Glossary

abiotic—Pertaining to nonliving things.

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

adaptive management—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 carried out within a framework of scientifically driven experiments to test predictions and assumptions inherent in a 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.

alternatives—Different sets of objectives and strategies or means of achieving refuge purposes and goals, helping fulfill the Refuge System mission and resolving issues.

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

APHIS—Animal and Plant Health Inspection Service; agency of the U.S. Department of Agriculture.

avifauna *or* **avifaunal biome**—A physiographic area defined by the Partners in Flight program that represents all the living components needed by a group of birds.

baseline—Set of critical observations, data, or information used for comparison or a control.

biological control, *also* **biocontrol**—Reduction in numbers or elimination of unwanted species by the introduction of natural predators, parasites, or diseases.

biological diversity, *also* **biodiversity**—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 ("U.S. Fish and Wildlife Service Manual" 052 FW 1.12B). The National Wildlife Refuge System's focus is on endemic species, biotic communities, and ecological processes.

biological integrity—Composition, structure, and function at the genetic, organism, and community levels consistent with natural conditions and the biological processes that shape genomes, organisms, and communities.

biomass—Total amount of living material, plants and animals, above and below the ground in a particular habitat or area.

biotic—Pertaining to life or living organisms.

breeding habitat—Habitat used by migratory birds or other animals during the breeding season.

buffer zone, *also* **buffer strip**—Protective land borders around critical habitats or water bodies that reduce runoff and nonpoint source pollution loading; areas created or sustained to lessen the negative effects of land development on animals and plants and their habitats.

canopy—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.

CCP—See *comprehensive conservation plan.*

CFR—See *Code of Federal Regulations.*

cfs—Cubic feet per second.

climax—Community that has reached a steady state under a particular set of environmental conditions; a relatively stable plant community; the final stage in ecological succession.

***Code of Federal Regulations* (CFR)**—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.

community—Area or locality in which a group of people lives and shares the same government.

compatible use—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.*

conservation—Management of natural resources to prevent loss or waste. Management actions may include preservation, restoration, and enhancement.

conservation easement—Perpetual agreement entered into by a landowner and the Service by which a landowner gives up or sells one or more of the rights on their property for conservation purposes, with terms set by the Service. In return for a single lump-sum payment, the landowner agrees not to drain, burn, level, or fill habitats covered by the easement. Conservation easements generally prohibit the cultivation of grassland and wetland habitats while still permitting the landowner traditional grazing uses. A single-habitat conservation easement is often referred to as either a "wetland easement" or a "grassland easement."

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

cool-season grass—Grass that begins growth earlier in the season and often become dormant in the summer; will germinate at lower temperatures (65–85°F). Examples are western wheatgrass, needle and thread, and green needlegrass.

cooperative agreement—Legal instrument used when the principal purpose of the transaction is the transfer of money, property, services or anything of value to a recipient in order to accomplish a public purpose authorized by federal statute and substantial involvement between the Service and the recipient is anticipated.

coordination area—Wildlife management area made available to a state, by "(A) cooperative agreement between the United States Fish and Wildlife Service and the state fish and game agency pursuant to Section 4 of the Fish and Wildlife Coordination Act (16 USC 664); of (B) by long-term leases or agreements pursuant to the Bankhead–Jones Farm Tenant Act (50 Stat. 525; 7 USC 1010 et seq.)." States manage coordination areas, but they are part of the Refuge System. CCPs are not required for coordination areas.

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

coulee—A deep ravine or gulch with sloping sides, often dry, that has been formed by running water.

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

cultural resources—Sites, buildings, structures, and objects that are the result of human activities and are more than 50 years old: prehistoric, historic, and architectural sites, artifacts, historic records, and traditional cultural properties including traditional use areas for Native Americans that may or may not have material evidence.

cultural resource inventory—Professionally conducted study designed to locate and evaluate evidence of cultural resources present within a defined area. Inventories may involve various levels including background literature search (class 1), sample inventory of project site distribution and density over a larger area (class 2), or comprehensive field examination to identify all exposed physical manifestation of cultural resources (class 3).

CWCS—Comprehensive wildlife conservation strategy.

CWD—Chronic wasting disease.

database—Collection of data arranged for ease and speed of analysis and retrieval, usually computerized.

deciduous—Pertaining to any plant organ or group of organs that is shed annually; perennial plants that are leafless for sometime during the year.

defoliation—Removing of vegetative parts; to strip vegetation of leaves; removal can be caused by weather, mechanical, animals, and fire.

demography—Quantitative analysis of population structure and trend.-

dense nesting cover (DNC)—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.

district—See *wetland management district.*

district purpose—See *purpose of the district.*

disturbance—Significant alteration of habitat structure or composition. May be natural (for example, fire) or human-caused events (for example, timber harvest).

DNC—See *dense nesting cover.*

DOI—U.S. Department of the Interior.

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

duck, dabbling—Duck that mainly feeds on vegetable matter by "upending" on the water surface, or by grazing, and only rarely dives.

duck, diving—Duck that mainly feeds by diving through the water.

EA—See *environmental assessment.*

ecological succession—Orderly progression of an area through time from one vegetative community to another in the absence of disturbance. For example, an area may proceed from grass–forb through aspen forest to mixed-conifer forest.

ecosystem—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.

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

endangered species, federal—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—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)—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).

environmental education—Education aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution.

environmental health—Natural composition, structure, and functioning of the physical, chemical, and other abiotic elements, and the abiotic processes that shape the physical environment.

EO—Executive order.

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

fauna—All the vertebrate and invertebrate animals of an area.

federal land—Public land owned by the federal government, including lands such as national forests, national parks, and national wildlife refuges.

federally listed species—Species listed under the federal Endangered Species Act of 1973, as amended, either as endangered, threatened, or species at risk (formerly candidate species).

fee title—Acquisition of most or all of the rights to a tract of land.

finding of no significant impact (FONSI)—Document prepared in compliance with the National Environmental Policy Act, supported by an environmental assessment, that briefly presents why a federal action will have no significant effects on the human environment and for which an environmental impact statement will not be prepared (40 CFR 1508.13).

fire regime—Description of the frequency, severity, and extent of fire that typically occurs in an area or vegetative type.

flora—All the plant species of an area.

fluvial—Regarding flowing water, usually rivers and streams. Important fluvial processes include erosion, downcutting of channels, and suspension and transport of sediments.

FmHA—Farmers Home Administration.

FMP—Fire management plan.

FONSI—See *finding of no significant impact.*

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.

forest—Group of trees with their crown overlapping (generally forming 60%–100% cover).

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.

FTE—See *full-time equivalent.*

full-time equivalent (FTE)—One or more job positions with tours of duty that, when combined, equate to one person employed for the standard government work-year.

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

GIS—See *geographic information system.*

glacial till—Unstratified sediment (clay, sand, and rocks) deposited by melting glaciers or ice sheets.

global positioning system (GPS)—System that, by using satellite telemetry, can pinpoint exact locations of places on the ground.

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).

GPS—See *global positioning system.*

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

guild—A group of species that use a common resource base in a similar fashion within an ecological community. A guild can be generally defined (for example, grassland birds) or specifically defined (for example, seed-eating small mammals).

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

habitat conservation—Protection of animal or plant habitat to ensure that the use of that habitat by the animal or plant is not altered or reduced.

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**—Land classification system based on the concept of distinct plant associations.

HAPET—Habitat and Population Evaluation Team.

hemi-marsh—The emergent phase of a seasonal or semipermanent wetland where the ratio of open-water area to emergent vegetation cover is about 50:50, and vegetation and open-water areas are highly interspersed.

herbivore—Animal feeding on plants.

herbivory—The eating of plants, especially ones that are still living.

HPAI—Highly pathogenic avian influenza.

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.

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.

"interseed"—Mechanical seeding of one or several plant species into existing stands of established vegetation.

introduced species—A nonnative plant or animal species that is intentionally or accidentally released into an ecosystem where it was not previously adapted.

introduction—Intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity.

invasive plant, *also* **noxious weed**—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—Place of refuge or protection where animals and birds may not be hunted.

IPM—See *integrated pest management.*

ISST—Invasive species strike team.

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).

lacustrine—Relating to, formed in, living in, or growing in lakes.

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.

local agencies—Municipal governments, regional planning commissions, or conservation groups.

macrophyte—Plant, especially a marine plant, that is large enough to be visible to the naked eye.

management alternatives—See *alternatives.*

management plan—Plan that guides future land management practices on a tract of land. See *cooperative agreement.*

mechanical control—Reduction in numbers or elimination of unwanted species through the use of mechanical equipment such as mowers and clippers.

microhabitat—Habitat features at a fine scale; often identifies a unique set of local habitat features.

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

migratory game bird—Bird species, regulated under the Migratory Bird Treaty Act and state laws (legally hunted, including ducks, geese, woodcock, and rails).

mission—Succinct statement of purpose or reason for being.

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

mixed-grass prairie—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—Process of collecting information to track changes of selected parameters over time.

monotypic—Having only one type or representative.

moraine—Mass of earth and rock debris carried by an advancing glacier and left at its front and side edges as it retreats.

NABCI—North American Bird Conservation Initiative.

national wildlife refuge—Designated area of land, water, or an interest in land or water within the 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 Refuge System; defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation, photography, 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—Species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

NAWCA—North American Wetlands Conservation Act.

NDGF—North Dakota Game and Fish Department.

Neotropical migrant, *also* **Neotropical migratory bird**—Bird species that breeds north of the United States–Mexico border and winters primarily south of this border.

NEPA—National Environmental Policy Act.

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

NHPA—National Historic Preservation Act.

nongovernmental organization—Any group that does not include federal, state, tribal, county, city, town, local, or other governmental entities.

North American Waterfowl Management Plan—North American Waterfowl Management Plan, signed in 1986, recognizes that the recovery and perpetuation of waterfowl populations depends on restoring wetlands and associated ecosystems throughout the United States and Canada. It established cooperative international efforts and joint ventures comprised of individuals; corporations; conservation organizations; and local, state, provincial, and federal agencies drawn together by common conservation objectives.

notice of intent—Notice that an environmental impact statement will be prepared and considered (40 CFR 1508.22); published in the *Federal Register*.

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 (invasive plant) is one that causes disease or has adverse effects on humans or the human environment and, therefore, is detrimental to the agriculture and commerce of the United States and to public health.

