

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 to gain information and experience necessary to assess and modify management activities; a process that uses feedback from research, monitoring, and evaluation of management actions to support or modify objectives and strategies at all planning levels; a process in which policy decisions are implemented within a framework of scientifically driven experiments to test predictions and assumptions inherent in management plan. Analysis of results helps managers determine 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 U.S. Fish and Wildlife 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.

ATV—All-terrain vehicle.

baseline—A set of critical 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.

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

CCC—*See* Civilian Conservation Corps.

CCP—*See* comprehensive conservation plan.

CFR—*See* Code of Federal Regulations.

cfs—Cubic feet per second.

Civilian Conservation Corps (CCC)—Peacetime civilian “army” established by President Franklin D. Roosevelt to perform conservation activities from 1933–42. Activities included erosion control; firefighting; tree planting; habitat protection; stream improvement; and building of fire towers, roads, recreation facilities, and drainage systems.

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 U.S. Fish and Wildlife Service Manual” 603 FW 3.6). A compatibility determination supports the selection of compatible uses and identified stipulations or limits necessary to ensure 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 U.S. Fish and Wildlife Service Manual” 602 FW 1.5).

concern—*See* issue.

conspecific—An individual belonging to the same species as another.

cool-season grasses—Grasses that begin growth earlier in the season and often become dormant in the summer. These grasses will germinate at lower temperatures. Examples of cool-season grasses are western wheatgrass, needleandthread, and green needlegrass.

coteau—A hilly upland including the divide between two valleys; a divide; the side of a valley.

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.

dense nesting cover (DNC)—A composition of grasses and forbs that allows for a dense stand of vegetation that protects nesting birds from the view of predators, usually consisting of one to two species of wheatgrass, alfalfa, and sweetclover.

depredation—Destruction or consumption of eggs, broods, or individual wildlife due to a predatory animal; damage inflicted on agricultural crops or ornamental plants by wildlife.

DNC—*See* dense nesting cover.

drawdown—The act of manipulating water levels in an impoundment to allow for the natural drying-out cycle of a wetland.

EA—*See* environmental assessment.

ecosystem—A dynamic and interrelating complex of plant and animal communities and their associated nonliving environment; a biological community, together 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.

EIS—Environmental impact statement.

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 significant portion 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 significant 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 impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

EPA—Environmental Protection Agency.

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.

fauna—All the vertebrate and invertebrate animals of an 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.

flora—All the plant species of an area.

FMP—Fire management plan.

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.

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

grassland tract—A contiguous area of grassland without fragmentation.

GS—General schedule (pay rate schedule for certain federal positions).

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—Significant 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.

HMP—Habitat management plan.

HUA—Hydrologic unit area.

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 due to 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.

inviolate sanctuary—A place of refuge or protection where animals and birds may not be hunted.

IPM—*See* integrated pest management.

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 U.S. Fish and Wildlife Service Manual” 602 FW 1.5).

lek—A physical area where males of a certain animal species gather to demonstrate their prowess and compete for females before or during the mating season.

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 and/or reason for being.

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

mixed-grass prairie—A transition zone between the tall-grass prairie and the short-grass prairie dominated by grasses of medium height that are approximately 2–4 feet tall. Soils are not as rich as the tall-grass prairie and moisture levels are less.

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 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 and photography, and environmental education and interpretation); establishes a formal process for determining appropriateness and compatibility; establish the responsibilities of the Secretary of the Interior for managing and protecting the Refuge System; requires a comprehensive conservation plan for each refuge by the year 2012. This Act amended portions 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.

NEPA—National Environmental Policy Act.

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

NOA—Notice of availability.

nongovernmental organization—Any group that is not composed 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 U.S.) 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 U.S. and to public health.

NRCS—Natural Resources Conservation Service of the U.S. Department of Agriculture.

NWR—National wildlife refuge.

objective—An objective is 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 attainable and time-specific and should be stated quantitatively to

the extent possible. If objectives cannot be stated quantitatively, they may be stated qualitatively (“Draft U.S. Fish and Wildlife Service Manual” 602 FW 1.5).

overlay refuge—Lands and waters that are under the primary jurisdiction of one federal agency; the refuge purpose is superimposed as a secondary interest in the property. Primary administration is retained by the host agency. Wildlife management must be compatible with those uses for which the primary agency acquired the land.

overwater species—Nesting species such as diving ducks and many colonial-nesting birds that build nests within dense stands of water-dependent plants, primarily cattail, or that build floating nests of vegetation that rest on the water.

OWLS—Outdoor wildlife learning site.

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 life span 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, and photography, and 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; Indian tribes; and foreign nations. It may

include anyone outside the core planning team. It includes those who may or may not have indicated 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 U.S. Fish and Wildlife 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).

Reclamation—Bureau of Reclamation of the U.S. Department of the Interior.

refuge operations needs system (RONS)—A national database that contains the unfunded operational needs of each refuge. Projects included are those required to implement approved plans and meet goals, objectives, and legal mandates.

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.

rest—Free from biological, mechanical, or chemical manipulation, in reference to refuge lands.

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

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 components 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.

RONS—*See* refuge operations needs system.

rough fish—A fish that is neither a sport fish nor an important food fish.

SAMMS—*See* Service Asset Maintenance Management System.

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

seasonally flooded—Surface water is present for extended periods in the growing season, but is absent by the end of the season in most years.

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

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

Service Asset Maintenance Management System (SAMMS)—A national database which contains the unfunded maintenance needs of each refuge; projects include those required to maintain existing equipment and buildings, correct safety deficiencies for the implementation of approved plans, and meet goals, objectives, and legal mandates.

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 seashore or mudflat areas.

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

special status species—Plants or animals that have been identified through federal law, state law, or agency policy as requiring special protection of monitoring. Examples include federally listed endangered, threatened, proposed, or candidate species; state-listed endangered, threatened, candidate, or monitor species; Service’s species of management concern; species identified by the Partners in Flight program as being of extreme or moderately high conservation concern.

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 general 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.

step-down management plan—A plan that provides the details necessary to implement management strategies identified in the comprehensive conservation plan (“Draft U.S. Fish and Wildlife 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 U.S. Fish and Wildlife Service Manual” 602 FW 1.5).

submergent—A vascular or nonvascular hydrophyte, either rooted or nonrooted, that lies entirely beneath the water surface, except for flowering parts in some species.

tame grass—*See* dense nesting cover.

threatened species, federal—Species listed under the Endangered Species Act of 1973, as amended, that are likely to become endangered within the foreseeable future throughout all or a significant portion 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, USFWS, 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; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

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 U.S. Fish and Wildlife Service Manual” 602 FW 1.5).

visual obstruction—Pertaining to the density of a plant community; the height of vegetation that blocks the view of predators and conspecifics to a nest.

visual obstruction reading (VOR)—A method of visually quantifying vegetative structure and composition.

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.

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 funds for restoration and management primarily as prairie wetland habitat critical to waterfowl and other wetland birds.

WG—Wage grade schedule (pay rate schedule for certain federal positions).

WGFD—*See* Wyoming Game and Fish Department.

wildland fire—A free-burning fire requiring a suppression response; all fire other than prescribed fire that occurs on wildlands (Service Manual 621 FW 1.7).

wildlife-dependent recreational use—The National Wildlife Refuge System Improvement Act of 1997 specifies six priority general public uses

of the Refuge System (hunting, fishing, wildlife and photography, environmental education and interpretation).

WMD—*See* wetland management district.

woodland—Open stands of trees with crowns not usually touching, generally forming 25–60 percent cover.

WPA—Works Progress Administration.

Wyoming Game and Fish Department (WGFD)—The Wyoming Game and Fish Department is charged with providing “an adequate and flexible system for the control, management, protection, and regulation of all Wyoming wildlife.” The WGFD maintains 36 Wildlife Habitat Management Areas and 96 Public Access Areas, encompassing 410,000 acres of managed lands for wildlife habitat and public recreation opportunity.

WUI—Wildland–urban interface.

Appendix A

Key Legislation and Policies

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

NATIONAL WILDLIFE REFUGE SYSTEM

The mission of the National Wildlife 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.

GOALS

- ❑ Fulfill our statutory duty to achieve refuge purpose(s) 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, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation, wildlife photography, 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 and

photography, and environmental education and interpretation.

- ❑ **Habitat**—Fish and wildlife will not prosper without high 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.

LEGAL AND POLICY GUIDANCE

Management actions on national wildlife refuges are circumscribed by many mandates including laws and executive orders, the latest of which is the Volunteer and Community Partnership Enhancement Act of 1998. Regulations that affect refuge management the most are listed below

American Indian Religious Freedom Act (1978)—Directs agencies to consult with native traditional religious leaders to determine appropriate 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 funded 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.

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

Executive Order 7425 (1936)—Establishes Pathfinder Wildlife Refuge “as a refuge and breeding ground for migratory birds and other wildlife”

Executive Order 8296 (1939)—Changes the refuge name from “Pathfinder Wildlife Refuge” to “Pathfinder National Wildlife Refuge.”

Executive Order 11990 (1977)—Requires federal agencies to take action to avoid the adverse impacts associated with the destruction or modification of wetlands.

Executive Order 11988 (1977)—Requires federal agencies to provide leadership and take action to reduce the risk of flood loss, minimize the impact 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 Indian sacred sites by Indian religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and where appropriate, maintain 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 nonfederal, 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 appropriate documents to facilitate better environmental decision making. [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 historical resources.

National Wildlife Refuge System Administration Act (1966)—Defines the National Wildlife Refuge System and authorizes the Secretary of the Interior to permit 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, determine 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 funds are available to manage the uses.

Rehabilitation Act (1973)—Requires programmatic accessibility in addition to physical accessibility for all facilities and programs funded by the federal government to ensure that any person can participate in any program.

Rivers and Harbors Act (1899)—Section 10 of this Act requires the authorization of U.S. Army Corps of Engineers prior to 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 assist in the management of refuges within the Refuge System; facilitates partnerships between the Refuge System and nonfederal 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, Consultation and Coordination

This document is the result of the extensive, collaborative, and enthusiastic efforts by the members of the planning team shown below.

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Many organizations, agencies, and individuals provided assistance with the preparation of this draft CCP. The Service acknowledges the efforts of the following individuals and groups toward the completion of this plan. The diversity, talent, and knowledge they contributed dramatically improved the vision and completeness of this document.

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| Wayne King | Biologist, NWRS | USFWS, Region 6 |

| <i>Team Member</i> | <i>Position</i> | <i>Work Unit</i> |
|----------------------|--|---------------------|
| Deb Parker | Writer-editor, division of refuge planning | USFWS, Region 6 |
| Dean Rundle | Refuge supervisor | USFWS, Region 6 |
| Richard Schroeder | Wildlife biologist | USGS Science Center |
| Shapins Belt Collins | Writer-editor; layout | Contractor |
| Michael Spratt | Chief, division of refuge planning | USFWS, Region 6 |
| Richard Sterry | Regional fire planner | USFWS, Region 6 |
| Meg Van Ness | Regional archaeologist | USFWS, Region 6 |

Appendix C

Public Involvement

Public scoping was initiated for Pathfinder NWR in a notice of intent (NOI) dated June 16, 2006. The NOI announced intent to prepare a comprehensive conservation plan and environmental assessment for the refuges and to obtain suggestions and information on the scope of issues to be considered in the planning process.

A public meeting was held in Casper, Wyoming, on May 24, 2006. Approximately 21 people attended the meeting. Numerous written comments were received during the open comment period. Comments received identified biological, social, and economic concerns regarding refuge management. The mailing list for the CCP and EA follows.

FEDERAL OFFICIALS

U.S. Representative Barbara Cubin, Washington DC
Rep. Cubin's Area Director, Cheyenne, WY
U.S. Senator Craig Thomas, Washington DC
Sen. Thomas's Area Director, Casper, WY
U.S. Senator Michael Enzi, Washington DC
Sen. Enzi's Area Director, Cheyenne, WY

FEDERAL AGENCIES

Bureau of Land Management; Casper, WY; Rawlins, WY
Bureau of Reclamation, Mills, WY
National Park Service; Denver, CO; Omaha, NE
USFWS, Ecological Services, Cheyenne, WY
USFWS, NWRs; Rawlins, WY; Albuquerque, NM; Anchorage, AK; Arlington, VA; Atlanta, GA; Fort Snelling, MN
USFWS, Office of Public Affairs, Washington DC
USFWS, Regional Offices, Hadley, MA; Portland, OR; Sacramento, CA; Sheperdstown, WV; Washington DC
USGS, Fort Collins Science Center, Fort Collins, CO

TRIBAL OFFICIALS

Arapaho Business Committee, Fort Washakie, WY
Crow Tribal Council, Crow Agency, MT
Northern Cheyenne Tribal Council, Lame Deer, MT
Oglala Sioux Tribal Council, Pine Ridge, SD
Shoshone Business Council, Fort Washakie, WY

STATE OFFICIALS

Governor Dave Freudenthal, Cheyenne
Representative George Bagby, Rawlins
Representative Bob Brechtel, Casper
Representative Roy Cohee, Casper
Representative Mary Meyer Gilmore, Casper
Representative Mary Hales, Casper
Representative Steve Harshman, Casper
Representative Thomas Lockhart, Casper
Representative Lisa Shepperson, Casper
Representative William Steward, Encampment
Representative Tim Stubson, Casper
Senator Kit Jennings, Casper
Senator Bill Landen, Casper
Senator Drew Perkins, Casper
Senator Charles Scott, Casper
Senator Bill Vasey, Rawlins

STATE AGENCIES

Wyoming Department of Agriculture, Cheyenne
Wyoming Game and Fish Department; Casper; Lander
Wyoming Game Fish Commission, Cheyenne
Wyoming Office of State Lands and Investments, Cheyenne
Wyoming State Historic Preservation Office, Cheyenne

LOCAL GOVERNMENT

Carbon County Board of Commissioners, Rawlins
Natrona County Board of Commissioners, Casper
Natrona County Roads, Bridges, and Parks, Mills
Mayor, Casper
Mayor, Rawlins

ORGANIZATIONS

American Bird Conservancy; The Plains, VA; Washington DC
American Rivers, Washington DC
Audubon Wyoming; Casper, WY; Laramie, WY; Tie Siding, WY

Defenders of Wildlife, Washington DC
Ducks Unlimited, Memphis, TN
Izaak Walton League, Gaithersburg, MD
Murie Audubon Society, Casper, WY
National Audubon Society; Washington DC; New York, NY
National Trappers Association Inc., New Martinsville, WV
National Wildlife Federation, Reston, VA
National Wildlife Refuge Association, Washington DC
North Platte Group Sierra Club, Casper, WY
Sierra Club; Sheridan, WY; San Francisco, CA
The Wilderness Society, Washington DC
U.S. Humane Society, Washington DC
Wyoming Outdoor Council, Logan, UT

UNIVERSITIES, COLLEGES, AND SCHOOLS

Colorado State University, Fort Collins, CO

LOCAL MEDIA

Casper Star Tribune, Casper
Daily Boomerang, Laramie
KISS 104.7 FM, Casper
KKTY AM & FM, Douglas
Rawlins Daily Times, Rawlins
Wyoming Public Radio, Laramie

INDIVIDUALS

22 individuals

Appendix D

Memorandum of Understanding

Contract No. 14-06-700-4605

MEMORANDUM OF UNDERSTANDING
Between The
BUREAU OF RECLAMATION
And The
BUREAU OF SPORT FISHERIES AND WILDLIFE

THIS MEMORANDUM OF UNDERSTANDING, made and entered into this 26th day of May, 1964, by and between the Bureau of Reclamation, and the Bureau of Sport Fisheries and Wildlife witnesseth that:

WHEREAS the United States, through the Bureau of Reclamation, is operating a reservoir located in Carbon and Natrona Counties, Wyoming, being the Pathfinder Dam and Reservoir, Pathfinder Unit, Oregon Trail Division, North Platte and Missouri River Basin Projects, established under the authority of the Act of June 17, 1902, as amended and supplemented; and

WHEREAS the Bureau of Sport Fisheries and Wildlife is administering certain land and water areas of said reservoir as the Pathfinder National Wildlife Refuge under authority of Executive Order No. 7425, dated August 1, 1936, Executive Order No. 8296, dated November 30, 1939, as modified by a subsequent Public Land Order.

NOW, THEREFORE, to define the responsibilities of the Bureau of Reclamation and the Bureau of Sport Fisheries and Wildlife regarding the proper administration of the land and water areas of Pathfinder National Wildlife Refuge as shown on Exhibit A, attached hereto and made a part hereof, and subject to the provisions and conditions contained hereafter, it is agreed that:

1. The Bureau of Sport Fisheries and Wildlife shall administer, develop, manage and operate the said land and water areas, including grazing, recreation and related uses, for the conservation, maintenance and management of the wildlife resources thereof and its habitat thereon in connection with the National Wildlife Refuge Program. The Bureau of Sport Fisheries and Wildlife shall conduct such activities under appropriate Federal and State laws and regulations and may do all things under such laws and regulations that are necessary to carry^{out} the National Wildlife Refuge Program.

2. There shall be no interference with the operation of the dam and reservoir by the Bureau of Reclamation for reclamation purposes.

3. Land use capabilities shall be established in cooperation with any appropriate Land Use Agency which is available to perform such services, such as the Bureau of Land Management or Soil Conservation Service, provided that economic use so established shall not be in conflict with the operation of the project for reclamation purposes by the Bureau of Reclamation or the administration of the area as a national wildlife refuge by the Bureau of Sport Fisheries and Wildlife.

4. The Bureau of Sport Fisheries and Wildlife will issue special use permits and such other instruments as are necessary to carry out the National Wildlife Refuge Program.

5. All land use revenues received by the Bureau of Sport Fisheries and Wildlife in connection with administration, development, management and operation of the said land and water areas shall be transferred to the Bureau of Reclamation for appropriate disposition.

6. For other than the primary purposes of the Pathfinder Dam and Reservoir Project, any easements, licenses, permits or right-of-way uses which may be requested and allowed through or upon said land and water areas shall be granted by the Bureau of Reclamation, subject to the stipulations of the Bureau of Sport Fisheries and Wildlife, or through the Bureau of Land Management upon concurrence by and subject to the stipulations of the Bureau of Sport Fisheries and Wildlife and the Bureau of Reclamation.

