA analysis—All activities, uses and facilities proposed for a refuge that have the potential to result in significant effects on the environment require an analysis of potential environmental impacts under the National Environmental Policy Act. This analysis may be documented as a categorical exclusion (CE), an environmental assessment (EA), or an environmental impact statement (EIS), depending on the nature of the proposed project.

Appropriate Use—All uses over which the Service has jurisdiction must be determined to be appropriate following direction in Service Manual 630 FW 1. Hunting, fishing, wildlife observation and photography, and environmental education and interpretation are considered appropriate by national policy with no further analysis required. See section 3.2.4.1 for a description of the criteria used to determine if other uses are appropriate.

Compatibility—All activities, uses and facilities allowed on the Refuge, except management actions undertaken by or for the Service, must be compatible with the purposes of the Refuge and the mission of the Refuge System. The analysis that occurs results in a refuge compatibility determination. Management activities undertaken by the Service or by volunteers, cooperators, or contractors working for the Service, with limited exception, are exempt from compatibility review (Part 603 of the Service Manual).

Regulations—All activities, uses and facilities allowed on a refuge must comply with any applicable regulations, as published in the Code of Federal Regulations. Regulations are

developed by the Service through a public process to implement the legal authorities under which the Service manages the Refuge System. For more information on these regulations, see the appropriate topic in the Management Directions and Guidelines section of this chapter. For some activities, other Federal agency and/or State regulations may also apply.

Temporary—A continuous period of time not to exceed 12 months, except as specifically provided otherwise. Special use permits or other authorizations may prescribe a longer period of time, but the structures or other human-made improvements need to be readily and completely dismantled and removed from the site when the period of authorized use terminates.

The following guidelines apply to all activities, uses, and facilities allowed on a refuge.

Area or time restrictions—All activities and uses allowed on a refuge may be restricted in certain areas or at certain times at the discretion of the refuge manager and with the appropriate level of public involvement, by emergency (short-term) or permanent regulation, if necessary to protect refuge resources or human health and safety.

Management emergencies—Activities, uses and facilities not allowed on a refuge or in specific management categories may be allowed if naturally-occurring or human-caused actions adversely affect refuge resources or threaten human health and safety.

Table 3-2. Activities, public uses, commercial uses, and facilities by management category

Activity	Minimal Management	Moderate Management	Intensive Management
ECOSYSTEM, HABITAT, AND FISH AND WILDLIFE MANAGEMENT			
Ecosystem and Landscape Management			
Collecting Information on and Monitoring Ecosystem Components Data gathering, monitoring and maintaining a comprehensive data base of selected ecosystem components (plants, animals, fish, water, air). (See sections 3.2.9.1 and 3.2.9.2)	Allowed	Allowed	Allowed
Research and Management Access and collection of data necessary for management decisions or to further science by the Service. (See section 3.2.9)	Allowed	Allowed	Allowed
Access and collection of data necessary for management decisions or to further science by ADF&G.	Allowed	Allowed	Allowed
Access and collection of data necessary for management decisions or to further science by other researchers.	May be authorized	May be authorized	May be authorized
Research and Management Facilities May be permanent or temporary structures or camps including weirs, counting towers, and sonar counters. (See section 3.2.17.1)	May be allowed	May be allowed	May be allowed
Fish and Wildlife Habitat Management			
Describing, Locating, and Mapping Habitats Development of quantitative, written, and graphic descriptions of fish and wildlife habitat including water, food, and shelter components. (See section 3.2.9.1)	Allowed	Allowed	Allowed
Habitat Management (See section 3.2.8.1) <i>Mechanical Treatment</i> Activities such as cutting, crushing or mowing of vegetation; water control structures; fencing; or artificial nest structures.	Not allowed; with exceptions consistent with section 3.1.1	May be allowed	May be allowed
<i>Chemical Treatment</i> Use of chemicals to remove or control nonnative species. (See section 3.2.9.8)	May be allowed	May be allowed	May be allowed
<i>Manual Treatment</i> Use of hand tools to remove, reduce, or modify hazardous plant fuels or exotic plant species; or to modify habitats (e.g., remove beaver dams).	May be allowed	May be allowed	May be allowed