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

objective—Concise statement of what is to be achieved, when and where it is to be achieved, and who is responsible for the work. Objectives are derived from goals and provide the basis for determining management strategies. Objectives should be attainable, time-specific, and measurable.

palustrine—Refers to a nontidal wetland dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens; or a wetland in tidal areas where salinity due to ocean-derived salts is below 0.5 parts per thousand.

Partners in Flight (PIF) program—Western Hemisphere program designed to conserve Neotropical migratory birds and officially endorsed by numerous federal and state agencies and nongovernmental organizations; also known as the Neotropical Migratory Bird Conservation Program.

partnership—Contract or agreement entered into by two or more individuals, groups of individuals, organizations or agencies in which each agrees to furnish a part of the capital or some in-kind service, such as labor, for a mutually beneficial enterprise.

patch—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.

phenology—The relationship between plant or animal development and climatic conditions.

PIF—See *Partners in Flight program.*

PL—Public law.

planning team—Team that prepares the comprehensive conservation plan. Planning teams are interdisciplinary in membership and function. A team generally consists of a planning team leader; refuge manager and staff biologist; staff specialists or other representatives of Service programs, ecosystems or regional offices; and state partnering wildlife agencies as appropriate.

planning team leader—Typically a professional planner or natural resource specialist knowledgeable of the requirements of National Environmental Policy Act and who has planning experience. The planning team leader manages the refuge planning process and ensures compliance with applicable regulatory and policy requirements.

planning unit—Single refuge, an ecologically or administratively related refuge complex, or distinct unit of a refuge. The planning unit also may include lands currently outside refuge boundaries.

plant association—Classification of plant communities based on the similarity in dominants of all layers of vascular species in a climax community.

plant community—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 (ponderosa pine or bunchgrass).

PPJV—Prairie Pothole Joint Venture.

predation—Mode of life in which food is primarily obtained by the killing or consuming of animals.

prescribed fire—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—See *wildlife-dependent recreational use.*

pristine—Typical of original conditions.

private land—Land that is owned by a private individual, a group of individuals, or a nongovernmental organization.

private landowner—Any individual, group of individuals, or nongovernmental organization that owns land.

private organization—Any nongovernmental organization.

proposed action—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). The draft comprehensive conservation plan.

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—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.

public land—Land that is owned by the local, state, or federal government.

purpose of the district—Purpose specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing authorization or expanding a district or district subunit ("Draft U.S. Fish and Wildlife Service Manual" 602 FW 1.5).

RAPP—Refuge Annual Performance Plan.

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

recruitment—The process of bringing hatch-year young into the adult population.

Refuge Operations Needs System—National database that contains the unfunded operational needs of each refuge. Projects included are those required to carry out approved plans and meet goals, objectives, and legal mandates.

Refuge System—See *National Wildlife Refuge System.*

region 6—Mountain-Prairie Region of the U.S. Fish and Wildlife Service, which administers Service programs in Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Wyoming, and Utah.

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

restoration—Artificial manipulation of a habitat to restore it to something close to its natural state. Involves taking a degraded grassland and reestablishing habitat for native plants and animals. Restoration usually involves the planting of native grasses and forbs, and may include shrub removal and the use of prescribed fire.

rhizomatous—A plant having rhizomes.

rhizome—A continuously growing, horizontal, underground stem that produces roots and sends shoots upward at intervals (for example, many iris species).

riparian area *or* **riparian zone**—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.

RLGIS—Refuge lands geographic information system.

"roundouts"—Odd shapes in boundaries of Refuge System lands that are "straightened" by the purchase of land tracts.

runoff—Water from rain, melted snow, or agricultural or landscape irrigation that flows over the land surface into a waterbody.

sandhills—Sand dunes created by wind and wave action following the melting of large glaciers about 8,000–10,000 years ago. Soils are sand and silt. Local relief exceeds 80 feet in some places.

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

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

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

Service Asset Maintenance Management System—National database that 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 mud flat areas.

sound professional judgment—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 and other applicable laws.

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; the Service's species of management concern; and species identified by the Partners in Flight program as being of extreme or moderately high conservation concern.

special use permit—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 ("National Wildlife Refuge System 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 population declines, small or restricted populations, or dependence on restricted or vulnerable habitats. Species that: (1) are documented or have apparent population declines; (2) are small or restricted populations; or (3) depend on restricted or vulnerable habitats.

stand—Any homogenous area of vegetation with more or less uniform soils, landform, and vegetation. Typically used to refer to forested areas.

step-down management plan—Plan that provides the details necessary to carry out management strategies identified in the comprehensive conservation plan ("Draft U.S. Fish and Wildlife Service Manual" 602 FW 1.5).

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

succession—See *ecological succession.*

SWG—State Wildlife Grant.

temporarily flooded—Surface water is present for brief periods during the growing season.

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—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.

trust resource—Resource that, through law or administrative act, is held in trust for the people by the government. A federal trust resource is one for which trust responsibility is given in part to the federal government through federal legislation or administrative act. Generally, federal trust resources are those considered to be of national or international importance no matter where they occur, such as endangered species and species such as migratory birds and fish that regularly move across state lines. In addition to species, trust resources include cultural resources protected through federal historic preservation laws, nationally important and threatened habitats, notably wetlands, navigable waters, and public lands such as state parks and national wildlife refuges.

trust species—See *trust resource.*

understory—Any vegetation whose canopy (foliage) is below, or closer to the ground than canopies of other plants.

upland—Dry ground; other than wetlands.

USC—United States Code.

USDA—U.S. Department of Agriculture.

U.S. Fish and Wildlife Service (Service, USFWS)—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. Fish and Wildlife Service mission—The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

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

U.S. Geological Survey (USGS)—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.

USGS—See *U.S. Geological Survey.*

vision statement—Concise statement of what the planning unit should be, or what the Service hopes to do, based primarily on the Refuge System mission, specific refuge purposes, and other mandates. In addition, the vision statement is tied to the maintenance and restoration of biological integrity, diversity, and environmental health of each refuge and the Refuge System.

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)—Measurement of the density of a plant community; the height of vegetation that blocks the view of predators to a nest.

VOR—See *visual obstruction reading.*

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

warm-season grass—Grass that begins growth later in the season (early June); require warmer soil temperatures to germinate and actively grow when temperatures are warmer (85–95°F). Examples are Indiangrass, switchgrass, and big bluestem.

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

watershed—Geographic area within which water drains into a particular river, stream or body of water. A watershed includes both the land and the body of water into which the land drains.

WDA—Wildlife development area.

wetland—Land transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water.

wetland management district (district, WMD)— Administrative unit that provides oversight in a multicounty area for all of the U.S. Fish and Wildlife Service's small land tracts.

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

wilderness—"A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain" (Wilderness Act of 1964 Section 2c [PL 88-577)]). This legal definition places wilderness in the "untrammeled" or "primeval" end of the environmental modification spectrum. Wilderness is roadless lands, legally classified as component areas of the National Wilderness Preservation System, and managed to protect its qualities of naturalness, solitude, and opportunity for primitive types of recreation.

wildfire—Free-burning fire requiring a suppression response; all fire other than prescribed fire that occurs in wildlands ("U.S. Fish and Wildlife Service Manual" 621 FW 1.7).

wildland fire—Every wildland fire is either a wildfire or a prescribed fire ("U.S. Fish and Wildlife Service Manual" 621 FW 1.3).

wildlife-dependent recreational use—Use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation. These are the six priority public uses of the Refuge System as established in the National Wildlife Refuge System Administration Act, as amended. Wildlife-dependent recreational uses, other than the six priority public uses, are those that depend on the presence of wildlife.

wildlife management—Practice of manipulating wildlife populations either directly through regulating the numbers, ages, and sex ratios harvested, or indirectly by providing favorable habitat conditions and alleviating limiting factors.

WMD—See *wetland management district.*

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

WPA—Waterfowl production area.

WUI—Wildland–urban interface.

Appendix A

Key Legislation and Policies

Administration of units of the National Wildlife Refuge System is governed by (1) bills passed by the U.S. Congress and signed into law by the president of the United States, and (2) by regulations developed by the various branches of the government. Following are brief descriptions of some of the most pertinent laws and statutes establishing legal parameters and policy direction for the Refuge System.

In alphabetical order of the name of the act, order, or regulation.

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

Antiquities Act (June 8, 1906; 16 USC 431–3; 34 Stat. 225): Authorizes the president to designate as national monuments objects or areas of historic or scientific interest on lands owned or controlled by the United States. Requires that a permit be obtained for examination of ruins, excavation of archaeological sites, and the gathering of objects of antiquity on lands under the jurisdiction of the Secretaries of Interior, Agriculture, and Army, and provided penalties for violations.

Archaeological Resources Protection Act (Public Law [PL] 96-95; October 31, 1979; 16 USC 470aa–ll; 93 Stat. 721): Largely supplants the resource protection provisions of the Antiquities Act for archaeological items. Establishes detailed requirements for issuance of permits for any excavation for or removal of archaeological resources from federal or Indian lands. Establishes civil and criminal penalties for the unauthorized excavation, removal, or damage of any such resources; for any trafficking in such resources removed from federal or Indian land in violation of any provision of federal law; and for interstate and foreign commerce in such resources acquired, transported, or received in violation of any state or local law. In addition, PL 100-588 (November 3, 1988; 102 Stat. 2983) lowers the threshold value of artifacts triggering the felony provisions of the act from $5,000 to $500, makes attempting to commit an action prohibited by the act a violation, and requires the land managing agencies to establish public awareness programs regarding the value of archaeological resources to the nation.

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

Archeological and Historic Preservation Act (PL 86-523; June 27, 1960; 16 USC 469–469c; 74 Stat. 220 [as amended by PL 93-291; May 24, 1974; 88 Stat. 174]): Carries out the policy established by the Historic Sites Act; directs federal agencies to notify the Secretary of the Interior whenever they find a federal or federally assisted, licensed, or permitted project may cause loss or destruction of significant scientific, prehistoric, or archaeological data. Authorizes use of appropriated, donated, and transferred money for the recovery, protection, and preservation of such data.