7. The Bureau of Sport Fisheries and Wildlife will cooperate in the development of a Bureau of Reclamation management plan for the Pathfinder Reservoir, as applicable to said land and water areas, and both parties agree that no uses, improvements or developments will be made contrary to the provisions of said plan except by mutual consent.

8. Both parties agree to cooperate in the presuppression and suppression of all fires.

9. This agreement shall become effective upon its approval by the last signatory thereto and shall remain in force until terminated by mutual consent.

10. The performance of any obligations or the expenditure of any funds under this agreement is made contingent on the Congress making the necessary appropriation.

11. No member of or delegate to the Congress or resident commissioner shall be admitted to any share or part of this agreement or

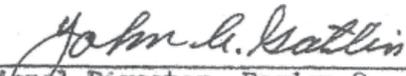
to any benefit that may arise therefrom, but this restriction shall not be construed to extend to this agreement if made with a corporation or company for its general benefit.

IN WITNESS WHEREOF, the parties hereto have executed this Memorandum of Understanding as of the day and year first above written.

BUREAU OF RECLAMATION

By 
Regional Director, Region 1

BUREAU OF SPORT FISHERIES AND WILDLIFE

By 
Regional Director, Region 2

Appd. Sol. Office

/s/ B. L. Kepford

Date: May 25, 1964

PATHFINDER NATIONAL WILDLIFE RE. JGE

CARBON AND NATRONA COUNTIES, WYOMING

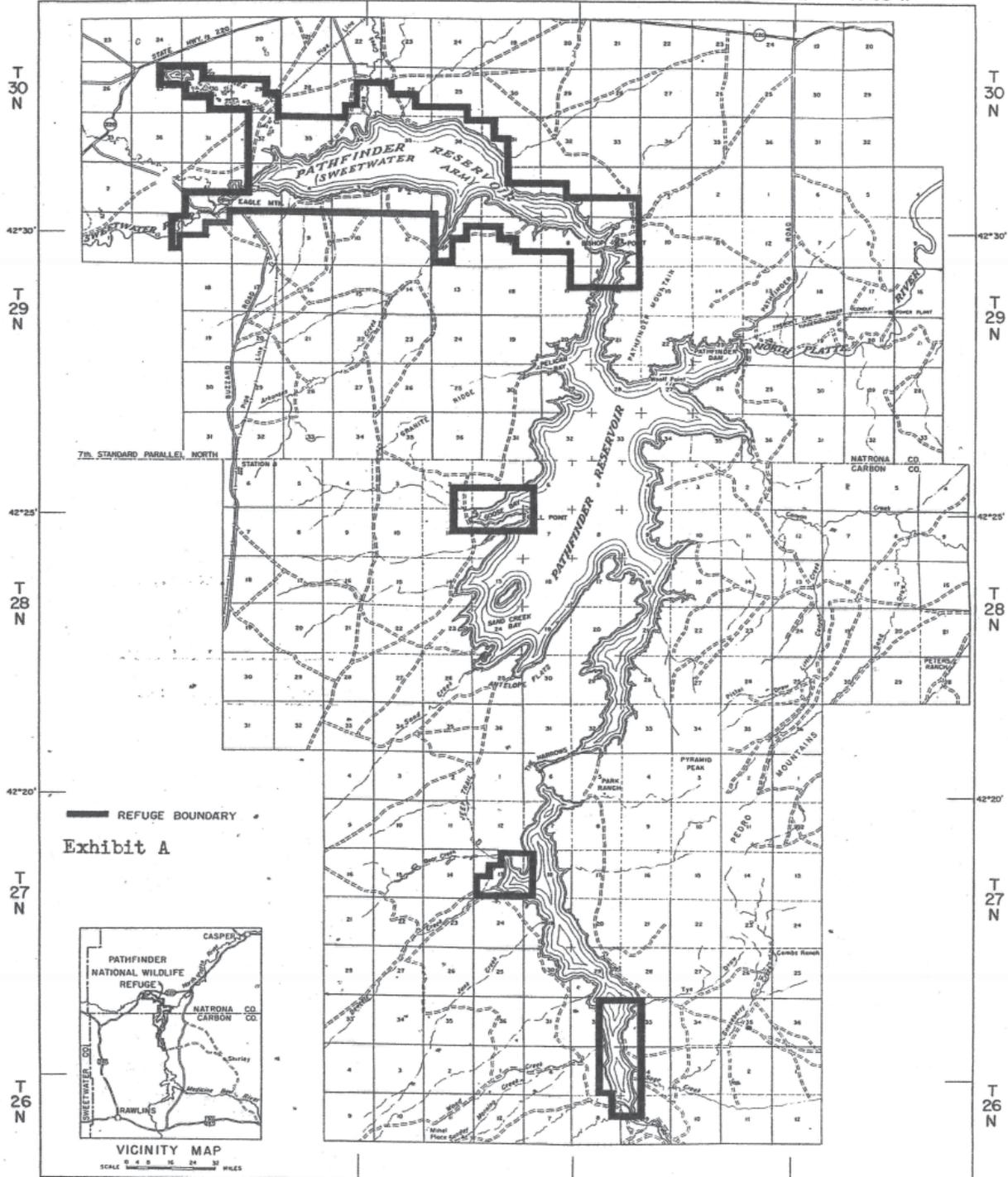
UNITED STATES
DEPARTMENT OF THE INTERIOR
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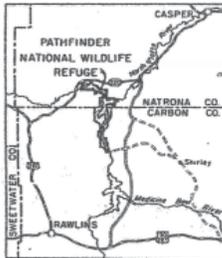
R 84 W

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
106°50' R 83 W



REFUGE BOUNDARY

Exhibit A



VICINITY MAP

SCALE 0 4 8 16 24 32 MILES

COMPILED IN THE BRANCH OF ENGINEERING
FROM U.S.G.S QUADRANGLES AND SURVEYS BY
U.S.F. & W.S.
REV. MARCH 1963, APRIL 1964

ALBUQUERQUE, NEW MEXICO

AUGUST, 1961

SIXTH PRINCIPAL MERIDIAN



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| 39 | 40 | 41 | 42 | 43 |

TOWNSHIP
DIAGRAM

TRUE NORTH
MAGNETIC NORTH
DECLINATION

MEAN
DECLINATION
1960

2R WYO.105 41

Appendix E

Appropriate Refuge Uses Policy

FISH AND WILDLIFE SERVICE

REFUGE MANAGEMENT

Part 603 National Wildlife Refuge System Uses

1.1 What is the purpose of this chapter? This chapter provides a national framework for determining appropriate refuge uses. In addition, this chapter provides the policy and procedure for refuge managers to follow when deciding if uses are appropriate on a refuge. This policy also clarifies and expands on the compatibility policy (603 FW 2.10D), which describes when refuge managers should deny a proposed use without determining compatibility. When we find a use is appropriate, we must then determine if the use is compatible before we allow it on a refuge.

1.2 What does this policy cover? This policy applies to all proposed and existing uses in the National Wildlife Refuge System (Refuge System) only when we have jurisdiction over the use. This policy does not apply to:

A. Situations Where Reserved Rights or Legal Mandates Provide We Must Allow Certain Uses. For example, we usually will not apply this policy to proposed public uses of wetland or grassland easement areas of the Refuge System. The rights we have acquired on these areas generally do not extend to control over such public uses except where those uses would conflict with the conditions of the easement.

B. Refuge Management Activities. Refuge management activities are designed to conserve fish, wildlife, and plants and their habitats and are conducted by the Refuge System or a Refuge System-authorized agent to fulfill a refuge purpose(s) or the Refuge System mission. These activities fulfill refuge purpose(s) or the Refuge System mission, and we base them on sound professional judgment. Refuge management activities are fish and wildlife population or habitat management actions including, but not limited to: prescribed burns, water level management, invasive species control, routine scientific monitoring, law enforcement activities, and maintenance of existing refuge facilities. We consider State fish and wildlife agency activities refuge management activities that are not subject to this policy when they:

(1) Directly contribute to the achievement of refuge purpose(s), refuge goals, and the Refuge System mission, as determined by the refuge manager in writing,

(2) Are addressed in a document such as a Regional or California/Nevada Operations Office (CNO) memorandum of understanding or a comprehensive conservation plan (CCP), or

(3) Are approved under national policy.

1.3 What is the policy regarding the appropriateness of uses on a refuge?

With the exception of 1.3.A. and 1.3.B. below, the refuge manager will decide if a new or existing use is an appropriate refuge use. If an existing use is not appropriate, the refuge manager will eliminate or modify the use as expeditiously as practicable. If a new use is not appropriate, the refuge manager will deny the use without determining compatibility. Uses that have been administratively determined to be appropriate are:

A. Six wildlife-dependent recreational uses. As defined by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act), the six wildlife-dependent recreational uses (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) are determined to be appropriate. However, the refuge manager must still determine if these uses are compatible.

B. Take of fish and wildlife under State regulations. States have regulations concerning take of wildlife that includes hunting, fishing, and trapping. We consider take of wildlife under such regulations appropriate. However, the refuge manager must determine if the activity is compatible before allowing it on a refuge.

1.4 What are the objectives of this chapter?

A. Refuges are first and foremost national treasures for the conservation of wildlife. Through careful planning, consistent Refuge Systemwide application of regulations and policies, diligent monitoring of the impacts of uses on wildlife resources, and preventing or eliminating uses not appropriate to the Refuge System, we can achieve the Refuge System conservation mission while also providing

the public with lasting opportunities to enjoy quality, compatible, wildlife-dependent recreation.

B. Through consistent application of this policy and these procedures, we will establish an administrative record and build public understanding and consensus on the types of public uses that are legitimate and appropriate within the Refuge System.

1.5 What are our statutory authorities for this policy?

A. National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee (Administration Act). This law provides the authority for establishing policies and regulations governing refuge uses, including the authority to prohibit certain harmful activities. The Administration Act does not authorize any particular use, but rather authorizes the Secretary of the Interior to allow uses only when they are compatible and “under such regulations as he may prescribe.” This law specifically identifies certain public uses that, when compatible, are legitimate and appropriate uses within the Refuge System. The law states “. . . it is the policy of the United States that . . . compatible wildlife-dependent recreation is a legitimate and appropriate general public use of the System . . . compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consideration in refuge planning and management; and . . . when the Secretary determines that a proposed wildlife-dependent recreational use is a compatible use within a refuge, that activity should be facilitated . . . the Secretary shall . . . ensure that priority general public uses of the System receive enhanced consideration over other general public uses in planning and management within the System . . .” The law also states “[i]n administering the System, the Secretary is authorized to take the following actions: . . . [i]ssue regulations to carry out this Act.” This policy implements the standards set in the Administration Act by providing enhanced consideration of priority general public uses and ensuring other public uses do not interfere with our ability to provide quality, wildlife-dependent recreational uses.

B. Refuge Recreation Act of 1962, 16 U.S.C. 460k (Recreation Act). This law authorizes the Secretary of the Interior to “. . . administer such areas [of the System] or parts thereof for public recreation when in his judgment public recreation can be an appropriate incidental or secondary use.” While the Recreation Act authorizes us to allow public recreation in areas of the Refuge System when the use is an “appropriate incidental or secondary use,” the Improvement Act provides the Refuge System mission and includes specific directives and a clear hierarchy of public uses on the Refuge System.

C. Alaska Native Claims Settlement Act, 43 U.S.C. 1601-1624. Activities on lands conveyed from the Refuge

System under section 22(g) of the Alaska Native Claims Settlement Act are not subject to this policy, but are subject to compatibility (see 603 FW 2).

D. Other Statutes that Establish Refuges, including the Alaska National Interest Lands Conservation Act of 1980 (ANILCA) (16 U.S.C. 410hh - 410hh-5, 460 mm - 460mm-4, 539-539e, and 3101 - 3233; 43 U.S.C. 1631 et seq.).

E. Executive Orders. We must comply with Executive Order (E.O.) 11644 when allowing use of off-highway vehicles on refuges. This order requires that we: designate areas as open or closed to off-highway vehicles in order to protect refuge resources, promote safety, and minimize conflict among the various refuge users; monitor the effects of these uses once they are allowed; and amend or rescind any area designation as necessary based on the information gathered. Furthermore, E.O. 11989 requires us to close areas to off highway vehicles when we determine that the use causes or will cause considerable adverse effects on the soil, vegetation, wildlife, habitat, or cultural or historic resources. Statutes, such as ANILCA, take precedence over Executive orders.

1.6 What do these terms mean?

A. Appropriate Use. A proposed or existing use on a refuge that meets at least one of the following four conditions.

- (1) The use is a wildlife-dependent recreational use as identified in the Improvement Act.
- (2) The use contributes to fulfilling the refuge purpose(s), the Refuge System mission, or goals or objectives described in a refuge management plan approved after October 9, 1997, the date the Improvement Act was signed into law.
- (3) The use involves the take of fish and wildlife under State regulations.
- (4) The use has been found to be appropriate as specified in section 1.11.

B. Native American. American Indians in the conterminous United States and Alaska Natives (including Aleuts, Eskimos, and Indians) who are members of federally recognized tribes.

C. Priority General Public Use. A compatible wildlife-dependent recreational use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation.

D. Quality. The criteria used to determine a quality recreational experience include:

- (1) Promotes safety of participants, other visitors, and facilities.
- (2) Promotes compliance with applicable laws and regulations and responsible behavior.

- (3) Minimizes or eliminates conflicts with fish and wildlife population or habitat goals or objectives in a plan approved after 1997.
- (4) Minimizes or eliminates conflicts with other compatible wildlife-dependent recreation.
- (5) Minimizes conflicts with neighboring landowners.
- (6) Promotes accessibility and availability to a broad spectrum of the American people.
- (7) Promotes resource stewardship and conservation.
- (8) Promotes public understanding and increases public appreciation of America's natural resources and our role in managing and protecting these resources.
- (9) Provides reliable/reasonable opportunities to experience wildlife.
- (10) Uses facilities that are accessible and blend into the natural setting.
- (11) Uses visitor satisfaction to help define and evaluate programs.

E. Wildlife-Dependent Recreational Use. As defined by the Improvement Act, a use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation.

1.7 What are our responsibilities?

A. Director. Provides national policy for deciding the appropriateness of uses within the Refuge System to ensure such findings comply with all applicable authorities.

B. Regional Director/CNO Manager.

- (1) Ensures refuge managers follow laws, regulations, and policies when making appropriateness findings.
- (2) Notifies the Director about controversial or complex appropriateness findings.

C. Regional Chief/CNO Assistant Manager.

- (1) Makes the final decision on appropriateness when the refuge supervisor does not concur with the refuge manager on positive appropriateness findings.
- (2) Notifies the Regional Director/CNO Manager about controversial or complex appropriateness findings.

D. Refuge Supervisor.

- (1) Reviews the refuge manager's finding that an existing or proposed use is appropriate when that use is not a wildlife-dependent recreational use or is not already described in a refuge management plan approved after October 9, 1997.

- (2) Reviews the refuge manager's finding that an existing use is not appropriate outside the CCP process.

(3) Refers an appropriateness finding to the Regional Chief/CNO Assistant Manager if the refuge supervisor does not concur with the refuge manager. Discusses nonconcurrence with the refuge manager for possible resolution before referring the finding to the Regional Chief/CNO Assistant Manager.

(4) Notifies the Regional Chief/CNO Assistant Manager about controversial or complex appropriateness findings.

(5) Reviews documentation at least annually for refuge uses found not appropriate and forwards the documentation to Refuge System Headquarters for inclusion in a database of refuge uses.

E. Refuge Manager.

- (1) Decides if a proposed or existing use is subject to this policy.
- (2) Makes a finding as to whether a use subject to this policy is appropriate or not appropriate.
- (3) Consults with State fish and wildlife agencies, as well as the refuge supervisor, when a request for a use could affect fish, wildlife, or other resources that are of concern to a State fish and wildlife agency.
- (4) Documents all findings under this policy in writing as described in section 1.11A(3).
- (5) Refers to the refuge supervisor all findings of appropriateness, both positive and negative, for any proposed use which is not a wildlife-dependent recreational use or which is not already described in a refuge CCP or step-down management plan approved after October 9, 1997. The refuge supervisor's concurrence is required for new uses found to be appropriate and existing uses found not appropriate outside the CCP process. The refuge supervisor periodically reviews other findings for consistency.

1.8 What is the relationship between appropriateness and compatibility?

This policy describes the initial decision process the refuge manager follows when first considering whether or not to allow a proposed use on a refuge. The refuge manager must find a use is appropriate before undertaking a compatibility review of the use. This policy clarifies and expands on the compatibility policy (603 FW 2.10D(1)), which describes when refuge managers should deny a proposed use without determining compatibility. If we find a proposed use is not appropriate, we will not allow the use and will not prepare a compatibility determination. By screening out proposed uses not appropriate to the refuge, the refuge manager avoids unnecessary compatibility reviews. By following

the process for finding the appropriateness of a use, we strengthen and fulfill the Refuge System mission. Section 1.11 describes the appropriateness finding process. Although a refuge use may be both appropriate and compatible, the refuge manager retains the authority to not allow the use or modify the use. For example, on some occasions, two appropriate and compatible uses may be in conflict with each other. In these situations, even though both uses are appropriate and compatible, the refuge manager may need to limit or entirely curtail one of the uses in order to provide the greatest benefit to refuge resources and the public. See the compatibility policy (603 FW 2.11G) for information concerning resolution of these conflicts.

1.9 How are uses considered in the comprehensive conservation planning process?

A. We will manage all refuges in accordance with an approved comprehensive conservation plan (CCP). The CCP describes the desired future conditions of the refuge or refuge planning unit and provides long-range guidance and management direction to accomplish the purpose(s) of the refuge and Refuge System mission. We prepare CCPs with State fish and wildlife agencies and with public involvement and include a review of the appropriateness and compatibility of existing refuge uses and of any planned future public uses. If, during preparation of the CCP, we identify previously approved uses we can no longer consider appropriate on the refuge, we will clearly explain our reasons to the public and describe how we will eliminate or modify the use. When uses are reviewed during the CCP process, the appropriateness finding will be documented using the form provided as FWS Form 3-2319 for the refuge files. The documentation for both appropriateness findings and compatibility determinations should also be included in the documentation for the CCP.

