

Glossary

accessible—Pertaining to physical access to areas and activities for people of different abilities, especially those with physical impairments.

adaptive resource management—The rigorous application of management, research, and monitoring programs to gain information and experience necessary to assess and change management activities; a process that uses feedback from research, monitoring programs, and evaluation of management actions to support or change objectives and strategies at all planning levels; a process in which policy decisions are carried out within a framework of scientifically driven experiments to test predictions and assumptions inherent in management plan. Analysis of results helps managers decide whether current management should continue as is or whether it should be modified to achieve desired conditions.

Administration Act—National Wildlife Refuge System Administration Act of 1966.

alternative—A reasonable way to solve an identified problem or satisfy the stated need (40 CFR 1500.2); one of several different means of accomplishing refuge purposes and goals and contributing to the Refuge System mission (Draft Service Manual 602 FW 1.5).

amphibian—A class of cold-blooded vertebrates including frogs, toads or salamanders.

annual—A plant that flowers and dies within 1 year of germination.

baseline—A set of essential observations, data, or information used for comparison or a control.

biological control—The use of organisms or viruses to control invasive plants or other pests.

biological diversity, also biodiversity—The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur (Service Manual 052 FW 1.12B). The National Wildlife Refuge System's focus is on indigenous species, biotic communities, and ecological processes.

biotic—Pertaining to life or living organisms; caused, produced by, or comprising living organisms.

candidate species, Federal—A plant or animal species proposed for addition to the Federal endangered and threatened species list. These species

have formerly been referred to as category 1 candidate species. From the February 28, 1996, Federal Register, page 7597: “those species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list but issuance of the proposed rule is precluded.”

canopy—A layer of foliage, generally the uppermost layer, in a vegetative stand; mid-level or understory vegetation in multilayered stands. Canopy closure (also canopy cover) is an estimate of the amount of overhead vegetative cover.

carrion—Dead animal body.

CCP—See comprehensive conservation plan.

CFR—See Code of Federal Regulations.

channel—The linear route along which surface water and ground water flow is concentrated.

channel morphology—the form and structure (such as width and depth) of a channel.

Code of Federal Regulations (CFR)—The codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government. Each volume of the CFR is updated once each calendar year.

compatibility determination—See compatible use.

compatible use—A wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the Director of the U.S. Fish and Wildlife Service, will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge (Draft Service Manual 603 FW 3.6). A compatibility determination supports the choice of compatible uses and identified stipulations or limits necessary to make sure that there is compatibility.

comprehensive conservation plan (CCP)—A document that describes the desired future conditions of the refuge and provides long-range guidance and management direction for the refuge manager to accomplish the purposes of the refuge, contribute to the mission of the Refuge System, and to meet other relevant mandates (Draft Service Manual 602 FW 1.5).

concern—See issue.

cover, also cover type, canopy cover—Present vegetation of an area.

cultural resources—The remains of sites, structures, or objects used by people in the past.

cygnet—A young swan.

EA—See environmental assessment.

ecosystem—A dynamic and interrelating complex of plant and animal communities and their associated nonliving environment; a biological community, with its environment, functioning as a unit. For administrative purposes, the Service has designated 53 ecosystems covering the United States and its possessions. These ecosystems generally correspond with watershed boundaries and their sizes and ecological complexity vary.

emergent—A plant rooted in shallow water and having most of the vegetative growth above water such as cattail and hardstem bulrush.

endangered species, Federal—A plant or animal species listed under the Endangered Species Act of 1973, as amended, that is in danger of extinction throughout all or a substantial part of its range.

endangered species, State—A plant or animal species in danger of becoming extinct or extirpated in a particular state within the near future if factors contributing to its decline continue. Populations of these species are at critically low levels or their habitats have been degraded or depleted to a substantial degree.

endemic species—Plants or animals that occur naturally in a certain region and whose distribution is relatively limited to a particular locality.

environmental assessment (EA)—A concise public document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action and alternatives to such action, and provides sufficient evidence and analysis of effects to decide whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

extinction—The complete disappearance of a species from the earth; no longer existing.

extirpation—The extinction of a population; complete eradication of a species within a specified area.

Federal trust resource—A trust is something managed by one entity for another who holds the ownership. The Service holds in trust many natural resources for the people of the United States of America as a result of Federal acts and treaties. Examples are species listed under the Endangered Species Act, migratory birds protected by international treaties, and native plant or wildlife species found on a national wildlife refuge.

Federal trust species—All species where the Federal Government has primary jurisdiction including federally endangered or threatened species, migratory birds, anadromous fish, and certain marine mammals.

forb—A broad-leaved, herbaceous plant; a seed-producing annual, biennial, or perennial plant that does not develop persistent woody tissue but dies down at the end of the growing season.

fragmentation—The alteration of a large block of habitat that creates isolated patches of the original habitat that are interspersed with a variety of other habitat types; the process of reducing the size and connectivity of habitat patches, making movement of individuals or genetic information between parcels difficult or impossible.

Friends group—Any formal organization whose mission is to support the goals and purposes of its associated refuge and the National Wildlife Refuge Association overall; Friends organizations and cooperative and interpretive associations.

FWS—See U.S. Fish and Wildlife Service.

geographic information system (GIS)—A computer system capable of storing and manipulating spatial data; a set of computer hardware and software for analyzing and displaying spatially referenced features (such as points, lines and polygons) with nongeographic attributes such as species and age.

GIS—See geographic information system.

GL—General Schedule classification and pay system for law enforcement officers.

goal—Descriptive, open-ended, and often broad statement of desired future conditions that conveys a purpose but does not define measurable units (Draft Service Manual 620 FW 1.5).

GS—General Schedule classification and pay system.

habitat—Suite of existing environmental conditions required by an organism for survival and reproduction; the place where an organism typically lives and grows.

habitat disturbance—Substantial alteration of habitat structure or composition; may be natural (for example, wildland fire) or human-caused events (for example, timber harvest and disking).

habitat type, also vegetation type, cover type—A land classification system based on the concept of distinct plant associations.

hydrologic regime—The system of a water cycle and its changes with time.

impoundment—A body of water created by collection and confinement within a series of levees or dikes, creating separate management units although not always independent of one another.

Improvement Act—National Wildlife Refuge System Improvement Act of 1997.

indigenous—Originating or occurring naturally in a particular place.

integrated pest management (IPM)—Methods of managing undesirable species such as invasive plants; education, prevention, physical or mechanical

methods of control, biological control, responsible chemical use, and cultural methods.

introduced species—A species present in an area because of intentional or unintentional escape, release, dissemination, or placement into an ecosystem as a result of human activity.

invasive plant, also noxious weed—A species that is nonnative to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health.

issue—Any unsettled matter that requires a management decision; for example, a Service initiative, opportunity, resource management problem, a threat to the resources of the unit, conflict in uses, public concern, or the presence of an undesirable resource condition (Draft Service Manual 602 FW 1.5).

listed species—A species, subspecies, or distinct vertebrate population segment that has been added to the Federal lists of Endangered and Threatened Wildlife and Plants as they appear in sections 17.11 and 17.12 of Title 50 of the Code of Federal Regulations (50 CFR 17.11 and 17.12).

management alternative—See alternative.

migration—Regular extensive, seasonal movements of birds between their breeding regions and their wintering regions; to pass usually periodically from one region or climate to another for feeding or breeding.

migratory birds—Birds that follow a seasonal movement from their breeding grounds to their wintering grounds. Waterfowl, shorebirds, raptors, and songbirds are all migratory birds.

mission—Succinct statement of purpose or reason for being.

mitigation—Measure designed to counteract an environmental effect or to make an effect less severe.

monitoring—The process of collecting information to track changes of selected parameters over time.

national wildlife refuge—A designated area of land, water, or an interest in land or water within the National Wildlife Refuge System, but does not include coordination areas; a complete listing of all units of the Refuge System is in the current “Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service.”

National Wildlife Refuge System (Refuge System)—Various categories of areas administered by the Secretary of the Department of the Interior for the conservation of fish and wildlife including species threatened with extinction, all lands, waters, and interests therein administered by the Secretary as wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game

ranges, wildlife management areas, and waterfowl production areas.

National Wildlife Refuge System Improvement Act of 1997 (Improvement Act)—Sets the mission and the administrative policy for all refuges in the National Wildlife Refuge System; defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation); establishes a formal process for determining appropriateness and compatibility; establishes the responsibilities of the Secretary of the Department of the Interior for managing and protecting the Refuge System. This Act amended parts of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966.

native species—A species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

neotropical migrant—A bird species that breeds north of the United States and Mexican border and winters primarily south of this border.

nest success—The percentage of nests that successfully hatch one or more eggs of the total number of nests started in an area.

nongovernmental organization—Any group that is not comprised of Federal, State, tribal, county, city, town, local, or other governmental entities.

noxious weed, also invasive plant—Any living stage (including seeds and reproductive parts) of a parasitic or other plant of a kind that is of foreign origin (new to or not widely prevalent in the United States) and can directly or indirectly injure crops, other useful plants, livestock, poultry, other interests of agriculture, including irrigation, navigation, fish and wildlife resources, or public health. According to the Federal Noxious Weed Act (PL 93–639), a noxious weed (such as invasive plant) is one that causes disease or has adverse effects on humans or the human environment and, therefore, is detrimental to the agriculture and commerce of the United States and to public health.

objective—A concise target statement of what will be achieved, how much will be achieved, when and where it will be achieved, and who is responsible for the work; derived from goals and provide the basis for determining management strategies. Objectives should be achievable and time specific and should be stated quantitatively to the extent possible. If objectives cannot be stated quantitatively, they may be stated qualitatively (Draft Service Manual 602 FW 1.5).

patch—An area distinct from that around it; an area distinguished from its surroundings by environmental conditions.

perennial—Lasting or active through the year or through many years; a plant species that has a lifespan of more than 2 years.

plant community—An assemblage of plant species unique in its composition; occurs in particular locations under particular influences; a reflection or integration of the environmental influences on the site such as soil, temperature, elevation, solar radiation, slope, aspect, and rainfall; denotes a general kind of climax plant community, such as ponderosa pine or bunchgrass.

prescribed fire—The skillful application of fire to natural fuels under conditions such as weather, fuel moisture, and soil moisture that allow confinement of the fire to a predetermined area and produces the intensity of heat and rate of spread to accomplish planned benefits to one or more objectives of habitat management, wildlife management, or hazard reduction.

priority public use—One of six uses authorized by the National Wildlife Refuge System Improvement Act of 1997 to have priority if found to be compatible with a refuge's purposes. This includes hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation.

proposed action—The alternative proposed to best achieve the purpose, vision, and goals of a refuge (contributes to the Refuge System mission, addresses the significant issues, and is consistent with principles of sound fish and wildlife management).

public—Individuals, organizations, and groups; officials of Federal, State, and local government agencies; American Indian tribes; and foreign nations. It may include anyone outside the core planning team. It includes those who may or may not have shown an interest in Service issues and those who do or do not realize that Service decisions may affect them.

public involvement—A process that offers affected and interested individuals and organizations an opportunity to become informed about, and to express their opinions on, Service actions and policies. In the process, these views are studied thoroughly and thoughtful consideration of public views is given in shaping decisions for refuge management.

purpose of the refuge—The purpose of a refuge is specified in or derived from the law, proclamation, Executive order, agreement, public land order, donation document, or administrative memorandum establishing authorization or expanding a refuge, refuge unit, or refuge subunit (Draft Service Manual 602 FW 1.5).

raptor—A carnivorous bird such as a hawk, a falcon, or a vulture that feeds wholly or chiefly on meat taken by hunting or on carrion (dead carcasses).

refuge purpose—See purpose of the refuge.

Refuge System—See National Wildlife Refuge System.

refuge use—Any activity on a refuge, except administrative or law enforcement activity, carried out by or under the direction of an authorized Service employee.

resident species—A species inhabiting a given locality throughout the year; nonmigratory species.

restoration—Management emphasis designed to move ecosystems to desired conditions and processes, such as healthy upland habitats and aquatic systems.

revetment—A structure to support a streambank.

riffle—The shallow zone between pools in a stream.

riparian area or riparian zone—An area or habitat that is transitional from terrestrial to aquatic ecosystems including streams, lakes, wet areas, and adjacent plant communities and their associated soils that have free water at or near the surface; an area whose parts are directly or indirectly attributed to the influence of water; of or relating to a river; specifically applied to ecology, “riparian” describes the land immediately adjoining and directly influenced by streams. For example, riparian vegetation includes all plant life growing on the land adjoining a stream and directly influenced by the stream.

riprap—A loose foundation of irregular rock fragments used under water for streambed protection or in soft materials to prevent streamside erosion.

scoping—The process of obtaining information from the public for input into the planning process.

section 7—The section of the Endangered Species Act that requires all Federal agencies, in consultation with the U.S. Fish and Wildlife Service, to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat.

sediment—Material deposited by water, wind, and glaciers.

Service—See U.S. Fish and Wildlife Service.

shelterbelt—Single to multiple rows of trees and shrubs planted around cropland or buildings to block or slow down the wind.

shorebird—Any of a suborder (*Charadrii*) of birds such as a plover or a snipe that frequent the sea-shore or mudflat areas.

spatial—Relating to, occupying, or having the character of space.

special use permit—A permit for special authorization from the refuge manager required for any

refuge service, facility, privilege, or product of the soil provided at refuge expense and not usually available to the public through authorizations in Title 50 CFR or other public regulations (Refuge Manual 5 RM 17.6).

species of concern—Those plant and animal species, while not falling under the definition of special status species, that are of management interest by virtue of being Federal trust species such as migratory birds, important game species, or significant keystone species; species that have documented or apparent populations declines, small or restricted populations, or dependence on restricted or vulnerable habitats.

stepdown management plan—A plan that provides the details necessary to carry out management strategies identified in the comprehensive conservation plan (Draft Service Manual 602 FW 1.5).

strategy—A specific action, tool, or technique or combination of actions, tools, and techniques used to meet unit objectives (Draft Service Manual 602 FW 1.5).

suppression—All the work of extinguishing a fire or confining fire spread.

threatened species, Federal—Species listed under the Endangered Species Act of 1973, as amended, that are likely to become endangered in the future throughout all, or a substantial part, of their range.

threatened species, State—A plant or animal species likely to become endangered in a particular state within the near future if factors contributing to population decline or habitat degradation or loss continue.

travel corridor—A landscape feature that facilitates the biologically effective transport of animals between larger patches of habitat dedicated to conservation functions. Such corridors may facilitate several kinds of traffic including frequent foraging movement, seasonal migration, or the once in a lifetime dispersal of juvenile animals. These are transition habitats and need not contain all the habitat elements required for long-term survival or reproduction of its migrants.

trust resource—See Federal trust resource.

trust species—See Federal trust species.

USDA—U.S. Department of Agriculture.

U.S. Fish and Wildlife Service (Service, FWS)—The principal Federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people. The Service manages the 93-million-acre National Wildlife Refuge System comprised of more than 530 national wildlife refuges and thousands of waterfowl production areas. It also operates 65 national fish hatcheries and 78 ecological service field stations, the agency

enforces Federal wildlife laws, manages migratory bird populations, restores national significant fisheries, conserves and restores wildlife habitat such as wetlands, administers the Endangered Species Act, and helps foreign governments with their conservation efforts. It also oversees the Federal aid program that distributes millions of dollars in excise taxes on fishing and hunting equipment to State wildlife agencies.