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

Criminal Code of Provisions of 1940 (as amended, 18 USC 41): States the intent of Congress to protect all wildlife within federal sanctuaries, refuges, fish hatcheries, and breeding grounds. Provides that anyone (except in compliance with rules and regulations promulgated by authority of law) who hunts, traps, or willfully disturbs any such wildlife, or willfully injures, molests, or destroys any property of the United States on such land or water, shall be fined up to $500 or imprisoned for not more than 6 months or both.

Emergency Wetland Resources Act of 1986: Authorizes the buy of wetlands from Land and Water Conservation Fund monies, removing a prior prohibition on such acquisitions. Requires the Secretary to establish a national wetlands priority conservation plan, requires the states to include wetlands in their comprehensive outdoor recreation plans, and transfers to the Migratory Bird Conservation Fund amount equal to import duties on arms and ammunition.

Endangered Species Act of 1973 and recent amendments (16 USC 1531–43, 87 Stat. 884; as amended): Provides for conservation of threatened and endangered species of fish, wildlife, and plants by federal action and by encouraging state programs. Specific provisions include the listing and determination of critical habitat for endangered and threatened species and consultation with the Service on any federally funded or licensed project that could affect any of these agencies; prohibition of unauthorized taking, possession, sale, transport, etc., of endangered species; an expanded program of habitat acquisition; establishment of cooperative agreements and grants-in-aid to states that establish

and maintain an active, adequate program for endangered and threatened species; assessment of civil and criminal penalties for violating the act or regulations.

Environmental Education Act of 1990 (PL 101-619; November 16, 1990; 20 USC 5501–10; 104 Stat. 3325): Establishes the Office of Environmental Education within the Environmental Protection Agency to develop and administer a federal environmental education program. Responsibilities of the office include developing and supporting programs to improve understanding of the natural and developed environment and the relationships between humans and their environment; supporting the dissemination of educational materials; developing and supporting training programs and environmental education seminars; managing a federal grant program; and administering an environmental internship and fellowship program. Requires the office to develop and support environmental programs in consultation with other federal natural resource management agencies including the Service.

EO 11644—Use of Off-road Vehicles on Public Lands (1972): Provides policy and procedures for regulating off-road vehicles.

EO 11988—Floodplain Management (May 24, 1977): Prevents federal agencies from contributing to the "adverse impacts associated with occupancy and modification of floodplains" and the "direct or indirect support of floodplain development." In the course of fulfilling their respective authorities, federal agencies "shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

EO 11990—Protection of Wetlands.

EO 12996—Management and General Public Use of the National Wildlife Refuge System (1996): Defines the mission, purpose, and priority public uses of the Refuge System; presents four principles to guide management of the system.

EO 13007—Indian Sacred Sites (1996): Directs federal land management agencies to accommodate access to and ceremonial use 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.

Federal Water Pollution Control Act of 1972, Section 401 (PL 92-500, USC 1411, 86 Stat. 816.33): Requires any applicant for a federal license or permit to conduct any activity that may result in a discharge into navigable waters to obtain a certification from the state in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over navigable waters at the point where the discharge originates or will originate, that the discharge will comply with applicable effluent limitations and water quality standards. Requires that a certification obtained for construction of any facility must also pertain to subsequent operation of the facility.

Federal Water Pollution Control Act of 1972, Section 404 (PL 92-500, 86 Stat. 816): Authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits, after notice and opportunity for public hearing, for discharge of dredged or fill material into navigable waters of the United States, including wetlands, at specified disposal sites. Requires that selection of disposal sites be in accordance with guidelines developed by the Administrator of the Environmental Protection Agency in conjunction with the Secretary of the Army. States that the Administrator can prohibit or restrict use of any defined area as a disposal site whenever she/he determines, after notice and opportunity for public hearings, that discharge of such materials into such areas will have an unacceptable adverse effect on municipal water supplies, shellfish beds, fishery areas, wildlife, or recreational areas.

Fish and Wildlife Act of 1956 (16 USC 742a–742j, 70 Stat. 1119; as amended): Establishes a comprehensive fish and wildlife policy and directs the Secretary of the Interior to provide continuing research and extension and conservation of fish and wildlife resources.

Fish and Wildlife Conservation Act of 1980 (PL 96366; September 29, 1980; 16 USC 2901–11; as amended 1986, 1988, 1990, and 1992): Creates a mechanism for federal matching funding of the development of state conservation plans for nongame fish and wildlife. States that subsequent amendments to this law require that the Secretary monitor and assess migratory nongame birds, determine the effects of environmental changes and human activities, identify birds likely to be candidates for endangered species listing, and identify conservation actions that would prevent this from being necessary. In 1989, Congress also directed the Secretary to identify lands and waters in the Western Hemisphere, the protection, management, or acquisition of which would foster conservation of migratory nongame birds. All of these activities are intended to assist the Secretary in fulfilling the Secretary's responsibilities under the Migratory Bird Treaty Act and the Migratory Bird Conservation Act, and provisions of the Endangered Species Act implementing the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere.

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.

Fish and Wildlife Improvement Act of 1978: Improves the administration of fish and wildlife programs and amends several earlier laws including the Refuge Recreation Act, the National Wildlife Refuge System Administration Act, and the Fish and Wildlife Act of 1956. Authorizes the Secretary to accept gifts and bequests of real and personal property on behalf of the United States. Authorizes the use of volunteers for Service projects and appropriations to carry out volunteer programs.

Historic Sites, Buildings and Antiquities Act (August 21, 1935; 16 USC 461–2, 464–7; 49 Stat. 666; known as the "Historic Sites Act" [as amended by PL 89-249; October 9, 1965; 79 Stat. 971]): Declares it a national policy to preserve historic sites and objects of national significance, including those located at refuges and districts. Provides procedures for designation, acquisition, administration, and protection of such sites. Provides for designation of National Historic and Natural Landmarks.

Land and Water Conservation Fund Act of 1965: Provides money from leasing bonuses, production royalties, and rental revenues for offshore oil, gas, and sulphur extraction to the Bureau of Land Management, the USDA Forest Service, the U.S. Fish and Wildlife Service, and state and local agencies for purchase of lands for parks, open space, and outdoor recreation.

Migratory Bird Conservation Act of 1929 (16 USC 715–715d, 715e, 715f–r): Establishes the Migratory Bird Conservation Commission, which consists of the Secretaries of the Interior (chair), Agriculture, and Transportation; two members from the House of Representatives; and an ex-officio member from the state in which a project is located. States that the commission approves acquisition of land and water, or interests therein, and sets the priorities for acquisition of lands by the Secretary of the Interior for sanctuaries or for other management purposes. Requires that, to acquire lands or interests therein, the state concerned must consent to such acquisition by legislation. Such legislation has been enacted by most states.

Migratory Bird Conservation Act of 1929 (16 USC 715s, 45 Stat. 1222, as amended): Authorizes acquisition, development, and maintenance of migratory bird refuges; cooperation with other agencies in conservation; and investigations and publications on North American birds. Authorizes payment of 25% of net receipts from administration of national wildlife refuges to the country or counties in which such refuges are located.

Migratory Bird Hunting and Conservation Stamp Act of 1934 (March 16, 1934; 16 USC 718–718h; 48 Stat. 51; known as The "Duck Stamp Act"; as amended): Requires each waterfowl hunter 16 years of age or older to possess a valid federal hunting stamp. Authorizes the requirement of an annual stamp for the hunting of waterfowl; proceeds go toward the purchase of habitat for waterfowl and other wildlife. Duck stamps are also bought (1) for entry into some refuges, (2) by conservationists, and (3) for stamp collections. Receipts from the sale of the stamp are deposited in a special Treasury account known as the Migratory Bird Conservation Fund and are not subject to appropriations.

Migratory Bird Treaty Act of 1918 (16 USC 703–11; 50 CFR, subchapter B; as amended): Implements treaties with Great Britain (for Canada) and Mexico for protection of migratory birds whose welfare is a federal responsibility. Provides for regulations to control taking, possession, selling, transporting, and importing of migratory birds and provides penalties for violations. Enables the setting of seasons and other regulations (including the closing of areas, federal or nonfederal) related to the hunting of migratory birds.

National and Community Service Act of 1990 (PL 101-610; November 16, 1990; 42 USC 12401; 104 Stat. 3127): Authorizes several programs to engage citizens of the United States in full and part-time projects designed to combat illiteracy and poverty, provide job skills, enhance educational skills, and fulfill environmental needs. Provides for grants to states for the creation of programs for citizens over 17 years of age. Programs must be designed to fill unmet educational, human, environmental, and public safety needs. Initially, participants will receive postemployment benefits of up to $1,000 per year for part-time participants and $2,500 for full-time participants.

Several provisions are of particular interest to the Service:

American Conservation and Youth Service Corps: As a federal grant program established under subtitle C of the law, the corps offers an opportunity for young adults between the ages of 16 and 25, or in the case of summer programs, between 15 and 21, to engage in approved human and natural resources projects that benefit the public or are carried out on federal or Indian lands. To be eligible for assistance, natural resources programs will focus on improvement of wildlife habitat and recreational areas, fish culture, fishery assistance, erosion, wetlands protection, pollution control, and similar projects. A stipend of not more than 100% of the poverty level will be paid to participants. A commission established to administer the Youth Service Corps will make grants to states, the Secretaries of Agriculture and Interior, and the Director of ACTION to carry out these responsibilities.

Thousand Points of Light: Creates a nonprofit Points of Light Foundation to administer programs to encourage citizens and institutions to volunteer to solve critical social issues, discover new leaders, and develop institutions committed to serving others.

National Environmental Policy Act of 1969 (PL 91-190; January 1, 1970; 42 USC 4321–47; 83 Stat. 852 [as amended by PL 94-52; July 3, 1975; 89 Stat. 258] [as amended by PL 94-83; August 9, 1975; 89 Stat. 424]): 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 the implementation of all actions, federal agencies must integrate the act with other planning requirements, and to prepare appropriate documents to facilitate better environmental decision making (40 CFR 1500). Declares national policy to encourage a productive and enjoyable harmony between humans and their environment.

> Section 102 of that act directs that "to the fullest extent possible the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this act, and all agencies of the Federal Government shall ... insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision making along with economic technical considerations."
>
> Section 102(2)c of the NEPA requires all federal agencies, with respect to major federal actions significantly affecting the quality the quality of the human environment, to submit to the Council on Environmental Quality a detailed statement of the environmental impact of the proposed action; any adverse environmental effect that cannot be avoided should the proposal be carried out; alternatives to the proposed action; the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity; any irreversible and irretrievable commitments of resources that would be involved in the proposed action, should it be carried out.