B. For proposed uses we did not consider during the preparation of the CCP or if a CCP has not yet been prepared, we will apply the procedure contained in this policy and make an appropriateness finding without additional public review and comment. However, if we find a proposed use is appropriate, we must still determine that the use is compatible. The compatibility determination includes an opportunity for public involvement. See the planning policy (602 FW 1, 3, and 4) for detailed policy on refuge planning.

1.10 What are the different types of refuge uses? For the purposes of this policy, there are five types of uses.

A. Wildlife-Dependent Recreational Uses. When compatible, they are legitimate and appropriate uses of refuges and are the priority general public uses of the Refuge System.

B. State Regulated Take of Fish and Wildlife. When compatible, the take of fish and wildlife under State regulations is a refuge use.

C. Other General Public Uses. General public uses that are not wildlife-dependent recreational uses (as defined in the Improvement Act) and do not contribute to the fulfillment of refuge purposes or goals or objectives as described in current refuge management plans (see section 1.6A(2)) are the lowest priorities for refuge managers to consider. These uses are likely to divert refuge management resources from priority general public uses or away from our responsibilities to protect and manage fish, wildlife, and plants and their habitats. Therefore, both law and policy have a general presumption against allowing such uses within the Refuge System. Before we will consider these uses further, regardless of how often they occur or how long they last, we must first find if these public uses are appropriate as defined in section 1.11.

D. Specialized Uses. These uses require specific authorization from the Refuge System, often in the form of a special use permit, letter of authorization, or other permit document. These uses do not include uses already granted by a prior existing right. We make appropriateness findings for specialized uses on a case-by-case basis. Before we will consider a specialized use, we must make an appropriateness finding as defined in section 1.11A(3) of this chapter. Any person whose request for a specialized use is denied or who is adversely affected by the refuge manager's decision relating to a permit may appeal the decision. In these situations, the person should follow the appeal process outlined in 50 CFR 25.45 and, for Alaska refuges, in 50 CFR 36.41(i). The appeal process for denial of a right-of-way application is in 50 CFR 29.22. The appeal process for persons who believe they have been improperly denied rights with respect to providing visitor services on Alaska refuges is in 50 CFR 36.37(g). Some common examples of specialized uses include:

(1) Rights-of-way. See 340 FW 3 (Rights-of-Way and Road Closings) and 603 FW 2 (Compatibility) for detailed policy on rights-of-way.

(2) Telecommunications facilities. We process requests to construct telecommunication facilities on a refuge the same way as any other right-of-way request. The Telecommunications Act of 1996 does not supersede any existing laws, regulations, or policy relating to rights-of-way on refuges. The refuge manager should continue to follow the procedures in 340 FW 3 (Rights-of-Way and Road Closings) and 603 FW 2 (Compatibility).

(3) Military, National Aeronautics and Space Administration (NASA), border security, and other national defense uses. The following guidelines apply to Refuge System lands owned in fee title by the Service or lands to which the Service has management rights that provide for the control of such uses:

(a) We will continue to honor existing, long-term, written agreements such as memorandums of understanding (MOU) between the Service and the military, NASA, and other Federal agencies with national defense missions. However, we discourage entering into any new agreements permitting military preparedness activities on refuges. Only the Director may approve any modification to existing agreements. Where joint military/NASA/Service jurisdiction occurs by law, an MOU negotiated by the principal parties, and subject to the approval of the Director, will specify the roles and responsibilities, terms, and stipulations of the refuge uses. Wherever possible, we will work to find practical alternatives to the use of refuge lands and to minimize the effects on fish, wildlife, and plants and their habitats.

(b) We consider authorized military activities on refuge lands that directly benefit refuge purposes to be refuge management activities, and they are not subject to this policy. For example, in a case where a national guard unit is assisting the refuge with the construction of a water control structure or helping to repair a refuge bridge, we consider these activities to be refuge management activities. We do not consider them to be specialized uses.

(c) For routine or continuous law enforcement and border security activities, an MOU between the Service and the specific enforcement agency must clearly define the roles and responsibilities of the enforcement agency and must specify the steps they will take to minimize impacts to refuge resources. The MOU should also address emergency situations and require advance notice and approval as a general rule. It should clearly spell out under what circumstances, if any, the enforcement agency may enter refuge lands in emergency situations prior to notifying the refuge manager. We recognize that in some situations a refuge manager cannot be notified until after an operation has taken place (for example, where lives are in danger). If such situations occur, the refuge manager must be notified as soon as possible. For undercover operations, those involved must strictly follow Service guidelines that cover the specific situation.

(4) Research. We actively encourage cooperative natural and cultural research activities that address our management needs. We also encourage research related to the management of priority general public uses. Such research activities are generally appropriate. However, we must review all research activities to decide if they are appropriate or not as defined in section 1.11. Research that directly benefits refuge management has priority over other research.

(5) Public safety training. We may assist local government agencies by allowing health, safety, and rescue training operations on the refuge if we find the use to be appropriate and compatible. Examples include fire safety training, search and rescue

training, and boat operations safety training. Law enforcement training exercises in support of refuge management activities are usually appropriate. We will evaluate each request on a case-by-case basis and consider the availability of other local sites. We will review these uses to decide if they are appropriate as defined in section 1.11. To the extent practicable, we will develop written agreements with the requesting agencies.

(6) Native American ceremonial, religious, medicinal, and traditional gathering of plants. We will review specific requests and provide reasonable access to Native Americans to refuge lands and waters for gathering plants for ceremonial, religious, medicinal, and traditional purposes when the activity is appropriate and compatible or when existing treaties allow or require such access.

(7) Natural resource extractions. Part 612 of the Service Manual provides general guidance relating to minerals management on refuges. Managers should refer to those policies, particularly in cases where their refuge has valid existing rights vested in private interests. The Alaska National Interest Lands Conservation Act of 1980 provides specific guidance for oil and gas leasing on Alaska refuges. We only allow the extraction of certain resources, such as gravel, that supports a refuge management activity when there is no practical alternative and only in compliance with 50 CFR 29.1. We will not justify such activity by citing budgetary constraints or mere convenience. We will seek funding through our normal budgetary process for projects that require gravel or similar resources found on the refuge.

(8) Commercial uses. Commercial uses of a refuge may be appropriate if they are a refuge management economic activity (see 50 CFR 25.12), if they directly support a priority general public use, or if they are specifically authorized by statute (such as ANILCA). See 50 CFR 29.1 for additional information on economic uses of the natural resources of refuges. An example of a commercial use that may be appropriate is a concession-operated boat tour that facilitates wildlife observation and interpretation. We will review all commercial uses to decide if they are appropriate as defined in section 1.11.

E. Prohibited uses. Certain activities that are prohibited on refuges by regulations are listed in 50 CFR 27.

1.11 How do we make the appropriateness finding for a use on a refuge?

A. A refuge use is appropriate if the use meets at least one of the following three conditions:

(1) It is a wildlife-dependent recreational use of a refuge. This finding does not require refuge supervisor concurrence.

(2) It contributes to fulfilling the refuge purpose(s), the Refuge System mission, or goals or objectives described in a refuge management plan approved after October 9, 1997, the date the Improvement Act was signed into law. This finding does not require refuge supervisor concurrence.

(3) The refuge manager has evaluated the use following the guidelines in this policy and found that it is appropriate. The refuge manager will address the criteria below and complete FWS Form 3-2319 for each use reviewed for appropriateness, including uses reviewed in conjunction with a CCP or step-down management plan. If the answers to the questions on FWS Form 3-2319 are consistently “yes,” and if the refuge manager finds, based on sound professional judgment, the use is appropriate for the refuge, the refuge manager then prepares the written justification using FWS Form 3-2319. (If the answer to any of the factors is “no,” refer to section 1.11B) Before undertaking a compatibility determination, the refuge manager should forward the justification to the refuge supervisor to obtain written concurrence when a use is found appropriate. The requirement for concurrence from the refuge supervisor will help us promote Refuge System consistency and avoid establishing precedents that may present management problems in the future. Refuge supervisors will usually consult with their Regional Chief/CNO Assistant Manager and peers in other Regions/CNO as these decisions are made to promote consistency within the Refuge System. The refuge manager will base the finding of appropriateness on the following 10 criteria:

(a) Do we have jurisdiction over the use? If we do not have jurisdiction over the use or the area where the use would occur, we have no authority to consider the use.

(b) Does the use comply with all applicable laws and regulations? The proposed use must be consistent with all applicable laws and regulations (e.g., Federal, State, tribal, and local). Uses prohibited by law are not appropriate.

(c) Is the use consistent with applicable Executive orders and Department and Service policies? If the proposed use conflicts with an applicable Executive order or Department or Service policy, the use is not appropriate.

(d) Is the use consistent with public safety? If the proposed use creates an unreasonable level of risk to visitors or refuge staff, or if the use requires refuge staff to take unusual safety precautions to assure the safety of the public or other refuge staff, the use is not appropriate.

(e) Is the use consistent with refuge goals and objectives in an approved management plan or other document? Refuge goals and objectives are designed to guide management toward achieving refuge purpose(s). These goals and objectives are

documented in refuge management plans, such as CCPs and step-down management plans. Refuges may also rely on goals and objectives found in comprehensive management plans or refuge master plans developed prior to passage of the Improvement Act as long as these goals and objectives comply with the tenets and directives of the Improvement Act. If the proposed use, either itself or in combination with other uses or activities, conflicts with a refuge goal, objective, or management strategy, the use is generally not appropriate.

(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? If we have already considered the proposed use in a refuge planning process or under this policy and rejected it as not appropriate, then we should not further consider the use unless circumstances or conditions have changed significantly. If we did not raise the proposed use as an issue during a refuge planning process, we may further consider the use.

(g) For uses other than wildlife-dependent recreational uses, is the use manageable within available budget and staff? If a proposed use diverts management efforts or resources away from the proper and reasonable management of a refuge management activity or wildlife-dependent recreational use, the use is generally not appropriate. In evaluating resources available, the refuge manager may take into consideration volunteers, refuge support groups, etc. If a requested use would rely heavily on volunteer or other resources, the refuge manager should discuss the situation with the refuge supervisor before making an appropriateness finding. The compatibility policy also addresses the question of available resources (603 FW 2.12A(7)).

(h) Will the use be manageable in the future within existing resources? If the use would lead to recurring requests for the same or similar activities that will be difficult to manage in the future, then the use is not appropriate. If we can manage the use so that impacts to natural and cultural resources are minimal or inconsequential, or if we can establish clearly defined limits, then we may further consider the use.

(i) Does the use contribute to the public’s understanding and appreciation of the refuge’s natural or cultural resources, or is the use beneficial to the refuge’s natural or cultural resources? If not, we will generally not further consider the use.

(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D), compatible, wildlife-dependent recreation into the future? If not, we will generally not further consider the use.

B. Where we do not have jurisdiction over the use, there is no need to evaluate it further as we cannot control the use (a “no” response to criterion

(a)). We may not find uses appropriate if they are illegal, inconsistent with existing policy, or unsafe. Therefore, if there is a “no” response to criteria (b), (c), or (d), immediately stop consideration of the use. If the answer is “no” to any of the other questions, we will generally not allow the use. However, there may be situations where the refuge has exceptional or unique recreational resources, such as rock climbing, that are not available nearby, off the refuge, and the use requires insignificant management resources. In such cases, we may further consider a use.

C. When the refuge manager finds that a proposed use is not appropriate, the finding must be documented for the refuge files using FWS Form 3-2319. This finding does not require refuge supervisor concurrence. However, if outside the CCP process a refuge manager finds that an existing use is not appropriate, the finding requires refuge supervisor concurrence. The refuge manager will send copies of all findings to the refuge supervisor to be incorporated into a national database annually. This section specifically clarifies and expands on the compatibility policy (603 FW 2.10D).

D. Following the issuance of this policy, refuge managers, in consultation with the States, must review all existing uses for appropriateness within 1 year unless the use was reviewed in a post-1997 CCP. If the refuge manager finds an existing use is not appropriate, the use must be modified so it is appropriate or terminated or phased out as expeditiously as practicable. The refuge manager must obtain refuge supervisor concurrence when there are changes to existing uses that eliminate the use or substantially change the use. All appropriateness findings required under section 1.11A(3), including findings made during the CCP process, must be documented for the refuge files using FWS Form 3-2319. Include the documentation for both appropriateness findings and compatibility determinations in the documentation for the CCP. A finding of “not appropriate” for a new use does not require refuge supervisor concurrence. However, the decision to modify or terminate a use may be subject to the National Environmental Policy Act (NEPA). Refuge managers should consult with their Regional NEPA coordinator to see if a decision would be subject to NEPA.

E. The Refuge System Headquarters will maintain a database of refuge uses. This database will include a refuge-by-refuge listing of all uses refuge managers have found either appropriate or not appropriate. With this information, refuge managers will know which uses have already been approved or denied at any other unit of the Refuge System. This information will help strengthen the Refuge System by reinforcing consistency and integrity in the way we consider refuge uses. However, this does not mean that a use found to be not appropriate on one

refuge should automatically be found not appropriate on other refuges in the Refuge System.

1.12 How do we coordinate with the States? Both the Service and State fish and wildlife agencies have authorities and responsibilities for management of fish and wildlife on refuges as described in 43 CFR part 24. Consistent with the Administration Act, as amended, the Director will interact, coordinate, cooperate, and collaborate with the State fish and wildlife agencies in a timely and effective manner on the acquisition and management of refuges. Under both the Administration Act, as amended, and 43 CFR part 24, the Director as the Secretary’s designee will ensure that Refuge System regulations and management plans are, to the extent practicable, consistent with State laws, regulations, and management plans. We charge refuge managers, as the designated representatives of the Director at the local level, with carrying out these directives. We will provide State fish and wildlife agencies timely and meaningful opportunities to participate in the development and implementation of programs conducted under this policy. These opportunities will most commonly occur through State fish and wildlife agency representation on the CCP planning teams. However, we will provide other opportunities for the State fish and wildlife agencies to participate in the development and implementation of program changes that would be made outside of the CCP process. Further, we will continue to provide State fish and wildlife agencies opportunities to discuss and, if necessary, elevate decisions within the hierarchy of the Service.

/sgd/ H. Dale Hall

DIRECTOR

Date: January 20, 2006

Appendix F

Compatibility Regulations



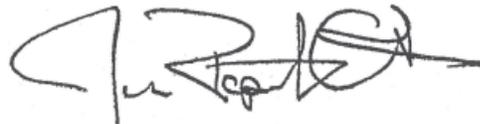
U.S. FISH AND WILDLIFE SERVICE TRANSMITTAL SHEET

| | | |
|---|--|---------------------------|
| PART 603 FW 2 | SUBJECT National Wildlife Refuge System Uses Compatibility | RELEASE NUMBER 360 |
| ORIGINATING OFFICE Division of Refuges | | DATE November 17, 2000 |

EXPLANATION OF MATERIAL TRANSMITTED:

This chapter establishes the process for determining whether or not a use of a national wildlife refuge is a compatible use, incorporating the compatibility provisions of the National Wildlife Refuge System Improvement Act of 1997, that amends the National Wildlife Refuge System Administration Act of 1966.

This chapter supersedes 5 RM 20 (Refuge Manual).



DIRECTOR

FILING INSTRUCTIONS:

Remove:

None

Insert:

603 FW 2, FWM 360, 11/17/00 (6 sheets)
Exhibit 1, 603 FW 2, FWM 360, 11/17/00
(1 sheet)
Exhibit 2, 603 FW 2, FWM 360, 11/17/00
(1 sheet)

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2.1 What is the purpose of this chapter? This chapter provides policy for determining compatibility of proposed and existing uses of national wildlife refuges.

2.2 What does this policy apply to? This policy applies to all proposed and existing uses of national wildlife refuges where we have jurisdiction over such uses.

2.3 What is the compatibility policy? The refuge manager will not initiate or permit a new use of a national wildlife refuge or expand, renew, or extend an existing use of a national wildlife refuge unless the refuge manager has determined that the use is a compatible use.

2.4 What are the objectives of this chapter?

A. To provide guidelines for determining compatibility of proposed national wildlife refuge uses and procedures for documentation and periodic review of existing national wildlife refuge uses; and

B. To ensure that we administer proposed and existing national wildlife refuge uses according to laws, regulations, and policies concerning compatibility.

2.5 What are our statutory authorities for requiring uses of national wildlife refuges to be compatible?

A. National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee (Refuge Administration Act). This law states that "The Secretary is authorized, under such regulations as he may prescribe, to -- (A) permit the use of any area within the System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible" and that "... the Secretary shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge, unless the Secretary has determined that the use is a compatible use and that the use is not inconsistent with public safety." The law also provides that, in administering the National Wildlife Refuge System, "... the Secretary is authorized to . . . Issue regulations to carry out this Act." A significant directive of the Refuge Administration Act is to ensure that we maintain the biological integrity, diversity, and environmental health of the National Wildlife Refuge System for present and future generations of Americans. We are now using the term "ecological integrity" in lieu of the phrase "biological integrity, diversity, and environmental health." Uses that we reasonably may anticipate to conflict with pursuing this directive to maintain the ecological integrity of the System are contrary to fulfilling the National Wildlife Refuge System mission and are therefore not compatible. Fragmentation of the National Wildlife Refuge System's wildlife habitats is a direct threat to the integrity of the National Wildlife Refuge System, both today and in the

decades ahead. Uses that we reasonably may anticipate to reduce the quality or quantity or fragment habitats on a national wildlife refuge will not be compatible.

B. Refuge Recreation Act of 1962, 16 U.S.C. 460k-460k-4 (Refuge Recreation Act). This law requires that any recreational use of a national wildlife refuge must be compatible with the primary purposes for which the refuge was established.

C. Alaska National Interest Lands Conservation Act of 1980, P.L. 96-487, 94 Stat. 23-71 (ANILCA). Section 304 of ANILCA adopted the compatibility standard of the Refuge Administration Act for Alaska refuges.

2.6 What do these terms mean?

A. Compatibility determination. A written determination signed and dated by the refuge manager and Regional Chief signifying that a proposed or existing use of a national wildlife refuge is a compatible use or is not a compatible use. The Director makes this delegation through the Regional Director.

B. Compatible use. A proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the national wildlife refuge.

C. Comprehensive conservation plan. A document that describes the desired future conditions of a refuge or planning unit and provides long-range guidance and management direction to achieve the purposes of the refuge; helps fulfill the mission of the Refuge System; maintains and, where appropriate, restores the ecological integrity of each refuge and the Refuge System; helps achieve the goals of the National Wilderness Preservation System; and meets other mandates.