U.S. Geological Survey (USGS)—A Federal agency whose mission is to provide reliable scientific information to describe and understand the earth; decrease loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

USGS—See U.S. Geological Survey.

vision statement—A concise statement of the desired future condition of the planning unit, based primarily on the Refuge System mission, specific refuge purposes, and other relevant mandates (Draft Service Manual 602 FW 1.5).

wading birds—Birds having long legs that enable them to wade in shallow water including egrets, great blue herons, black-crowned night-herons, and bitterns.

waterfowl—A category of birds that includes ducks, geese, and swans.

waterfowl production area—Land that the National Wildlife Refuge System acquires with Federal Duck Stamp money for restoration and management, primarily as prairie wetland habitat critical to waterfowl and other wetland birds.

watershed—The region draining into a river, a river system, or a body of water.

wetland management district (WMD)—Land that the Refuge System acquires with Federal Duck Stamp money for restoration and management primarily as prairie wetland habitat critical to waterfowl and other wetland birds.

WG—Wage Grade classification and pay system.

WGFD—Wyoming Game and Fish Department.

wildfire—A wildland fire originating from an unplanned ignition caused by lightning, volcanoes, unauthorized and accidental human-caused fires, and escaped prescribed burns.

wildland fire—A general term describing any non-structure fire that occurs in the wildland.

wildlife-dependent recreational use—Use of a refuge involving hunting, fishing, wildlife observation, photography, environmental education, or interpretation. The National Wildlife Refuge System Improvement Act of 1997 specifies that these are the six priority public uses of the Refuge System.

woodlands—Open stands of trees with crowns not usually touching, generally forming 25- to 60-percent cover.

Appendix A

Key Legislation and Policy

This appendix briefly describes the guidance for the National Wildlife Refuge System and other policies and key legislation that guide the management of the National Elk Refuge.

A.1 National Wildlife Refuge System

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

(National Wildlife Refuge System Improvement Act of 1997)

Goals

- Fulfill our statutory duty to achieve refuge purposes and further the Refuge System mission.
- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- Perpetuate migratory bird, interjurisdictional fish, and marine mammal populations.
- Conserve a diversity of fish, wildlife, and plants.
- Conserve and restore, where appropriate, representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.

- Foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

Guiding Principles

There are four guiding principles for management and general public use of the Refuge System established by Executive Order 12996 (1996):

- *Public Use*—The Refuge System provides important opportunities for compatible wildlife-dependent recreational activities involving hunting, fishing, wildlife observation, photography, environmental education, and interpretation.
- *Habitat*—Fish and wildlife will not prosper without quality habitat and without fish and wildlife, traditional uses of refuges cannot be sustained. The Refuge System will continue to conserve and enhance the quality and diversity of fish and wildlife habitat within refuges.
- *Partnerships*—America's sportsmen and women were the first partners who insisted on protecting valuable wildlife habitat within wildlife refuges. Conservation partnerships with other Federal agencies, State agencies, tribes, organizations, industry, and the general public can make significant contributions to the growth and management of the Refuge System.
- *Public Involvement*—The public should be given a full and open opportunity to participate in decisions regarding acquisition and management of our national wildlife refuges.

Management actions on national wildlife refuges are circumscribed by many mandates including laws and Executive orders.

American Indian Religious Freedom Act (1978)—Directs agencies to consult with native traditional religious leaders to figure out proper policy changes necessary to protect and preserve Native American religious cultural rights and practices.

Americans with Disabilities Act (1992)—Prohibits discrimination in public accommodations and services.

Antiquities Act (1906)—Authorizes the scientific investigation of antiquities on Federal land and provides penalties for unauthorized removal of objects taken or collected without a permit.

Archaeological and Historic Preservation Act (1974)—Directs the preservation of historic and archaeological data in Federal construction projects.

Archaeological Resources Protection Act (1979), as amended—Protects materials of archaeological interest from unauthorized removal or destruction and requires Federal managers to develop plans and schedules to locate archaeological resources.

Architectural Barriers Act (1968)—Requires federally owned, leased, or financed buildings and facilities to be accessible to persons with disabilities.

Clean Water Act (1977)—Requires consultation with the U.S. Army Corps of Engineers (404 permits) for major wetland modifications.

Dingell–Johnson Act (1950)—Authorized the Secretary of the Department of the Interior to provide financial help for State fish restoration and management plans and projects. Financed by excise taxes paid by manufacturers of rods, reels, and other fishing tackle. Known as the Federal Aid in Sport Fish Restoration Act.

Endangered Species Act (1973)—Requires all Federal agencies to carry out programs for the conservation of endangered and threatened species.

Executive Order 11988 (1977)—Requires Federal agencies to provide leadership and take action to reduce the risk of flood loss, decrease the effect of

floods on human safety, and preserve the natural and beneficial values served by the floodplains.

Executive Order 12996, Management and General Public Use of the National Wildlife Refuge System (1996)—Defines the mission, purpose, and priority public uses of the National Wildlife Refuge System. It also presents four principles to guide management of the Refuge System.

Executive Order 13007, Indian Sacred Sites (1996)—Directs Federal land management agencies to accommodate access to and ceremonial uses of American Indian sacred sites by American Indian religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and where proper, keep the confidentiality of sacred sites.

Federal Noxious Weed Act (1990)—Requires the use of integrated management systems to control or contain undesirable plant species and an interdisciplinary approach with the cooperation of other Federal and State agencies.

Federal Records Act (1950)—Requires the preservation of evidence of the Government's organization, functions, policies, decisions, operations, and activities, as well as basic historical and other information.

Fish and Wildlife Coordination Act (1958)—Allows the U.S. Fish and Wildlife Service to enter into agreements with private landowners for wildlife management purposes.

Migratory Bird Conservation Act (1929)—Establishes procedures for acquisition by purchase, rental, or gifts of areas approved by the Migratory Bird Conservation Commission.

Migratory Bird Hunting and Conservation Stamp Act (1934)—Authorizes the opening of part of a refuge to waterfowl hunting.

Migratory Bird Treaty Act (1918)—Designates the protection of migratory birds as a Federal responsibility; and enables the setting of seasons and other regulations, including the closing of areas, Federal or non-Federal, to the hunting of migratory birds.

National Environmental Policy Act (1969)—Requires all agencies, including the Service, to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate this Act with other planning requirements, and prepare

proper documents to facilitate better environmental decisionmaking. [From the Code of Federal Regulations (CFR), 40 CFR 1500]

National Historic Preservation Act (1966), as amended—Establishes as policy that the Federal Government is to provide leadership in the preservation of the Nation's prehistoric and historic resources.

National Wildlife Refuge System Administration Act (1966)—Defines the National Wildlife Refuge System and authorizes the Secretary of the Department of the Interior to allow any use of a refuge, provided such use is compatible with the major purposes for which the refuge was established.

National Wildlife Refuge System Improvement Act of 1997—Sets the mission and administrative policy for all refuges in the National Wildlife Refuge System; mandates comprehensive conservation planning for all units of the Refuge System.

Native American Graves Protection and Repatriation Act (1990)—Requires Federal agencies and museums to inventory, find ownership of, and repatriate cultural items under their control or possession.

Refuge Recreation Act (1962)—Allows the use of refuges for recreation when such uses are compatible with the refuge's primary purposes and when sufficient money is available to manage the uses.

Rehabilitation Act (1973)—Requires programmatic accessibility and physical accessibility for all facilities and programs paid for by the Federal Government to make sure that any person can take part in any program.

Rivers and Harbors Act (1899)—Section 10 of this Act requires the authorization of U.S. Army Corps of Engineers before any work in, on, over, or under navigable waters of the United States.

Volunteer and Community Partnership Enhancement Act (1998)—Encourages the use of volunteers to help in the management of refuges within the Refuge System; facilitates partnerships between the Refuge System and non-Federal entities to promote public awareness of the resources of the Refuge System and public participation in the conservation of the resources; and encourages donations and other contributions.

Appendix B

List of Preparers and Contributors

This draft CCP and EA is the result of extensive, collaborative, and enthusiastic effort by the members of the planning team shown below. In addition, many others have contributed time as subject matter experts and reviewers.

B.1 Planning Team

<i>Team member</i>	<i>Position</i>	<i>Work unit</i>
Patti Bennett-Taylor	Budget analyst, former	National Elk Refuge, Jackson, Wyoming
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Toni Griffin	Planning team leader	U.S. Fish and Wildlife Service, Region 6, Lakewood, Colorado
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B.2 Contributors

Many organizations, agencies, and individuals helped prepare this CCP. We acknowledge the efforts of the following individuals and groups toward the completion of this plan. The diversity, talent, and knowledge contributed dramatically improved the vision and completeness of this document.

<i>Contributor</i>	<i>Position</i>	<i>Work unit</i>
Lara Gertsch	Aquatic habitat biologist	WGFD, Jackson Regional Office, Jackson, Wyoming
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Meg Van Ness	Regional archaeologist	U.S. Fish and Wildlife Service, Region 6, Lakewood, Colorado

Appendix C

Public Involvement

C.1 Public Involvement

On October 22, 2010, we published a notice of intent in the Federal Register to prepare a comprehensive conservation plan for the National Elk Refuge (75 Federal Register 65370). The notice provided information about the refuge and the CCP process along with details on how the public could provide comments about issues to consider in the environmental document and in development of the CCP. We specified that written comments were due by November 22, 2010. The notice indicated that more opportunities for providing comments would be announced in local news media throughout the planning process.

During preplanning, our planning team assembled a mailing list of private citizens; local, regional, and State government representatives and legislators; other Federal agencies; tribes; and interested organizations.

We sent the first planning update to the mailing list addressees in January 2011. The planning update provided information on the history of the National Elk Refuge and the CCP process, along with an invitation to an upcoming public open house on January 11. We invited the public to meet with our staff, learn more about the planning process, and provide input to the planning process. The planning update told people how to submit written comments by letter, fax, or email, which were due February 10, 2011.

At the January 2011 open house, the planning team used informational posters, maps, and handouts to display a history of the Refuge System, an orientation to the National Elk Refuge, and an overview of the processes for comprehensive conservation planning and implementing the National Environmental Policy Act. Staff answered questions on a variety of topics about refuge management and the CCP process. We encouraged the 40 attendees to ask questions and offer comments; planning team members recorded verbal comments and gave each attendee a comment form to submit more thoughts or questions, which were due by February 10, 2011.

We sent out a second planning update in March 2011. The update had a summary of the public scop-

ing efforts and the more than 200 comments that the planning team got during scoping. The update listed the key issues that we identified: landscape-scale conservation, wildlife, habitat, scenic quality, and visitor services. We considered input from the public open house, letters, emails, and comment forms in developing the draft CCP and EA.

Although the public identified elk and bison management as an issue during scoping for the CCP, the issue is outside the scope of this planning process. We and the National Park Service previously addressed this issue in an interagency, environment analysis process that had extensive public involvement. In 2007, we completed the resulting Bison and Elk Management Plan, which has goals, objectives, and strategies for managing elk and bison at the National Elk Refuge and at Grand Teton National Park for the next 15 years.

Our response to public comments on this draft CCP and EA will be completed before final approval of the CCP. The mailing list for the CCP follows.

C.2 Federal Officials

U.S. Congressman Cynthia Lummis, Washington, DC

U.S. Senator John Barrasso, Washington, DC

U.S. Senator Michael Enzi, Washington, DC

C.3 Federal Agencies

Bureau of Reclamation, Pacific Northwest
Regional Office, Boise, Idaho

National Park Service, Grand Teton National
Park, Moose, Wyoming

National Park Service, Intermountain Regional
Office, Denver, Colorado

USDA Forest Service, Bridger-Teton National
Forest, Jackson, Wyoming

[REDACTED]

Assiniboine and Sioux Tribes of Fort Peck, Popular, Montana
Cheyenne and Arapaho Tribes, Concho, Oklahoma
Cheyenne River Sioux Tribe, Eagle Butte, South Dakota
Crow Creek Sioux Tribal Council, Fort Thompson, South Dakota
Eastern Shoshone Tribal Council, Fort Washakie, Wyoming
Lower Brule Sioux Tribe, Lower Brule, South Dakota
Northern Arapaho Business Council, Fort Washakie, Wyoming
Northern Cheyenne Tribal Council, Lame Deer, Montana
Oglala Sioux Tribe, Pine Ridge, South Dakota
Rosebud Sioux Tribal Council, Rosebud, South Dakota
Santee Sioux Tribal Council, Niobrara, Nebraska
Shoshone-Bannock Tribes, Fort Hall, Idaho
Shoshone Business Council, Fort Washakie, Wyoming
Shoshone Cultural Center, Fort Washakie, Wyoming
Standing Rock Sioux Tribal Council, Fort Yates, North Dakota

[REDACTED]

Governor Matt Mead, Cheyenne, Wyoming
Senator Leland G. Christensen, Alta, Wyoming
Senator Dan Dockstader, Afton, Wyoming
Representative Keith Gingery, Jackson, Wyoming
Representative Ruth A. Petroff, Jackson, Wyoming
Representative Jim Roscoe, Wilson, Wyoming

[REDACTED]

WGFD, Cheyenne, Wyoming
WGFD, Jackson, Wyoming
WGFD, Lander, Wyoming

[REDACTED]

Teton Conservation District, Jackson, Wyoming
Teton County Board of Commissioners, Jackson, Wyoming
Teton County Building Department, Jackson, Wyoming
Teton County Sheriff's Office, Jackson, Wyoming
Town of Jackson, Wyoming

[REDACTED]

Alta Planning and Design, Saratoga Springs, New York
Atkins, PBS&J, Missoula, Montana
Bear Creek Incorporated, Jackson, Wyoming
Biota Research and Consulting, Jackson, Wyoming
Brush Buck Guide Services, Jackson, Wyoming
Burton Design Incorporated, Jackson, Wyoming
Four Seasons Resort, Teton Village, Wyoming
Grizzly Country Wildlife Adventures, Jackson, Wyoming
The Hole Hiking Experience, Jackson, Wyoming
Jackson Hole Eco Tour Adventures, Jackson, Wyoming
Jackson Hole Photo Tours, Jackson, Wyoming
Jackson Hole Wildlife Safaris, Jackson, Wyoming
Nelson Engineering, Jackson, Wyoming
Snake River Brewing Company, Jackson, Wyoming
Snowmobiletours.net, Jackson, Wyoming
Spring Creek Ranch, Jackson, Wyoming
Steady Jake Mobile DJ, Jackson, Wyoming
Upstream Anglers and Outdoor Adventures, Jackson, Wyoming
Wyoming Photo Experience, Jackson, Wyoming

[REDACTED]

Concerned Citizens for the Elk, Jackson, Wyoming
Craighead Beringia South, Kelly, Wyoming
Defenders of Wildlife, Washington, DC
Ducks Unlimited, Conservation Program, Bismarck, North Dakota