National Historic Preservation Act of 1966 (PL 89-665; October 15, 1966; 16 USC 470–470b, 470c–n; 80 Stat. 915; and repeatedly amended): Provides for preservation of significant historical features (buildings, objects, and sites) through a grants-in-aid program to the states. Establishes the National Register of Historic Places and a program of matching grants under the existing National Trust for Historic Preservation (16 USC 468–468d). Establishes the Advisory Council on Historic Preservation, which was made a permanent independent agency in PL 94-422 (September 28, 1976; 90 Stat. 1319). That act creates the Historic Preservation Fund. Directs federal agencies to take into account the effects of their actions on items or sites listed or eligible for listing in the National Register.

National Wildlife Refuge System Administration Act of 1966 (PL 89-669; 16 USC 668dd–ee; 80 Stat. 929; as amended): Defines the Refuge System as including wildlife refuges, areas for protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, and waterfowl production areas. Authorizes the Secretary to permit any use of an area provided such use is compatible with the major purposes for which such area was established. States that purchase considerations for rights-of-way go into the Migratory Bird Conservation Fund for the acquisition of lands. By regulation, up to 40% of an area acquired for a migratory bird sanctuary may be opened to migratory bird hunting unless the Secretary finds that the taking of any species of migratory game birds in more than 40% of such area would be beneficial to the species. Requires an act of Congress for the divestiture of lands in the system, except for (1) lands acquired with Migratory Bird Conservation Commission money, and (2) lands that can be removed from the system by land exchange, or if brought into the system by a cooperative agreement, then pursuant to the terms of the agreement.

National Wildlife Refuge System Improvement Act of 1997 (PL 105-57; October 9, 1997; Amendment to the National Wildlife Refuge System Administration Act of 1966): Sets the mission and the administrative policy for all units in the Refuge System. Clearly defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation, photography, environmental education, and interpretation); establishes a formal process for determining appropriateness and compatibility; establishes the responsibilities of the Secretary of the Interior for managing and protecting the Refuge System; and requires a CCP for each refuge by the year 2012. Also amended portions of the Refuge Recreation Act and the National Wildlife Refuge System Administration Act of 1966.

Key provisions include the following:

- A requirement that the Secretary of the Interior ensures maintenance of the biological integrity, diversity, and environmental health of the Refuge System.
- The definition of compatible wildlife-dependent recreation as "legitimate and appropriate general public use of the [National Wildlife Refuge] System."
- The establishment of hunting, fishing, wildlife observation, photography, environmental education, and interpretation as "priority public uses" where compatible with the mission and purpose of individual national wildlife refuges.
- The refuge managers' authority to use sound professional judgment in determining which public uses are compatible at national wildlife refuges and whether or not they will be allowed (a formal process for determining "compatible use" is currently being developed).
- The requirement of open public involvement in decisions to allow new uses of national wildlife refuges and renew existing ones, as well as in the development of CCPs for national wildlife refuges.

National Wildlife Refuge Regulations (50 CFR 25-35, 43 CFR 3103.2 and 3120.3–3): Provides regulations for administration and management of national wildlife refuges including mineral leasing, exploration, and development.

Rights-of-way General Regulations (50 CFR 29.21; 34 FR 19907, December 19, 1969): Provides for procedures for filing applications. Provides terms and conditions under which rights-of-way over, above, and across lands administered by the Service may be granted.

Wilderness Preservation and Management (50 CFR 35; 16 USC 1131-1136; 43 USC 1201; 78 Stat. 890): Provides procedures for establishing wilderness units under the Wilderness Act of 1964 at units of the Refuge System.

National Wildlife Refuge System Volunteer and Community Partnership Enhancement Act of 1998 (PL 105-242, 112 Stat. 1575): Encourages the use of volunteers to assist the Service 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 those resources. Encourages donations and other contributions by persons and organizations to the Refuge System.

North American Wetlands Conservation Act (PL 101-233; December 13, 1989; 16 USC 4401–12; 103 Stat. 1968): Provides for the conservation of North American wetland ecosystems, waterfowl and other migratory birds, fish, and wildlife that depend on such habitats. Establishes a council to review project proposals and provided funding for the projects. Provides funding and administrative direction for implementation of the North American Waterfowl Management Plan and the Tripartite Agreement on wetlands between Canada, United States, and Mexico. Converts the Pittman–Robertson account into a trust fund, with the interest available without appropriation through the year 2006 to carry out the programs authorized by the act, along with an authorization for annual appropriation of $15 million plus an amount equal to the fines and forfeitures collected under the Migratory Bird Treaty Act. Available money may be expended, upon approval of the Migratory Bird Conservation Commission, for payment of not to exceed 50% of the United States share of the cost of wetlands conservation projects in Canada, Mexico, or the United States (or 100% of the cost of projects on federal lands). At least 50% and no more than 70% of the money received is to go to Canada and Mexico each year.

Refuge Recreation Act of 1962: Authorizes the Secretary of the Interior to administer refuges, hatcheries, and other conservation areas for recreational use, when such uses do not interfere with the areas' primary purposes. Authorizes construction and maintenance of recreational facilities and the acquisition of land for incidental fish and wildlife oriented recreational development or protection of natural resources. Authorizes the charging of fees for public uses.

Refuge Recreation Act of 1966 (PL 87-714, 16 USC 460k et seq., 76 Stat. 653–4): Authorizes appropriate, incidental, or secondary recreational use at conservation areas administered by the Secretary of the Interior for fish and wildlife purposes.

Refuge Recreation Act of 1969 [16 USC 460k–k4], as amended.

Refuge Revenue Sharing Act, Section 401 (June 15, 1935; 16 USC 715s; 49 Stat. 383): Provides for payments to counties in lieu of taxes, using revenues derived from the sale of products from refuges. Related legislation follows:

PL 88-523 (August 30, 1964; 78 Stat. 701): Makes major revisions by requiring that all revenues received from refuge products such as animals, timber and minerals, or from leases or other privileges, be deposited in a special Treasury account and net receipts distributed to counties for public schools and roads.

PL 93-509 (December 3, 1974; 88 Stat. 1603): Requires that monies remaining in the fund after payments be transferred to the Migratory Bird Conservation Fund for land acquisition under provisions of the Migratory Bird Conservation Act.

PL 95-469 (October 17, 1978; 92 Stat. 1319): Expands the revenue-sharing system to include national fish hatcheries and Service research stations. Includes in the Refuge Revenue Sharing Fund receipts from the sale of salmonid carcasses. Establishes payments to counties as follows:

On acquired land, the greatest amount calculated on the basis of 75 cents per acre, ¾ of 1% of the appraised value, or 25% of the net receipts produced from the land.

On land withdrawn from the public domain, 25% of net receipts and basic payments under PL 94-565 (31 USC 1601–1607, 90 Stat. 2662), payment in lieu of taxes on public lands.

This amendment also authorizes appropriations to make up any difference between the amount in the fund and the amount scheduled for payment in any year. The stipulation that payments be used for schools and roads was removed, but counties were required to pass payments along to other units of local government within the county that suffer losses in revenues due to the establishment of Service areas.

Refuge Revenue Sharing Act of 1978 (PL 95-469; October 17, 1978; amended 16 USC 715s; 50 CFR, part 34): Changes the provisions for sharing revenues with counties in a number of ways. Makes revenue sharing

applicable to all lands administered by the Service, whereas previously it was applicable only to areas in the Refuge System. Makes payments available for any governmental purpose, whereas the old law restricted the use of payments to roads and schools. For lands acquired in fee simple, provides a payment of 75 cents per acre, ¾ of 1% of fair market value or 25% of net receipts, whichever is greatest, whereas the old law provided a payment of ¾ of 1% adjustment cost or 25% of net receipts, whichever was greater. Makes reserve (public domain) lands entitlement lands under PL 94-565 (16 USC 1601–1607) and provides for a payment of 25% of net receipts. Authorizes appropriations to make up any shortfall in net receipts, to make payments in the full amount for which counties are eligible. The old law provided that if net receipts were insufficient to make full payment, payment to each county would be reduced proportionality.

Refuge Trespass Act of June 28, 1906 (18 USC 41, 43 Stat. 98; 18 USC 145): Provides the first federal protection for wildlife at national wildlife refuges. Makes it unlawful to hunt, trap, capture, willfully disturb, or kill any bird or wild animal, or take or destroy the eggs of any such birds, on any lands of the United States set apart or reserved as refuges or breeding grounds for such birds or animals by any law, proclamation, or executive order, except under rules and regulations of the Secretary. The act also protects government property on such lands.

Refuge Trespass Act of June 25, 1948 (18 USC 41, Stat. 686; Section 41 of the Criminal Code, Title 18): Consolidates the penalty provisions of various acts from January 24, 1905 (16 USC 684–687, 33 Stat. 614) through March 10, 1934 (16 USC 694–694b, 48 Stat. 400) and restates the intent of Congress to protect all wildlife within federal sanctuaries, refuges, fish hatcheries, and breeding grounds. Provides that anyone (except in compliance with rules and regulations promulgated by authority of law) who hunts, traps, or willfully disturbs any wildlife on such areas, or willfully injures, molests, or destroys any property of the United States on such lands or waters, shall be fined, imprisoned, or both.

Rehabilitation Act of 1973 (October 1, 1973; 29 USC 794 [as amended by PL 93-112, Title 5; 87 Stat. 355]): Prohibits discrimination on the basis of handicap under any program or activity receiving federal financial assistance.

Transfer of Certain Real Property for Wildlife Conservation Purposes Act of 1948: Provides that, upon determination by the Administrator of the General Services Administration, real property no longer needed by a federal agency can be transferred without reimbursement to the Secretary of the Interior if the land has particular value for migratory birds, or to a state agency for other wildlife conservation purposes.

U.S. Department of the Interior Order No. 3226 (January 19, 2001): Directs bureaus and offices of the Department to analyze the potential effects on climate change when undertaking long-range planning, when setting priorities for scientific research, and when making major decisions about use of resources.