Activity	Minimal Management	Moderate Management	Intensive Management
Aquatic Habitat Modifications Activities such as stream bank restoration, passage structures, fish barriers, or removal of obstacles that result in physical modification of aquatic habitats to maintain or restore native fish species. (See section 3.2.8.1)	May be allowed	May be allowed	May be allowed
Fire Management—Prescribed Fires Fire ignited by management actions to meet specific management objectives. (See section 3.2.8.2)	May be allowed	May be allowed	May be allowed
Fire Management—Wildland Fire Use The planned use of naturally occurring fires to meet management objectives. (See section 3.2.8.2)	May be allowed	May be allowed	May be allowed
Fire Management—Fire Suppression Management actions intended to protect identified resources from a fire, extinguish a fire, or alter a fire’s direction of spread. (See section 3.2.8.2)	Allowed	Allowed	Allowed
Nonnative and Pest Plant Control Monitoring, extirpation, control, removal and/or relocation, and other management practices for pest and nonnative plant species. (See section 3.2.9.8)	May be allowed	May be allowed	May be allowed
Water Quality and Quantity Management Monitoring of water quality and quantity to identify baseline data and for management purposes; includes installation of gauging stations. (See section 3.2.7.2)	Allowed	Allowed	Allowed
Fish and Wildlife Population Management			
Reintroduction of Species The reintroduction of native species to restore natural diversity of fish, wildlife, and habitats. (See section 3.2.9.6)	May be allowed	May be allowed	May be allowed
Fish and Wildlife Control The control, relocation, sterilization, removal or other management of native species, including predators, to maintain natural diversity of fish, wildlife and habitats; favor other fish or wildlife populations; protect reintroduced, threatened, or endangered species; or restore depleted native populations. (See section 3.2.9.7)	May be allowed	May be allowed	May be allowed
Nonnative Species Management The removal or control of nonnative species (including predators). (See section 3.2.9.8)	May be allowed	May be allowed	May be allowed

Activity	Minimal Management	Moderate Management	Intensive Management
<p>Pest Management and Disease Prevention and Control Relocation or removal of organisms that threaten human health or survival of native fish, wildlife, or plant species. Management practices directed at controlling pathogens that threaten fish, wildlife, and people, such as rabies and parasite control. (See section 3.2.9.9)</p>	May be allowed	May be allowed	May be allowed
<p>Fishery Restoration Actions taken to restore fish access to spawning and rearing habitat, or actions taken to restore populations to historic levels. Includes harvest management, escapement goals, habitat restoration, stocking, egg incubation boxes, and lake fertilization. (See section 3.2.9.10)</p>	May be allowed	May be allowed	May be allowed
<p>Fishery Restoration Facilities Fisheries facilities may be permanent or temporary and may include hatcheries, fish ladders, fish passages, fish barriers and associated structures. (See sections 3.2.9.10 and 3.2.17.1)</p>	May be authorized	May be authorized	May be authorized
<p>Fishery Enhancement Activities applied to a fish stock to supplement numbers of harvestable fish to a level beyond what could be naturally produced based upon a determination or reasonable estimate of historic levels. (See section 3.2.9.11)</p>	May be allowed	May be allowed	May be allowed
<p>Fishery Enhancement Facilities May be permanent or temporary and may include hatcheries, egg incubation boxes, fish ladders, fish passages, fish barriers and associated structures. (See sections 3.2.9.11 and 3.2.17.1)</p>	May be authorized	May be authorized	May be authorized
<p>Native Fish Introductions Movement of native fish species within a drainage on the refuge to areas where they have not historically existed. (See section 3.2.9.6)</p>	May be allowed	May be allowed	May be allowed
<p>Nonnative Species Introductions Introduction of species not naturally occurring within the refuge. (See section 3.2.9.6)</p>	Not allowed	Not allowed except as described in Section 3.9	Not allowed