Ducks Unlimited, National Headquarters, Memphis, Tennessee
 Friends of Pathways, Jackson, Wyoming
 Greater Yellowstone Coalition, Jackson, Wyoming
 Jackson Hole and Greater Yellowstone Visitor Center, Jackson, Wyoming
 Jackson Hole Art Initiative, Jackson, Wyoming
 Jackson Hole Chamber of Commerce, Jackson, Wyoming
 Jackson Hole Conservation Alliance, Jackson, Wyoming
 Jackson Hole Historical Society and Museum, Jackson, Wyoming
 Jackson Hole Land Trust, Jackson, Wyoming
 Jackson Hole One Fly, Wyoming
 Jackson Hole Trout Unlimited, Wyoming
 Jackson Hole Wildlife Foundation, Jackson, Wyoming
 The Murie Center, Moose, Wyoming
 Northern Rockies Conservation Cooperative, Jackson, Wyoming
 Rocky Mountain Elk Foundation, Missoula, Montana
 Safe Wildlife Crossings for Jackson Hole, Jackson, Wyoming
 Snake River Fund, Wyoming
 Sportsmen for Fish and Wildlife, Jackson, Wyoming
 Teton County Weed and Pest District, Jackson, Wyoming
 Teton Raptor Center, Wilson, Wyoming
 Teton Science Schools, Jackson, Wyoming
 Wildlife Conservation Society, Bronx, New York
 The Wildlife Society, Bethesda, Maryland
 The Wildlife Society, Wyoming Chapter, Lander, Wyoming
 Wyoming Wetlands Society, Jackson, Wyoming
 Wyoming Wildlife Federation, Lander, Wyoming

Northwestern University, Evanston, Illinois

Sinte Gleska University, Sicangu Heritage Center, Mission, South Dakota

C.11 Media

Associated Press, Cheyenne, Wyoming
 Casper Star Tribune, Casper, Wyoming
 Dubois Frontier, Dubois, Wyoming
 Herald Journal, Logan, Utah
 Idaho State Journal, Pocatello, Wyoming
 Jackson Hole Magazine, Jackson, Wyoming
 Jackson Hole News and Guide, Jackson, Wyoming
 Jackson Hole Underground, Jackson, Wyoming
 JH Weekly, Jackson, Wyoming
 K2TV, Casper, Wyoming
 KCWY13, Mills, Wyoming
 KHOL, Jackson Hole Community Radio, Jackson, Wyoming
 KID FM, Idaho Falls, Idaho
 KIFI TV, Idaho Falls, Idaho
 KPIN, Pinedale Radio, Pinedale, Wyoming
 KPVI TV, Pocatello, Idaho
 KTWO, Casper, Wyoming
 KZ95, Jackson Hole Radio, Jackson, Wyoming
 The Mountain Pulse, Jackson, Wyoming
 New York Times, New York
 Pinedale Online, Pinedale, Wyoming
 Pinedale Roundup, Pinedale, Wyoming
 Post Register, Idaho Falls, Idaho
 Star Valley Independent, Afton, Wyoming
 Sublette Examiner, Pinedale, Wyoming
 Teton Valley News, Driggs, Idaho
 The Valley Citizen, Driggs, Idaho
 Wyoming Lifestyle Magazine, Laramie, Wyoming
 Wyoming Public Radio, Laramie, Wyoming

C.12 Individuals

121 individuals

Appendix D

Species Lists

What follows are the names of animals and plants found on the National Elk Refuge.

D.1 Lists of Federally Listed and State-Listed Plants and Animals

Plant species of concern listed in Wyoming are shown below.

<i>Scientific name</i>	<i>Common name</i>
<i>Aster borealis</i>	Rush aster
<i>Astragalus terminalis</i>	Railhead milkvetch
<i>Carex buxbaumii</i>	Buxbaum's sedge
<i>Carex parryana</i>	Parry sedge
<i>Carex scirpoidea scripiformis</i>	Canadian single-spike sedge
<i>Eriophorum viridicarinatum</i>	Green-keeled cotton-grass
<i>Heterotheca villosa var. depressa</i>	Teton golden aster
<i>Lesquerella carinata</i>	Keeled bladderpod
<i>Muhlenbergia glomerata</i>	Marsh muhly
<i>Salix candida</i>	Hoary willow
<i>Scirpus rollandii</i>	Pygmy bulrush
<i>Utricularia intermedia</i>	Flat-leaf bladderwort

Animal species listed under the Federal Endangered Species Act and by the State of Wyoming (species of greatest conservation need), with documented occurrence on the National Elk Refuge in Wyoming follow: Federally threatened—a plant or animal species listed under the Endangered Species Act of 1973, as amended, that is likely to become endangered within the foreseeable future throughout all or a significant part of its range; Federal candidate—a plant or animal species proposed for addition to the Federal endangered and threatened species list; Wyoming tier 1—highest priority species of greatest conservation need; Wyoming tier 2—moderate priority species of greatest conservation need.

<i>Scientific name</i>	<i>Common Name</i>	<i>Documented refuge use</i>
Federally threatened		
<i>Ursos arctos</i>	Grizzly bear	Incidental
Federal candidate		
<i>Centrocercus urophasianus</i>	Greater sage-grouse (also WY tier 1)	Year-round, breeding documented
Wyoming tier 1		
<i>Anaxyrus boreas boreas</i>	Boreal toad	Year-round, breeding documented
<i>Athene cunicularia</i>	Burrowing owl	Incidental
<i>Buteo regalis</i>	Ferruginous hawk	Seasonal
<i>Gavia immer</i>	Common loon	Incidental
<i>Haliaeetus leucocephalus</i>	Bald eagle	Year-round, breeding documented
<i>Strix nebulosa</i>	Great gray owl	Incidental

<i>Scientific name</i>	<i>Common Name</i>	<i>Documented refuge use</i>
Wyoming tier 2		
<i>Rana luteiventris</i>	Columbia spotted frog	Year-round, breeding documented
<i>Charina bottae</i>	Northern rubber boa	Incidental
<i>Thamnophis sirtalis fitchi</i>	Valley gartersnake	Incidental
<i>Anas acuta</i>	Northern pintail	Seasonal
<i>Asio flammeus</i>	Short-eared owl	Seasonal
<i>Aythya affinis</i>	Lesser scaup	Seasonal, breeding documented
<i>Aythya americana</i>	Redhead	Seasonal, breeding documented
<i>Botaurus lentiginosus</i>	American bittern	Seasonal
<i>Bucephala islandica</i>	Barrow's goldeneye	Seasonal
<i>Buteo swainsoni</i>	Swainson's hawk	Seasonal
<i>Calamospiza melanocorys</i>	Lark bunting	Incidental
<i>Cygnus buccinator</i>	Trumpeter swan	Year-round, breeding documented
<i>Dolichonyx oryzivorus</i>	Bobolink	Seasonal, breeding documented
<i>Falco peregrinus</i>	Peregrine falcon	Seasonal
<i>Hydroprogne caspia</i>	Caspian tern	Incidental
<i>Larus pipixcan</i>	Franklin's gull	Seasonal
<i>Melanerpes lewis</i>	Lewis's woodpecker	Seasonal
<i>Numenius americanus</i>	Long-billed curlew	Seasonal, breeding documented
<i>Nycticorax nycticorax</i>	Black-crowned night-heron	Incidental
<i>Rallus limicola</i>	Virginia rail	Incidental
<i>Spizella breweri</i>	Brewer's sparrow	Seasonal, breeding documented
<i>Tympanuchus phasianellus columbianus</i>	Columbian sharp-tailed grouse	Incidental
<i>Alces alces</i>	Moose	Year-round, breeding documented
<i>Lontra canadensis</i>	Northern river otter	Year-round, breeding documented
<i>Myotis lucifugus</i>	Little brown myotis	Seasonal
<i>Ovis canadensis</i>	Bighorn sheep	Year-round, breeding documented
Wyoming tier 3		
<i>Empidonax traillii</i>	Willow flycatcher	Seasonal
<i>Falco columbarius</i>	Merlin	Seasonal
<i>Grus canadensis</i>	Sandhill crane	Seasonal, breeding documented

D.2 Plant Species

The following lists show the scientific and common names of the plant species that have been found on the National Elk Refuge in Wyoming. An asterisk (*) indicates a nonnative species.

<i>Scientific name</i>	<i>Common name</i>
<i>Achillea millefolium var. alpicola</i>	Common yarrow
<i>Achnatherum hymenoides</i>	Indian ricegrass
<i>Achnatherum nelsonii ssp. nelsonii</i>	Nelson's needlegrass
<i>Agoseris glauca var. glauca</i>	Short-beaked agoseris

<i>Scientific name</i>	<i>Common name</i>
<i>Agoseris glauca</i> var. <i>laciniata</i>	Short-beaked agoseris
<i>Agropyron cristatum</i>	Crested wheatgrass*
<i>Agrostis stolonifera</i>	Redtop*
<i>Allium cernuum</i>	Nodding onion
<i>Allium schoenoprasum</i> var. <i>schoenoprasum</i>	Wild chives*
<i>Alopecurus aequalis</i>	Shortawn foxtail
<i>Alopecurus pratensis</i>	Meadow foxtail*
<i>Alyssum alyssoides</i>	Pale alyssum*
<i>Alyssum desertorum</i> var. <i>desertorum</i>	Desert alyssum*
<i>Amaranthus albus</i>	White pigweed
<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>	Western serviceberry
<i>Anemone multifida</i>	Cliff anemone
<i>Angelica arguta</i>	Sharptooth angelica
<i>Angelica pinnata</i>	Pinnate-leaved angelica
<i>Antennaria dimorpha</i>	Low pussytoes
<i>Antennaria microphylla</i>	Small-leaf pussytoes
<i>Antennaria pulcherrima</i>	Showy pussytoes
<i>Antennaria rosea</i>	Rosy pussytoes
<i>Antennaria umbrinella</i>	Umber pussytoes
<i>Arabis drummondii</i>	Drummond's rockcress
<i>Arabis glabra</i>	Towermustard
<i>Arabis holboellii</i>	Holboell's rockcress
<i>Arenaria congesta</i>	Ballhead sandwort
<i>Argentina anserina</i>	Silverweed
<i>Arnica sororia</i>	Twin arnica
<i>Artemisia biennis</i> var. <i>biennis</i>	Biennial wormwood*
<i>Artemisia frigida</i>	Fringed sagewort
<i>Artemisia ludoviciana</i> ssp. <i>ludoviciana</i>	Louisiana sagebrush
<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	Basin big sagebrush
<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	Mountain big sagebrush
<i>Artemisia tripartita</i> ssp. <i>tripartita</i>	Threetip sagebrush
<i>Astragalus agrestis</i>	Field milkvetch
<i>Astragalus argophyllus</i> var. <i>argophyllus</i>	Silver-leaved milkvetch
<i>Astragalus canadensis</i> var. <i>brevidens</i>	Canada milkvetch
<i>Astragalus diversifolius</i> var. <i>campestris</i>	Lesser rushy milkvetch
<i>Astragalus eucosmus</i>	Elegant milkvetch
<i>Astragalus miser</i> var. <i>decumbens</i>	Sagebrush weedy milkvetch
<i>Astragalus miser</i> var. <i>tenuifolius</i>	Weedy milkvetch
<i>Astragalus purshii</i> var. <i>purshii</i>	Wooly milkvetch
<i>Astragalus terminalis</i>	Railhead milkvetch
<i>Atriplex rosea</i>	Red orache*
<i>Atriplex truncata</i>	Wedgescale orache
<i>Balsamorhiza sagittata</i>	Arrowleaf balsamroot
<i>Besseya wyomingensis</i>	Wyoming kittentails
<i>Betula glandulosa</i>	Bog birch

<i>Scientific name</i>	<i>Common name</i>
<i>Betula occidentalis</i>	Water birch
<i>Bidens cernua</i>	Nodding beggarticks
<i>Bromus carinatus</i>	California brome
<i>Bromus ciliatus</i>	Fringed brome
<i>Bromus inermis</i> ssp. <i>inermis</i>	Smooth brome*
<i>Bromus tectorum</i>	Cheatgrass*
<i>Calamagrostis canadensis</i>	Bluejoint wheatgrass
<i>Calamagrostis rubescens</i>	Pinegrass
<i>Calamagrostis stricta</i>	Slimstem reedgrass
<i>Callitriche palustris</i>	Spring water starwort
<i>Calochortus nuttallii</i>	Sego-lily
<i>Camelina microcarpa</i>	Littlepod falseflax*
<i>Campanula rotundifolia</i>	Harebell
<i>Capsella bursa-pastoris</i>	Shepherd's purse*
<i>Caragana arborescens</i>	Peatree*
<i>Cardaria chalapensis</i>	Chalapa hoarycress, whitetop*
<i>Carduus acanthoides</i>	Plumeless thistle*
<i>Carduus nutans</i>	Musk thistle*
<i>Carex aquatilis</i>	Water sedge
<i>Carex aurea</i>	Golden sedge
<i>Carex buxbaumii</i>	Buxbaum's sedge
<i>Carex capillaris</i>	Hair sedge
<i>Carex duriuscula</i>	Narrow-leaved sedge
<i>Carex filifolia</i>	Thread-leaved sedge
<i>Carex interior</i>	Inland sedge
<i>Carex microptera</i>	Small-wing sedge
<i>Carex nebrascensis</i>	Nebraska sedge
<i>Carex parryana</i> var. <i>parryana</i>	Parry sedge
<i>Carex pellita</i>	Woolly sedge
<i>Carex praegracilis</i>	Clustered field sedge
<i>Carex rossii</i>	Ross sedge
<i>Carex rostrata</i>	Beaked sedge
<i>Carex sartwellii</i>	Sartwell's sedge
<i>Carex scirpoidea</i> ssp. <i>scirpoidea</i>	Canadian single-spike sedge
<i>Carex simulata</i>	Analogue sedge
<i>Carex viridula</i>	Green sedge
<i>Castilleja angustifolia</i> var. <i>angustifolia</i>	Narrowleaf paintbrush
<i>Castilleja angustifolia</i> var. <i>dubia</i>	Desert paintbrush
<i>Castilleja flava</i>	Yellow paintbrush
<i>Castilleja miniata</i>	Scarlet paintbrush
<i>Catabrosa aquatica</i>	Brookgrass
<i>Cerastium beeringianum</i> ssp. <i>earlei</i>	Alpine chickweed
<i>Cercocarpus ledifolius</i> var. <i>ledifolius</i>	Curl-leaf mountain mahogany
<i>Chaenactis douglasii</i> var. <i>douglasii</i>	Hoary dustymaiden
<i>Chamerion angustifolium</i>	Fireweed