D. Conservation, and Management. To sustain and, where appropriate, restore and enhance, healthy populations of fish, wildlife, and plants utilizing, in accordance with applicable Federal and State laws, methods and procedures associated with modern scientific resource programs. Such methods and procedures include, consistent with the provisions of the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), protection, research, census, law enforcement, habitat management, propagation, live trapping and transplantation, and regulated taking.

E. Coordination area. A wildlife management area made available to a State by:

(1) Cooperative agreement between the U.S. Fish and Wildlife Service and a State agency having control over

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wildlife resources pursuant to section 4 of the Fish and Wildlife Coordination Act (16 U.S.C. 664); or

(2) Long-term leases or agreements pursuant to title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 et seq.). The States manage coordination areas but they are part of the National Wildlife Refuge System. The compatibility standard does not apply to coordination areas.

F. Director. The Director, U.S. Fish and Wildlife Service or the authorized representative of such official.

G. Fish, Wildlife, and Fish and wildlife. Any member of the animal kingdom in a wild, unconfined state, whether alive or dead, including a part, product, egg, or offspring of the member.

H. National wildlife refuge, and Refuge. A designated area of land, water, or an interest in land or water located within the National Wildlife Refuge System but does not include coordination areas.

I. National Wildlife Refuge System, and System. All lands, waters, and interests therein administered by the U.S. Fish and Wildlife Service as wildlife refuges, wildlife ranges, wildlife management areas, waterfowl production areas, coordination areas, and other areas for the protection and conservation of fish and wildlife including those that are threatened with extinction as determined in writing by the Director or so directed by Presidential or Secretarial order. The determination by the Director may not be delegated.

J. National Wildlife Refuge System mission, and System mission. 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.

K. Plant. Any member of the plant kingdom in a wild, unconfined state, including any plant community, seed, root, or other part of a plant.

L. Purpose(s) of the refuge. The purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a national wildlife refuge, national wildlife refuge unit, or national wildlife refuge subunit. For refuges that encompass Congressionally designated wilderness, the purposes of the Wilderness Act are additional purposes of the wilderness portion of the refuge.

M. Refuge management activity. An activity conducted by the Service or a Service-authorized agent to fulfill one or more purposes of the national wildlife refuge, or the National Wildlife Refuge System mission. Service-authorized agents

include contractors, cooperating agencies, cooperating associations, refuge support groups, and volunteers.

N. Refuge management economic activity. A refuge management activity on a national wildlife refuge that results in generation of a commodity which is or can be sold for income or revenue or traded for goods or services. Examples include: farming, grazing, haying, timber harvesting, and trapping.

O. Refuge Manager. The official directly in charge of a national wildlife refuge or the authorized representative of such official. In the case of a national wildlife refuge complex, this refers to the official directly in charge of the complex.

P. Regional Chief. The official in charge of the National Wildlife Refuge System within a Region of the U.S. Fish and Wildlife Service or the authorized representative of such official.

Q. Refuge use, and Use of a refuge. A recreational use (including refuge actions associated with a recreational use or other general public use), refuge management economic activity, or other use of a national wildlife refuge by the public or other non-National Wildlife Refuge System entity.

R. Regional Director. The official in charge of a Region of the U.S. Fish and Wildlife Service or the authorized representative of such official.

S. Secretary. The Secretary of the Interior or the authorized representative of such official.

T. Service, We, and Us. The U.S. Fish and Wildlife Service, Department of the Interior.

U. Sound professional judgment. A finding, determination, or decision that is consistent with principles of sound fish and wildlife management and administration, available science and resources, and adherence to the requirements of the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), and other applicable laws. Included in this finding, determination, or decision is a refuge manager's field experience and knowledge of the particular refuge's resources.

V. State, and United States. One or more of the States of the United States, Puerto Rico, American Samoa, the Virgin Islands, Guam, and the territories and possessions of the United States.

W. Wildlife-dependent recreational use, and Wildlife-dependent recreation. A use of a national wildlife refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation. The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee) specifies that these are the

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six priority general public uses of the National Wildlife Refuge System.

2.7 What are our responsibilities?

A. Director. Provides national policy for making compatibility determinations to ensure that such determinations comply with all applicable authorities.

B. Regional Director.

(1) Ensures that refuge managers follow laws, regulations, and policies when making compatibility determinations.

(2) Makes the final decision on compatibility determinations when the Regional Chief does not concur with the refuge manager.

(3) Notifies the Director regarding controversial or complex compatibility determinations.

C. Regional Chief.

(1) Reviews all compatibility determinations for the purpose of deciding whether or not to concur.

(2) Refers a compatibility determination to the Regional Director if the Regional Chief does not concur with the refuge manager. Discusses nonconcurrency with the refuge manager for possible resolution before referring to the Regional Director.

(3) Notifies the Regional Director regarding controversial or complex compatibility determinations.

D. Refuge Manager.

(1) Determines if a proposed or existing use is subject to the compatibility standard.

(2) Determines whether a use is compatible or not compatible.

(3) Documents all compatibility determinations in writing.

(4) Ensures that we provide for public review and comment opportunities for all compatibility determinations, unless previously provided.

(5) Refers all compatibility determinations to the Regional Chief for concurrence.

2.8 What is the compatibility standard for Alaska refuges?

A. The Refuge Administration Act establishes the same standard for compatibility for Alaska refuges as for other national wildlife refuges. The provisions of ANILCA are the primary guidance refuge managers should apply when examining issues regarding subsistence use. We may alter the compatibility process, in some cases, for Alaska refuges to include additional procedural steps, such as when reviewing applications for oil and gas leasing on non-North Slope lands (ANILCA Sec. 1008) and for applications for transportation and utility systems (ANILCA Sec. 1104).

B. Alaska refuges established before the passage of ANILCA have two sets of purposes. Purposes for pre-ANILCA refuges (in effect on the day before the enactment of ANILCA) remain in force and effect, except to the extent that they may be inconsistent with ANILCA or the Alaska Native Claims Settlement Act, in which case the provisions of those Acts control. However, the original purposes for pre-ANILCA refuges apply only to those portions of the refuge established by the prior executive order or public land order, and not to those portions of the refuge added by ANILCA.

C. Section 22(g) of the Alaska Native Claims Settlement Act provides that patents issued to Village Corporations for selected land within the boundaries of a refuge existing on December 18, 1971, the signing date of the Act, will contain provisions that these lands remain subject to laws and regulations governing the use and development of such refuges. This includes application of the compatibility standard for such use and development, excepting certain differences provided in regulation (50 CFR 25.21) that acknowledge the unique status of these lands.

2.9 When is a compatibility determination required?

A. We require a compatibility determination for all refuge uses as defined by the term "refuge use" and must include in the analysis consideration of all associated facilities, structures, and improvements, including those constructed or installed by us or at our direction. This requirement will apply to all such facilities, structures, improvements, and refuge actions associated with uses that we approve on or after the effective date of this policy and to the replacement or major repair or alteration of facilities, structures, and improvements associated with already approved uses.

B. Facilities, structures, and improvements commonly associated with recreational public uses include: environmental education centers; boat/fishing docks; parking lots; boat ramps; roads; trails; viewing platforms/towers; and visitor centers.

C. Facilities, structures, and improvements commonly associated with refuge management economic activities include: loading/unloading areas; construction, operation,

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and maintenance buildings; parking lots; roads and trails; fences; stock ponds and other livestock watering facilities; and crop irrigation facilities.

D. We will make compatibility determinations for such facilities, structures, and improvements at the same time we make the compatibility determination for the use or activity in question.

2.10 When is a compatibility determination not required?

A. Refuge management activity. We do not require a compatibility determination for refuge management activities as defined by the term "refuge management activity" except for "refuge management economic activities." Examples of refuge management activities that do not require a compatibility determination include: prescribed burning; water level management; invasive species control; routine scientific monitoring, studies, surveys, and censuses; historic preservation activities; law enforcement activities; and maintenance of existing refuge facilities, structures, and improvements. In addition, we do not require compatibility determinations for State wildlife management activities on a national wildlife refuge pursuant to a cooperative agreement between the State and the Fish and Wildlife Service where the refuge manager has made a written determination that such activities support fulfilling the refuge purposes or the System mission.

B. Other exceptions.

(1) There are other circumstances under which the compatibility requirements may not be applicable. The most common exceptions involve property rights that are not vested in the Federal Government, such as reserved rights to explore and develop minerals or oil and gas beneath a refuge. In some cases, these exceptions may include water rights, easements, or navigable waters. Exceptions may apply when there are rights or interests imparted by a treaty or other legally binding agreement, where primary jurisdiction of refuge lands falls to an agency other than us, or where legal mandates supersede those requiring compatibility. Where reserved rights or legal mandates provide that we must allow certain activities, we should not prepare a compatibility determination. In the case of reserved rights, the refuge manager should work with the owner of the property interest to develop stipulations in a special use permit or other agreement to alleviate or minimize adverse impacts to the refuge.

(2) Communication and cooperation between the refuge manager and the owner of reserved rights will help protect refuge resources without infringing upon privately held rights. refuge managers may find it helpful in these instances to secure legal advice from the Department of the Interior Office of the Solicitor.

(3) Compatibility provisions of the Refuge Administration Act do not apply to Department of Defense overflights or non-Department of Defense overflights above a refuge. However, other Federal laws (e.g., Airborne Hunting Act, Endangered Species Act, Bald Eagle Protection Act) may govern overflights above a refuge. For Department of Defense overflights, active communication and cooperation between the refuge manager and the local base commander will be the most effective way to protect refuge resources. For non-Department of Defense overflights, active communication and cooperation between the refuge manager and personnel at local airports, pilot training schools, and private groups regarding the Federal Aviation Administration's requested minimum altitudes over national wildlife refuges will be the most effective way to protect refuge resources.

(4) Compatibility requirements apply to activities on bodies of water in or within any area of the National Wildlife Refuge System. Under 50 CFR 25.11, this is effectively to the extent of the ownership interest of the United States in lands or waters. Where activities on water bodies not within an area of the National Wildlife Refuge System are affecting refuge resources, the refuge manager should seek State cooperation in managing the activities. If necessary, the refuge manager should consider refuge-specific regulations that would address the problem or consult with the Office of the Solicitor regarding other legal remedies for injury to refuge resources.

(5) Compatibility provisions of the Refuge Administration Act do not apply to activities authorized, funded, or conducted by another Federal agency that has primary jurisdiction over the area where a refuge or a portion of a refuge has been established, if those activities are conducted in accordance with a memorandum of understanding between the Secretary or the Director and the head of the Federal agency with primary jurisdiction over the area.

C. Emergencies. The Refuge Administration Act states that the Secretary may temporarily suspend, allow, or initiate any use in a refuge if the Secretary determines it is necessary to immediately act in order to protect the health and safety of the public or any fish or wildlife population. Authority to make decisions under this emergency power is delegated to the refuge manager. Temporary actions should not exceed 30 days and will usually be of shorter duration. Such emergency actions are not subject to the compatibility determination process as outlined in this chapter. When using this authority, the refuge manager will notify the Regional Chief in advance of the action, or in cases where the nature of the emergency requires immediate response, as soon as possible afterwards, and typically no later than the start of business on the first normal workday following the emergency action. The refuge manager will create a written record (memorandum to the file) of the decision, the reasons supporting it, and why it was necessary to protect the health and safety of the public or any fish or wildlife population.

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little concern if it involves few boats, but of increasing concern with growing numbers of boats. Likewise, when considered separately, a use may not exceed the compatibility threshold, but when considered cumulatively in conjunction with other existing or planned uses, a use may exceed the compatibility threshold.

(2) While refuge managers should be looking for tangible impacts, the fact that a use will result in a tangible adverse effect, or a lingering or continuing adverse effect is not necessarily the overriding concern regarding "materially interfere with or detract from." These types of effects should be taken into consideration but the primary aspect is how does the use and any impacts from the use affect our ability to fulfill the System mission and the refuge purposes. For example, the removal of a number of individual animals from a refuge through regulated hunting, trapping or fishing would, in many instances, help the refuge manager manage to improve the health of wildlife populations. However, the take of even one individual of a threatened or endangered species could significantly impact the refuge's ability to manage for and perpetuate that species. Likewise, wildlife disturbance that is very limited in scope or duration may not result in interference with fulfilling the System mission or refuge purposes. However, even unintentional minor harassment or disturbance during critical biological times, in critical locations, or repeated over time may exceed the compatibility threshold.

(3) The refuge manager must consider not only the direct impacts of a use but also the indirect impacts associated with the use and the cumulative impacts of the use when conducted in conjunction with other existing or planned uses of the refuge, and uses of adjacent lands or waters that may exacerbate the effects of a refuge use.

C. Making a use compatible through replacement of lost habitat values or other compensatory mitigation. We will not allow compensatory mitigation to make a proposed refuge use compatible, except by replacement of lost habitat values as provided in subparagraph D below. If the proposed use cannot be made compatible with stipulations we cannot allow the use.

D. Existing rights-of-way. We will not make a compatibility determination and will deny any request for maintenance of an existing right-of-way that will affect a unit of the National Wildlife Refuge System, unless (1) the design adopts appropriate measures to avoid resource impacts and includes provisions to ensure no net loss of habitat quantity and quality; (2) restored or replacement areas identified in the design are afforded permanent protection as part of the national wildlife refuge or wetland management district affected by the maintenance; and (3) all restoration work is completed by the applicant prior to any title transfer or recording of the easement, if applicable. Maintenance of an existing right-of-way includes minor expansion or minor realignment to meet safety standards. Examples of minor

expansion or minor realignment include: expand the width of a road shoulder to reduce the angle of the slope; expand the area for viewing on-coming traffic at an intersection; and realign a curved section of a road to reduce the amount of curve in the road.

E. Refuge-specific analysis. We must base compatibility determinations on a refuge-specific analysis of reasonably anticipated impacts of a particular use on refuge resources. We should base this refuge-specific analysis on information readily available to the refuge manager, including field experience and familiarity with refuge resources, or made available to the refuge manager by the State, tribes, proponent(s) or opponent(s) of the use, or through the public review and comment period. Refuge-specific analysis need not rely on refuge-specific biological impact data, but may be based on information derived from other areas or species that are similarly situated and therefore relevant to the refuge-specific analysis. We do not require refuge managers to independently generate data to make determinations but rather to work with available information. Refuge managers may work at their discretion with the proponent(s) of the use or other interested parties to gather additional information before making the determination. If information available to the refuge manager is insufficient to document that a proposed use is compatible, then the refuge manager would be unable to make an affirmative finding of compatibility, and we must not authorize or permit the use. See 2.12A(8) for additional information dealing with priority public uses.

F. Relationship to management plans. The refuge manager will usually complete compatibility determinations as part of the comprehensive conservation plan or step-down management plan process for individual uses, specific use programs, or groups of related uses described in the plan. The refuge manager will incorporate compatibility determinations prepared concurrently with a plan as an appendix to the plan. These compatibility determinations may summarize and incorporate by reference what the refuge manager addressed in detail in the comprehensive conservation plan, step-down management plan, or associated National Environmental Policy Act (NEPA) document.

G. Managing conflicting uses. The refuge manager may need to allocate uses in time and/or space to reduce or eliminate conflicts among users of the refuge. If this cannot be done, the refuge manager may need to terminate or disallow one or more of the uses. The Refuge Administration Act does not prioritize among the six wildlife-dependent recreational uses. Therefore, in the case of direct conflict between these priority public uses, the refuge manager should evaluate, among other things, which use most directly supports long-term attainment of refuge purposes and the System mission. This same analysis would support a decision involving conflict between two nonpriority public uses. Where there are conflicts between priority and nonpriority public uses, priority public uses take precedence.

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(1) The refuge manager should deny a proposed use without determining compatibility if any of the following situations exist:

(a) The proposed use conflicts with any applicable law or regulation (e.g., Wilderness Act, Endangered Species Act, Marine Mammal Protection Act, Migratory Bird Treaty Act);

(b) The proposed use conflicts with any applicable executive order, or written Department of the Interior or Service policy;

(c) The proposed use conflicts with the goals or objectives in an approved refuge management plan (e.g., comprehensive conservation plan, comprehensive management plan, master plan or step-down management plan);

(d) The proposed use has already been considered in an approved refuge management plan and was not accepted;

(e) The proposed use is inconsistent with public safety;

(f) The proposed use is a use other than a wildlife-dependent recreational use that is not manageable within the available budget and staff; or

(g) The proposed use conflicts with other resource or management objectives provided that the refuge manager specifies those objectives in denying the use.

(2) A compatibility determination should be prepared for a proposed use only after the refuge manager has determined that we have jurisdiction over the use and has considered items (a) through (g) above (see Exhibit 1).

E. Existing compatibility determinations. Compatibility determinations in existence prior to the effective date of this policy will remain in effect until and unless modified and will be subject to periodic reevaluation as described in section 2.11H. Any use specifically authorized for a period longer than 10 years (such as rights-of-way) is subject to a compatibility determination at the time of the initial application and when the term expires and we receive a request for renewal. We will use periodic reevaluations for such long-term uses to review compliance with permit terms and conditions.

2.11 What are considerations when applying compatibility?**A. Sound professional judgment.**

(1) In determining what is a compatible use, the Refuge Administration Act relies on the "sound professional

judgment" of the Director. The Director delegates authority to make compatibility determinations through the Regional Director to the refuge manager. Therefore, it is the refuge manager who is required and authorized to exercise sound professional judgment. Compatibility determinations are inherently complex and require the refuge manager to consider their field experiences and knowledge of a refuge's resources, particularly its biological resources, and make conclusions that are consistent with principles of sound fish and wildlife management and administration, available scientific information, and applicable laws. When a refuge manager is exercising sound professional judgment, the refuge manager will use available information that may include consulting with others both inside and outside the Service.

(2) The refuge manager must also consider the extent to which available resources (funding, personnel, and facilities) are adequate to develop, manage, and maintain the proposed use so as to ensure compatibility. The refuge manager must make reasonable efforts to ensure that the lack of resources is not an obstacle to permitting otherwise compatible wildlife-dependent recreational uses (hunting, fishing, wildlife observation and photography, and environmental education and interpretation). If reasonable efforts do not yield adequate resources to develop, manage, and maintain the wildlife-dependent recreational use, the use will not be compatible because the Service will lack the administrative means to ensure proper management of the public activity on the refuge.