Wilderness Act of 1964 (PL 88-577; September 3, 1964): Directs the Secretary of the Interior, within 10 years, to review every roadless area of 5,000 or more acres and every roadless island (regardless of size) within the Refuge System and National Park Service for inclusion in the National Wilderness Preservation System.

Laws and Executive Orders that Regulate Recreational Use on the Refuge System

Alaska National Interest Lands Conservation Act of 1980 (16 USC 410 hh3233 and 43 USC 1602–1784)
Alaska Native Claims Settlement Act (43 USC 1601–24)
Antiques Act of 1906 (16 USC 431–3)
Archaeological and Historic Preservation Act of 1960 (16 USC 469–469c), as amended
Archaeological Resources Protection Act of 1979 (16 USC 470aa–mm)
Comprehensive Environmental Responses, Compensation and Liability Act of 1980
Endangered Species Act of 1973 (16 USC 1531–44), as amended
Executive Order 11593—Protection and Enhancement of the Cultural Environment
Executive Order 11593—Protection of Historical, Archaeological, and Scientific Properties
Executive Order 11644—Use of Off-road Vehicles on Public Lands
Executive Order 11988—Floodplain Management
Executive Order 11990—Protection of Wetlands
Executive Order 12372—Intergovernmental Review of Federal Program
Executive Order 12962—Recreational Fisheries
Executive Order 12996—Management and General Public Use of the National Wildlife Refuge System
Executive Order 13006—Locating Federal Facilities On Historic Properties In Our Nation's Central Cities
Executive Order 13007—Indian Sacred Sites
Executive Order 13287—Preserve America
The Fish and Wildlife Act of 1956 (16 USC 742f [a] [4]), as amended
Fish and Wildlife Conservation Act (16 USC 2901–11), as amended
The Fish and Wildlife Coordination Act (16 USC 661[1]–662[c])
Fish and Wildlife Improvement Act of 1978 (16 USC 7421)
Historic Sites, Building and Antiquities Act of 1935 (16 USC 461–2, 464–7)
Land and Water Conservation Fund (16 USC 460[l–4]–[l–11]), as amended.
Migratory Bird Conservation Act of 1929 (16 USC 715–715d, 715e, 715f–r), as amended
National Wildlife Refuge System Administration Act of 1966 (16 USC 668dd–669ee), as amended
National Wildlife Refuge System Improvement Act of 1997
Natural Historic Preservation Act of 1966 (16 USC 470–470b, 470c–n), as amended
Refuge Recreation Act of 1962 (16 USC 460k–k4), as amended
Refuge Recreation Act of 1969 (16 USC 460k–k4), as amended
Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended
Wild and Scenic Rivers Act (16 USC 1271–87), as amended
Wilderness Act of 1964 (16 USC 1131–6)

Appendix B

Preparers and Contributors

This document is the result of extensive, collaborative, and enthusiastic efforts by the members of the planning team for the nine North Dakota wetland management districts. Many others contributed insight and support.

Planning Team

The planning team comprised the project leaders for the Refuge System units that administer the districts, a biology subteam, a visitor services subteam, and extended team members.

Refuge System Project Leaders

Team Member	*Position*	*Work Unit*
Michael Erickson	Project leader	Kulm Wetland Management District
David Gillund	Project leader	Lostwood Wetland Management District Complex
Tedd Gutzke	Project leader (retired)	J. Clark Salyer National Wildlife Refuge Complex
Kim Hanson	Project leader	Arrowwood National Wildlife Refuge Complex
Kelly Hogan	Project leader	J. Clark Salyer National Wildlife Refuge Complex
Roger Hollevoet	Project leader	Devils Lake Wetland Management District Complex
Lloyd Jones	Project leader	Audubon National Wildlife Refuge Complex

Biology Subteam

Team Member	*Position*	*Work Unit*
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Dave Bolin	Wetland management district manager	J. Clark Salyer National Wildlife Refuge Complex
Cami Dixon	Wildlife biologist	Devils Lake Wetland Management District Complex
Mike Goos	Wetland management district manager	Audubon National Wildlife Refuge Complex
Tim Kessler	Wetland management district manager	Crosby Wetland Management District

Team Member	*Position*	*Work Unit*
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Richard Schroeder	Wildlife biologist	USGS–Biological Survey, Fort Collins, CO

Visitor Services Subteam

Team Member	*Position*	*Work Unit*
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Stacy Hoehn	Refuge operations specialist	Valley City Wetland Management District
Jackie Jacobson	Outdoor recreation planner	Audubon National Wildlife Refuge Complex
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Chad Zorn	Refuge operations specialist	Lostwood Wetland Management District Complex

Extended Team Members

Team Member	*Position*	*Work Unit*
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Gary Eslinger	Biological technician	J. Clark Salyer National Wildlife Refuge Complex
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Mike Estey	Wildlife biologist and GIS specialist	USFWS HAPET, Bismarck, ND
Paul Halko	Refuge manager	Devils Lake Wetland Management District (south unit)
Randy Kreil	Division chief	NDGF
Greg Link	Assistant division chief	NDGF

Team Member	*Position*	*Work Unit*
Chuck Loesch	Wildlife biologist and GIS specialist	USFWS HAPET, Bismarck, ND
Edward Meendering	*Former* wetland management district manager	Valley City Wetland Management District
Neil Niemuth	Wildlife biologist and GIS specialist	USFWS HAPET, Bismarck, ND
Ron Reynolds	Project leader	USFWS HAPET, Bismarck, ND
Neil Shook	Refuge manager	Devils Lake Wetland Management District (north unit)
Kurt Tompkins	Refuge manager	Kellys Slough National Wildlife Refuge
Brian Vose	Refuge manager	Lake Alice National Wildlife Refuge
Stu Wacker	Realty field supervisor (retired)	Wetland acquisition office, Bismarck, ND
Stacy Adolf-Whipp	District manager	Arrowwood Wetland Management District
Gary Williams	Deputy project leader	Audubon National Wildlife Refuge Complex
Kevin Willis	State coordinator	Partners for Fish and Wildlife Program, Bismark, ND

Contributors

The Service acknowledges the efforts of the following individuals and organizations toward the completion of the CCP. The diversity, talents, and knowledge they contributed dramatically improved the vision and completeness of this document.

Team Member	*Position*	*Work Unit*
Richard Coleman	Assistant regional director, Refuge System	USFWS regional office, Lakewood, CO
Paul Cornes	Refuge supervisor	USFWS regional office, Lakewood, CO
Megan Estep	Chief hydrologist	USFWS regional office, Lakewood, CO
Sheri Fetherman	Chief, division of education and visitor services	USFWS regional office, Lakewood, CO
Wayne King	Refuge biologist	USFWS regional office, Lakewood, CO
Rod Krey	Refuge supervisor (retired)	USFWS regional office, Lakewood, CO
David Linehan	Deputy refuge supervisor	USFWS regional office, Lakewood, CO

Team Member	*Position*	*Work Unit*
Bud Oliveira	Deputy assistant regional director, Refuge System	USFWS regional office, Lakewood, CO
Deb Parker	Writer–editor, division of refuge planning	USFWS regional office, Lakewood, CO
Ron Shupe	Deputy assistant regional director, Refuge System (retired)	USFWS regional office, Lakewood, CO
Michael Spratt	Chief, division of refuge planning	USFWS regional office, Lakewood, CO
Richard Sterry	Regional fire planner	USFWS regional office, Lakewood, CO
Meg VanNess	Regional archaeologist	USFWS regional office, Lakewood, CO

Appendix C

Public Involvement

Public involvement started with a notice of intent published in the *Federal Register* on February 28, 2007. The notice announced the Service's intent to prepare a CCP for the districts and obtain suggestions and information on the scope of issues to consider in the planning process.

Public Scoping

In April 2007, the Service sent the first planning update to interested parties. The update provided information about the history of the districts and the CCP process, along with an invitation to public scoping meetings. The local media also announced the public meetings. The planning update included a comment form and postage-paid envelope to give the public an opportunity to easily provide written comments.

The Service held six public meetings in various locations throughout North Dakota starting on March 26, 2007, and ending on April 11, 2007. After a presentation about the districts, along with an overview of the CCP and NEPA processes, attendees were encouraged to ask questions and offer comments. Service employees were available after the presentation to answer individuals' questions about the CCP process and district management.

The Service received 46 written comments throughout the scoping process. The public provided numerous written comments that identified biological, social, and economic concerns about management of the districts.

Public Review of the Draft CCP and EA

The Service considered all input obtained from meetings and correspondence, including emails, in development of the draft CCP and EA. In addition, the Service considered changes to the districts' current management that were suggested by the public and other groups.

On August 19, 2008, the Service published a notice of availability announcing that the draft CCP and EA, with three management alternatives, was available for a 30-day public review. The Service mailed hard copies of the document to more than 90 federal, state, and local agencies; organizations; and citizens. In addition, the Service posted the draft CCP and EA document on the region 6 website and sent out news releases and a planning update.

During the review period, the Service held nine public meetings in various locations throughout North Dakota. At each meeting, after a presentation about the districts and overview of the CCP and NEPA processes, Service employees encouraged attendees to ask questions and offer comments. Each attendee received a comment form to submit additional thoughts or questions in writing.

The following section summarizes the comments from five letters submitted during the 30-day public review of the draft CCP and EA, along with the Service's responses to the summarized comments.

Comment 1: Your mantra states wildlife comes first. Aren't wetland management districts managed for all wildlife, not just migratory birds?

Response 1: Congress passed the National Wildlife Refuge System Improvement Act of 1997 to ensure that the Refuge System is managed as a national system of lands, waters, and interests for the protection and conservation of the nation's wildlife resources. Two main components of the Improvement Act are a strong and singular wildlife conservation mission and the recognition that wildlife-dependent recreational uses involving hunting, fishing, wildlife observation, photography, environmental education, and interpretation are legitimate and appropriate public uses of the Refuge System. The Service's motto or "mantra" that "wildlife comes first" means that wildlife and their habitat have priority over all public uses.