<i>Scientific name</i>	<i>Common name</i>
<i>Chenopodium berlandieri</i> var. <i>zschackii</i>	Pitseed goosefoot
<i>Chenopodium foliosum</i>	Smallhead goosefoot*
<i>Chenopodium pratericola</i>	Mountain goosefoot
<i>Chrysothamnus viscidiflorus</i> ssp. <i>lanceolatus</i>	Green rabbitbrush
<i>Chrysothamnus viscidiflorus</i> ssp. <i>viscidiflorus</i>	Green rabbitbrush
<i>Cirsium arvense</i>	Canada thistle*
<i>Cirsium scariosum</i>	Elk thistle
<i>Cirsium subniveum</i>	Snowy thistle
<i>Cirsium vulgare</i>	Bull thistle*
<i>Clematis hirsutissima</i>	Leatherflower
<i>Clematis occidentalis</i> var. <i>grosseserrata</i>	Rock virgin's bower
<i>Collomia linearis</i>	Narrowleaf collomia
<i>Comandra umbellata</i> ssp. <i>pallida</i>	Bastard toad-flax
<i>Convolvulus arvensis</i>	Field bindweed*
<i>Cordylanthus ramosus</i>	Bushy birdbeak
<i>Cornus sericea</i>	Redosier dogwood
<i>Corydalis aurea</i>	Golden-smoke
<i>Crataegus douglasii</i>	Black hawthorn
<i>Crepis acuminata</i>	Tapertip hawksbeard
<i>Crepis modocensis</i>	Siskiyou hawksbeard
<i>Crepis runcinata</i> ssp. <i>glauca</i>	Meadow hawksbeard
<i>Crepis runcinata</i> ssp. <i>hispidulosa</i>	Broad-leaved meadow hawksbeard
<i>Dactylis glomerata</i>	Orchardgrass*
<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>	Shrubby cinquefoil
<i>Delphinium bicolor</i>	Little larkspur
<i>Deschampsia cespitosa</i>	Tufted hairgrass
<i>Descurainia incana</i> ssp. <i>procera</i>	Mountain tansymustard
<i>Descurainia sophia</i>	Flixweed*
<i>Dodecatheon pulchellum</i>	Dark-throat shooting star
<i>Elaeagnus commutata</i>	Silverberry
<i>Eleocharis acicularis</i>	Slender spikerush
<i>Eleocharis palustris</i>	Common spikerush
<i>Elymus albicans</i>	Griffith's wheatgrass
<i>Elymus elymoides</i>	Bottlebrush squirreltail
<i>Elymus lanceolatus</i>	Thickspike wheatgrass
<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>	Riparian thickspike wheatgrass
<i>Elymus repens</i>	Common quackgrass*
<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>	Slender wheatgrass
<i>Epilobium brachycarpum</i>	Panicled willow-herb
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	American willow-herb
<i>Epilobium hornemannii</i>	Hornemann's willow-herb
<i>Epilobium leptophyllum</i>	Swamp willow-herb
<i>Equisetum hyemale</i> var. <i>affine</i>	Common scouring-rush
<i>Equisetum laevigatum</i>	Smooth scouring-rush
<i>Equisetum variegatum</i>	Northern scouring-rush

<i>Scientific name</i>	<i>Common name</i>
<i>Ericameria nauseosa</i> ssp. <i>nauseosa</i> var. <i>nauseosa</i>	Rubber rabbitbrush
<i>Erigeron compositus</i>	Cut-leaved fleabane
<i>Erigeron corymbosus</i>	Foothill daisy
<i>Erigeron glabellus</i> var. <i>glabellus</i>	Smooth daisy
<i>Erigeron lonchophyllus</i>	Spear-leaf fleabane
<i>Erigeron pumilus</i>	Shaggy fleabane
<i>Eriogonum brevicaulis</i> var. <i>laxifolium</i>	Shortstem buckwheat
<i>Eriogonum caespitosum</i>	Mat buckwheat
<i>Eriogonum ovalifolium</i> var. <i>purpureum</i>	Cushion buckwheat
<i>Eriogonum umbellatum</i> var. <i>majus</i>	Sulfur buckwheat
<i>Eriophorum angustifolium</i> ssp. <i>subarcticum</i>	Many-spiked cottongrass
<i>Eriophorum viridicarinatum</i>	Green-keeled cottongrass
<i>Erysimum capitatum</i> var. <i>capitatum</i>	Sanddune wallflower
<i>Erysimum cheiranthoides</i>	Treacle wallflower*
<i>Eucephalus elegans</i>	Elegant aster
<i>Festuca idahoensis</i>	Idaho fescue
<i>Festuca ovina</i>	Sheep fescue
<i>Fragaria virginiana</i>	Virginia strawberry
<i>Frasera speciosa</i>	Monument plant
<i>Frasera speciosa</i>	Green gentian
<i>Fritillaria atropurpurea</i>	Checker lily
<i>Galium boreale</i>	Northern bedstraw
<i>Galium trifidum</i>	Small bedstraw
<i>Gentiana affinis</i>	Prairie gentian
<i>Gentiana fremontii</i>	Water gentian
<i>Geranium viscosissimum</i> var. <i>incisum</i>	Sticky geranium
<i>Geranium viscosissimum</i> var. <i>viscosissimum</i>	Sticky geranium
<i>Geum macrophyllum</i> var. <i>perincisum</i>	Large-leaved avens
<i>Geum triflorum</i>	Prairie-smoke
<i>Glaux maritima</i>	Sea-milkwort
<i>Glyceria grandis</i>	American mannagrass
<i>Glyceria striata</i>	Fowl mannagrass
<i>Glycyrrhiza lepidota</i>	Licorice-root
<i>Gnaphalium palustre</i>	Lowland cudweed
<i>Grindelia squarrosa</i>	Curly-cup gumweed
<i>Gutierrezia sarothrae</i>	Broom snakeweed
<i>Hackelia floribunda</i>	Many-flowered stickseed
<i>Hedysarum boreale</i>	Northern sweet-vetch
<i>Helianthella uniflora</i>	Rocky Mountain helianthella
<i>Heraclium maximum</i>	Cow parsnip
<i>Hesperostipa comata</i> ssp. <i>intermedia</i>	Needle and thread
<i>Heterotheca villosa</i> var. <i>depressa</i>	Teton golden aster
<i>Heuchera parvifolia</i>	Littleleaf alumroot
<i>Hierochloa odorata</i>	Common sweetgrass
<i>Hippuris vulgaris</i>	Common mare's-tail

<i>Scientific name</i>	<i>Common name</i>
<i>Hordeum brachyantherum</i>	Meadow barley
<i>Hordeum jubatum</i>	Foxtail barley
<i>Hypericum scouleri</i> ssp. <i>scouleri</i>	Western St. John's-wort
<i>Ipomopsis aggregata</i>	Scarlet gilia
<i>Ipomopsis spicata</i> ssp. <i>orchidacea</i>	Mountain spicate-gilia
<i>Juncus arcticus</i> ssp. <i>littoralis</i>	Baltic rush
<i>Juncus longistylis</i>	Long-styled rush
<i>Juncus nodosus</i>	Tuberous rush
<i>Juncus saximontanus</i>	Rocky Mountain rush
<i>Juncus tenuis</i> var. <i>dudleyi</i>	Slender rush
<i>Juniperus communis</i> var. <i>depressa</i>	Common juniper
<i>Juniperus scopulorum</i>	Rocky Mountain juniper
<i>Koeleria macrantha</i>	Junegrass
<i>Krascheninnikovia lanata</i>	Winterfat
<i>Lactuca serriola</i>	Prickly lettuce*
<i>Lappula occidentalis</i> var. <i>occidentalis</i>	Western stickseed
<i>Lappula squarrosa</i>	European stickseed*
<i>Lemna minor</i>	Lesser duckweed
<i>Lepidium densiflorum</i>	Common peppergrass
<i>Lepidium perfoliatum</i>	Clasping peppergrass*
<i>Leptosiphon septentrionalis</i>	Northern linanthus
<i>Lesquerella carinata</i> var. <i>carinata</i>	Keeled bladderpod
<i>Leucopoa kingii</i>	Spikefescue
<i>Leymus cinereus</i>	Great Basin wildrye
<i>Linanthus pungens</i>	Common prickly-phlox
<i>Linum lewisii</i>	Blue flax
<i>Lithospermum ruderales</i>	Western gromwell
<i>Lomatium foeniculaceum</i>	Fennel-leaved biscuitroot
<i>Lomatium simplex</i> var. <i>simplex</i>	Nineleaf biscuitroot
<i>Lonicera involucrata</i>	Bearberry honeysuckle
<i>Lupinus argenteus</i> ssp. <i>argenteus</i>	Silvery lupine
<i>Lupinus argenteus</i> var. <i>rubricaulis</i>	Silvery lupine
<i>Lupinus sericeus</i>	Silky lupine
<i>Machaeranthera canescens</i> ssp. <i>canescens</i>	Hoary aster
<i>Mahonia repens</i>	Oregon-grape
<i>Maianthemum stellatum</i>	Starry false Solomon's-seal
<i>Malcolmia africana</i>	Malcolmia*
<i>Matricaria discoidea</i>	Pineapple-weed*
<i>Medicago lupulina</i>	Black medic*
<i>Medicago sativa</i> ssp. <i>sativa</i>	Alfalfa*
<i>Melilotus officinalis</i>	White sweetclover*
<i>Melilotus officinalis</i>	Yellow sweetclover*
<i>Mentha arvensis</i>	Field mint
<i>Mertensia ciliata</i>	Ciliate bluebells
<i>Mertensia oblongifolia</i>	Leafy bluebells

<i>Scientific name</i>	<i>Common name</i>
<i>Mimulus guttatus</i>	Yellow monkeyflower
<i>Minuartia nuttallii</i> ssp. <i>nuttallii</i>	Nuttall's sandwort
<i>Monolepis nuttalliana</i>	Povertyweed
<i>Muhlenbergia filiformis</i>	Pullup muhly
<i>Muhlenbergia glomerata</i>	Marsh muhly
<i>Muhlenbergia richardsonis</i>	Mat muhly
<i>Myosotis scorpioides</i>	Common forget-me-not*
<i>Myriophyllum sibiricum</i>	Common watermilfoil
<i>Nassella viridula</i>	Green needlegrass
<i>Nasturtium officinale</i>	Watercress
<i>Oenothera caespitosa</i> ssp. <i>caespitosa</i>	Tufted evening-primrose
<i>Oenothera pallida</i> ssp. <i>trichocalyx</i>	Pale evening-primrose
<i>Opuntia polyacantha</i> var. <i>polyacantha</i>	Plains prickly-pear
<i>Orthocarpus luteus</i>	Yellow owl-clover
<i>Oxytropis deflexa</i> var. <i>sericea</i>	Nodding locoweed
<i>Packera cana</i>	Woolly groundsel
<i>Packera debilis</i>	Weak groundsel
<i>Packera paupercula</i>	Balsam groundsel
<i>Packera streptanthifolia</i>	Alpine meadow groundsel
<i>Packera streptanthifolia</i>	Cleft-leaved groundsel
<i>Parnassia palustris</i> var. <i>montanensis</i>	Northern grass-of-Parnassus
<i>Pedicularis crenulata</i>	Meadow lousewort
<i>Pedicularis groenlandica</i>	Elephanthead lousewort
<i>Penstemon humilis</i>	Lowly beardtongue
<i>Penstemon procerus</i> var. <i>procerus</i>	Small-flower beardtongue
<i>Penstemon radicosus</i>	Matroot beardtongue
<i>Penstemon subglaber</i>	Subglabrous beardtongue
<i>Petrophyton caespitosum</i>	Rocky Mountain rockmat
<i>Phacelia franklinii</i>	Franklin's phacelia
<i>Phalaris arundinacea</i>	Reed canarygrass
<i>Phleum alpinum</i>	Alpine timothy
<i>Phleum pratense</i>	Timothy*
<i>Phlox hoodii</i>	Hood's phlox
<i>Phlox kelseyi</i> ssp. <i>kelseyi</i>	Kelsey's phlox
<i>Phlox longifolia</i>	Long-leaf phlox
<i>Phlox multiflora</i>	Many-flowered phlox
<i>Picea engelmannii</i>	Engelmann spruce
<i>Picea pungens</i>	Blue spruce
<i>Pinus contorta</i>	Lodgepole pine
<i>Pinus flexilis</i>	Limber pine
<i>Plantago eriopoda</i>	Alkali plantain
<i>Plantago major</i>	Common plantain
<i>Platanthera aquilonis</i>	Northern green bog-orchid
<i>Poa annua</i>	Annual bluegrass*
<i>Poa bulbosa</i>	Bulbous bluegrass*

<i>Scientific name</i>	<i>Common name</i>
<i>Poa cusickii</i> ssp. <i>epilis</i>	Cusick's bluegrass
<i>Poa palustris</i>	Fowl bluegrass
<i>Poa pratensis</i>	Kentucky bluegrass
<i>Poa secunda</i>	Sandberg bluegrass
<i>Polemonium occidentale</i>	Western Jacob's-ladder
<i>Polygonum achoreum</i>	Erect knotweed
<i>Polygonum amphibium</i> var. <i>stipulaceum</i>	Water smartweed
<i>Polygonum aviculare</i>	Common knotweed*
<i>Polygonum douglasii</i> ssp. <i>douglasii</i>	Douglas' knotweed
<i>Polygonum viviparum</i>	Alpine bistort
<i>Populus angustifolia</i>	Narrowleaf cottonwood
<i>Populus tremuloides</i>	Quaking aspen
<i>Potentilla arguta</i>	Glandular cinquefoil
<i>Potentilla gracilis</i> var. <i>fastigiata</i>	Slender cinquefoil
<i>Potentilla gracilis</i> var. <i>pulcherrima</i>	Soft cinquefoil
<i>Potentilla norvegica</i>	Norwegian cinquefoil
<i>Potentilla ovina</i> var. <i>ovina</i>	Sheep cinquefoil
<i>Potentilla pensylvanica</i>	Prairie cinquefoil
<i>Primula incana</i>	Mealy primrose
<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	Self-heal
<i>Prunus virginiana</i> var. <i>melanocarpa</i>	Chokecherry
<i>Psathyrostachys juncea</i>	Russian wildrye*
<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	Bluebunch wheatgrass
<i>Pseudotsuga menziesii</i>	Douglas-fir
<i>Pulsatilla patens</i> ssp. <i>multifida</i>	Pasqueflower
<i>Purshia tridentata</i>	Bitterbrush
<i>Pyrocoma uniflora</i> var. <i>uniflora</i>	One-flowered goldenweed
<i>Ranunculus aquatilis</i> var. <i>diffusus</i> new name	White water buttercup
<i>Ranunculus cymbalaria</i>	Shore buttercup
<i>Ranunculus glaberrimus</i> var. <i>ellipticus</i>	Sagebrush buttercup
<i>Ranunculus hyperboreus</i>	Floating water buttercup
<i>Ranunculus inamoenus</i> var. <i>inamoenus</i>	Unlovely buttercup
<i>Ranunculus macounii</i>	Macoun's buttercup
<i>Ranunculus sceleratus</i> var. <i>multifidus</i>	Blister buttercup
<i>Ribes aureum</i> var. <i>aureum</i>	Golden currant
<i>Ribes cereum</i> var. <i>cereum</i>	Wax currant
<i>Ribes oxycanthoides</i> ssp. <i>setosum</i>	Missouri gooseberry
<i>Rorippa curvipes</i> var. <i>truncata</i>	Wasatch yellowcress
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose
<i>Rosa woodsii</i> var. <i>woodsii</i>	Woods' rose
<i>Rumex aquaticus</i> var. <i>fenestratus</i>	Western dock
<i>Rumex maritimus</i> var. <i>fueginus</i>	Golden dock
<i>Rumex salicifolius</i> var. <i>mexicanus</i>	Willow dock
<i>Salix bebbiana</i>	Bebb willow
<i>Salix boothii</i>	Booth's willow