(3) Refuge managers are reminded that, unless otherwise provided for in law or other legally binding directive, permitting uses of national wildlife refuges is a determination vested by law in the Service. Under no circumstances (except emergency provisions necessary to protect the health and safety of the public or any fish or wildlife population) may we authorize any use not determined to be compatible.

B. Materially interfere with or detract from.

(1) When completing compatibility determinations, refuge managers use sound professional judgment to determine if a use will materially interfere with or detract from the fulfillment of the System mission or the purpose(s) of the refuge. Inherent in fulfilling the System mission is not degrading the ecological integrity of the refuge. Compatibility, therefore, is a threshold issue, and the proponent(s) of any use or combination of uses must demonstrate to the satisfaction of the refuge manager that the proposed use(s) pass this threshold test. The burden of proof is on the proponent to show that they pass; not on the refuge manager to show that they surpass. Some uses, like a proposed construction project on or across a refuge that affects the flow of water through a refuge, may exceed the threshold immediately, while other uses, such as boat fishing in a small lake with a colonial nesting bird rookery may be of

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(1) We will reevaluate compatibility determinations for existing wildlife-dependent recreational uses when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use, or concurrently with the preparation or revision of a comprehensive conservation plan, or at least every 15 years, whichever is earlier. In addition, a refuge manager always may reevaluate the compatibility of a use at any time.

(2) Except for uses specifically authorized for a period longer than 10 years (such as rights-of-way), we will reevaluate compatibility determinations for all existing uses other than wildlife-dependent recreational uses when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use, or at least every 10 years, whichever is earlier. Again, a refuge manager always may reevaluate the compatibility of a use at any time.

(3) For uses in existence on November 17, 2000, that were specifically authorized for a period longer than 10 years (such as rights-of-way), our compatibility reevaluation will examine compliance with the terms and conditions of the authorization, not the authorization itself. We will frequently monitor and review the activity to ensure that the permittee carries out all permit terms and conditions. However, the Service will request modifications to the terms and conditions of the permits from the permittee if the Service determines that such changes are necessary to ensure that the use remains compatible. After November 17, 2000, no uses will be permitted or reauthorized, for a period longer than 10 years, unless the terms and conditions for such long-term permits specifically allows for the modifications to the terms and conditions, if necessary to ensure compatibility. We will make a new compatibility determination prior to extending or renewing such long-term uses at the expiration of the authorization. When we prepare a compatibility determination for reauthorization of an existing right-of-way, we will base our analysis on the existing conditions with the use in place, not from a pre-use perspective.

(4) The refuge manager will determine whether change in the conditions under which the use is permitted or new information regarding the effects of the use is significant or not. The refuge manager will make this decision by considering whether or not these new conditions or new information could reasonably be expected to change the outcome of the compatibility determination. Any person at any time may provide information regarding changes in conditions and new information to the refuge manager. However, the refuge manager maintains full authority to determine if this information is or is not sufficient to trigger a reevaluation.

(5) When we reevaluate a use for compatibility, we will take a fresh look and prepare a new compatibility determination following the procedure outlined in paragraph 2.12A.

I. Public review and comment. An opportunity for public review and comment is required for all compatibility determinations. For compatibility determinations prepared concurrently with comprehensive conservation plans or step-down management plans, we can achieve public review and comment concurrently with the public review and comment of the draft plan and associated NEPA document. For compatibility determinations prepared separately from a plan, we will determine the appropriate level of opportunity for public review and comment through a tiered approach based on complexity, controversy, and level of impact to the refuge. See 2.12A(9) for details on public review and comment.

2.12 What information do we include in a compatibility determination?

A. All compatibility determinations will include the following information. To maintain consistency, we will use the format provided in Exhibit 2 for documenting all compatibility determinations.

(1) **Use.** Identify the use. A use may be proposed or existing, and may be an individual use, a specific use program, or a group of related uses. The refuge manager will determine whether to consider a use individually, a specific use program, or in conjunction with a group of related uses. However, whenever practicable, the refuge manager should concurrently consider related uses or uses that are likely to have similar effects and associated facilities, structures and improvements, in order to facilitate analysis of cumulative effects and to provide opportunity for effective public review and comment.

(2) **Refuge name.** Identify the name of the refuge.

(3) **Establishing and acquisition authority(ies).** Identify the specific authority(ies) used to establish the refuge (e.g., Executive Order, public land order, Secretarial Order, refuge-specific legislation, or general legislation).

(4) **Refuge purpose(s).** Identify the purpose(s) of the refuge from the documents identified in 2.12A(3). For a use proposed for designated wilderness areas within the System, the refuge manager must first analyze whether or not the use can be allowed under the terms of the Wilderness Act (16 U.S.C. 1131-36). If so, the refuge manager must then determine if the use is compatible. As a matter of policy, the refuge manager will also analyze whether or not the use is compatible with the purposes of the Wilderness Act, which makes such purposes supplemental to those of the national wildlife refuge.

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(5) National Wildlife Refuge System mission. The mission of the National Wildlife 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.”

(6) Description of use. Describe the nature and extent of the use. The refuge manager may work with the proponent(s) of a use to gather information required in subparagraphs (a) through (e) below to describe the proposed use. If the use is described in sufficient detail in a comprehensive conservation plan, step-down management plan, other plan, or associated NEPA document, the refuge manager may provide a summary of the use and reference the plan or NEPA document. At a minimum, the refuge manager must address and include the following in the compatibility determination:

(a) What is the use? Is the use a priority public use?

(b) Where would the use be conducted? Describe the specific areas of the refuge that will be used: habitat types and acres involved; key fish, wildlife, and plants that occur in or use that habitat; and the proportion of total refuge acreage and the specific habitat type involved. Include a description of other areas that may be affected incidental to the specific use, such as access to the destination area and storage of equipment. This information may be described in writing and on a map.

(c) When would the use be conducted? Describe the time of year and day, and duration of the use.

(d) How would the use be conducted? Describe the techniques to be used, types of equipment required, and number of people per given period. Include supporting uses and associated facilities, structures and improvements as appropriate, e.g., boating and boat ramps to support fishing, camping and campsites to support hunting, etc.

(e) Why is this use being proposed? Describe the reason for the use and the need to conduct the use on the refuge. Describe the extent to which other areas in the vicinity provide similar opportunities.

(7) Availability of resources.

(a) Complete an analysis of costs for administering and managing each use. Implicit within the definition of sound professional judgment is that adequate resources (including financial, personnel, facilities, and other infrastructure) exist or can be provided by the Service or a partner to properly develop, operate, and maintain the use in a way that will not materially interfere with or detract from fulfillment of the refuge purpose(s) and the System mission. If resources are lacking for establishment or continuation of wildlife-

dependent recreational uses, the refuge manager will make reasonable efforts to obtain additional resources or outside assistance from States, other public agencies, local communities, and/or private and non-profit groups before determining that the use is not compatible. If adequate resources cannot be secured, the use will be found not compatible and cannot be allowed. Efforts to find additional funding must be documented on the compatibility determination form.

(b) For many refuges, analysis of available resources will have been made for general categories of uses when preparing comprehensive conservation plans, step-down management plans, other plans, or NEPA documents. If the required and available resources are described in sufficient detail in a comprehensive conservation plan, step-down management plan, other plan, or associated NEPA document, provide a summary of the required and available resources for the use and reference the plan or NEPA document. If not sufficiently covered in the planning document, the following should be documented in the compatibility determination:

(i) Resources involved in the administration and management of the use.

(ii) Special equipment, facilities or improvements necessary to support the use. Itemize expenses such as costs associated with special equipment, physical changes or improvements necessary on the refuge that would be required to comply with disabled access requirements.

(iii) Maintenance costs associated with the use (e.g., trail maintenance and mowing, signing, garbage pickup or sanitation costs, parking areas, road repair or grading, building or structure repair, including blinds, boat ramps, kiosks, etc.).

(iv) Monitoring costs (e.g., biological or visitor surveys, maintenance of control sites, etc.) to assess the impact of uses over time on natural resources and quality of the visitors' experience.

(c) This analysis of cost for administering and managing each use will only include the incremental increase above general operational costs that we can show as being directly caused by the proposed use.

(d) Offsetting revenues, such as entrance fees and user fees that are returned to the refuge, should be documented in determining the costs to administer individual or aggregated uses.

(8) Anticipated impacts of the use.

(a) Identify and describe the reasonably anticipated impacts of the use. In assessing the potential impacts of a proposed use on the refuge's purpose(s) and the System mission,

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refuge managers will use and cite available sources of information, as well as their best professional judgment, to substantiate their analysis. Sources may include planning documents, environmental assessments, environmental impact statements, annual narrative reports, information from previously conducted or ongoing research, data from refuge inventories or studies, published literature on related biological studies, State conservation management plans, field management experience and consultation with wildlife research professionals, State wildlife resource managers and industry professionals, etc. Refuge managers are not required to independently generate data on which to base compatibility determinations. The refuge manager may work with the proponent(s) of the use and other interested parties to gather additional information before making the determination. If available information to the refuge manager is insufficient to document that a proposed use is compatible, then the refuge manager would be unable to make an affirmative finding of compatibility and we must not authorize or permit the use. If the use is a priority public use, and sufficient information is not available, the refuge manager should work with the proponent of the use to acquire the necessary information before finding the use not compatible based solely on insufficient available information. This does not mean that the burden of information collection is shifted to the refuge manager, but that the refuge manager should take steps to ensure that the additional information needs are clearly identified and that appropriate assistance is provided in facilitating the collection of that information.

(b) Refuge managers should distinguish between long-term and short-term impacts. A use may initially only be expected to cause minor impacts to the resource. However, the cumulative impacts over time may become quite substantial. Other uses may have impacts that are very short in duration but very significant while they are occurring, or are the converse: very long in duration but very insignificant in effect.

(c) Although direct impacts on refuge resources, such as wildlife disturbance or destruction of habitats, or degradation of ecological integrity may be easily predicted, the analysis of impacts must also address indirect and cumulative effects that may be reasonably associated with a specific use. Indirect impacts of a proposed use may include taking away or diverting resources from an activity that would support fulfilling the System mission or refuge's purposes and therefore would be a factor in determining whether the proposed use is compatible or not. A use with little potential for impact on its own may contribute to more substantive cumulative impacts on refuge resources when conducted in conjunction with or preceding or following other uses, and when considered in conjunction with proposed or existing uses of lands and waters adjacent to the refuge.

(d) If the anticipated impacts of the use are described in sufficient detail in a comprehensive conservation plan, step-

down management plan, other plan, or associated NEPA document, refuge managers may provide a summary of the anticipated impacts of the use and reference the plan or NEPA document.

(e) Refuge managers should list all conservation objectives in approved refuge management plans (e.g., comprehensive conservation plan, comprehensive management plan, master plan, or step-down management plan), that reasonably might be affected by the proposed use. To the extent possible, the determination of anticipated impacts should include an explanation of the impacts on these specific conservation objectives and how that affects fulfilling refuge purposes or the System mission.

(9) Public review and comment.

(a) The refuge manager must provide an opportunity for public review and comment on the proposed refuge uses(s) before issuing a final compatibility determination. Public review and comment includes actively seeking to identify individuals and organizations that reasonably might be affected by, or interested in, a refuge use. Additionally, public review and comment will offer the public the opportunity to provide relevant information and express their views on whether or not a use is compatible. The extent and complexity of public review and comment that is necessary or appropriate will be determined by the refuge manager. For example, significantly modifying a popular hunting, fishing, or wildlife observation program would likely be controversial and would require considerable opportunity for public review and comment, whereas temporarily closing a small portion of a wildlife observation trail would likely require much less opportunity for public review and comment. For compatibility determinations prepared concurrently with comprehensive conservation plans or step-down management plans, public involvement can be achieved concurrently with the public review and comment of the draft plan and associated NEPA document. For compatibility determinations prepared separately from a plan, handle the level of public review and comment through the following tiered approach.

(i) For minor, incidental, or one-time uses that have been shown by past experience at this or other refuges in the System to result in no significant or cumulative impact to the refuge and would likely generate minimal public interest, the public review and comment requirement can be accomplished by posting a notice of the proposed determination at the refuge headquarters.

(ii) For all other uses, at a minimum, the refuge manager will solicit public comment by placing a public notice in a newspaper with wide local distribution. The notice must contain, at a minimum: a brief description of the compatibility determination process, a description of the use that is being evaluated, the types of information that may be used in completing the evaluation, how to provide comments, when

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comments are due, and how people may be informed of the decision the refuge manager will make regarding the use. The public will be given at least 14 calendar days to provide comments following the day the notice is published.

(iii) For evaluations of controversial or complex uses, the refuge manager should expand the public review and comment process to allow for additional opportunities for comment. This may include newspaper or radio announcements, notices or postings in public places, notices in the Federal Register, letters to potentially interested people such as adjacent landowners, holding public meetings, or extending the comment period.

(b) Public review and comment efforts must be documented on the compatibility determination form and relevant information retained with compatibility determinations as part of the administrative record. The documentation must include a description of the process used, a summary of comments received, and a description of any actions taken or not taken because of the comments received. All written public comments will be retained in the administrative record. If a comprehensive conservation plan or NEPA document is being prepared, this information would be included in these documents as part of the administrative record.

(10) Use is compatible or not compatible. Identify whether the use is compatible or not compatible. This is where the refuge manager indicates whether or not the use would, or would not, materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the refuge.

(11) Stipulations necessary to ensure compatibility.

(a) Describe any stipulations (terms or conditions) necessary to ensure compatibility. If a use is not compatible as initially proposed, it may be modified with stipulations that avoid or minimize potential adverse impacts, making the use compatible. It is not the responsibility of the refuge manager to develop a sufficient set of stipulations so as to make an otherwise not compatible proposed use, compatible. If the use cannot be modified with stipulations sufficient to ensure compatibility, the use cannot be allowed.

(b) Protective stipulations in the compatibility determination for a particular use should specify the manner in which that use must be carried out to ensure compatibility. Stipulations must be detailed and specific. They may identify such things as limitations on time (daily, seasonal, or annual) or space where a use could be safely conducted, the routes or forms of access to be used, and any restrictions on the types of equipment to be used or number of people to be involved. Monitoring of the use must be sufficient to evaluate compliance with stated conditions and swift action must be taken to correct or respond to any serious deviations.

(12) Justification. After completing the steps described above, the refuge manager will provide a written justification for the determination. The justification must provide a logical explanation describing how the proposed use would, or would not, materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the refuge.

(13) Signature. The refuge manager will sign and date the compatibility determination and submit it to the Regional Chief for review and concurrence.

(14) Concurrence. The Regional Chief will sign and date the compatibility determination if in concurrence. If the Regional Chief does not concur, the Regional Chief must discuss the determination with the refuge manager and attempt to resolve the differences. If they do not agree, the Regional Chief must refer the compatibility determination to the Regional Director and the use may not be allowed unless, upon review, the Regional Director makes a written determination that the use is compatible.

(15) Mandatory 10- or 15-year reevaluation date. At the time the compatibility determination is made, the refuge manager will insert the required maximum 10-year reevaluation date for uses other than wildlife-dependent recreational uses or a 15-year maximum reevaluation date for wildlife-dependent recreational uses.

2.13 How do we expedite the compatibility determination process? The Refuge Administration Act provides for expedited consideration of uses that will likely have no detrimental effect on the fulfillment of the purpose(s) of the refuge or the System mission. The intent of this provision is to reduce the administrative burden on the refuge manager and speed the compatibility determination process for uses that are frequently found to be compatible. For minor, incidental, or one-time uses that have been shown to have no significant or cumulative impact to the refuge and would likely generate minimal public interest, the time period for an opportunity for public review and comment may be reduced to the time available.

2.14 What do we do with existing uses that are not compatible? Existing uses determined to be not compatible will be expeditiously terminated or modified to make the use compatible. Except with written authorization by the Director, this process of termination or modification will not exceed 6 months from the date that the compatibility determination is signed.

2.15 May we deny uses that are compatible? A determination that a use is compatible does not require the use to be allowed. Determinations on whether or not to allow otherwise compatible uses are based on compliance with other laws, the System mission, policy, refuge purposes, availability of resources to manage the use, possible conflicts

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with other uses, public safety, and other administrative factors. The refuge manager must clearly document and describe in writing the administrative reasons for not permitting a compatible use. Usually, a refuge manager will make this decision prior to making a compatibility determination and completing one will be unnecessary.

2.16 What are the procedures for appealing a permit denial? Procedures for appealing a permit denial are provided in 50 CFR 25.45 (special use permits), 50 CFR 29.22 (rights-of-way), 50 CFR 36.41 (i) (special use permits for refuges in Alaska), or 43 CFR 36.8 (rights-of-way for Alaska). We are providing no administrative mechanism to appeal a compatibility determination.

2.17 When do we prepare pre-acquisition compatibility determinations?

A. When we add lands to the National Wildlife Refuge System, the refuge manager assigned management responsibility for the land to be acquired, will identify prior to acquisition, withdrawal, transfer, reclassification, or donation of those lands, existing wildlife-dependent recreational public uses (if any) determined to be compatible that we will permit to continue on an interim basis, pending completion of the comprehensive conservation plan. For this purpose, the refuge manager will make a pre-acquisition compatibility determination that will apply to existing wildlife-dependent recreational public uses that may be allowed, if determined to be compatible during the interim between acquisition and completion of the comprehensive conservation plan. The purpose of this policy is to inform the public, prior to acquisition, which pre-existing wildlife-dependent recreational public uses will be allowed to continue on newly acquired lands. Such decisions must be based on the compatibility standards and procedures outlined in this chapter. These pre-acquisition compatibility determinations for continuing existing wildlife-dependent recreational public uses will be made in writing, using the format in Exhibit 2.

B. Pre-acquisition compatibility determinations only apply to existing wildlife-dependent recreational public uses and are intended to be short-term in nature, bridging the gap between acquisition of refuge lands and completion of refuge comprehensive conservation plans. They should be made in conjunction with the preparation and release of appropriate pre-acquisition Realty documentation, prepared pursuant to NEPA. Pre-acquisition compatibility determinations should document the type, level, timing and location of wildlife-dependent recreational public uses that are presently occurring on lands proposed for acquisition.