Establishing legislation defines the purpose of each WPA in a wetland management district. Congress created the concept of waterfowl production areas under the Small Wetland Program in 1958 as an amendment to the Migratory Bird Hunting and Conservation Stamp Act (Duck Stamp Act). This program allows proceeds from the sale of federal Duck Stamps to be used to protect migratory waterfowl and their habitat. The habitat protected through the Small Wetland Program consists of small wetlands and surrounding grassland habitat, primarily in the United States' portion of the Prairie Pothole Region. This legislation also established the purpose of WPAs as breeding and resting places for migratory birds. The Service manages these lands

to benefit migratory birds; however many of the habitat management strategies provide habitat for other species of birds, mammals, insects, and animals. The CCP calls for habitats to be managed for target species—waterfowl, migratory shorebirds, grassland birds, and other priority species.

Comment 2: My easement with the Service is for water for all wildlife, not just for migratory birds. There is too much emphasis on migratory birds.

Response 2: The federal government created the limited-interest refuge program in the 1930s, when the United States was experiencing a severe drought and waterfowl and other wildlife populations were in sharp decline. This program enabled the establishment of refuge and flowage easements for the purposes of (1) water conservation, (2) drought relief, and (3) migratory bird and other wildlife conservation. The purpose of the limited-interest refuges was primarily for migratory birds; however, these refuges also provide habitat for other wildlife. The program has played a vital role in the recovery and protection of water resources and the waterfowl and other wildlife that depend on these areas.

Comment 3: Because the visitor services goal includes wildlife observation and photography, there should be a greater emphasis on grassland birds and their habitat management requirements.

Response 3: Management of native prairie on the Service's fee-title lands in the districts will focus on reduction of invasive plants and stimulation of native grasses and forbs. These management practices will best provide for the habitat requirements of native grassland bird species.

Comment 4: The concern about prairie conversion for corn production may be true, but prairie converted for oil and gas development is also a major concern.

Response 4: It would certainly be accurate to add oil and gas development as a concern to the prairie conversion issue. The loss of habitat through conversion of native prairie is associated with many facets of energy development and does affect wildlife.

Comment 5: Increased oil and gas drilling has already changed the landscape. It is uncertain how drilling will affect WPAs, but drilling will have an affect on wildlife. The Service needs to study drilling and consider ways to conserve wildlife habitat for the future.

Response 5: Although the Service has no jurisdiction, in almost all cases, over access to mineral rights, the Service has stepped up the acquisition of grassland and wetland easements. Where oil activities will affect the Service's fee-title and easement lands, the Service negotiates the means by which negative effects will be minimized to protect habitat to the fullest extent possible.

Comment 6: How does the application of chemicals fit into the plan for a healthy ecosystem?

Response 6: The National Wildlife Refuge System Improvement Act of 1997 requires the Secretary of the Interior to maintain the biological integrity, diversity, and environmental health of the Refuge System. A significant threat to the biological integrity and diversity of WPAs is the invasion of nonnative plants. Research has shown that a comprehensive and integrated plan is necessary to control nonnative plants. The CCP specifies a combination of management tools such as grazing, burning, herbicide application, biological control, mowing, haying, and reseeding.

Besides the requirement to maintain biological integrity and diversity, the Service has a legal responsibility to control weeds. North Dakota Century Code states the following: "Every person in charge of or in possession of land in this state, whether as landowner, lessee, renter, or tenant, under statutory authority or otherwise, shall control or eradicate noxious weeds on those lands." The code further states, "Each federal agency shall develop a management plan for control or eradicating noxious weeds on land under the agency's jurisdiction."

Following integrated pest management plans, the Service makes every effort to minimize the use of chemical applications. Herbicides applied on WPAs in the districts must go though an extensive review process. The Service does not allow chemicals that are highly toxic to wildlife. Furthermore, all applicators must strictly follow label instructions and closely monitor wind conditions to minimize drift.

Comment 7: Why aren't all district lands open to haying?

Response 7: The purpose of WPAs is to provide nesting and resting grounds for migratory birds. District staffs apply a variety of management techniques to achieve a diverse, contiguous grassland community that contains both structure and species diversity for nesting and breeding migratory birds. The districts use multiple tools to obtain optimal nesting habitat. Haying removes valuable cover for nesting and winter survival of many species of wildlife. The Service will apply this tool, like other management practices, only when it meets management objectives.

Comment 8: Why can't the parking and picnic areas be hayed?

Response 8: There are few designated parking areas at the WPAs and most are too small for haying. In addition, invasive plants have infested most of the parking areas. There are no areas provided specifically for picnicking. Priority public uses for Service lands are hunting, fishing, wildlife observation, photography, interpretation,

and environmental education; picnicking is not a priority public use.

Comment 9: There should be more concentrated effort on mowing ditches.

Response 9: The Service is required to mow road ditches according to North Dakota Century Code 63-05-01, which states, "It is the duty of landowners or operators with land adjoining regularly traveled county and township highways, as designated by the township board of supervisors in organized townships, the board of county commissioners in unorganized townships, and the board of county commissioners in the case of county highways, to cut all weeds and grasses along the regularly traveled highways adjoining their lands, including weeds and grasses growing within the public right of way [*sic*] bordering the highways and their lands. The cutting shall be completed not later than September fifteenth or October first, as prescribed by the board of county commissioners." District staffs make every effort to make two clean passes; however, safety is the foremost concern for tractor operators. If safety becomes an issue for the tractor operator, some locations may receive only one pass.

Comment 10: Why can't a neighboring landowner mow more than two passes next to a farmstead for a firebreak?

Response 10: In areas where fire has been an issue or there is a need to maintain a firebreak, the district staffs determine if this is an appropriate measure to alleviate fire concerns. If neighboring landowners feel they are in danger due to the threat of wildland fire, they can contact a district's fire management officer to obtain the handout, *Fire Wise Communities*, which provides guidance for reducing risks of fire near homes.

Comment 11: While burning has a role in management of the districts, the Service needs to use other management applications along with burning.

Response 11: Each management technique has its advantages and disadvantages and each plays a unique role in management of WPAs. The CCP describes the ecological benefit to use all management techniques rather than rely on one technique.

Comment 12: Can the Service use management practices that provide benefits to the producer as well as to wildlife?

Response 12: The Service uses a combination of management practices including grazing, haying, prescribed fire, and cooperative farming at WPAs. The Service relies heavily on local producers or cooperators for grazing, haying, and farming. Therefore, producers do benefit when the Service uses these practices to improve wildlife habitat.

Comment 13: The Service should have food plots instead of wildlife feeding on neighboring farmlands.

Response 13: When planning the options for management of vegetation, the district staffs consider the establishment purpose of the WPAs, as well as the policy for native and nonnative species. The purpose of WPAs is to provide habitat for waterfowl and other migratory birds; the Service also is directed to manage WPAs for natural biodiversity. (Refer to response 1 for a detailed description of the purpose for WPAs).

Grassland management will continue to be the primary focus of WPA management, since grassland is the limiting upland habitat component in most districts. Many grassland bird species, including waterfowl, have increased nest success when nesting in large contiguous blocks of grassland.

Comment 14: The Service shouldn't have put beavers on district lands to kill trees.

Response 14: The Service has no record of beaver releases at any of the WPAs. If there is a problem with beaver at a WPA, the Service can coordinate with the USDA Animal and Plant Inspection Service for further instruction and assistance.

Mailing List

The CCP mailing list follows.

Federal Officials

U.S. Senator Byron L. Dorgan, Washington DC
Sen. Dorgan's area director, Bismarck, ND
U.S. Senator Kent Conrad, Washington DC
Sen. Conrad's area director, Bismarck, ND
U.S. Representative Earl Pomeroy, Washington DC
Rep. Pomeroy's area director, Bismarck, ND

Federal Agencies

Bureau of Reclamation, Bismarck, ND
National Park Service, Omaha, NE
USDA–APHIS, Bismarck, ND
USDA–Farm Service Agency, Bottineau, ND
USDA–Farm Service Agency, Rugby, ND
USDA–Farm Service Agency, Towner, ND
USDA–Natural Resources Conservation Service (NRCS), Bismarck, ND
USDA–NRCS, Bottineau, ND
USDA–NRCS, Copperstown, ND
USDA–NRCS, Linton, ND
USDA–NRCS, Mohall, ND
USDA–NRCS, Rolla, ND
USDA–NRCS, Rugby, ND
USDA–NRCS, Steel, ND
USDA–NRCS, Valley City, ND
USFWS, Ecological Services, Bismarck, ND

USFWS, National Wildlife Refuge System—Albuquerque, NM; Anchorage, AK; Arlington, VA; Atlanta, GA; Fort Snelling, MN; Hadley, MA; Portland, OR; Rawlins, WY; Sacramento, CA; Shepherdstown, WV; Washington DC
USGS–Fort Collins Science Center, Fort Collins, CO

Tribes

Three Affiliated Tribes, New Town, ND
Standing Rock Sioux Tribe, Fort Yates, ND
Spirit Lake Tribal Council, Fort Totten, ND
Sisseton-Wahpeton Oyate, Agency Village, SD
Turtle Mountain Band of Chippewa, Belcourt, ND
White Earth Band of Chippewa, White Earth, MN

State Officials

Governor John Hoeven, Bismarck, ND
North Dakota State Representatives and Senators (139)

State Agencies

North Dakota Forest Service, Bismarck, ND
NDGF, Bismarck, ND
North Dakota State Historical Preservation Office, Bismarck, ND
North Dakota State Land Board, Bismarck, ND
North Dakota State University Extension Service, Bismarck, ND
North Dakota State University Extension Service, Linton, ND
North Dakota State University Extension Service, Steele, ND
North Dakota State Water Commission

Local Government

County commissioners (33)
Mayors (7)
Resource conservation districts (8)
Weed board offices (19)

Organizations

American Bird Conservancy, Plains, VA
American Rivers, Washington DC
Animal Protection Institute, Sacramento, CA
Beyond Pesticides, Washington DC
Defenders of Wildlife, Washington DC
Duck Unlimited, Great Plains Office, Bismarck, ND
Fund for Animals, Silver Springs, MD
Izaak Walton League, Gaithersburg, MD
Murie Audubon Society, Casper, WY
National Audubon Society, Fargo, ND
National Audubon Society—Washington DC; New York, NY
National Trappers Association, New Martinsville, WV
National Wildlife Federation, Reston, VA
National Wildlife Refuge Association, Washington DC
National Wild Turkey Federation, Bismarck, ND
The Nature Conservancy, Minneapolis, MN
Sierra Club—San Francisco, CA; Sheridan, WY
Union Pacific Railroad, Omaha, NE
The U.S. Humane Society, Washington DC
The Wilderness Society, Washington DC
Wildlife Management Institute—Fort Collins, CO; Corvallis, OR; Washington DC