<i>Scientific name</i>	<i>Common name</i>
<i>Salix brachycarpa</i>	Smallfruit willow
<i>Salix candida</i>	Hoary willow
<i>Salix drummondiana</i>	Drummond's willow
<i>Salix exigua</i>	Narrowleaf willow
<i>Salix geyeriana</i>	Geyer willow
<i>Salix lucida ssp. caudata</i>	Greenleaf willow
<i>Salix lutea</i>	Yellow willow
<i>Salix melanopsis</i>	Dusky willow
<i>Salix planifolia</i>	Planeleaf willow
<i>Salsola tragus</i>	Russian thistle*
<i>Schoenocrambe linifolia</i>	Flax-leaved plainsmustard
<i>Schoenoplectus acutus var. acutus</i>	Hardstem bulrush
<i>Schoenoplectus tabernaemontani</i>	Soft-stem bulrush
<i>Scutellaria galericulata</i>	Marsh skullcap
<i>Sedum lanceolatum</i>	Lance-leaved stonecrop
<i>Selaginella densa</i>	Compact spike-moss
<i>Senecio hydrophilus</i>	Water groundsel
<i>Senecio integerrimus var. exaltatus</i>	Western groundsel
<i>Senecio serra</i>	Butterweed groundsel
<i>Shepherdia canadensis</i>	Canada buffaloberry
<i>Silene latifolia</i>	White campion*
<i>Sisymbrium altissimum</i>	Tumblemustard*
<i>Sisyrinchium idahoense var. occidentale</i>	Western blue-eyed grass
<i>Sium suave</i>	Hemlock waterparsnip
<i>Solidago canadensis var. salebrosa</i>	Canada goldenrod
<i>Solidago missouriensis var. missouriensis</i>	Missouri goldenrod
<i>Solidago nana</i>	Low goldenrod
<i>Sonchus arvensis ssp. uliginosus</i>	Marsh sow-thistle*
<i>Spiranthes romanzoffiana</i>	Hooded lady's tresses
<i>Stellaria crassifolia</i>	Thickleaved starwort
<i>Stellaria longipes</i>	Longstalk starwort
<i>Stenotus acaulis</i>	Stemless goldenweed
<i>Stuckenia filiformis ssp. filiformis</i>	Slender-leaved pondweed
<i>Stuckenia pectinata</i>	Fennel-leaved pondweed
<i>Swertia perennis</i>	Swertia
<i>Symphoricarpos oreophilus var. utahensis</i>	Mountain snowberry
<i>Symphyotrichum ascendens</i>	Long-leaved aster
<i>Symphyotrichum boreale</i>	Boreal aster
<i>Symphyotrichum eatonii</i>	Eaton's aster
<i>Symphyotrichum foliaceum var. apricum</i>	Leafybract aster
<i>Symphyotrichum spathulatum var. spathulatum</i>	Western mountain aster
<i>Taraxacum laevigatum</i>	Red-seeded dandelion*
<i>Taraxacum officinale</i>	Common dandelion
<i>Tetradymia canescens</i>	Gray horsebrush
<i>Thalictrum alpinum</i>	Alpine meadowrue

<i>Scientific name</i>	<i>Common name</i>
<i>Thalictrum venulosum</i>	Veiny meadowrue
<i>Thelypodium paniculatum</i>	Panicled thelypody
<i>Thinopyrum intermedium</i>	Intermediate wheatgrass*
<i>Thlaspi arvense</i>	Field pennycress*
<i>Townsendia nuttallii</i>	Nuttall's Easter-daisy
<i>Tragopogon dubius</i>	Yellow salsify*
<i>Trichophorum pumilum</i>	Pygmy bulrush
<i>Trifolium hybridum</i>	Alsike clover*
<i>Trifolium pratense</i>	Red clover*
<i>Trifolium repens</i>	White clover*
<i>Triglochin maritima</i>	Seaside arrowgrass
<i>Triglochin palustris</i>	Marsh arrowgrass
<i>Typha latifolia</i>	Common cattail
<i>Urtica dioica</i>	Stinging nettle
<i>Utricularia intermedia</i>	Flat-leaf bladderwort
<i>Utricularia macrorhiza</i>	Greater bladderwort
<i>Valeriana edulis</i>	Tobacco-root
<i>Valeriana occidentalis</i>	Western valerian
<i>Verbascum thapsus</i>	Common mullein*
<i>Verbena bracteata</i>	Bracted vervain
<i>Veronica americana</i>	American brooklime
<i>Veronica anagallis-aquatica</i>	Water speedwell
<i>Vicia americana ssp. minor</i>	American vetch
<i>Vicia cracca</i>	Bird vetch*
<i>Viola adunca</i>	Early blue violet
<i>Viola palustris</i>	Marsh violet
<i>Viola praemorsa ssp. linguifolia</i>	Upland yellow violet
<i>Zannichellia palustris</i>	Horned pondweed
<i>Zigadenus paniculatus</i>	Panicled death-camas
<i>Zizia aptera</i>	Heart-leaved Alexanders

D.3 Mammal Species

The following lists show the scientific and common names of the mammal species that have been found on the National Elk Refuge in Wyoming.

<i>Scientific name</i>	<i>Common name</i>
Insectivora	Insectivores
<i>Sorex cinereus</i>	Masked shrew
<i>Sorex merriami</i>	Merriam's shrew
<i>Sorex monticolus</i>	Dusky or montane shrew
<i>Sorex palustris</i>	Water shrew

<i>Scientific name</i>	<i>Common name</i>
Chiroptera	
Bats	
Vespertilionidae	
<i>Eptesicus fuscus</i>	Big brown bat
<i>Lasionycteris noctivagans</i>	Silver-haired bat
<i>Lasiurus cinereus</i>	Hoary bat
<i>Myotis ciliolabrum</i>	Small-footed myotis
<i>Myotis evotis</i>	Long-eared myotis
<i>Myotis lucifugus</i>	Little brown myotis
<i>Myotis volans</i>	Long-legged myotis
<i>Plecotus townsendii</i>	Townsend's big-eared bat
Lagomorpha	
Rabbits and Hares	
Leporidae	
<i>Lepus americanus</i>	Snowshoe hare
<i>Lepus townsendii</i>	White-tailed jackrabbit
Rodentia	
Rodents	
Sciuridae (Squirrels)	
<i>Glaucomys sabrinus</i>	Northern flying squirrel
<i>Marmota flaviventris</i>	Yellow-bellied marmot
<i>Spermophilus armatus</i>	Uinta ground squirrel
<i>Tamias amoenus</i>	Yellow-pine chipmunk
<i>Tamias minimus</i>	Least chipmunk
<i>Tamiasciurus hudsonicus</i>	Red squirrel (pine squirrel, chickaree)
Geomyidae (Pocket gophers)	
<i>Thomomys talpoides</i>	Northern pocket gopher
Castoridae (Beavers)	
<i>Castor canadensis</i>	Beaver
Cricetidae	
<i>Neotoma cinerea</i>	Bushy tailed woodrat
<i>Peromyscus maniculatus</i>	Deer mouse
Arvicolinae (subfamily)	
<i>Clethrionomys gapperi</i>	Southern red-backed vole
<i>Lemmyscus curtatus</i>	Sagebrush vole
<i>Microtus longicaudus</i>	Long-tailed vole
<i>Microtus montanus</i>	Montane vole
<i>Microtus pennsylvanicus</i>	Meadow vole
<i>Microtus richardsoni</i>	Water vole
<i>Microtus richardsoni</i>	Richardson's vole
<i>Ondatra zibethicus</i>	Muskrat
Murinae (subfamily)	
<i>Mus musculus</i>	House mouse
Dipodidae	
<i>Zapus princeps</i>	Western jumping mouse
Erethizontidae (Porcupines)	
<i>Erethizon dorsatum</i>	Porcupine

<i>Scientific name</i>	<i>Common name</i>
Carnivora	
Carnivores	
Canidae (Canids)	
<i>Canis latrans</i>	Coyote
<i>Canis lupus</i>	Gray wolf
<i>Vulpes vulpes</i>	Red fox
Ursidae (Bears)	
<i>Ursus americanus</i>	Black bear
<i>Ursus arctos</i>	Grizzly bear
Procyonidae (Raccoons)	
<i>Procyon lotor</i>	Raccoon
Mustelidae (Mustelids)	
<i>Lutra canadensis</i>	Northern river otter
<i>Mephitis mephitis</i>	Striped skunk
<i>Mustela erminea</i>	Ermine (short-tailed weasel)
<i>Mustela frenata</i>	Long-tailed weasel
<i>Mustela vison</i>	Mink
<i>Taxidea taxus</i>	Badger
Felidae (Felids)	
<i>Lynx rufus</i>	Bobcat
<i>Puma concolor</i>	Mountain lion
Artiodactyla	
Hoofed mammals	
Cervidae	
<i>Alces alces</i>	Moose
<i>Antilocarpa americana</i>	Pronghorn
<i>Cervus elaphus</i>	Elk (wapiti)
<i>Odocoileus hemionus</i>	Mule deer
<i>Odocoileus virginianus</i>	White-tailed deer
Bovidae	
<i>Bison bison</i>	Bison (American buffalo)
<i>Ovis canadensis</i>	Mountain sheep (bighorn sheep)

D.4 Bird Species

The following lists show the scientific and common names of the mammal species that have been found on the National Elk Refuge in Wyoming. An asterisk (*) indicates a nonnative species.

<i>Scientific name</i>	<i>Common name</i>
Hummingbirds	
<i>Selasphorus platycercus</i>	Broad-tailed hummingbird
<i>Selasphorus rufus</i>	Rufous hummingbird
<i>Stellula calliope</i>	Calliope hummingbird

<i>Scientific name</i>	<i>Common name</i>
Perching birds	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Thus rubescens</i>	American pipit
<i>Bombycilla cedrorum</i>	Cedar waxwing
<i>Bombycilla garrulus</i>	Bohemian waxwing
<i>Carduelis pinus</i>	Pine siskin
<i>Carduelis tristis</i>	American goldfinch
<i>Carpodacus cassinii</i>	Cassin's finch
<i>Carpodacus mexicanus</i>	House finch
<i>Catharus fuscescens</i>	Veery
<i>Catharus guttatus</i>	Hermit thrush
<i>Catharus ustulatus</i>	Swainson's thrush
<i>Certhia americana</i>	Brown creeper
<i>Cinclus mexicanus</i>	American dipper
<i>Cistothorus palustris</i>	Marsh wren
<i>Contopus sordidulus</i>	Western wood-pewee
<i>Corvus brachyrhynchos</i>	Common crow
<i>Corvus corax</i>	Common raven
<i>Dendroica petechia</i>	Yellow warbler
<i>Dolichonyx oryzivorus</i>	Bobolink
<i>Dumetella carolinensis</i>	Gray catbird
<i>Empidonax minimus</i>	Least flycatcher
<i>Empidonax oberholseri</i>	Dusky flycatcher
<i>Empidonax occidentalis</i>	Cordilleran flycatcher
<i>Empidonax trailii</i>	Willow flycatcher
<i>Eremophila alpestris</i>	Horned lark
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Geothlypis trichas</i>	Common yellowthroat
<i>Hirundo rustica</i>	Barn swallow
<i>Icteria virens</i>	Yellow-breasted chat
<i>Icterus bullockii</i>	Bullock's oriole
<i>Junco hyemalis</i>	Dark-eyed junco
<i>Lanius excubitor</i>	Northern shrike
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Leucosticte tephrocotis</i>	Gray-crowned rosy finch
<i>Loxia curvirostra</i>	Red crossbill
<i>Loxia leucoptera</i>	White-winged crossbill
<i>Melospiza melodia</i>	Song sparrow
<i>Melospiza lincolni</i>	Lincoln's sparrow
<i>Molothrus ater</i>	Brown-headed cowbird
<i>Myadestes townsendi</i>	Townsend's solitaire
<i>Nucifraga columbiana</i>	Clark's nutcracker
<i>Oporornis tolmiei</i>	MacGillivray's warbler
<i>Passer domesticus</i>	House sparrow
<i>Passerculus sandwichensis</i>	Savannah sparrow

<i>Scientific name</i>	<i>Common name</i>
<i>Passerella iliaca</i>	Fox sparrow
<i>Passerina amoena</i>	Lazuli bunting
<i>Perisoreus canadensis</i>	Gray jay
<i>Petrochelidon pyrrhonota</i>	Cliff swallow
<i>Pheucticus melanocephalus</i>	Black-headed grosbeak
<i>Pica hudsonia</i>	Black-billed magpie
<i>Pipilo chlorurus</i>	Green-tailed towhee
<i>Piranga ludoviciana</i>	Western tanager
<i>Plectrophenax nivalis</i>	Snow bunting
<i>Poecile atricapilla</i>	Black-capped chickadee
<i>Poecile gambelii</i>	Mountain chickadee
<i>Poocetes gramineus</i>	Vesper sparrow
<i>Regulus satrapa</i>	Golden-crowned kinglet
<i>Regulus calendula</i>	Ruby-crowned kinglet
<i>Riparia riparia</i>	Bank swallow
<i>Salpinctes obsoletus</i>	Rock wren
<i>Sayornis saya</i>	Say's phoebe
<i>Seiurus noveboracensis</i>	Northern waterthrush
<i>Setophaga ruticilla</i>	American redstart
<i>Sialia currucoides</i>	Mountain bluebird
<i>Sitta canadensis</i>	Red-breasted nuthatch
<i>Sitta carolinensis</i>	White-breasted nuthatch
<i>Spizella breweri</i>	Brewer's sparrow
<i>Spizella passerina</i>	Chipping sparrow
<i>Stelgidopteryx serripennis</i>	Northern rough-winged swallow
<i>Sturnella neglecta</i>	Western meadowlark
<i>Sturnus vulgaris</i>	European starling*
<i>Tachycineta bicolor</i>	Tree swallow
<i>Tachycineta thalassina</i>	Violet-green swallow
<i>Troglodytes aedon</i>	House wren
<i>Turdus migratorius</i>	American robin
<i>Tyrannus tyrannus</i>	Eastern kingbird
<i>Tyrannus verticalis</i>	Western kingbird
<i>Vermivora celata</i>	Orange-crowned warbler
<i>Vireo gilvus</i>	Warbling vireo
<i>Wilsonia pusilla</i>	Wilson's warbler
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed blackbird
<i>Zonotrichia leucophrys</i>	White-crowned sparrow
Woodpeckers	
<i>Colaptes auratus</i>	Northern flicker
<i>Melanerpes lewis</i>	Lewis' woodpecker
<i>Picoides pubescens</i>	Downy woodpecker
<i>Picoides villosus</i>	Hairy woodpecker
<i>Sphyrapicus nuchalis</i>	Red-naped sapsucker
<i>Sphyrapicus thyroideus</i>	Williamson's sapsucker