2.18 What is the relationship of compatibility to NEPA? NEPA requires us to examine the environmental impact of our actions, incorporate environmental information, and utilize public participation, as appropriate, in the planning and implementation of our actions. NEPA compliance is required

whenever we take an action. It is the action that triggers NEPA. A compatibility determination is not an action under NEPA, rather it is only one of many factors that we take into account whenever we consider taking an action; i.e., allow a refuge use. Deciding whether or not to allow the use is the action, not the compatibility determination. Comprehensive conservation plans, step-down management plans, and the issuance of special use permits are actions about allowing or not allowing refuge uses. These actions require NEPA compliance. Many compatibility determinations will be completed concurrently with these processes. Compatibility determinations are an integral part of our decision about refuge uses; however, it is important to note that compatibility is only one of many factors that we take into account when we consider allowing or not allowing a refuge use.

Appendix G

Draft Compatibility Determinations for Hunting

USE: Hunting

REFUGE NAME: Pathfinder NWR

COUNTY: Carbon and Natrona counties, Wyoming

ESTABLISHING AND ACQUISITION

AUTHORITY: Executive Order 7425

REFUGE PURPOSES:

“As a refuge and breeding ground for birds and other wildlife.” (Executive Order 7425, dated August 1, 1936)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION

The mission of the National Wildlife 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.

DESCRIPTION OF USE

The use would be continuation of the existing hunting program, which includes ducks, coots, mergansers, deer, and pronghorn in accordance with dates and regulations established by the Wyoming Game and Fish Commission. The use would be conducted over the entire refuge.

Hunting is one of the six wildlife-dependent, priority public uses specified in the Improvement Act. It can be allowed at the refuge without interfering with the migratory bird resource.

When would the use be conducted?

Late-season upland game bird hunting and small game hunting would open on the day following the deer gun season. The upland game bird hunting season would close when the state season closes. The small game hunting season would close on March 31 to reduce disturbance to waterfowl and other migratory birds.

How would the use be conducted?

A state-issued unit permit would be required to hunt deer. All hunters must follow state regulations for hunted species. The refuge is closed to all other hunting activities.

Availability of Resources

Resources involved in the administration and management of the use: None.

Special equipment, facilities, or improvements necessary to support the use: None.

Maintenance costs: None.

Monitoring costs: None.

Offsetting revenues: None.

Anticipated Impacts of the Use

Short-term impacts: There may be temporary disturbance to nontarget wildlife near the activity. Animals surplus to populations would be removed by hunting, which may help ensure populations remain beneath the carrying capacity of available habitats.

Long-term impacts: Higher-quality habitats capable of supporting healthy populations of wildlife would result if animal populations (especially deer) remain beneath carrying capacity.

Cumulative impacts: There would be no direct or indirect cumulative impacts anticipated with this use.

Public Review and Comment

This compatibility determination was prepared concurrently with the draft CCP and EA for the refuge. Public review and comment will be achieved concurrently with the public review and comment period for the draft CCP and EA.

Determination

Hunting is a compatible use at Pathfinder NWR.

Stipulations Necessary to Ensure Compatibility

Stipulations for the hunting program would be made available in the refuge's hunting “tear sheet.”

Justification

Hunting is a traditional and legislated wildlife-dependent, priority public use. The current staff levels are inadequate to ensure the activity takes place with minimum negative impacts to the refuge and its associated wildlife. Use will be appropriately managed in cooperation with WGFD. Hunting at the refuge is a legitimate and necessary wildlife management tool that can be used to keep wild animal populations at healthy levels.

Signature

Ann Timberman Date
Project Leader, Arapaho NWR Complex
USFWS, Region 6

Review

Lloyd Jones Date
Regional Compatibility Coordinator
USFWS, Region 6

Bud Oliveira Date
Refuge Supervisor
USFWS, Region 6

Mandatory 15-Year Reevaluation Date: 2023

Concurrence

Richard A. Coleman, PhD Date
Assistant Regional Director
National Wildlife Refuge System
USFWS, Region 6

Appendix H

Draft Compatibility Determination for Wildlife Observation and Photography

USES: Wildlife observation and photography

REFUGE NAME: Pathfinder NWR

COUNTY: Carbon and Natrona counties, Wyoming

ESTABLISHING AND ACQUISITION

AUTHORITY: Executive Order 7425

REFUGE PURPOSES:

“As a refuge and breeding ground for birds and other wildlife.” (Executive Order 7425, dated August 1, 1936)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION

The mission of the National Wildlife 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.

DESCRIPTION OF USES

The uses would be a continuation of existing public use programs and activities of and related to wildlife observation and photography.

This draft CCP proposes to continue the above uses and add the following to improve wildlife observation and photography:

- Update and improve refuge signs.
- Update existing brochures to the Service’s graphic standards.

Wildlife observation and photography would be allowed year-round. However, access into the refuge would be limited during the deer gun and muzzleloader seasons; only hunters or those accompanying hunters (details in the “tear sheet”) would be allowed at the refuge during these seasons.

The uses would occur over the entire refuge. Vehicle access would be restricted to the parking area at the interpretive overlook located off Highway 220. Supporting use (access) would be controlled and regulated through the publication of refuge “tear sheets” and brochures, and through information posted at the kiosks.

Wildlife observation and photography are two of the six wildlife-dependent, priority public uses specified in the Improvement Act. These uses and their supporting access-related uses can be allowed at the refuge without interfering with the migratory bird resource.

Availability of Resources

Currently, the programs for wildlife observation and photography are administered using available resources. Implementing new programs, activities, and facilities outlined in this CCP is tied to funding requests in the form of RONS and SAMMS projects.

Resources involved in the administration and management of the uses: None.

Special equipment, facilities, or improvements necessary to support the uses: None.

Maintenance costs: None.

Monitoring costs: None.

Offsetting revenues: None.

Anticipated Impacts of the Uses

Short-term impacts: Temporary disturbance may exist to wildlife near the activity. Direct, short-term impacts may include minor damage from traffic to refuge roads when wet and muddy.

Long-term impacts: None.

Cumulative impacts: There would be no direct or indirect cumulative impacts anticipated with these uses.

Public Review and Comment

This compatibility determination was prepared concurrently with the draft CCP and EA for the

refuge. Public review and comment will be achieved concurrently with the public review and comment period for the draft CCP and EA.

Determination

Wildlife observation and photography, along with their supporting uses, are compatible uses at Pathfinder NWR.

Stipulations Necessary to Ensure Compatibility

Stipulations regarding the public use program would be made available in published refuge brochures. Dates, closed areas, and other information would be specified.

Justification

Wildlife observation and photography are priority wildlife-dependent public uses acknowledged in the Improvement Act. These uses promote an appreciation for the natural resources at the refuge. Increased public stewardship will support and complement the Service’s actions in achieving the purposes of the refuge and the mission of the National Wildlife Refuge System.

The refuge contains unique habitats and supports wildlife populations—particularly migratory birds, upland game birds, and big game animals—in excess of what can be observed on neighboring private lands. These uses promote an appreciation for the natural resources at the refuge. Access into the refuge would be restricted during the deer gun and muzzleloader seasons for safety reasons.

No significant adverse impacts to the wildlife resource are expected from the primary or supporting uses.

Signature

Ann Timberman Date
Project Leader, Arapaho NWR Complex
USFWS, Region 6

Review

Lloyd Jones Date
Regional Compatibility Coordinator
USFWS, Region 6

Bud Oliveira Date
Refuge Supervisor
USFWS, Region 6

Mandatory 15-Year Reevaluation Date: 2023

Concurrence

Richard A. Coleman, PhD Date
Assistant Regional Director
National Wildlife Refuge System
USFWS, Region 6

Appendix I

Draft Compatibility Determination for Environmental Education and Interpretation

USE: Environmental education and interpretation

REFUGE NAME: Pathfinder NWR

COUNTY: Carbon and Natrona counties, Wyoming

ESTABLISHING AND ACQUISITION

AUTHORITY: Executive Order 7425

REFUGE PURPOSES:

“As a refuge and breeding ground for birds and other wildlife.” (Executive Order 7425, dated August 1, 1936)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION

The mission of the National Wildlife 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.

DESCRIPTION OF USES

The uses would be a continuation of environmental education and interpretative programs at current levels. Environmental education consists of activities conducted by refuge staff and partnerships. Interpretation occurs in less formal activities through exhibits, signs, and brochures. Visiting school and nonprofit groups would use the refuge as an outdoor classroom and tour site.

This draft CCP proposes to continue with the above uses and add the following to improve environmental education and interpretation activities for visitors:

- Update and improve refuge signs.
- Update existing brochures to the Service’s graphic standards.

These activities would be held during the daytime, most frequently while school is in session (September–May). Less frequently, nonprofit groups would be hosted during the summer months.

Refuge staff would provide the instruction and host classroom tours in most cases. When someone other than refuge personnel leads activities, a special use permit may be issued. Most activities would be at the interpretive overlook located off State Highway 220. Occasionally, small groups would be led to interior portions of the refuge such as the riparian and wetland habitat areas.

Environmental education and interpretation are two of the six wildlife-dependent public uses specified in the Improvement Act. These uses can be allowed at the refuge without interfering with the migratory bird resource.

Availability of Resources

Currently, environmental education and interpretation programs are conducted using available resources. Implementing new programs, activities, and facilities outlined in this CCP is tied to funding requests in the form of RONS and SAMMS projects.

Resources involved in the administration and management of the uses: None.

Special equipment, facilities, or improvements necessary to support the uses: None.

Maintenance costs: None.

Monitoring costs: None.

Offsetting revenues: None.

Anticipated Impacts of the Uses

Short-term impacts: Temporary disturbance may exist to wildlife near the activities. Minimal disturbance to wildlife and wildlife habitat will result from these uses at the current and proposed levels. Adverse impacts are minimized through careful timing and placement of activities. Minor damage to vegetation, littering, and increased maintenance may occur. These activities will have only minor impacts

on wildlife and will not detract from the primary purposes of the refuge.

Long-term impacts: These activities would increase local support of the refuge and increase knowledge of stewardship of natural resources to students young and old.

Cumulative impacts: There would be no direct nor indirect cumulative impacts anticipated with the continuation of these uses.

Public Review and Comment

This compatibility determination was prepared concurrently with the draft CCP and EA for the refuge. Public review and comment will be achieved concurrently with the public review and comment period for the draft CCP and EA.

Determination

Environmental education and interpretation are compatible uses at Pathfinder NWR.

Stipulations Necessary to Ensure Compatibility

Anticipated impacts are assumed to be light; however, disturbance is almost an unavoidable impact of the interpretive and environmental education programs. However, it is through these activities that visitors would receive an

understanding of proper etiquette and the impact people have on habitat and wildlife. This information and refuge-specific regulations would be available through visitor contacts, brochures, and kiosks. Periodic law enforcement would ensure compliance with regulations and area closures.

Justification

Environmental education and interpretation are legislated, wildlife-dependent, priority public uses. Other than minor disturbance, they would have no impact to the resource. These uses would contribute to the mission of the Refuge System by increasing knowledge and support of the stewardship of natural resources.

The refuge contains unique habitats and supports wildlife populations—particularly migratory birds, upland game birds, and big game animals—in excess of what can be observed on neighboring private lands. These uses promote an appreciation for natural resources and support for conservation programs at the refuge.

Signature

Ann Timberman Date
Project Leader, Arapaho NWR Complex
USFWS, Region 6

Review

Lloyd Jones Date
Regional Compatibility Coordinator
USFWS, Region 6

Bud Oliveira Date
Refuge Supervisor
USFWS, Region 6

Mandatory 15-Year Reevaluation Date: 2023

Concurrence

Richard A. Coleman, PhD Date
Assistant Regional Director
National Wildlife Refuge System
USFWS, Region 6

Appendix J

Draft Compatibility Determination for Prescribed Grazing

USE: Prescribed grazing

REFUGE NAME: Pathfinder NWR

COUNTY: Carbon and Natrona counties, Wyoming

ESTABLISHING AND ACQUISITION

AUTHORITY: Migratory Bird Conservation Act, Executive Order 7425

REFUGE PURPOSES:

“As a refuge and breeding ground for birds and other wildlife.” (Executive Order 7425, dated August 1, 1936)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION

The mission of the National Wildlife 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.

DESCRIPTION OF USES

Prescribed grazing is the use of livestock, usually cattle, to remove standing vegetation, reduce vegetative litter, suppress woody vegetation or noxious weeds, open up vegetation-choked wetlands, or open up areas to sunlight and encourage native grass seedlings and growth. Prescribed grazing is carefully timed, and usually of short duration (usually 2–4 weeks), to target certain species for grazing impacts in order to benefit other species for growth after the competing vegetation has been removed.

Fence construction and maintenance (often a temporary electric fence) and control and rotation of the livestock are the responsibility of the cooperating private party. Market rate grazing fees are determined by the regional office, but may include standard deductions for fence construction and maintenance, frequent livestock rotations, construction of water gaps, or hauling/providing additional water in dry pasture.

This CCP proposes to continue with the above use and add the following to improve management of refuge upland habitats:

- Conduct upland vegetation surveys.
- Evaluate grazing program to determine appropriate stocking rates, duration, and so forth of grazing program.
- Install and maintain fencing, where appropriate, to manage grazing program.

Availability of Resources

Developing grazing plans and special use permits (SUPs) and monitoring compliance and biological effects require some Service resources. Most grazing management costs (fencing labor, monitoring and moving livestock, hauling water) are provided by the cooperator or permittee. Evaluating the grasslands for grazing prescriptions and grassland response is part of the refuge grassland management responsibilities. Some alternative form of grassland management, prescribed burning, or haying may be used if the areas are not treated with prescribed grazing.

Managing grasslands through permitted haying has comparable costs to managing a prescribed grazing program. Managed mowing would be more expensive, since all labor costs would be assumed by the Service. Prescribed fire can be an effective grassland management tool, but there are personnel and weather limitations on a burning program, as well the fact that some tracts are not suited to burning management. In addition, there is an ecological benefit to rotating grassland management techniques, such as grazing, burning, and haying, at different seasons, rather than just relying on one technique.

Anticipated Impacts of the Uses

Grazing by domestic livestock has the short-term effect of removing some or much of the standing vegetation from a tract of grassland. Properly prescribed, the effect of this removal of vegetation increases the vigor of the grassland, stimulates the growth of desired species of grass and forbs, and reduces the abundance of targeted species such as cool-season exotics, woody species, invasive species, or cattails. Grazing in the spring may cause the loss

of some bird nests due to trampling, and may cause some birds not to nest in areas being grazed. Grazing on public wildlife lands can create an aesthetic issue of concern for some people or visitors who do not understand grassland management. Prescribed grazing is usually of short duration and ultimately enhances the diversity and vigor of grassland habitats. Grazing livestock may create a minor and temporary disturbance to wildlife, but generally do no harm. There is a slight potential for conflict between the visiting public and the livestock or the permittee.

Public Review and Comment

This compatibility determination was prepared concurrently with the draft CCP and EA for the refuge. Public review and comment will be achieved concurrently with the public review and comment period for the draft CCP and EA.

Determination

As this activity is an economic use, it must meet the compatibility threshold of “contributing to the Mission and Purposes” of the Refuge System and refuge area. Prescribed grazing is used to improve and manage grassland habitats on refuges and benefit the migratory birds and other wildlife that use these habitats.

The use of grazing as a habitat management tool is compatible at Pathfinder NWR with the following stipulations.

Stipulations Necessary to Ensure Compatibility

- SUPs will specify the stocking rates, dates of use, and timing for each unit or grazing cell on the refuge.

- The standard grazing fee, as determined for each state by the regional office, and any standard deductions for any labor or work done on Service lands will be included on the SUP.
- Grazing permittees must comply with all applicable state livestock health laws.
- No supplemental feeding will be allowed without authorization from the project leader/refuge manager.
- Control and confinement of livestock will be the responsibility of the permittee.
- The permit is issued subject to the revocation and appeals procedure contained in Title 50, Part 25 of the CFR.

Justification

Controlled grazing by domestic livestock will not materially interfere or detract from the purposes for which the refuge was established. Prescribed livestock grazing creates temporary disturbances to vegetation. Many of these disturbances are desirable for grassland management. Grazing produces an undesirable but short-term impact to grassland nesting birds and site aesthetics. In the long term, prescribed grazing increases grassland vigor, species diversity, and habitat quality. Prescribed grazing is an alternative management tool that can be used to replace or complement prescribed fire, mowing, or haying of Service grasslands. Without periodic disturbance caused by grazing the health of the grassland community would decline.

Signature

Ann Timberman Date
 Project Leader, Arapaho NWR Complex
 USFWS, Region 6

Review

Bud Oliveira Date
 Refuge Supervisor
 USFWS, Region 6

Mandatory 15-Year Reevaluation Date: 2023

Concurrence

Richard A. Coleman, PhD Date
 Assistant Regional Director
 National Wildlife Refuge System
 USFWS, Region 6

Appendix K

Fire Management Program

The Service has administrative and fire management for 16,806 acres located within the boundaries of Pathfinder NWR in central Wyoming.

THE ROLE OF FIRE

Vegetation within the Wyoming Basin has evolved under periodic disturbance and defoliation from grazing, fire, drought, and floods. This periodic disturbance is what kept the ecosystem diverse and healthy while maintaining significant biodiversity for thousands of years.

Historically, natural fire and Native American ignitions played an important disturbance role in many ecosystems by removing fuel accumulations, decreasing the impacts of insects and diseases, stimulating regeneration, cycling nutrients, and providing a diversity of habitats for plants and wildlife.

When fire is excluded from shrub-steppe landscape, the fuel loading increases due the continued growth and increase in shrub size and density. This creates a decadent stand of tall dense shrubs that reduce species diversity by shading understory plants. It also increases fuel loading which leads to an increase in a fire's resistance to control. This increase in resistance to control threatens firefighter and public safety as well as private and federal properties.

However, fire when properly used, can:

- reduce hazardous fuels build-up in both wildland-urban interface (WUI) and non-WUI areas;
- improve wildlife habitats by reducing density of vegetation
- and/or changing plant species composition;
- sustain and/or increase biological diversity;
- improve woodlands and shrublands by reducing plant density;
- reduce susceptibility of plants to insect and disease outbreaks;
- improve quality and quantity of livestock forage;
- and improve the quantity of water available for municipalities and activities dependent on wildlands for their water supply.