Universities and Colleges

Bismarck State College
Minot State University
Northwestern University

Media

Newspapers (57)
Radio stations (4)
TV stations (2)

Individuals

Individuals (631)

Appendix D

Section 7 Biological Evaluation

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

Originating Person:
John Esperance, Region 6, Division of Planning

Telephone Number:
Planning 303/236 4369

Date: August 1, 2008

I. Region: 6

II. Service Activity (Program): Refuges

III. Pertinent Species and Habitat

A. Federally listed species and/or their critical habitat within the action area:

County	*Interior Least Tern–E*	*Whooping Crane–E*	*Black-footed Ferret–E*	*Pallid Sturgeon–E*	*Gray Wolf–E*	*Piping Plover–T*	*Western Prairie Fringed Orchid–T*	*Dakota Skipper–C*	*Designated Critical Habitat–Piping Plover*
Barnes		X							
Benson		X				X			X
Bottineau		X			X				
Burke		X			X	X		X	X
Cass									
Cavalier		X							
Dickey		X							
Divide		X			X	X			X
Eddy		X				X		X	X
Foster		X				X			
Grand Forks									
Griggs		X							
Lamoure		X							
Logan		X				X			X
McHenry		X				X		X	X
McIntosh		X				X			X
McLean	X	X		X	X	X		X	X
Mountrail	X	X		X	X	X		X	X
Nelson									
Oliver	X	X	X	X	X	X		X	X
Pierce		X				X			X
Rolette		X						X	
Sheridan		X				X			X
Steele									
Stutsman		X				X		X	X
Traill									
Ward		X			X	X		X	X
Wells		X				X		X	
Williams	X	X		X	X	X			X

B. Proposed species and/or proposed critical habitat within the action area:

Critical habitat for the piping plover

C. Candidate species within the action area:

None

IV. Station Name, Geographic Area, and Action

A. Stations:

Arrowwood, Audubon, Chase Lake, Crosby, Devils Lake, J. Clark Salyer, Kulm, Lostwood, and Valley City wetland management districts

B. Geographic area:

Nine wetland management districts throughout North Dakota

C. Action:

Issuance and implementation of nine wetland management district comprehensive conservation plan

V. Location (attach map)

A. Ecoregion number and name:

The nine districts are located within the USFWS Mountain-Prairie Region 6, and specifically in the Hudson Bay and Missouri main stem ecosystems.

B. Counties and state:

See above; within North Dakota

VI. Description of Proposed Action

The National Wildlife Refuge System Improvement Act of 1997 requires the U.S. Fish and Wildlife Service to develop a comprehensive conservation plan by 2012 for each wetland management district and national wildlife refuge. The CCP will guide management of the districts for the next 15 years.

The wetland management districts provide oversight for all of the U.S. Fish and Wildlife Service's small land tracts in a multicounty area. These nine wetland management districts in North Dakota manage 1,208 waterfowl production areas, tens of thousands of conservation easements, and 50 wildlife development areas in 34 counties. These district lands, totaling 1,125,084 acres, are part of the National Wildlife Refuge System, a network of lands set aside to conserve fish and wildlife and their habitat.

The nine districts were established in the early 1960s, with the major objectives of wetland preservation, waterfowl and wildlife production, and maintenance of breeding grounds for migratory birds. The districts also provide a northern staging area and habitat for migration.

VII. Determination of Effects

A. Explanation of effects of the action on species and critical habitats in items III. A, B, and C:

The CCP process consisted of a series of steps including environmental analysis. Public and partner involvement were encouraged and valued throughout the process. The U. S. Fish and Wildlife Service's planning team developed management alternatives to meet the purposes, vision, and goals of the districts. Implementation of the CCP will be monitored throughout its 15-year effective period.

All nine districts have a primary purpose to protect, restore, and enhance the ecological diversity of grasslands and wetlands of the North Dakota Prairie Pothole Region. Contribute to the production and growth of continental waterfowl populations to meet the goals of the North American Waterfowl Management Plan. Also, to support healthy populations of other migratory birds, threatened and endangered species, and other wildlife.

The species listed in III occur in various numbers and can be observed on grasslands, marshes and open water on a number of the districts described in the CCP. The primary issues related to these species of concern center on: monitoring their populations; monitoring habitat use; identifying, securing, and maintaining essential habitat; and developing habitat conditions in areas that hold potential for these species and that will promote increased recruitment or population protection to secure and increase their populations.

B. Explanation of actions to be implemented to reduce adverse effects:

The actions of the CCP implementation on the nine districts are not expected to create adverse effects. The implementation of a more defined management at the districts may create more suitable habitat for listed species and through monitoring enhance the potential of increasing their populations.

VIII. Effect Determination and Response Requested

A. Listed species/designated critical habitat:

Determination	Response Requested
No effect/no adverse modification	_____ Concurrence
May affect, but is not likely to adversely affect species/adversely modify critical habitat	__X__ Concurrence
May affect, and is likely to adversely affect species/modify critical habitat	_____ Formal Consultation

B. Proposed species/proposed critical habitat:

Determination	Response Requested
No effect on proposed species/no adverse modification of proposed critical habitat (species: none)	__X__ Concurrence
Is likely to jeopardize proposed species or adversely modify proposed critical habitat (species: none)	_____ Conference

John F. Esperance 8/11/08

John Esperance — Date
Supervisory Fish and Wildlife Biologist
Division of Planning
National Wildlife Refuge System
Region 6

IX. Reviewing ESO Evaluation

__X__ Concurrence

_____ Non-Concurrence

_____ Formal Consultation Required

_____ Conference Required

_____ Informal Conference Required

Jeffrey K. Towner 9/26/08

Jeffrey Towner — Date
Field Supervisor
Ecological Services
Bismarck, ND

Appendix E

Environmental Compliance

Environmental Action Statement

U.S. Fish and Wildlife Service, Region 6
Lakewood, Colorado

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record.

I have determined that the action of implementing the "Comprehensive Conservation Plan—North Dakota Wetland Management Districts" is found not to have significant environmental effects, as determined by the attached "Finding of No Significant Impact" and the environmental assessment as found with the draft comprehensive conservation plan.

Approved by

Steve Guertin Date
Regional Director, Region 6
U.S. Fish and Wildlife Service
Lakewood, CO

Concurred with by

Richard A. Coleman, PhD Date
Assistant Regional Director, Region 6
National Wildlife Refuge System
U.S. Fish and Wildlife Service
Lakewood, CO

Paul Cornes Date
Refuge Supervisor, Region 6
U.S. Fish and Wildlife Service
Lakewood, CO

Submitted by

Kim Hanson 9/30/08
Date
Project Leader
Arrowwood National Wildlife Refuge Complex
(Arrowwood, Chase Lake, and Valley City wetland management districts)
Pingree, ND

Kelly Hogan 9/30/08
Date
Project Leader
J. Clark Salyer National Wildlife Refuge Complex
(J. Clark Salyer Wetland Management District)
Upham, ND

Lloyd Jones 9/30/08
Date
Project Leader
Audubon National Wildlife Refuge Complex
(Audubon Wetland Management District)
Coleharbor, ND

Michael Erickson 9/30/08
Date
Project Leader
Kulm Wetland Management District
Kulm, ND

Roger Hollevoet 9/30/08
Date
Project Leader
Devils Lake Wetland Management District Complex
Devils Lake, ND

David Gillund 9/30/08
Date
Project Leader
Lostwood Wetland Management District Complex
(Crosby and Lostwood wetland management districts)
Kenmare, ND

Finding of No Significant Impact

U.S. Fish and Wildlife Service, Region 6
Lakewood, Colorado

The U.S. Fish and Wildlife Service assessed three management alternatives for nine wetland management districts (Arrowwood, Audubon, Chase Lake, Crosby, Devils Lake, J. Clark Salyer, Kulm, Lostwood, and Valley City) in North Dakota as to their effectiveness in achieving the districts' purposes and their impacts on the human environment.

- **Alternative A, the "no-action" alternative.** The Service would continue current management.
- **Alternative B, the proposed action.** Wildlife habitat management would enhance wetlands and uplands. The Service would base management objectives for habitat types on the habitat preferences of groups of target species such as waterfowl, migratory shorebirds, grassland birds, and threatened and endangered species. The district staffs would focus on high- and medium-priority habitats. The district staffs would carry out compatible techniques to enhance production of targeted migratory bird populations.

  The district staffs would maintain existing environmental education and visitor services programs, with additional waterfowl emphasis. The Service proposes, at a future date, (1) one new administration and visitor center facility each for Audubon and Kulm wetland management districts, and (2) one new visitor contact station each for Lostwood, Valley City, and Arrowwood wetland management districts.
- **Alternative C.** Management by the district staffs would target native prairie and wetland and be more intensive and widespread. As a priority, district staffs would seek out restoration projects that expand and return native grasslands to quality native prairie. The Service would have additional management options that address habitat requirements and needs of specific groups of water-dependent birds such as waterfowl and shorebirds.

  The district staffs would develop new environmental education and visitor services programs. The Service proposes, at a future date, (1) one new administration and visitor center facility each for Audubon and Kulm wetland management districts, and (2) one new visitor contact station each for Lostwood, Valley City, and Arrowwood wetland management districts.

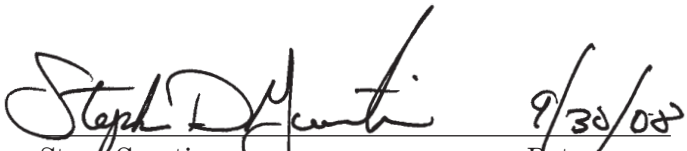
Based on the assessment and comments received, I have selected alternative B as the preferred alternative for implementation.

I selected the preferred alternative because it best meets the purposes for which the nine, above-listed wetland management districts in North Dakota were established and is preferable to alternatives A and C in light of physical, biological, economic, and social factors. The preferred alternative will continue to provide public access for wildlife-dependent recreation at the districts' waterfowl production areas.

I find that the preferred alternative is not a major federal action that would significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969. Accordingly, the preparation of an environmental impact statement for the proposed action is not required.