<i>Scientific name</i>	<i>Common name</i>
Gallinaceous birds	
<i>Alectoris chukar</i>	Chukar*
<i>Perdix perdix</i>	Gray partridge*
<i>Tympanuchus phasianellus columbianus</i>	Columbian sharp-tailed grouse
<i>Bonasa umbellus</i>	Ruffed grouse
<i>Centrocercus urophasianus</i>	Greater sage-grouse
<i>Dendragapus obscurus</i>	Blue grouse
Waterfowl	
<i>Anas acuta</i>	Northern pintail
<i>Anas americana</i>	American wigeon
<i>Anas clypeata</i>	Northern shoveler
<i>Anas crecca</i>	Green-winged teal
<i>Anas cyanoptera</i>	Cinnamon teal
<i>Anas platyrhynchos</i>	Mallard
<i>Anas strepera</i>	Gadwall
<i>Aythya affinis</i>	Lesser scaup
<i>Aythya americana</i>	Redhead
<i>Aythya collaris</i>	Ringed-neck duck
<i>Branta canadensis</i>	Canada goose
<i>Bucephala albeola</i>	Bufflehead
<i>Bucephala clangula</i>	Common goldeneye
<i>Bucephala islandica</i>	Barrow's goldeneye
<i>Chen caerulescens</i>	Snow goose
<i>Cygnus buccinator</i>	Trumpeter swan
<i>Cygnus columbianus</i>	Tundra swan
<i>Lophodytes cucullatus</i>	Hooded merganser
<i>Mergus merganser</i>	Common merganser
<i>Oxyura jamaicensis</i>	Ruddy duck
Shorebirds	
<i>Actitis macularia</i>	Spotted sandpiper
<i>Capella gallinago</i>	Common snipe
<i>Catoptrophorus semipalmatus</i>	Willet
<i>Charadrius vociferus</i>	Killdeer
<i>Ereubetes mauri</i>	Western sandpiper
<i>Eupoda montana</i>	Mountain plover
<i>Himantopus mexicanus</i>	Black-necked stilt
<i>Limnodromus scolopaceus</i>	Long-billed dowitcher
<i>Limosa fedoa</i>	Marbled godwit
<i>Numenius americanus</i>	Long-billed curlew
<i>Phalaropus tricolor</i>	Wilson's phalarope
<i>Recurvirostra americana</i>	American avocet
<i>Tringa flavipes</i>	Lesser yellowlegs
<i>Tringa melanoleuca</i>	Greater yellowlegs
Rails and coots	
<i>Coturnicops noveboracensis</i>	Yellow rail

<i>Scientific name</i>	<i>Common name</i>
<i>Fulica americana</i>	American coot
<i>Porzana carolina</i>	Sora
Cranes	
<i>Grus canadensis</i>	Sandhill crane
Bitterns, herons, and ibis	
<i>Plegadis chihi</i>	White-faced ibis
<i>Ardea herodias</i>	Great blue heron
<i>Botaurus lentiginosus</i>	American bittern
<i>Bubulcus ibis</i>	Cattle egret
<i>Leucophoyx thula</i>	Snowy egret
<i>Nycticorax nycticorax</i>	Black-crowned night-heron
Raptors	
<i>Accipiter cooperii</i>	Cooper's hawk
<i>Accipiter striatus</i>	Sharp-shinned hawk
<i>Aquila chrysaetos</i>	Golden eagle
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lagopus</i>	Rough-legged hawk
<i>Buteo swainsoni</i>	Swainson's hawk
<i>Cathartes aura</i>	Turkey vulture
<i>Circus cyaneus</i>	Northern harrier
<i>Falco columbarius</i>	Merlin
<i>Falco mexicanus</i>	Prairie falcon
<i>Falco peregrinus</i>	Peregrine falcon
<i>Falco sparverius</i>	American kestrel
<i>Haliaeetus leucocephalus</i>	Bald eagle
<i>Pandion haliaetus</i>	Osprey
Owls	
<i>Aegolius acadicus</i>	Northern saw-whet owl
<i>Asio flammeus</i>	Short-eared owl
<i>Asio otus</i>	Long-eared owl
<i>Athene cunicularia</i>	Burrowing owl
<i>Bubo virginianus</i>	Great-horned owl
<i>Strix nebulosa</i>	Great grey owl
Seabirds	
<i>Aechmophorus occidentalis</i>	Western grebe
<i>Pelecanus erythrorhynchos</i>	White pelican
<i>Phalacrocorax auritus</i>	Double-crested cormorant
<i>Podiceps caspicus</i>	Eared grebe
<i>Podilymbus podiceps</i>	Pied-billed grebe
Gulls and terns	
<i>Chlidonias niger</i>	Black tern
<i>Larus californicus</i>	California gull
<i>Larus philadelphia</i>	Bonaparte's gull
<i>Larus pipixcan</i>	Franklin's gull
<i>Sterna caspia</i>	Caspian tern

<i>Scientific name</i>	<i>Common name</i>
<i>Sterna forsteri</i>	Forster's turn
Other birds	
<i>Gavia immer</i>	Common loon
<i>Ceryle alcyon</i>	Belted kingfisher
<i>Chordeiles minor</i>	Common nighthawk
<i>Columba livia</i>	Rock dove*
<i>Streptopelia decaocto</i>	Eurasian collared dove*
<i>Zenaida macroura</i>	Mourning dove

D.5 Amphibian and Reptile Species

The following lists show the scientific and common names of the amphibian and reptile species that have been found on the National Elk Refuge in Wyoming.

<i>Scientific name</i>	<i>Common name</i>
<i>Ambystoma tigrinum</i>	Tiger salamander
<i>Bufo boreas boreas</i>	Boreal toad
<i>Charina bottae bottae</i>	Rubber boa
<i>Pseudacris maculate</i>	Boreal chorus frog
<i>Rana luteiventris</i>	Columbia spotted frog
<i>Thamnophis elegans vagrans</i>	Intermountain wandering garter snake
<i>Thamnophis sirtalis fitchi</i>	Valley garter snake

D.6 Fish Species

The following lists show the scientific and common names of the fish species that have been found on the National Elk Refuge in Wyoming. An asterisk (*) indicates a nonnative species.

<i>Scientific name</i>	<i>Common name</i>
<i>Catostomus discobolus</i>	Bluehead sucker
<i>Catostomus ardens</i>	Utah sucker
<i>Catostomus platyrhynchus</i>	Mountain sucker
<i>Cottus bairdi</i>	Mottled sculpin
<i>Cottus beldingi</i>	Paiute sculpin
<i>Oncorhynchus clarkii</i>	Snake River cutthroat trout
<i>Oncorhynchus clarkia ssp. x O. mykiss</i>	Snake River cutthroat trout x rainbow trout hybrid
<i>Oncorhynchus mykiss</i>	Rainbow trout*
<i>Pimephales promelas</i>	Fathead minnow*
<i>Prosopium williamsoni</i>	Mountain whitefish
<i>Richardsonius balteatus</i>	Redside shiner

<i>Scientific name</i>	<i>Common name</i>
<i>Rhinichthys cataractae</i>	Longnose dace
<i>Rhinichthys osculus</i>	Speckled dace
<i>Salmo trutta</i>	Brown trout*
<i>Salvelinus fontinalis</i>	Eastern brook trout*

Appendix E

Compatibility Determinations

E.1 Refuge Name and Date Established

- National Elk Refuge
- Established August 10, 1912

E.2 Refuge Purposes

The following excerpts describe the various purposes of the refuge as set in legal orders, laws, and regulations:

- as “a winter game (elk) reserve” (16 U.S.C. § 673, 37 Stat.293)
- as “a winter elk refuge” (37 Stat. 847)
- for “refuge and breeding grounds for birds” (Executive Orders 3596 and 3741)
- for “the grazing of, and as a refuge for, American elk and other big game animals” (16 U.S.C. § 673a, 44 Stat. 1246)
- for “the conservation of fish and wildlife” (16 U.S.C. § 742[a–j], Fish and Wildlife Act of 1956)
- for “opportunities for wildlife-oriented recreational development oriented to fish and wildlife, the protection of natural resources, and the conservation of threatened or endangered species” (16 U.S.C., § 460[k–l], Refuge Recreation Act)

E.3 National Wildlife Refuge System Mission

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

E.4 Description of Uses

The following uses are evaluated for their compatibility on the refuge:

- Hunting
- Fishing
- Wildlife Observation and Noncommercial Photography
- Environmental Education and Interpretation
- Research and Monitoring
- Commercial Filming, Audio Recording, and Still Photography
- Commercial Guiding, Outfitting, Game Retrieval, and Wildlife-Viewing Tours

Hunting

The CCP proposes to continue to provide elk and bison hunting consistent with the Bison and Elk Management Plan, including adaptively modifying hunting regulations to achieve herd size objectives and extending accommodations for hunters with disabilities. The refuge would continue to allow elk and bison retrieval from the Bridger-Teton National Forest to Elk Refuge Road south and west of Twin Creek subdivision, allow a ceremonial tribal bison hunt with annual harvest of up to five bison, prohibit the hunting of any other wildlife species other than elk and bison, and promote voluntary use of lead-free ammunition.

In addition, the refuge would expand hunting opportunities for young people. We would work with partners to develop a hunter mentoring program. By scheduling the existing youth hunt to later in the season, young hunters would have a better chance of observing and harvesting elk. Options would include designating a weekend midseason (of the adult hunter season) for youth only or adding a weekend after the end of the regular elk season.

The refuge would provide more outreach for other refuge users to promote education and awareness of the refuge hunting program. Staff would develop bear attractant regulations for hunting on the refuge, encourage the carry of bear spray while hunting, and consider requiring hunters to carry bear spray. Staff might develop hunter-use management tools such as hunter checkpoints, hunter success surveys, and mandatory reporting of tag use to better manage hunt program opportunities.

The refuge would consider and create more hunting opportunities for species other than elk and bison as the need arose. Staff would coordinate with WGFD to develop specific refuge hunting opportunities by making available limited-quota type 6 tags in Hunt Area 77 on the refuge to increase cow elk harvest. We would also work with WGFD to develop a limited-quota antlered elk hunt on the refuge to provide more quality opportunities using limited-quota, type 1 tags in Hunt Area 77. The refuge would open currently closed areas on the southern and western boundaries of the refuge to archery hunters to create more harvest opportunities.

We would analyze and consider more hunter access areas and designated parking lots. The staff would look at more access for bison hunters on the northern end of the refuge though the Teton Valley Highlands subdivision, either on the western end of the subdivision to hunt retrieval road 6 or on the eastern end to hunt retrieval road 7. We would consider access for archery hunters on the western

boundary of the refuge next to the Jackson National Fish Hatchery.

Availability of Resources

The refuge updates with available resources the current directional signs and brochures. Maintenance of access roads, parking, hunting and information kiosks, and public use signs is closely tied to Maintenance Management System funding. The refuge's base money would pay for the update and printing of brochures.

The refuge would need more law enforcement staff and resources (1) to manage significant changes in the hunting program to reduce disturbance to wildlife and habitat, (2) to carry out and encourage preventative law enforcement efforts, and (3) to check compliance with public use and hunting regulations.

Anticipated Impacts of Use

The hunting program would continue to provide hunters ample opportunity for quality hunting experiences without materially detracting from the mission of the Refuge System or the establishing purposes of the refuge. We would keep the public use brochures and the refuge's Web site up-to-date and readily available to hunters. Staff would continue to monitor hunter success and satisfaction through random contacts with hunters in the field and in the refuge office.

Elk and bison hunting programs on the National Elk Refuge are essential to achieve the population objectives outlined in the Bison and Elk Management Plan. Although hunting directly affects the hunted species and might indirectly disturb other species, limits on harvest and access for recreational hunting would make sure that populations do not fall to unsustainable levels. By its nature, hunting creates a disturbance to wildlife and directly affects the individual animals being hunted. We would design and monitor hunting to offer a safe and quality program and to keep adverse effects within acceptable limits.

Other effects from hunting activity include conflicts with individuals participating in wildlife-dependent, priority public uses such as wildlife observation and photography. This could decrease the visitor satisfaction during the hunting season.

Public Review and Comment

This compatibility determination is presented for public review and comment as part of the 30-day public comment period for the draft CCP and EA for the National Elk Refuge.

Determination

Hunting would be a compatible use on the National Elk Refuge.

Stipulations Necessary for Compatibility

Hunters would be required to follow refuge-specific regulations for acquisition of hunting permits; access, parking, and travel restrictions; and weapons and ammunition limitations. Limiting access and monitoring the use could help limit any adverse effects.

Justification

The National Wildlife Refuge System Act of 1966, other laws, and the Service's policy allow hunting on a national wildlife refuge when it is compatible with the purposes for which the refuge was established and acquired. Hunting is a form of wildlife-dependent recreation and is identified as a priority public use in the Improvement Act. Based on anticipated biological effects described above and in the EA, we find that hunting on the refuge in accordance with State regulations would not interfere with the purposes for which the refuge was established and would support management objectives. Special refuge regulations are in place to reduce negative effects on habitat and wildlife.

Mandatory 15-year Reevaluation Date: 2028

Fishing

This use would be a continuation of the historical activity of noncommercial fishing. Public use areas such as parking and fishing areas, as well as interpretive panels, signs, kiosks, and other structures might be installed and supported to facilitate the fishing program. Areas on the refuge that are seasonally sensitive to migratory birds would remain closed to public entry and use. The refuge would open only selected areas to fishing. Special refuge regulations governing fishing would be available in refuge brochures.

The CCP proposes to allow fishing on the refuge in accordance with State regulations. The refuge would provide fishing opportunities during daylight hours. We would maintain fishing access along Highway 89, along with the parking turnouts along upper Flat Creek. The Gros Ventre River, upper Flat Creek, lower Flat Creek, lower Nowlin Creek and

Sleeping Indian Pond are open to fishing according to season dates and regulations set by WGFD. All other refuge ponds, Flat Creek downstream from the old Crawford Bridge site, and Nowlin Creek upstream from the posted fishing boundary would remain closed to fishing.

Besides sponsoring Kids' Fishing Day with Jackson National Fish Hatchery and WGFD, the refuge would start programs that attract more young people to fish at the refuge. Future programs could include casting instruction, fishing skills clinics, and a mentoring program for young anglers.

The Flat Creek fishery is managed for a native, wild, and trophy-sized population of Snake River cutthroat trout. Long-time devotees of Flat Creek report a decline in the opportunity to fish for large cutthroats. Recent fish surveys show that nonnative trout (brook, brown, and rainbow) account for almost half of the trout population in Flat Creek. There is a need for management of this fishery to support the quality of the fishing experience.

Availability of Resources

The refuge has adequate administrative and management staff to support the fishing program.

Anticipated Impacts of Use

Temporary disturbance of wildlife might occur near fishing activity. Fishing would temporarily decrease the fish population until natural reproduction or stocking replenished the population. Frequency of use would be directly dependent on fish populations and their feeding activity. When fish populations were high and active, public use would increase. Minimal disturbance to ground-nesting birds might occur from anglers walking along rivers and streams. Littering could also become a problem. We anticipate no long-term negative effects on resources.

Public Review and Comment

This compatibility determination is presented for public review and comment as part of the 30-day public comment period for the draft CCP and EA for the National Elk Refuge.

Determination

Fishing would be a compatible use on the National Elk Refuge in accordance with State regulations.

Stipulations Necessary for Compatibility

Refuge regulations allow access to fishing areas during daylight hours only. A scheduled gate opening at daylight on the August 1 season opening would be consistent with refuge regulations. We would post access gates with opening time information and conduct public outreach.