WILDLAND FIRE MANAGEMENT POLICY AND GUIDANCE

In 2001, an update of the 1995 "Federal Fire Policy" was completed and approved by the Secretaries of Interior and Agriculture. The 2001 "Federal Wildland Fire Management Policy" directs federal agencies to achieve a balance between fire suppression to protect life, property, and resources and fire use to regulate fuels and maintain healthy ecosystems. In addition, it directs agencies to use the appropriate management response for all wildland fire regardless of the ignition source. This policy provides eight guiding principles that are fundamental to the success of the fire management program:

- Firefighter and public safety is the first priority in every fire management activity.
- The role of wildland fires as an ecological process and natural change agent will be incorporated into the planning process.
- Fire management plans (FMPs), programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities.
- Fire management programs and activities are economically viable, based on values to be protected, costs, and land and resource management objectives.
- FMPs and activities are to be based on the best available science.
- FMPs and activities incorporate public health and environmental quality consideration.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
- Standardization of policies and procedures among federal agencies is an ongoing objective.

The fire management considerations, guidance, and direction should be addressed in the land use resource plans (for example, the CCP). FMPs are step-down processes from the land use plans and habitat plans, with more detail on fire suppression, fire use, and fire management activities.

MANAGEMENT DIRECTION

The Arapaho NWRC will protect life, property, and other resources from wildland fire by safely suppressing all wildfires. Prescribed fire and manual and mechanical fuel treatments will be used in an ecosystem context for habitat management purposes, and to protect both federal and private property. Fuels reduction activities will be applied in collaboration with federal, state, private, and NGO partners. In addition, fuel treatments will be prioritized based on the guidance for prioritization established in the goals and strategies outlined in the “U.S. Fish and Wildlife Service National Wildlife Refuge System Wildland Fire Management Program Strategic Plan 2003–2010” and the “R6 Refuges Regional Priorities FY07–11.” For WUI treatments, areas with community wildfire protection plans (CWPPs) and communities at risk (CARs) will be the primary focus. On August 17, 2001, the “Federal Register” published a list of CARs throughout the nation. In the area near Pathfinder NWR, no communities were identified in the list. Any additions or deletions to the CARs list are the responsibility of the state through coordination with interagency partners. Wyoming has determined to complete CWPPs on a county basis. Natrona and Carbon counties have completed CWPPs. The Service will place a high priority in collaborating with our neighboring partners to reduce the risk of wildfire using fuels reduction projects.

All aspects of the fire management program will be conducted in a manner consistent with applicable laws, policies, and regulations. The Arapaho NWRC will maintain an FMP to accomplish the fire management goals described below. Prescribed fire and manual and mechanical fuel treatments will be applied in a scientific way under selected weather and environmental conditions.

FIRE MANAGEMENT GOALS

The goals and strategies of the “U.S. Fish and Wildlife Service National Wildlife Refuge System Wildland Fire Management Program Strategic Plan” are consistent with Department of Interior and Service policies, National Fire Plan direction, President Bush’s Healthy Forest Initiative, the 10-Year Comprehensive Strategy and Implementation Plan, National Wildfire Coordinating Group (NWCG) guidelines, initiatives of the Wildland Fire Leadership Council, and Interagency Standards for Fire and Aviation Operations.

The “R6 Refuges Regional Priorities FY07–11” are consistent with region 6’s refuges vision statement: “to maintain and improve the biological integrity of the region, ensure the ecological condition of the region’s public and private lands are better understood, and endorse sustainable use of habitats that support native wildlife and people’s livelihoods.” The fire management goals for the Pathfinder NWR

are to use prescribed fire and manual and mechanical fuel treatments to (1) reduce the threat to life and property; and (2) meet the habitat goals and objectives identified in this CCP.

Fire Management Objective

The objective of the fire management program is to use prescribed fire and manual and mechanical methods to treat refuge lands for hazardous fuels and habitat management purposes.

Strategies

Strategies and tactics that emphasize public and firefighter safety as well as resource values at risk will be used. Wildland fire suppression, prescribed fire methods, manual and mechanical means, timing, and monitoring are described in more detail within the step-down FMP.

All management actions would use prescribed fire and manual and/or mechanical means to reduce hazardous fuels, restore and maintain desired habitat conditions, control nonnative vegetation, and control the spread of woody vegetation within the upland and wetland habitats. The fuels treatment program will be outlined in the FMP for the wetland management district. Site-specific prescribed fire burn plans will be developed following the Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide (2006) template.

Prescribed fire temporarily reduces air quality by reducing visibility and releasing components through combustion. Pathfinder NWR will meet the Clean Air Act emission standards by adhering to the “Wyoming State Implementation Plan” requirements during all prescribed fire activities.

Fire Management Rationale

Pathfinder NWR does not have any recorded fire history since its establishment in 1909. Landfire has identified the shrub-steppe community within and around Pathfinder NWR as a Fire Regime IV, which means historically these areas burned every 35–100+ years and were stand-replacement fires. Some areas within the refuge boundary are identified as a Fire Regime III (35–100+ years and mixed-severity fires). Because fires have not occurred on Pathfinder NWR since its establishment, these habitat types are nearing or have reached the point where they maybe outside their historic fire return interval. Since settlement of the area, wildfires that have occurred have been suppressed (Landfire).

Fire Management Organization, Contacts, and Cooperation

Qualified fire management technical oversight for the refuges will be established by region 6 of the Service, using the fire management district approach. Under this approach, fire management staff will be determined by established modeling systems based on the fire management workload of a group of Service lands (refuges, wetland management districts, fish hatcheries), and possibly that of interagency partners. The fire management workload consists of historical wildland fire suppression activities as well as historical and planned fuels treatments.

Depending on budgets, fire management staffing and support equipment may be located at the administrative station or at other locations within the fire management district and shared between all units. Fire management activities will be conducted in a coordinated and collaborative manner with federal and nonfederal partners.

On approval of this CCP, a new FMP would be developed for Pathfinder NWR as (1) an FMP that covers the wetland management district, (2) an FMP that covers the fire management district, (3) an FMP that covers the Arapaho NWR Complex, or (4) an interagency FMP.

Appendix L

List of Occurring Plant Species

The following vascular plant species were documented on Pathfinder NWR during a rare survey of plants (Fertig 2000). Nonnative species are indicated by an asterisk (*). In addition, slender spiderplant (*Cleome multicaulis*), a state species of concern, is found on the Sweetwater Arm Unit of the refuge.

| <i>Scientific Name</i> | <i>Common Name</i> |
|--|--------------------------|
| <i>Agrostis stolonifera</i> | Redtop* |
| <i>Alopecurus aequalis</i> | Shortawn foxtail |
| <i>Alopecurus arundinaceus</i> | Creeping meadow foxtail* |
| <i>Artemisia biennis</i> var. <i>biennis</i> | Biennial wormwood |
| <i>Artemisia cana</i> var. <i>cana</i> | Silver sagebrush |
| <i>Artemisia frigida</i> | Prairie sagewort |
| <i>Artemisia ludoviciana</i> var. <i>ludoviciana</i> | White sagebrush |
| <i>Artemisia tridentata wyomingensis</i> | Wyoming big sagebrush |
| <i>Asclepias speciosa</i> | Showy milkweed |
| <i>Aster ascendens</i> | Western aster |
| <i>Aster ericoides</i> | Heath-leaved aster |
| <i>Aster occidentalis</i> | Western mountain aster |
| <i>Astragalus agrestis</i> | Purple milkvetch |
| <i>Astragalus bodinii</i> | Bodin's milkvetch |
| <i>Atriplex rosea</i> | Tumbling saltweed* |
| <i>Atriplex subspicata</i> | Saline saltbrush |
| <i>Bassia hyssopifolia</i> | Fivehorn smotherweed* |
| <i>Bidens cernua</i> | Nodding beggartick |
| <i>Bromus inermis</i> var. <i>inermis</i> | Smooth brome* |
| <i>Bromus tectorum</i> | Cheatgrass* |
| <i>Calamagrostis inexpansa</i> | Northern reedgrass |
| <i>Cardaria pubescens</i> | Hairy whitetop |
| <i>Carex nebrascensis</i> | Nebraska sedge |
| <i>Centaureum exaltatum</i> | Desert centaury |
| <i>Chenopodium atrovirens</i> | Pinyon goosefoot |
| <i>Chenopodium glaucum</i> var. <i>salinum</i> | Oakleaf goosefoot |
| <i>Chenopodium rubrum</i> var. <i>glomeratum</i> | Red goosefoot |
| <i>Chrysothamnus nauseosus</i> | Rubber rabbitbrush |
| <i>Cirsium arvense</i> | Canada thistle* |
| <i>Cirsium tioganum</i> var. <i>coloradense</i> | Colorado thistle |
| <i>Cleome serrulata</i> | Rocky Mountain beeplant |
| <i>Conyza canadensis</i> | Canadian horseweed |

| <i>Scientific Name</i> | <i>Common Name</i> |
|---|-------------------------|
| <i>Distichlis stricta</i> | Saltgrass |
| <i>Echinochloa</i> spp. | Barnyardgrass |
| <i>Eleocharis</i> spp. | Spikerush |
| <i>Elymus Canadensis</i> | Canada wildrye |
| <i>Elymus lanceolatus</i> | Thickspike wheatgrass |
| <i>Elymus repens</i> | Quackgrass* |
| <i>Equisetum arvense</i> | Field horsetail |
| <i>Equisetum hyemale</i> | Scouringrush horsetail |
| <i>Equisetum laevigatum</i> | Smooth horsetail |
| <i>Gentianella amarella</i> var. <i>amarella</i> | Autumn dwarf gentian |
| <i>Glaux maritima</i> | Sea milkwort |
| <i>Glycyrrhiza lepidota</i> | American licorice |
| <i>Gnaphalium palustre</i> | Western marsh cudweed |
| <i>Grindelia squarrosa</i> | Curlycup gumweed |
| <i>Gutierrezia sarothrae</i> | Broom snakeweed |
| <i>Haplopappus uniflorus</i> | Plantain goldenweed |
| <i>Helenium autumnale</i> var. <i>montanum</i> | Common sneezeweed |
| <i>Helianthus petiolaris</i> | Prairie sunflower |
| <i>Heliotropium curassavicum</i> var. <i>obovatum</i> | Salt heliotrope |
| <i>Hippuris vulgaris</i> | Common mare's-tail |
| <i>Hordeum jubatum</i> | Foxtail barley |
| <i>Iva</i> | Marsh elder |
| <i>Iva axillaris</i> | Povertyweed |
| <i>Juncus bufonius</i> | Toad rush |
| <i>Juncus compressus</i> | Roundfruit rush |
| <i>Juncus nodosus</i> | Knotted rush |
| <i>Koeleria macrantha</i> | Prairie Junegrass |
| <i>Lactuca oblongifolia</i> | Blue lettuce |
| <i>Lactuca serriola</i> | Prickly lettuce |
| <i>Limosella aquatica</i> | Water mudwort |
| <i>Lycopus asper</i> | Rough bugleweed |
| <i>Melilotus albus</i> | White sweetclover |
| <i>Melilotus officinalis</i> | Yellow sweetclover |
| <i>Mentha arvensis</i> | Field mint |
| <i>Muhlenbergia asperifolia</i> | Scratchgrass |
| <i>Oenothera villosa</i> | Hairy evening-primrose |
| <i>Opuntia polyacantha</i> var. <i>polyacantha</i> | Hairspine pricklypear |
| <i>Oryzopsis hymenoides</i> | Indian ricegrass |
| <i>Oxytropis riparia</i> | Oxus locoweed* |
| <i>Plagiobothrys scouleri</i> | Scouler's popcornflower |
| <i>Plantago eriopoda</i> | Redwool plantain |
| <i>Poa pratensis</i> | Kentucky bluegrass* |
| <i>Polygonum amphibium</i> var. <i>emersum</i> | Longroot smartgrass |

| <i>Scientific Name</i> | <i>Common Name</i> |
|--|--------------------------|
| <i>Polygonum aviculare</i> | Prostrate knotweed |
| <i>Polygonum lapathifolium</i> | Curltop knotweed |
| <i>Potentilla anserina</i> | Silverweed cinquefoil |
| <i>Puccinellia nuttalliana</i> | Nuttall's alkaligrass |
| <i>Ranunculus cymbalaria</i> | Alkali buttercup |
| <i>Rorippa truncata</i> | Buntleaf yellowcress |
| <i>Rosa sayi</i> | Prickly rose |
| <i>Rumex maritimus</i> var. <i>fueginus</i> | Golden dock |
| <i>Rumex stenophyllus</i> | Narrowleaf dock* |
| <i>Sagittaria cuneata</i> | Arumleaf arrowhead |
| <i>Salicornia rubra</i> | Red swampfire |
| <i>Salix amygdaloides</i> | Peachleaf willow |
| <i>Salix exigua</i> | Narrowleaf willow |
| <i>Salix lutea</i> | Yellow willow |
| <i>Salsola australis</i> | Prickly Russian thistle* |
| <i>Sarcobatus vermiculatus</i> | Greasewood |
| <i>Scirpus acutus</i> | Hardstem bulrush |
| <i>Scirpus pungens</i> var. <i>polyphyllus</i> | Common threesquare |
| <i>Sisymbrium altissimum</i> | Tumblemustard* |
| <i>Solanum rostratum</i> | Buffalobur nightshade |
| <i>Spartina pectinata</i> | Prairie cordgrass |
| <i>Spergularia</i> spp. | Sandspurry |
| <i>Sporobolus airoides</i> | Alkali sacaton |
| <i>Stachys palustris</i> | Marsh hedgenettle |
| <i>Suaeda calceoliformis</i> | Pursh seepweed |
| <i>Symphotrichum frondosum</i> | Short-rayed alkali aster |
| <i>Tamarix ramosissima</i> | Saltcedar |
| <i>Thelypodium integrifolium</i> | Entireleaved thelypody |
| <i>Trifolium repens</i> | White clover |
| <i>Triglochin maritimum</i> | Seaside arrowgrass |
| <i>Typha latifolia</i> | Broadleaf cattail |
| <i>Xanthium strumarium</i> var. <i>canadense</i> | Canada cocklebur |

Appendix M

List of Potentially Occurring Bird Species

The following list of bird species was compiled from other national wildlife refuges in the state of Wyoming. The species listed below potentially occur in the area, but may or may not be present at Pathfinder NWR.

| <i>Scientific Name</i> | <i>Common Name</i> |
|----------------------------------|----------------------|
| <i>Accipiter cooperii</i> | Cooper's hawk |
| <i>Accipiter gentilis</i> | Northern goshawk* |
| <i>Accipiter striatus</i> | Sharp-shinned hawk* |
| <i>Actitis macularia</i> | Spotted sandpiper |
| <i>Aechmophorus clarkii</i> | Clark's grebe |
| <i>Aechmophorus occidentalis</i> | Western grebe |
| <i>Agelaius phoeniceus</i> | Red-winged blackbird |
| <i>Aix sponsa</i> | Wood duck |
| <i>Anas acuta</i> | Northern pintail |
| <i>Anas americana</i> | American wigeon |
| <i>Anas carolinensis</i> | Green-winged teal |
| <i>Anas clypeata</i> | Northern shoveler |
| <i>Anas cyanoptera</i> | Cinnamon teal |
| <i>Anas discors</i> | Blue-winged teal |
| <i>Anas platyrhynchos</i> | Mallard |
| <i>Anas strepera</i> | Gadwall |
| <i>Anthus rubescens</i> | American pipit |
| <i>Aquila chrysaetos</i> | Golden eagle |
| <i>Ardea herodias</i> | Great blue heron |
| <i>Asio flammeus</i> | Short-eared owl* |
| <i>Athene cunicularia</i> | Burrowing owl* |
| <i>Aythya affinis</i> | Lesser scaup |
| <i>Aythya americana</i> | Redhead |
| <i>Aythya collaris</i> | Ring-necked duck |
| <i>Aythya marila</i> | Greater scaup* |
| <i>Aythya valisineria</i> | Canvasback |
| <i>Bombycilla cedrorum</i> | Cedar waxwing* |
| <i>Bombycilla garrulus</i> | Bohemian waxwing* |
| <i>Botaurus lentiginosus</i> | American bittern |
| <i>Branta canadensis</i> | Canada goose |
| <i>Bubo virginianus</i> | Great horned owl* |
| <i>Bubulcus ibis</i> | Cattle egret |
| <i>Bucephala albeola</i> | Bufflehead |

| <i>Scientific Name</i> | <i>Common Name</i> |
|-----------------------------------|------------------------------|
| <i>Bucephala clangula</i> | Common goldeneye |
| <i>Bucephala islandica</i> | Barrow's goldeneye* |
| <i>Buteo jamaicensis</i> | Red-tailed hawk |
| <i>Buteo lagopus</i> | Rough-legged hawk |
| <i>Buteo regalis</i> | Ferruginous hawk |
| <i>Buteo swainsoni</i> | Swainson's hawk |
| <i>Butorides virescens</i> | Green heron* |
| <i>Calamospiza melanocorys</i> | Lark bunting |
| <i>Calcarius ornatus</i> | Chestnut-collared longspur |
| <i>Calcarius sandwichensis</i> | McGown's longspur |
| <i>Calidris alba</i> | Sanderling* |
| <i>Carduelis pinus</i> | Pine siskin |
| <i>Carduelis tristis</i> | American goldfinch |
| <i>Cathartes aura</i> | Turkey vulture |
| <i>Catharus guttatus</i> | Hermit thrush* |
| <i>Charadrius montanus</i> | Mountain plover* |
| <i>Charadrius vociferus</i> | Killdeer |
| <i>Chen caerulescens</i> | Snow goose* |
| <i>Chen rossii</i> | Ross's goose* |
| <i>Chlidonias niger</i> | Black tern |
| <i>Chondestes grammacus</i> | Lark sparrow |
| <i>Chordeiles minor</i> | Common nighthawk |
| <i>Circus cyaneus</i> | Northern harrier |
| <i>Cistothorus palustris</i> | Marsh wren |
| <i>Coccothraustes vespertinus</i> | Evening grosbeak* |
| <i>Colaptes auratus</i> | Northern flicker |
| <i>Corvus brachyrhynchos</i> | American crow |
| <i>Corvus corax</i> | Common raven |
| <i>Cygnus columbianus</i> | Tundra swan |
| <i>Dendroica coronata</i> | Yellow rumped warbler |
| <i>Dendroica nigrescens</i> | Black-throated gray warbler* |
| <i>Dendroica petechia</i> | Yellow warbler |
| <i>Egretta thula</i> | Snowy egret |
| <i>Eremophila alpestris</i> | Horned lark |
| <i>Erolia alpina</i> | Dunlin* |
| <i>Erolia bairdii</i> | Baird's sandpiper |
| <i>Erolia mauri</i> | Western sandpiper |
| <i>Erolia minutilla</i> | Least sandpiper |
| <i>Euphagus carolinus</i> | Rusty blackbird* |
| <i>Euphagus cyanocephalus</i> | Brewer's blackbird |
| <i>Falco mexicanus</i> | Prairie falcon |
| <i>Falco peregrinus</i> | Peregrine falcon |
| <i>Fulica americana</i> | American coot |