Activity	Minimal Management	Moderate Management	Intensive Management
SUBSISTENCE (See section 3.2.10)			
Subsistence Activities			
Fishing, Hunting, Trapping, and Berry Picking The taking of fish and wildlife and other natural resources for personal consumption, as provided by law.	Allowed	Allowed	Allowed
Collection of House Logs and Firewood <u>Harvesting</u> live standing timber greater than 6 inches diameter at breast height for personal or extended family use.	May be authorized	May be authorized	May be authorized
Collection of House Logs and Firewood Live trees between 3 and 6 inches diameter at breast height for personal or extended family use.	20 trees or less per year allowed; more than 20 trees per year may be authorized	20 trees or less per year allowed; more than 20 trees per year may be authorized	20 trees or less per year allowed; more than 20 trees per year may be authorized
Collection of Plant Materials Harvesting trees less than 3 inches diameter at breast height, dead standing or downed timber, grass, bark, and other plant materials used for subsistence purposes.	Allowed	Allowed	Allowed
Temporary Facilities Establishment and use of tent platforms, shelters, and other temporary facilities and equipment directly related to the taking of fish and wildlife. (See section 3.2.13.2)	Allowed	Allowed	Allowed
Subsistence Cabins – See Cabins (See also section 3.2.13.1)			
Subsistence Access – subject to reasonable regulations under provisions of Section 810 of ANILCA (See section 3.2.10.1)			
Use of snowmobiles, motorboats, and other means of surface transportation traditionally employed for subsistence purposes.	Allowed	Allowed	Allowed
ACCESS (See sections 3.2.11, and 3.2.12) Restrictions subject to provisions of Section 1110 of ANILCA as applicable; see also Subsistence Access section above.			
Foot	Allowed	Allowed	Allowed
Dogs and Dog Teams	Allowed	Allowed	Allowed
Other Domestic Animals Includes horses, mules, llamas, etc.	Allowed	Allowed	Allowed
Nonmotorized Boats Includes canoes, kayaks, rafts, etc.	Allowed	Allowed	Allowed

Activity	Minimal Management	Moderate Management	Intensive Management
Use of snowmachine, motorboats, airplanes and nonmotorized surface transportation methods for traditional activities and for travel to and from villages and homesites.	Allowed	Allowed	Allowed
Highway Vehicles	Not allowed	May be allowed on designated roads	Allowed on all-weather roads
Off-Road Vehicles (All-Terrain Vehicles) Includes air boats and air cushion vehicles. (See sections 3.2.10.1 and 3.2.11.2)	Not allowed; with exceptions consistent with section 3.2.11.2	May be allowed only on designated routes or areas; air boats and air cushion vehicles not allowed	May be allowed only on designated routes or areas; air boats and air cushion vehicles not allowed
Helicopters Includes all rotary-wing aircraft. (See section 3.2.11.3)	May be authorized	May be authorized	May be authorized
PUBLIC USE, RECREATION, and OUTREACH ACTIVITIES Also see ACCESS and Commercial Recreation sections.			
Hunting, Fishing, Wildlife Observation, Wildlife Photography, Interpretation, and Environmental Education Note: All activities listed are priority public uses (See sections 3.2 and 3.2.12)	Allowed	Allowed	Allowed
Trapping, Walking, Hiking, Camping at Undeveloped Sites, and Dog Sledding (See sections 3.2 and 3.2.12)	Allowed	Allowed	Allowed
General Photography See also COMMERCIAL USES. (See sections 3.2 and 3.2.12)	Allowed	Allowed	Allowed
Outreach Activities (See sections 3.1 and 3.2.14)	Allowed	Allowed	Allowed
Public Use and Recreation Facilities – level of development is consistent with management intent of the category (See section 3.2.13)			
All Weather Roads And associated developments including bridges.	Not allowed	May be allowed	May be allowed
Unimproved Roads Note: while unimproved roads are not allowed in Minimal management, Wilderness and Wild Rivers, roads may exist. In these management categories, the roads would not be designated for use or maintained.	Not allowed	May be allowed	May be allowed
Designated Off-Road Vehicle (All-Terrain Vehicle) Trails and Routes	Not allowed	May be allowed	May be allowed
Roadside Exhibits and Waysides	Not applicable	May be allowed	May be allowed
Constructed and Maintained Airstrips	Not allowed	May be allowed	May be allowed