The typical Flat Creek anglers are avid flycasters that have adopted catch-and-release principles as their conservation ethic. The refuge needs to create an educational component that would convince our anglers to harvest nonnative trout. Special refuge regulations might be necessary to require anglers to remove nonnative trout caught in Flat Creek to meet management objectives.

Justification

Fishing is a form of wildlife-dependent recreations and is identified as a priority public use in the Improvement Act. Based on the biological effects addressed above and in the EA, we find that fishing would not interfere with the purposes for establishment of the refuge. Current staff levels and money are adequate. Special refuge regulations are in place to reduce negative effects on refuge habitat and wildlife.

Mandatory 15-year Reevaluation Date: 2028

Wildlife Observation and Noncommercial Photography

A variety of habitats and many species of wildlife on the refuge provide observation and photography opportunities year-round. The refuge would continue to provide wildlife observation and photography opportunities such as (1) observation blinds, (2) an up-to-date species list for the refuge, and (3) allowing the use of portable viewing and photography blinds through the issuance of special use permits. These activities may take place on foot, bicycle, automobile, horse, cross-country skis, and snowshoes.

Refuge facilities bring visitors closer to wildlife. New facilities for observing and photographing wildlife (such as observation platforms, trails, auto tour routes, photography blinds, and webcams) might be developed. In addition, the CCP proposes maintaining access to existing turnouts, trails, and other observation sites. The primary viewing turnouts and designated observation sites follow:

- upper viewing platform on the second story of the visitor center
- Burt Raynes Boardwalk and remote-viewing platform on the eastern side of the visitor center lawn
- turnout north of the visitor center and the Flat Creek Bridge, which has a viewing platform and National Elk Refuge sign (turnout would continue to be plowed in winter, thus providing year-round access to the turnout)
- turnout along Highway 89 north of Jackson, which has a kiosk and interpretive panel about the purpose of the fence and the elk “jumps” (refer to “Fencing” in chapter 4, section 4.3) (turnout would continue to be plowed in winter by the Wyoming Department of Transportation, giving travelers on Highway 89 a safe place to pull over and view wildlife; however, plowed snow would pile up on the northern end of the turnout, blocking access to the kiosk and interpretive panel)
- with added turnouts, about 10 turnouts would be available on Elk Refuge Road. They would be plowed during winter months to encourage vehicles to move off the road to view wildlife

Elk Refuge Road and Flat Creek Road would be open to the public for wildlife observation and access to national forest lands from May 1 through November 30. During winter, 3.5 miles of Elk Refuge Road (from the refuge entrance to the Twin Creek subdivision) would be open to provide access to national forest lands and wildlife-viewing opportunities. Access to the refuge beyond the Twin Creek subdivision would continue to be restricted as part of an area closure to protect wintering wildlife and is coordinated with the Bridger-Teton National Forest.

In addition the refuge would use the Jackson Hole Community Pathways to develop a more prominent access route across visitor center lawn to the existing remote-viewing platform and develop a boardwalk through wetland areas near the visitor center. We might build a photo blind along the boardwalk for noncommercial photography. The refuge might use webcams to provide remote wildlife-viewing opportunities.

Availability of Resources

Sufficient resources are available to administer, manage, and check this use of wildlife observation and noncommercial photography. Existing refuge infrastructure would support these activities. The construction and maintenance of roadways, kiosks, observation platforms, and trails, as well as law enforcement activities to make sure that visitors comply with refuge regulations while conducting these activities, are the principle expenses associated with wildlife observation and photography. An extra park ranger, law enforcement officer, and maintenance worker, as proposed in the CCP, would enhance public opportunities for these uses and improve the quality and quantity of opportunities.

Anticipated Impacts of the Use

The proposed wildlife observation and photography uses, including development of facilities to support those uses, would foster public appreciation and understanding of the Greater Yellowstone Ecosystem and the importance of refuge habitats for wildlife conservation.

Short-term effects might include the temporary displacement of bison, elk, birds, and other wildlife to adjacent habitats during the initial positioning and removal of portable blinds, cameras, and other equipment. Observation areas are in locations that provide consistent wildlife-viewing opportunity with minimal disturbance to wildlife.

Hiking during the breeding season, when confined to open trails and roads would have little or no effect on wildlife. Bicycling would be restricted to roadways open to vehicular traffic to reduce disturbance to wildlife. Some animals and birds would be flushed from foraging or resting habitats by the approach of people on trails.

Winter disturbance to resident wildlife would be temporary and minor. The destruction of ground bird nests by horses (allowed only during hunting) and the disturbance to other wildlife would be minimal because of the seasonal restrictions inherent to the hunting season.

The area affected by these disturbances would be small compared to the overall habitat available. Furthermore, all areas are available to wildlife for undisturbed use during closed hours, and we do not anticipate that disturbance caused by observation and photography would cause wildlife to leave the refuge. We find that disturbance from wildlife observation and noncommercial photography programs would be biologically insignificant. We would expect no long-term effects if recommended stipulations were followed.

Public Review and Comment

This compatibility determination is presented for public review and comment as part of the 30-day public comment period for the draft CCP and EA for the National Elk Refuge.

Determination

Wildlife observation and noncommercial photography would be compatible uses on the National Elk Refuge.

Stipulations Necessary for Compatibility

The refuge would issue special use permits to all individuals using blinds for observation and photography on the refuge. Staff would issue five special use permits for designated areas in any given year. The use of small observation blinds would be available on a first-come, first-serve basis. If the number of requests for blinds exceeded five, the permitting process would be reviewed and modified as necessary. Refuge staff would give information to visitors using permanent or portable observation and photography blinds on proper use and etiquette of these structures to reduce disturbance to wildlife and their natural environments and other refuge visitors:

- Visitors need to notify refuge staff before arrival at the refuge for observation and photography.
- Refuge staff decides locations of blinds, which might be limited to areas next to public access roads.
- Refuge staff decides if, when, where, and for how long access may be allowed to photograph at individual areas.
- Visitors need to erect and remove portable blinds daily.

The refuge would support seasonal closures to protect sensitive wildlife areas and reduce disturbance to fish and wildlife. We would restrict non-Service vehicles to county and public access roads in the refuge.

We would design viewing areas to reduce disturbance effects on wildlife and all refuge resources while providing a good opportunity to view wildlife in natural environments.

The refuge would allow foot traffic (hiking, cross-country skiing, and snowshoeing) only on designated trails, roads open to motorized vehicles, and in the refuge hunt area during the refuge hunting season.

We would restrict use of horses to the hunting program or to roadways open to motorized vehicles year-round. The refuge would restrict bicycling to designated trails and roadways open to motorized vehicles.

Justification

Wildlife observation and photography are forms of wildlife-dependent recreation and are identified as priority public uses in the Improvement Act. These uses, both existing and future enhanced programs as prescribed in the CCP, would be compatible with the purposes of the refuge and the mission of the Refuge System. These uses are not only justified but are encouraged by the Improvement Act. Wildlife observation and photography can instill, in citizens of all ages, a greater appreciation for wildlife and its habitat. This appreciation could extend to the Refuge System and other conservation agencies.

Disturbance from wildlife observation and photography is not expected to adversely affect wildlife populations. Most wildlife observation is confined within a set distance from existing roadways. In some locations, the infrastructure helps to concentrate visitors in areas that can allow wildlife observation and photography opportunities at safe distances that reduce disturbance to wildlife.

Based on anticipated biological effects described above and in the EA, we find that wildlife observation and noncommercial photography on the refuge would not interfere with the purposes for which the refuge was established. Limiting access and monitoring the uses could help limit any adverse effects.

Mandatory 15-year Reevaluation Date: 2028

Environmental Education and Interpretation

The refuge would provide opportunity for student field trips on an “as-arranged” basis. Temporary and impromptu outdoor classrooms could be established or used in wetland and riparian habitats; however, seasonal closures might occur to avoid effects on threatened and endangered species or sensitive habitats.

Interpretive panels and auto tour brochures would give visitors information about habitat, wildlife, management actions.

The CCP proposes to continue environmental education and interpretation and add the following to improve these programs to foster appreciation and

understanding of the Refuge System and the resources of the refuge:

- The refuge would develop a self-guided interpretive tour route on Elk Refuge Road and Flat Creek Road on the eastern side of the refuge, including interpretive turnouts, signage, and brochures. We would need to address safety mitigation during critical times of year (hunting and bison hazing). The refuge would need to update and replace interpretive signs as needed, with panels related to the tour route theme.
 - First phase (winter route)—Develop the route from Elk Refuge Road entrance to Twin Creek subdivision for approximately 3.5 miles.
 - Second phase (summer route)—Develop the route from Twin Creek subdivision to the McBride area; open May 1–December 1 with an interpretive kiosk at the McBride parking area.
 - Third phase—Increase traffic control signing from the McBride area to the eastern parking lot and include the traffic information in the brochure. (If we encouraged or promoted traffic to the east parking lot, we would need to make a major change to the road for safety. Currently, this is a one-lane road around McBride Ridge.)
- We might develop short multimedia presentations that would be available on demand. This would respond to visitors’ needs and preferences as well as allow refuge staff to update segments with minimal cost and staff time.
- We would emphasize the role of national wildlife refuges versus national parks and national forests.
- The refuge would use the North Highway 89 Pathway during open season to interpret wetland values or other messages. Refuge staff would cooperate with Teton County to evaluate pathway effects on wildlife and habitat and adjust use as appropriate.
- Refuge staff would develop a more prominent access route across visitor center lawn to the existing remote-viewing platform and develop a boardwalk through wetland areas

near the visitor center. A photo blind might be developed along the boardwalk for non-commercial photography.

- We would develop more accessible observation sites on the refuge.
- Refuge staff might take part in special events and activities offsite to bring the refuge message to large numbers of people as time and staff allow.
- The refuge would update interpretive panels, brochures, Web sites, and maps.

Availability of Resources

The refuge would use annual operations money, grants, regional project proposals, and challenge cost-share agreements to enhance environmental education and interpretation activities, directional signs, and brochures.

The visitor services staff relies on a large residential volunteer workforce as the means to offer formal and informal interpretation during the summer months when visitor center visitation peaks. Volunteers also provide formal and informal interpretation during the winter months. The refuge would seek money for permanent or seasonal interpreters to improve programming at the visitor center, Miller House, and offsite programs.

To meet the demand for environmental education during the school year, we use money from nongovernmental partnerships to hire seasonal winter naturalists. Refuge volunteers offer environmental education programs in the spring.

Anticipated Impacts of the Use

We would continue to promote a greater public understanding and appreciation of the refuge resources, programs, and issues through interpretive, outreach, and environmental education programs. The refuge staff would continue to provide environmental education and interpretation both on and off refuge lands. Presentations, both on and off Service lands, would be provided to refuge visitors, school groups, and organizations, helping us reach a broader audience.

Updated brochures, interpretive panels, and other educational materials would help visitors understand refuge resources, ecosystem processes, and land management. Features such as the proposed auto tour route and accessible observation sites would provide access to the many sights and sounds of the refuge.

We would manage onsite presentations to reduce disturbance to wildlife, habitat, and cultural resources.

We would manage onsite presentations to reduce disturbance to wildlife, habitat, and cultural resources; however, there might be a short-term, low-level effect on the immediate and surrounding area. Effects could include trampling of vegetation and temporary disturbance to nearby wildlife species during the activities. Development and implementation of interpretive and education programs would have minimal and biologically insignificant effects on refuge resources.

Public Review and Comment

This compatibility determination is presented for public review and comment as part of the 30-day public comment period for the draft CCP and EA for the National Elk Refuge.

Determination

Environmental education and interpretation would be compatible uses on the National Elk Refuge.

Stipulations Necessary for Compatibility

The refuge would hold onsite activities where minimal effect on wildlife and habitats would occur.

All motor vehicles associated with environmental education and interpretation would remain on designated roads open to vehicular traffic.

Staff would check use patterns and would make adjustments in timing, location, and duration of activities as needed to limit disturbance to wildlife and habitat.

We would review new environmental education and interpretation activities to make sure these activities met program objectives and were compatible.

Justification

Environmental education and interpretation are forms of wildlife-dependent recreation and are priority public uses of the Refuge System. Environmental education and interpretation would increase public awareness and appreciation of the significant wildlife and habitat values of the refuge and the Refuge System. We anticipate that such appreciation and understanding would foster increased public support for

the Refuge System and conservation of America's wildlife resources.

Based on the anticipated biological effects described above and in the EA, we find that environmental education and interpretation on the refuge would not interfere with the purposes for which the refuge was established. Limiting access and monitoring the uses could help limit any adverse effects.

Mandatory 15-year Reevaluation Date: 2028

Research and Monitoring

The refuge would allow research and monitoring on a variety of biological, physical, and social issues and concerns to address management information needs or other issues. Studies would be conducted by Federal, State, and private entities, including the U.S. Geological Survey, State and private universities, and independent researchers and contractors.

Each year, the refuge issues special use permits for biological and physical research studies; normally, we get fewer than 10 requests each year. The refuge would give priority to studies that contribute to the enhancement, protection, preservation, and management of the refuge's native plant, fish, and wildlife populations and their habitats. Research applicants must submit proposals that describe the following:

- objectives of the study
- justification for the study
- detailed study methods and a schedule
- potential effects on wildlife and habitat including short- and long-term disturbance, injury, or mortality
- measures the researcher would take to reduce disturbances or other effects
- personnel involved and their qualifications and experience
- status of necessary permits (such as scientific collecting permits and endangered species permits)
- costs to the refuge and refuge staff time requested, if any
- anticipated progress reports and end products, such as reports or publications

Refuge staff would review research permit applications and issue special use permits if approved. Evaluation criteria for the issuance of special use permits would include, but not be limited to, the following:

- We would give higher priority over other requests to research that would contribute to specific management issues, the purposes of the refuge, or the mission of the Refuge System.
- We would not approve research that would conflict with other ongoing research, monitoring, or management programs.
- We would be less likely to approve research projects that could be conducted off refuge lands.
- We would likely not approve research that would cause undue disturbance or would be intrusive. The refuge would carefully weigh the degree and type of disturbance when evaluating a research request.
- We would decide if the research evaluation made any effort to reduce disturbance through study design including adjusting location, timing, number of permittees, study methods, and number of study sites.
- We would likely deny the request if staff levels or logistics make it impossible for refuge staff to check researcher activity in a sensitive area.
- We would consider and agree on the length of the project before approval.
- To reduce disturbance to wildlife, we would not permit researchers in closed areas, unless specifically authorized. The refuge would permit vehicular access only on roads and trails normally open to the public.

Availability of Resources

Current staff would be adequate to manage research and monitoring projects at anticipated levels. Reviewing a permit application, drafting and issuing the special use permit, and making compliance assessments would take an average of 15 hours of staff time per permit.

Access points, vehicles, miscellaneous equipment, and limited logistical support might be available at

the refuge manager's discretion. Temporary housing on the refuge might be available for use by researchers while studying refuge resources, at the refuge manager's discretion.

Anticipated Impacts of Use

We would expect some degree of disturbance with all research activities, because researchers might use Service roads or enter areas that are closed to the public. Research activities might disturb fish and wildlife and their habitats. For example, the presence of researchers could cause waterfowl to flush from resting and feeding areas, cause disruption of birds and other wildlife on nests or breeding areas, or increase predation on individual nests and animals as predators follow human scent or trails. To wildlife, the energy cost of disturbance could be appreciable in terms of disruption of feeding, displacement from preferred habitat, and the added energy expenditure to avoid disturbance. Some research might require collection of samples or handling of wildlife. Efforts to capture animals could cause disturbance, injury, or death to groups of wildlife or to individuals.