| <i>Scientific Name</i> | <i>Common Name</i> |
|----------------------------------|---------------------------|
| <i>Gallinago delicata</i> | Wilson's snipe |
| <i>Gavia immer</i> | Common loon |
| <i>Geothlypis trichas</i> | Common yellowthroat |
| <i>Grus canadensis tabida</i> | Sandhill crane |
| <i>Haliaeetus leucocephalus</i> | Bald eagle |
| <i>Himantopus mexicanus</i> | Black-necked stilt* |
| <i>Hirundo rustica</i> | Barn swallow |
| <i>Hydroprogne caspia</i> | Caspian tern* |
| <i>Larus argentatus</i> | Herring gull* |
| <i>Larus californicus</i> | California gull |
| <i>Larus delawarensis</i> | Ring-billed gull* |
| <i>Larus philadelphia</i> | Bonaparte's gull |
| <i>Larus pipixcan</i> | Franklin's gull |
| <i>Lanius ludovicianus</i> | Loggerhead shrike |
| <i>Leucosticte atrata</i> | Black rosy finch |
| <i>Leucosticte australis</i> | Brown-capped rosy finch* |
| <i>Leucosticte tephrocotis</i> | Gray-crowned rosy finch* |
| <i>Limnodromus scolopaceus</i> | Long-billed dowitcher |
| <i>Limosa fedoa</i> | Marbled godwit |
| <i>Lophodytes cucullatus</i> | Hooded merganser* |
| <i>Melanitta deglandi</i> | White-winged scoter* |
| <i>Melospiza melodia</i> | Song sparrow |
| <i>Mergus merganser</i> | Common merganser |
| <i>Micropalmata himantopus</i> | Stilt sandpiper* |
| <i>Molothrus ater</i> | Brown-headed cowbird |
| <i>Numenius americanus</i> | Long-billed curlew* |
| <i>Numenius phaeopus</i> | Whimbrel* |
| <i>Nycticorax nycticorax</i> | Black-crowned night-heron |
| <i>Oreoscoptes montanus</i> | Sage thrasher |
| <i>Oxyura jamaicensis</i> | Ruddy duck |
| <i>Passer domesticus</i> | House sparrow |
| <i>Passerculus sandwichensis</i> | Savannah sparrow |
| <i>Pelecanus erythrorhynchos</i> | American white pelican |
| <i>Petrochelidon pyrrhonota</i> | Cliff swallow |
| <i>Phalacrocorax auritus</i> | Double-crested cormorant |
| <i>Phalaropus lobatus</i> | Red-necked phalarope |
| <i>Phalaropus tricolor</i> | Wilson's phalarope |
| <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>Plegadis chihi</i> | White-faced ibis |
| <i>Podiceps auritus</i> | Horned grebe* |
| <i>Podiceps grisegena</i> | Red-necked grebe* |

| <i>Scientific Name</i> | <i>Common Name</i> |
|--------------------------------------|-------------------------------|
| <i>Podiceps nigricollis</i> | Eared grebe |
| <i>Podilymbus podiceps</i> | Pied-billed grebe |
| <i>Poecile atricapilla</i> | Black-capped chickadee |
| <i>Poecetes gramineus</i> | Vesper sparrow |
| <i>Porzana carolina</i> | Sora |
| <i>Quiscalus quiscula</i> | Common grackle |
| <i>Rallus limicola</i> | Virginia rail |
| <i>Recurvirostra americana</i> | American avocet |
| <i>Riparia riparia</i> | Bank swallow |
| <i>Salpinctes obsoletus</i> | Rock wren* |
| <i>Sayornis saya</i> | Say's phoebe |
| <i>Selasphorus platycercus</i> | Broad-tailed hummingbird |
| <i>Selasphorus rufus</i> | Rufous hummingbird |
| <i>Sialia currucoides</i> | Mountain bluebird |
| <i>Spizella breweri</i> | Brewer's sparrow |
| <i>Spizella passerina</i> | Chipping sparrow |
| <i>Stelgidopteryx serripennis</i> | Northern rough-winged swallow |
| <i>Sterna forsteri</i> | Forster's tern |
| <i>Sterna hirundo</i> | Common tern* |
| <i>Sturnus vulgaris</i> | European starling |
| <i>Sturnella magna</i> | Eastern meadowlark* |
| <i>Sturnella neglecta</i> | Western meadowlark |
| <i>Tachycineta bicolor</i> | Tree swallow |
| <i>Tachycineta thalassina</i> | Violet-green swallow |
| <i>Toxostoma rufum</i> | Brown thrasher |
| <i>Tringa flavipes</i> | Lesser yellowlegs |
| <i>Tringa melanoleuca</i> | Greater yellowlegs |
| <i>Tringa semipalmata</i> | Willet |
| <i>Tringa solitaria</i> | Solitary sandpiper |
| <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>Xanthocephalus xanthocephalus</i> | Yellow-headed blackbird |
| <i>Zenaidura macroura</i> | Mourning dove* |
| <i>Zonotrichia leucophrys</i> | White-crowned sparrow |

Asterisk (*) signifies rare sightings.

Appendix N

List of Potentially Occurring Amphibian and Reptile Species

The following list of amphibian and reptile species was compiled from other national wildlife refuges in the state of Wyoming. The species listed below potentially occur in the area, but may or may not be present at Pathfinder NWR.

| <i>Scientific Name</i> | <i>Common Name</i> |
|---------------------------------------|---------------------|
| Amphibians | |
| <i>Ambystoma tigrinum</i> | Tiger salamander |
| <i>Phrynosoma platyrhinos</i> | Horned lizard |
| <i>Pseudacris triseriata maculata</i> | Boreal chorus frog |
| Reptiles | |
| <i>Crotalus viridis</i> | Prairie rattlesnake |
| <i>Pituophis catenifer</i> | Bull snake |

Appendix 0

List of Potentially Occurring Mammal Species

The following list of mammal species was compiled from other national wildlife refuges in the state of Wyoming. The species listed below potentially occur in the area, but may or may not be present at Pathfinder NWR.

| <i>Scientific Name</i> | <i>Common Name</i> |
|--------------------------------------|--------------------------------|
| <i>Antilocapra americana</i> | Pronghorn |
| <i>Canis latrans</i> | Coyote |
| <i>Cervus canadensis</i> | Elk |
| <i>Chaetodipus hispidus</i> | Hispid pocket mouse |
| <i>Cynomys leucurus</i> | White-tailed prairie dog |
| <i>Lepus townsendii</i> | White-tailed jack rabbit |
| <i>Mephitis mephitis</i> | Striped skunk |
| <i>Microtus pennsylvanicus</i> | Meadow vole |
| <i>Mustela frenata</i> | Long-tailed weasel |
| <i>Mustela vison</i> | Mink |
| <i>Myotis lucifugus</i> | Little brown myotis |
| <i>Odocoileus hemionus</i> | Mule deer |
| <i>Ondatra zibethicus</i> | Muskrat |
| <i>Perognathus fasciatus</i> | Wyoming pocket mouse |
| <i>Peromyscus maniculatus</i> | Deer mouse |
| <i>Procyon lotor</i> | Common raccoon |
| <i>Reithrodontomys megalotis</i> | Western harvest mouse |
| <i>Sorex cinereus</i> | Masked shrew |
| <i>Spermophilus elegans</i> | Wyoming ground squirrel |
| <i>Spermophilus tridecemlineatus</i> | Thirteen-lined ground squirrel |
| <i>Sylvilagus audubonii</i> | Desert cottontail |
| <i>Tamias minimus</i> | Least chipmunk |
| <i>Taxidea taxus</i> | American badger |
| <i>Thomomys talpoides</i> | Northern pocket gopher |
| <i>Vulpes vulpes</i> | Red fox |

Bibliography

- Audubon Wyoming. Birds and science: IBAs in Wyoming. [Internet]. <http://www.audubonwyoming.org/BirdSci_IBA_WY.html> accessed 4 May 2008.
- Autobee, Robert. 1996. Research on historic Reclamation projects. Denver, CO: Bureau of Reclamation History Program. [Pages unknown].
- Bureau of Sport Fisheries and Wildlife (BSFW). 1961. Annual narrative: Pathfinder National Wildlife Refuge. [Place of publication unknown]: Bureau of Sport Fisheries and Wildlife. [Pages unknown].
- . 1962. Annual narrative: Pathfinder National Wildlife Refuge. [Place of publication unknown]: Bureau of Sport Fisheries and Wildlife. [Pages unknown].
- . 1964. Memorandum from BSFW to the Bureau of Land Management, Wyoming State Office. [Place of publication unknown]: Bureau of Sport Fisheries and Wildlife. [Pages unknown].
- . 1966. Annual narrative: Pathfinder National Wildlife Refuge. [Place of publication unknown]: Bureau of Sport Fisheries and Wildlife. [Pages unknown].
- Carver, Erin; Caudill, James. 2007. Banking on nature 2006: the economic benefits to local communities of national wildlife refuge visitation. Washington, DC: U.S. Fish and Wildlife Service, Division of Economics. 372 p.
- Cooper, D.J. 1986. Community structure and classification of Rocky Mountain wetland ecosystems. In: Windell, J.T.; Willard, B.E.; Cooper, D.J.; Foster, S.Q.; Knud-Hanson, C.F.; Rink, L.P.; Kiladis, G.N.; editors. An ecological characterization of Rocky Mountain montane and subalpine wetlands. U.S. Fish and Wildlife Service, Biological Report 86. 66–147.
- Dai, X.; Boutton, T.W.; Hailemichael, M.; Ansley, R.J.; Jessup, K.E. 2006. Soil carbon and nitrogen storage in response to fire in a temperate mixed-grass savanna. *Journal of Environmental Quality* 35:1620–1628.
- Dechant, J.A.; Johnson, D.H.; Igl, L.D.; Goldade, C.M.; Zimmerman, A.L.; Euliss, B.R. 2003. Effects of management practices on grassland birds: Wilson's phalarope. Jamestown, ND: Northern Prairie Wildlife Research Center. Northern Prairie Wildlife Research Center Online (Version 12DEC2003). <<http://www.npwrc.usgs.gov/resource/literatr/grasbird/wiph/wiph.htm>> accessed 24 July 2007.
- Dieter, C.D. 1990. Causes and effects of water turbidity: a selected annotated bibliography. Brookings, SD: South Dakota Cooperative Fish and Wildlife Research Unit, South Dakota State University. Technical Bulletin Number 5. 64 p.
- Fertig, W. 2000. Survey for Ute ladies' tresses (*Spiranthes diluvialis*) along the Sweetwater River in Pathfinder National Wildlife Refuge. Report prepared for the Bureau of Reclamation by the Wyoming Natural Diversity Database, Laramie, WY. 15 p.
- Kantrud, H.A. 1990. Sago pondweed (*Potamogeton pectinatus* L.): a literature review. U.S. Fish and Wildlife Service, Resources Publication 176. 89 p.
- . 1991. Widgeon grass (*Ruppia maritima* L.): a literature review. U.S. Fish and Wildlife Service, Fish and Wildlife Research 10. 58 p.
- Krull, J.N. 1970. Aquatic plant-macroinvertebrate associations and waterfowl. *Journal of Wildlife Management* 34:707–718.
- Kullberg, R.G. 1974. Distribution of aquatic macrophytes related to paper mill effluents in a southern Michigan stream. *American Midland Naturalist* 91(2):271–281.
- Landfire. [Internet]. <<http://www.landfire.gov/>>. accessed 4 May 2008.
- Larson, M.L.; Letts, R. 2003. Cultural resource overview of the Laramie Basin and Pathfinder Reservoir, Wyoming, and North Park, Colorado. Laramie, WY: George C. Frinson Institute of Anthropology and Archaeology, University of Wyoming. [Pages unknown].
- Marzluff, J.M.; Ewing, K. 2001. Restoration of fragmented landscapes for the conservation of birds: a general framework and specific recommendations for urbanizing landscapes. *Restoration Ecology* 9(3):280–292.
- Merrill, E.H.; Kohley, T.W.; Herdendorf, M.E.; Reiners, W.A.; Driese, K.L.; Marrs, R.W.; Anderson, S.H. 1996. Wyoming Gap Analysis: A geographic analysis of biodiversity, final report. Laramie, WY: Department of Zoology and Physiology, Department of Botany, and Wyoming Cooperative Fish and Wildlife Research Unit,

- University of Wyoming. <<http://www.wygisc.uwyo.edu/wbn/content.html>> accessed 3 May 2007.
- Meyer, J.L.; Kaplan, L.A.; Newbold, D.; Strayer, D.L.; Woltemade, C.J.; Zedler, J.B.; Beilfuss, R.; Carpenter, Q.; Semlitsch, R.; Watzin, M.C.; Zedler, P.H. 2003; revised 2007. Where rivers are born: the scientific imperative for defending small streams and wetlands. [Place of publication unknown]: American Rivers and the Sierra Club. 28 p. <<http://www.sierraclub.org/healthycommunities/rivers/>> accessed 4 May 2008.
- Nelson, J.W.; Kadlec, J.A. 1984. A conceptual approach to relating habitat structure and macroinvertebrate production in freshwater wetlands. *Transactions of the North American and Natural Resources Conference* 49:262–270.
- Nicholoff, S. H., compiler. 2003. Wyoming bird conservation plan, version 2.0. Lander, WY: Wyoming Partners in Flight. <http://www.partnersinflight.org/bcps/pl_86sum.htm> accessed 3 May 2008.
- Oakleaf, B; Cerovski, A.O., Luce, B. 1996. Nongame bird and mammal plan: a plan for inventories and management of nongame birds and mammals in Wyoming. Cheyenne, WY: Wyoming Game and Fish Department. 184 p. <<http://gf.state.wy.us/wildlife/nongame/NongamePlan/>> accessed 4 May 2008.
- Pashley, D.N.; Beardmore, C.J.; Fitzgerald, J.A.; Ford, R.P.; Hunter, W.C.; Morrison, M.S.; Rosenberg, K.V. 2000. Partners in Flight: Conservation of the land birds of the United States. The Plains, VA: American Bird Conservancy.
- Ramirez P., Jr.; Dickerson, K.; Jennings, M. 1995. Trace element concentrations in water, sediment, and biota from Pathfinder National Wildlife Refuge, Natrona and Carbon counties, Wyoming. Cheyenne, WY: U.S. Fish and Wildlife Service Contaminant Report R6/708C/95. 13 p.
- Stanley, T.R.; Knopf, F.L. 2000. Avian responses to late-season grazing in a shrub-willow floodplain. *Conservation Biology* 16 (1):225–231.
- State of Wyoming, Wyoming Economic Analysis Division. 2007. Estimates of Wyoming and county population. [Internet]. <<http://eadiv.state.wy.us/pop/CO-06EST.htm>> accessed 21 January 2007.
- Sudgen, L.G. 1973. Feeding ecology of pintail, gadwall, American widgeon, and lesser scaup ducklings in southern Alberta. Canadian Wildlife Service, Report Series 24. Ottawa, Canada. 45 p.
- U.S. Bureau of Labor Statistics. 2006. The employment situation: October 2006. [Internet]. Revised November 3, 2006. <http://www.bls.gov/news.release/archives/empisit_11032006.pdf> accessed 4 May 2008.
- U.S. Census Bureau. 2006. American FactFinder: Wyoming. [Internet]. <<http://factfinder.census.gov>> accessed 4 May 2008.
- U.S. Department of Energy, Office of Fossil Energy and the Office of Science. 1999. Carbon sequestration research and development. Springfield, VA: National Technical Information Service. <http://www.fossil.energy.gov/programs/sequestration/publications/1999_rdreport/> accessed 24 July 2007.
- U.S. Department of the Interior, Bureau of Reclamation. North Platte Project, Nebraska and Wyoming. [Internet]. <<http://www.usbr.gov/dataweb/html/northplatte.html>> accessed 4 May 2008.
- U.S. Department of the Interior. National Atlas of the United States. Wyoming federal lands and Indian reservations map. 2005. [Internet]. <<http://nationalatlas.gov/printable/images/pdf/fedlands/wy.pdf>> accessed on 21 January 2007.
- U.S. Environmental Protection Agency (EPA). 2007a. AirData: air quality index report (Carbon and Natrona counties, Wyoming). [Internet]. <<http://www.epa.gov/oar/data/>> accessed 4 May 2008.
- . 2007b. AirData: county air quality report—criteria air pollutants (Carbon and Natrona counties, Wyoming). [Internet]. <<http://http://www.epa.gov/oar/data/>> accessed 4 May 2008.
- U.S. Fish and Wildlife Service (USFWS). 1999. Fulfilling the promise. Arlington, VA: U.S. Department of the Interior, Fish and Wildlife Service. 94 p.
- . 2002. Annual report. [Place of publication unknown]: U.S. Fish and Wildlife Service. [pages unknown]
- Voights, D.K. 1976. Aquatic invertebrate abundance in relation to changing marsh vegetation. *American Midland Naturalist* 95(2): 313–322.
- Western Regional Climate Center. Pathfinder Dam, Wyoming: NCDC 1971–2000 monthly normals. [Internet]. <<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?wy7105>> accessed 4 May 2008.
- Wyoming Game and Fish Department. 2006. Wyoming Game and Fish ENewsletter. [Internet]. <http://gf.state.wy.us/services/news/newsletter/06/01/060106_4.asp> accessed 4 May 2008.
- Wyoming Interagency Vegetation Committee. 2002. Wyoming guidelines for managing sagebrush communities with emphasis on fire management. Cheyenne, WY: Wyoming Game and Fish Department; Wyoming Bureau of Land Management. 53 p.
- Wyoming Natural Diversity Database. 2006. Laramie, WY: University of Wyoming. Unpublished data.