Activity	Minimal Management	Moderate Management	Intensive Management
Cleared Landing Strips and Areas Includes unimproved areas where airplanes land. Minor brush cutting or rock removal by hand is allowed for maintenance.	May be allowed	May be allowed	May be allowed
Constructed Hiking Trails Includes bridges, boardwalks, trailheads, and related facilities.	May be allowed	May be allowed	May be allowed
Designated Hiking Routes Unimproved and unmaintained trails; may be designated by signs, cairns, and/or on maps.	Allowed	Allowed	Allowed
Boat Launches and Docks Designated sites for launching and storing watercraft or tying up a float plane.	May be allowed	May be allowed	May be allowed
Visitor Contact Facilities A variety of staffed and unstaffed facilities providing information on the refuge and its resources to the public; facilities range from visitor centers to kiosks and signs. (See section 3.2.13)	May be allowed	May be allowed	May be allowed
Campgrounds Developed sites accessible by highway vehicles.	Not applicable	May be allowed	May be allowed
Hardened Campsites Areas where people can camp that are accessible by vehicle or on foot but where the only facilities provided are for public health and safety and/or resource protection; may include gravel pads for tents, hardened trails, and/or primitive toilets. (See section 3.1)	Allowed	Allowed	Allowed
Temporary Facilities Includes tent frames, caches, and other similar or related facilities; does not include cabins. See also SUBSISTENCE, COMMERCIAL USES, and Administrative Facilities. (See section 3.2.13.2)	May be authorized	May be authorized	May be authorized
Cabins – also other related structures such as outdoor toilets, food caches, storage sheds, and fish drying racks (See section 3.2.13.1)			
Public Use Cabin A cabin administered by the Service and available for use by the public; intended only for short-term public recreational use and occupancy.	Existing cabins allowed to remain; new cabins may be allowed	Existing cabins allowed to remain; new cabins may be allowed	Existing cabins allowed to remain; new cabins may be allowed
Administrative Cabin Any cabin primarily used by refuge staff or other authorized personnel for the administration of the refuge. (See section 3.2.17.1)	May be allowed	May be allowed	May be allowed

Activity	Minimal Management	Moderate Management	Intensive Management
<p>Subsistence Cabin Any cabin necessary for health and safety and to provide for the continuation of ongoing subsistence activities; not for recreational use.</p>	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized
<p>Commercial Cabin Any cabin used in association with a commercial operation, including but not limited to commercial fishing activities and recreational guiding services.</p>	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized
<p>Other Cabins Cabins associated with authorized uses by other government agencies.</p>	May be authorized	May be authorized	May be authorized
Administrative Facilities (See section 3.2.17.1)			
<p>Administrative Field Camps Temporary facilities used by refuge staff and other authorized personnel to support individual (generally) field projects; may include, but not limited to, tent frames and temporary/portable outhouses, shower facilities, storage/maintenance facilities, and caches.</p>	May be allowed	May be allowed	May be allowed
<p>Administrative Field Sites Permanent facilities used by refuge staff or other authorized personnel for the administration of the refuge. Includes administrative cabins and related structures (see Cabins) and larger multi-facility administrative sites necessary to support ongoing field projects, research, and other management activities. Temporary facilities, to meet short-term needs, may supplement the permanent facilities at these sites.</p>	Use of existing sites allowed including replacement of existing facilities as necessary; new sites may be allowed	Use of existing sites allowed including replacement of existing facilities as necessary; new sites may be allowed	Use of existing sites allowed including replacement of existing facilities as necessary; new sites may be allowed
<p>Refuge Administrative Office Complex Facilities necessary to house refuge operations, outreach, and maintenance activities and associated infrastructure; includes staff offices, storage, maintenance, parking lots, and <u>other similar facilities</u>.</p>	Not allowed	Not allowed	May be allowed
<p>Hazardous Materials Storage Sites including appropriate structures and equipment necessary for the storage and transfer of fuels and other hazardous materials used for administrative purposes; must be in compliance with all Federal and State requirements.</p>	May be allowed	May be allowed	May be allowed

Activity	Minimal Management	Moderate Management	Intensive Management
Residences Residential housing for refuge staff and their families; includes single and multi-family dwellings.	Not allowed	Not allowed	May be allowed
Bunkhouses Quarters to house temporary and similar employees, volunteers, visitors, and other agency personnel.	Not allowed	May be allowed	May be allowed
Aircraft Hangars and Facilities for Storage of Aircraft	Not allowed	Not allowed	May be allowed
Boat Launches and Docks Designated sites for launching and storing watercraft or tying up a float plane.	May be allowed	May be allowed	May be allowed
Radio Repeater Sites Sites used to maintain radio communications equipment; may include helispots for access.	May be allowed	May be allowed	May be allowed
COMMERCIAL USES			
Except as noted, a special use permit or other <u>authorization</u> is required for economic use of a refuge.			
Guiding and Outfitting	May be authorized	May be authorized	May be authorized
Transporting	May be authorized	May be authorized	May be authorized
Fixed-Wing Air Taxis	May be authorized	May be authorized	May be authorized
Helicopter Air Taxis	May be authorized	May be authorized	May be authorized
Bus and Auto Tours	Not applicable	May be authorized	May be authorized
Mineral Exploration (See section 3.2.15.2)			
See section 3.2.18 for information on the Alaska Mineral Resource Assessment Program			
Surface Geological Studies Includes surface rock collecting and geological mapping activities (includes helicopter or fixed-wing access).	May be authorized	May be authorized	May be authorized
Geophysical Exploration and Seismic Studies Examination of subsurface rock formations through devices that set off and record vibrations in the earth. Usually involves mechanized surface transportation, but may be helicopter supported; includes studies conducted for the Department of the Interior.	May be authorized	May be authorized	May be authorized
Core Sampling Using helicopter transported motorized drill rig to extract subsurface rock samples; does not include exploratory wells; includes sampling conducted for Department of the Interior.	May be authorized	May be authorized	May be authorized