Sampling activities could cause compaction of soils and the trampling of vegetation, the establishment of temporary foot trails through vegetation, and disruption of bottom sediments in wetlands. The removal of vegetation or sediments by core sampling methods could increase localized turbidity and disrupt nontarget plants and animals. Installation of posts, equipment platforms, collection devices, and other research equipment might present a hazard to heavy equipment operators if these items were not adequately marked and removed at the right times or on completion of the project.

Public Review and Comment

This compatibility determination is presented for public review and comment as part of the 30-day public comment period for the draft CCP and EA for the National Elk Refuge.

Determination

Research and monitoring would be compatible uses on the National Elk Refuge.

Stipulations Necessary for Compatibility

Refuge staff would use the above criteria for evaluating and determining whether to approve a proposed study. Before conducting investigations, researchers would obtain a special use permit from the refuge that contained specific stipulations for when, where, and how the research would be con-

ducted. If research methods were found to have potential effects on habitat or wildlife, it must be shown that the research was necessary for conservation management of resources on the refuge. The researchers would develop measures to reduce potential effects to be included as part of the study design; these measures would be conditions in the special use permit. The refuge manager would have the discretion to prohibit research that causes undo harm or disturbance or that would not contribute to the purposes of the refuge or the mission of the Refuge System.

Researchers would follow all refuge rules and regulations unless otherwise exempted by refuge management. Extremely sensitive wildlife habitats and species would be sufficiently protected from disturbance by limiting research activities in these areas. The refuge would review projects annually, and researcher would submit annual progress reports. Refuge staff would check research activities for compliance with conditions of the special use permit. At any time, refuge staff might accompany the researchers to determine potential effects. Staff could decide that approved research and special use permits be terminated because of observed effects. The refuge manager could also cancel a special use permit if the researcher was out of compliance or to make sure there is wildlife and habitat protection.

Specific stipulations in the special use permit would vary by research project, but would be designed to reduce impacts to wildlife and their habitats and to make sure visitors, researchers, and refuge staff were safe. To reduce potential safety hazards, researchers must clearly mark posts, equipment platforms, fencing materials, and other equipment left unattended. Such items must be promptly removed on completion of the research.

Researchers must possess all applicable State and Federal permits for the capture and possession of protected species, for conducting regulated activities in wetlands, and for any other regulated activities.

Research involving collections would be extremely restricted. Collections would be limited to type or voucher specimens only, require preapproval by the refuge manager, and include verification of compliance with all State and Federal collection permits and requirements.

Researchers would promptly submit findings, such as annual status reports and a final report, to the refuge manager for inclusion in the decisionmaking and management process.

Justification

Research and monitoring would be activities that provide essential information necessary for the

appropriate and effective management of refuge resources:

- • Research can help provide answers to complex questions, when those answers are not readily apparent and are vital to determining effective management strategies.
- • Monitoring would be necessary to quantify or qualify the results of management actions. This is a basic step in the adaptive resource management process and necessary to guide modifications to management actions for improved results.

We would issue research and monitoring permits only when the information they provided was so valuable that it outweighed the temporary disturbance and minor effects on wildlife and their habitats. We would expect minimal effects on refuge wildlife and habitats with research studies, because special use permits would include conditions to make sure that these effects were kept to a minimum.

Mandatory 10-year reevaluation date: 2023

Commercial Filming, Audio Recording, and Still Photography

Commercial motion pictures and audio recordings are defined as the digital or film recording of a visual image or sound recording by a person, business, or other entity for a market audience, such as for a documentary, television, feature film, advertisement, or similar project. It does not include news coverage or amateur and visitor use.

Commercial photography is defined as a visual recording (motion or still) by firms or individuals other than news media representatives who intend to distribute their photographic content for money or other consideration. This includes the creation of educational, entertainment, or commercial enterprises as well as advertising audiovisuals for the purpose of paid product or services, publicity, and commercially oriented photo contests.

The National Elk Refuge provides tremendous opportunities for commercial filming and photography of bison, elk, migratory birds, and other wildlife. Each year, the refuge staff receives 6–15 requests to conduct commercial filming or photography on refuge lands. Refuge staff review requests for commercial photography, motion pictures, and audio recordings and issue special use permits for approved requests.

We evaluate each request on an individual basis using several U.S. Department of the Interior, agency, and Refuge System policies (such as 43 CFR Part 5, 50 CFR 27.71, and 8 RM 16).

Evaluation criteria would include the following:

- Commercial photography, motion pictures, and audio recordings must (1) show a means to increase public appreciation and understanding of wildlife or natural habitats, (2) enhance public knowledge, appreciation, and understanding of the Refuge System, or (3) facilitate outreach and education goals of the refuge. The refuge would deny the use and not issue a special use permit if none of the previous criteria were met.
- We would not approve activities that caused undue disturbance to wildlife or habitat. Refuge staff would carefully weigh the degree and type of disturbance when evaluating a request.
- We would not approve requests that would conflict with other management programs or would impair existing wildlife-dependent recreational uses.
- If logistics or lack of staff made it impossible for the refuge staff to monitor the activity, we might deny the request, depending on the specific circumstances.

Availability of Resources

The commercial filming, audio recording, and still photography uses would be administered with current resources. Administrative costs for review of applications and issuance of special use permits and staff time to conduct compliance checks might be offset by a fee system designated for the agencies within the U.S. Department of the Interior.

Anticipated Impacts of Use

Wildlife filmmakers and photographers tend to create the greatest disturbance of all wildlife observers (Dobb 1998, Klein 1993, Morton 1995). While observers frequently stop to view wildlife, photographers are more likely to approach the animals; even a slow approach by photographers tends to have behavioral consequences to wildlife (Klein 1993). Photographers often remain close to wildlife for extended periods in an attempt to habituate the subject to their presence (Dobb 1998). Furthermore, photographers with low-power lenses tend to get much closer to their subjects (Morton 1995). This usually causes

more disturbance to wildlife as well as habitat, including the trampling of plants. Handling of animals and disturbing vegetation (such as cutting plants and removing flowers) or cultural artifacts is prohibited on refuge lands.

Issuance of special use permits with strict guidelines and followup by refuge staff for compliance would help to reduce or avoid these effects. Permittees who did not follow the stipulations of their special use permits could have their permits revoked, and further applications for filming or photographing on the refuge would be denied. The refuge could issue a notice of violation to permittees who operate outside the conditions of their permits and violate refuge regulations.

Public Review and Comment

This compatibility determination is presented for public review and comment as part of the 30-day public comment period for the draft CCP and EA for the National Elk Refuge.

Determination

Commercial filming, audio recording, and still photography would be compatible uses on the National Elk Refuge.

Stipulations Necessary for Compatibility

We would use the evaluation criteria described earlier to decide if commercial filming, audio recording, or still photography was a compatible use.

All commercial filming would require a special use permit that would (1) describe conditions that protect the refuge's values, purposes, resources, and public health and safety, and (2) prevent unreasonable disruption of the public's use and enjoyment of the refuge. Such conditions may be, but are not limited to: specifying road conditions when access would not be allowed, establishing time limitations, and identifying routes of access. These conditions would be identified to prevent (1) excessive disturbance to wildlife, (2) damage to habitat or refuge infrastructure, or (3) conflicts with other visitor services or management activities. Staff and workloads would determine if special access to closed areas of the refuge would be allowed case-by-case.

The special use permit would stipulate that imagery produced on refuge lands would be made available for environmental education, interpretation, outreach, internal documents, or other suitable uses. In addition, any commercial products must include proper credits to the refuge, the Refuge System, and the Service.

Still photography would require a special use permit, with specific conditions as outlined above, if one or more of the following occurred:

- Photography takes place at locations where or when members of the public are not allowed.
- Photography uses models, sets, or props that are not part of the location's natural or cultural resources or administrative facilities.
- The refuge has higher administrative costs to provide management and oversight to avoid impairment of the resources and values of the site, limit resource damage, and decrease health and safety risks to the visiting public.
- The photographer intentionally manipulates vegetation to create a shot, for example, cutting vegetation to create a blind.

To reduce the effects on refuge lands and resources, the refuge staff would make sure that all commercial filmmakers and commercial still photographers (regardless of whether a special use permit were issued) comply with policies, rules, and regulations. The staff would monitor and assess the activities of all filmmakers, audio recorders, and still photographers.

Justification

Commercial filming, audio recording, and still photography are economic uses that, to be compatible, must contribute to the achievement of the refuge purposes, mission of the Refuge System, and the mission of the Service. Providing opportunities for these uses should result in an increased public awareness of the refuge's ecological importance as well as advancing the public's knowledge and support for the Refuge System and our agency. The stipulations outlined above and conditions imposed in the special use permits issued to commercial filmmakers, audio recorders, and still photographers would make sure that these wildlife-dependent activities occur with minimal adverse effects to resources or visitors.

Mandatory 10-year reevaluation date: 2023

Commercial Guiding, Outfitting, Game Retrieval, and Wildlife-Viewing Tours

Flat Creek is a popular fishing destination especially in August, and some time periods seem to be overcrowded. Private anglers have asked us why we issue guided fishing permits since they can add to the crowding. Law enforcement has identified several unpermitted guiding outfitters in the past two seasons and suspects that there is little respect for the refuge permitting requirements. Creating a limit for the total number of permits and setting quotas of two trips, two guides, and a maximum of two clients per day could have a desired result of dispersing anglers. Charging a permit fee could create a sustained funding mechanism for maintaining fishing access signing and the printing of fishing regulations.

The refuge has allowed guided elk and bison hunts by special use permit since 2008. This service has helped young, novice, and elderly hunters and hunters with limited equipment to enjoy a quality, well-equipped hunting experience. Guided hunting would continue to increase the potential for hunters unfamiliar with the refuge to successfully harvest an animal, contributing to meeting the refuge population objectives. Fees collected would help offset the costs of administering this program.

The refuge has allowed game retrieval services by special use permit for decades. Elk and bison are large, making it challenging for a young, inexperienced, physically challenged, or ill-equipped hunter to field-dress or transport a large carcass from an area closed to motor vehicles to the hunter's vehicle.

We would continue to allow wildlife-viewing tour companies to operate on the refuge through a special use permit that outlined special conditions for operation including required safety mitigation. Several of the tour companies have attended National Elk Refuge-sponsored training to enable them to provide accurate, interpretive wildlife information. The visitor services staff would continue communication throughout the year with wildlife tour companies to give them with current information about management practices, operations, and issues.

The refuge would continue to support a contracted interpretive sleigh ride program in winter and work closely with the contractor to provide quality education and interpretation through a unique wildlife-viewing opportunity.

Availability of Resources

The refuge would administer commercial guiding, outfitting, game retrieval, and wildlife-viewing tours

with current resources. Administrative costs for review of applications, issuance of special use permits, and staff time to make compliance checks could be offset by a fee system designated for the agencies within the U.S. Department of the Interior.

Anticipated Impacts of the Use

Fishing and hunting guides assist visitors by providing local knowledge and equipment to enhance their client's chances for a successful outdoor experience. Limitations placed in the special use permits would restrict these guiding operations and prevent an exclusive right to an area or the exclusion of the public. Fishing guides can help clients catch and release fish in a manner that prevents injuries to the fish. Hunting guides likely improve the potential for their clients to harvest a bison or elk, which helps move the herds closer to the population objectives outlined in the Bison and Elk Management Plan; this would be a positive contribution to the refuge's management efforts.

Permittees for game retrieval services would be constrained by the same travel restrictions as hunters, operating only in areas and on routes that were open to hunters. Wildlife disturbance would be minimal in these areas, which are already subject to hunter activities. Game retrieval services would prevent carcass spoilage and provide a service to hunters who might be unable to process and retrieve a harvested elk or bison. These services would contribute to a quality hunting program and could help increase total harvest.

Wildlife-viewing tour companies provide wildlife observation and interpretation opportunities primarily to tourists visiting Jackson Hole, many of which arrive by aircraft and need ground transportation to wildlife-viewing areas. Tour company vehicles, along with tourists in personal vehicles, have parked along Elk Refuge Road in the winter to observe bighorn sheep and have caused traffic congestion. The proposed construction of additional parking areas along Elk Refuge Road near Miller Butte would help reduce this problem.

The sleigh ride program would continue to provide a unique and spectacular setting to present a wildlife interpretive message that was important to the mission of the National Elk Refuge and raised awareness of National Wildlife Refuge System. This program is anticipated to continue to reach between 20,000 and 25,000 people annually. Horse-drawn sleighs and wagons would cause insignificant disturbance to elk and other wildlife.

The above commercial activities would require special use permits, which would include strict guidelines and conditions to prevent the exclusion of the public or damage and disturbance to wildlife and

their habitats. Refuge staff monitoring these activities for compliance with restrictions would help prevent conflicts with wildlife or the public. Permittees who did not follow the conditions outlined in their special use permits could have their permits revoked and further applications denied.

Public Review and Comment

This compatibility determination is presented for public review and comment as part of the 30-day public comment period for the draft CCP and EA for the National Elk Refuge.

Determination

Commercial guiding, outfitting, game retrieval, and wildlife-viewing tours would be compatible uses on the National Elk Refuge.

Stipulations Necessary for Compatibility

Commercial guiding, outfitting, game retrieval, and wildlife-viewing tours must (1) show a means to extend public appreciation and understanding of wildlife or natural habitats, (2) enhance education, appreciation, and understanding of the Refuge System, or (3) facilitate outreach and education goals of the refuge. Failure to show any of these criteria would result in a special use permit being denied.

Special use permits for these uses would (1) describe conditions that protect the refuge's values, purposes, resources, and public health and safety, and (2) prevent unreasonable disruption of the public's use and enjoyment of the refuge. Such conditions may be, but would not be limited to, specifying road conditions when access would not be allowed, establishing time limitations, and identifying routes of access.

For game retrieval services, we would prohibit off-road vehicles and require companies to operate only in areas and on routes that are open to hunters.

The refuge would set these conditions to prevent excessive disturbance to wildlife, damage to habitat or refuge infrastructure, or conflicts with other visitor services or management activities. To reduce the effects on our lands and resources, the refuge staff would make sure that all commercial guides, outfitters, game retrieval services, and wildlife-viewing tour companies (regardless of whether a special use permit is issued) comply with policies, rules, and regulations.

Justification

Commercial guiding, outfitting, game retrieval, and wildlife-viewing tours are economic uses that

would need to contribute to the achievement of the refuge purposes, mission of the Refuge System, or the mission of the Service. Providing opportunities for these uses should result in an increased public awareness of the refuge's ecological importance as well as advancing the public's knowledge and support for the Refuge System and the Service. The stipulations outlined above and conditions imposed in the special use permits issued to commercial guides, outfitters, game retrieval services, and wildlife-viewing tour companies would make sure that these wildlife-dependent activities occur with minimal adverse effects to resources or visitors.

Mandatory 10-year Reevaluation Date: 2023

E.5 Approval of Compatibility Determinations

Submitted by:

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National Elk Refuge
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Date

Reviewed by:

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Date

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