Activity	Minimal Management	Moderate Management	Intensive Management
Other Geophysical Studies Helicopter-supported gravity and magnetic surveys and other minimal impact activities that do not require mechanized surface transportation.	May be authorized	May be authorized	May be authorized
Mineral Development (see section 3.2.15.2)			
Oil and Gas Leasing Leasing, drilling, and extraction of oil and gas for commercial purposes. Includes all associated above and below ground facilities.	Not allowed	Not allowed	May be authorized
Sale of Sand, Gravel, and Other Common Variety Minerals Extraction of sand, gravel, and other saleable minerals for commercial purposes; includes commercial use by Federal, State, and local agencies.	Not allowed	Not allowed	May be authorized
Other Mineral Leasing Includes the extraction of coal, geothermal resources, potassium, sodium, phosphate, sulfur, or other leaseable minerals for commercial purposes. For cases of national need, see section 3.2.15.2.	Not allowed	Not allowed	Not allowed
Mining of Hardrock Minerals Development of valid (pre-ANILCA) mining claims (lode, placer, and mill sites) on refuge lands for the purpose of extracting hardrock minerals.	Not applicable	Not applicable	Not applicable
Other Commercial Activities			
Commercial Filming, Videotaping, and Audiotaping (See section 3.2.15.6)	May be authorized	May be authorized	May be authorized
Grazing (See section 3.2.15.7)	Not allowed	Not allowed	Not allowed
Agriculture (Commercial) (See section 3.2.15.7)	Not allowed	Not allowed	Not allowed
Commercial Fishery Support Facilities At or below 1979 levels. (See section 3.2.15.3)	Not applicable	Not applicable	Not applicable
Commercial Fishery Support Facilities Above 1979 levels. (See section 3.2.15.3)	May be authorized	May be authorized	May be authorized
Seafood Processing (See section 3.2.15.3)	Not allowed	Not allowed	Not allowed
Aquaculture and Mariculture Support Facilities (See section 3.2.15.3)	Not allowed	Not allowed	May be authorized
Commercial Timber & Firewood Harvest (See section 3.2.15.4)	May be authorized	May be authorized	May be authorized
Commercial Gathering of Other Refuge Resources (See section 3.2.15.5)	Not allowed	May be authorized	May be authorized

Activity	Minimal Management	Moderate Management	Intensive Management
<p>Transportation and Utility Systems Includes transmission lines, pipelines, telephone and electrical power lines, oil and gas pipelines, communication systems, roads, airstrips, and other necessary related facilities. Does not include facilities associated with on-refuge oil and gas development. (See section 3.2.11.7)</p>	<p>May be authorized; would require a plan amendment</p>	<p>May be authorized</p>	<p>May be authorized</p>
<p>Navigation Aids and Other Facilities Includes air and water navigation aids and related facilities, communication sites and related facilities, facilities for national defense purposes and related air/water navigation aids, and facilities for weather, climate, and fisheries research and monitoring; includes both private and government facilities. (See section 3.2.11.11)</p>	<p>May be authorized</p>	<p>May be authorized</p>	<p>May be authorized</p>
<p>Major Hydroelectric Power Development Hydroelectric dams creating a change in streamflow with an elevation change and reservoir behind the dam. (See section 3.2.15.7)</p>	<p>Not allowed</p>	<p>Not allowed</p>	<p>Not allowed</p>
<p>Small Hydroelectric Power Development Hydroelectric generation by low-head or instream structures that do not change the flow of the river. (See section 3.2.15.7)</p>	<p>Not Allowed</p>	<p>Not allowed</p>	<p>Not allowed</p>