The following is a summary of anticipated environmental effects from implementation of the preferred alternative:

- The preferred alternative will not adversely impact endangered or threatened species or their habitat.
- The preferred alternative will not adversely impact archaeological or historical resources.
- The preferred alternative will not adversely impact wetlands nor does the plan call for structures that could be damaged by or that will significantly influence the movement of floodwater.
- The preferred alternative will not have a disproportionately high or adverse human health or environmental effect on minority or low-income populations.



Steve Guertin — Date
Regional Director, Region 6
U.S. Fish and Wildlife Service
Lakewood, CO

Appendix F

Compatibility Determinations for Wildlife-dependent Recreational Uses, Grazing, Haying, and Farming

District Names

Arrowwood Wetland Management District
Audubon Wetland Management District
Chase Lake Wetland Management District
Crosby Wetland Management District
Devils Lake Wetland Management District
J. Clark Salyer Wetland Management District
Kulm Wetland Management District
Lostwood Wetland Management District
Valley City Wetland Management District

Establishing and Acquisition Authorities

- Migratory Bird Hunting and Conservation Stamp Act (16 USC 718[c])
- Migratory Bird Conservation Act 16 USC 715d(2)
- Migratory Bird Conservation Act 16 USC 715i(a)

Purposes

"Small areas, to be designated as 'Waterfowl Production Areas' may be acquired without regard to the limitations and requirements of the Migratory Bird Conservation Act, but all of the provisions of such Act which govern the administration and protection of lands acquired thereunder, except the inviolate sanctuary provisions of such Act, shall be applicable to areas acquired pursuant to this subsection."

Migratory Bird Hunting and Conservation Stamp Act (16 USC 718[c])

"For use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

Migratory Bird Conservation Act 16 USC 715d(2)

"Areas of lands, waters, or interests therein acquired or reserved pursuant to this subchapter shall … be administered … to conserve and protect migratory birds in accordance with treaty obligations with Mexico, Canada, Japan and the Union of Soviet Socialist Republics, and other species of wildlife found thereon, including species that are listed … as endangered or threatened species, and to restore and develop adequate wildlife habitat."

Migratory Bird Conservation Act 16 USC 715i(a)

National Wildlife Refuge System Mission

The mission of the 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:
Recreational Hunting

All WPAs are open to recreational hunting in accordance with the Migratory Bird Hunting and Conservation Stamp Act. The Service will continue to provide recreational hunting and expand programs at WPAs where programs can be provided in a compatible manner. The Service will allow continued recreational hunting of waterfowl, deer, ring-necked pheasant, sharp-tailed grouse, and other approved state game species according to state regulations.

Availability of Resources

Sufficient resources are available to carry out the recreational hunting program.

Anticipated Impacts of Use

Some wildlife disturbance will occur during recreational hunting activities. There will be no negative effects on cultural resources or threatened or endangered species.

Determination

Recreational hunting is compatible.

Stipulations Necessary to Ensure Compatibility

- Continue to provide the hunting programs at WPAs as prescribed by legislation.
- Require the use of nontoxic shot, in accordance with current hunting regulations for migratory birds and upland game.

- Prohibit vehicle access beyond approved access roads, trails, and parking lots.
- Prohibit camping, overnight use, and fires.
- Require that hunting be in accordance with federal and state regulations.
- Promote sound hunting practices for hunter safety and quality experiences.
- Annually review recreational hunting activities to ensure these activities are compatible.

Justification

The Improvement Act identifies hunting on Refuge System lands as a wildlife-dependent recreational (priority) use. Additionally, hunting is a legitimate wildlife management tool that can be used to manage populations. Hunting harvests a small percentage of the renewable resources, which is in accordance with wildlife objectives and principles. Based on the biological impacts anticipated above and in the EA, it is determined that recreational hunting within the nine wetland management districts in this CCP will not interfere with the habitat goals and objectives or purposes for the districts.

Mandatory 15-year Reevaluation Date: 2023

Description of Use:
Recreational Fishing

All WPAs are open to recreational fishing in accordance with the Migratory Bird Hunting and Conservation Stamp Act. The Service will continue to provide recreational fishing at designated fishing areas in accordance with state regulations. Fishing within districts is available summer and winter. Permanent lakes on district WPA lands offer fishing for northern pike, perch, walleye, and a few other species.

Availability of Resources

Sufficient resources are available to carry out the current recreational fishing program. The CCP does not call for the implementation of any new fishing programs.

Anticipated Impacts of Use

Fishing and other human activities may cause disturbance to wildlife. There will be no negative effects on cultural resources or threatened or endangered species.

Determination

Recreational fishing is compatible.

Stipulations Necessary to Ensure Compatibility

- Require that fishing follow state and federal regulations.
- Monitor existing use to ensure that facilities are adequate and disturbance to wildlife continues to be minimal.

Justification

The Improvement Act identifies fishing on Refuge System lands as a wildlife-dependent recreational (priority) use. Based on the biological impacts anticipated above and in the EA, it is determined that recreational fishing within the nine wetland management districts in this CCP will not interfere with the habitat goals and objectives or purposes for the districts.

Mandatory 15-year Reevaluation Date: 2023

Description of Use:
Wildlife Observation and Photography

All WPAs are open to wildlife observation and photography in accordance with the Migratory Bird Hunting and Conservation Stamp Act. The Service will provide opportunities that support these wildlife-dependent recreational uses.

The CCP will continue the above uses and add the following to improve wildlife observation and photography:

- Provide the public with wildlife observation and photography opportunities at the districts by identification of open observation areas to the public through signage, publications, and maps.
- Provide the public with birding opportunities through identification of birding drives and promotion of WPAs as stops. Provide support materials to guide visitors through the state and direct them to key birding spots.
- Develop and construct a district map with a clear plastic overlay for each visitor center or contact station where visitors can record their bird observations.
- Construct a computer kiosk where visitors can access birding information (for example, bird songs from a product such as “Thayer Birding Software”).

Availability of Resources

Existing programs such as current WPA and district signs and brochures can be updated with available resources. Construction of new facilities described in the CCP is closely tied to funding requests (projects through the Refuge Operating Needs System and Service Asset Maintenance Management System).

Anticipated Impacts of Use

Minimal disturbances to wildlife and wildlife habitat will result from these uses at the current and CCP levels. Some disturbance to wildlife will occur in areas frequented by visitors. There will be some minor damage to vegetation, littering, and increased maintenance. There will be no negative effects on cultural resources or threatened or endangered species.

Determination

Wildlife observation and photography are compatible.

Stipulations Necessary to Ensure Compatibility

- Restrict vehicles to designated roads and trails.
- Monitor use, regulate access, and maintain necessary facilities to prevent habitat degradation and minimize wildlife disturbance.
- Develop trails and viewing areas that have minimal impact on wildlife and their habitats.
- Annually review wildlife observation and photography activities to ensure these activities are compatible.

Justification

Based on the biological impacts addressed above and in the EA, it is determined that wildlife observation and photography at the nine wetland management districts within this CCP will not interfere with the habitat goals and objectives or purposes for the districts.

Wildlife observation and photography are priority public uses listed in the Improvement Act. By facilitating these uses, visitors will gain knowledge and an appreciation of fish and wildlife, which will lead to increased public stewardship of wildlife and their habitats. Increased public stewardship will support and complement the Service's actions in achieving the purposes of the districts and the mission of the Refuge System.

Mandatory 15-year Reevaluation Date: 2023

Description of Use:
Environmental Education and Interpretation

All WPAs are open to environmental education and interpretation in accordance with the Migratory Bird Hunting and Conservation Stamp Act. The Service will provide opportunities for environmental education and interpretation. Environmental education consists of activities conducted by district staffs, volunteers, and teachers. Interpretation occurs in less formal activities with district staffs, volunteers, or through exhibits, educational "trunks," signs, programs, and brochures. Currently, environmental education and interpretation activities are conducted at district offices and various off-site WPA locations where activities and programs are presented.

The proximity of the districts to North Dakota's major population base provides potential to substantially expand environmental education and interpretation programs at individual districts. The CCP will continue current uses, as well as with the identified additional staff, to improve environmental education and interpretation for all visitors.

The following are facility and program improvements described in the CCP:

- Install boundary signs at WPAs.
- Identify key WPAs within the districts that could support visitor use information and construct signage and information kiosks at these areas.
- At Arrowwood National Wildlife Refuge Complex (includes the district), remodel the office entrance to include a visitor contact station with interpretive exhibits.
- At Arrowwood Wetland Management District, build two kiosks: one at Bauer's Lake WPA (Foster County) and one at Wallace WPA (Eddy County).
- At Audubon National Wildlife Refuge Complex (includes the district), construct an education center to house exhibits, classrooms, visitor information, and office space.
- At Crosby Wetland Management District, improve the entrance road to the office.
- At Devils Lake Wetland Management District, develop a visitor contact station and office at a WPA.
- At Kulm Wetland Management District, construct a visitor contact station and office at Patzer WPA.
- At Lostwood Wetland Management District, improve the entrance road to the office and remodel the existing office to add a visitor contact station.
- At Valley City Wetland Management District, improve and update the visitor contact station by adding exhibits to enhance the visitor experience.
- At Valley City Wetland Management District, construct and improve the trail system and build kiosks and interpretive panels at Alice WPA.
- At Valley City Wetland Management District, make improvements to the Outdoor Wildlife Learning Site adjacent to the district office, including paving the trail to make it universally accessible and design and construction of interpretive facilities.

- In the eastern portion of Valley City Wetland Management District, construct a handicap-accessible blind and interpretive trail.
- Construct additional interpretive panels for trails and parking lots.

Availability of Resources

Existing programs such as district signs and brochures can be updated with available resources. Construction of new facilities and upgrade of existing facilities described in the CCP are closely tied to funding requests (projects through the Refuge Operating Needs System and Service Asset Maintenance Management System).

Anticipated Impacts of Use

Minimal disturbances to wildlife and wildlife habitat will result from these uses at the current and CCP levels. Some disturbance to wildlife will occur in areas frequented by visitors. There will be some minor damage to vegetation, littering, and increased maintenance. There will be no negative effects on cultural resources or threatened or endangered species.

Determination

Environmental education and interpretation are compatible.

Stipulations Necessary to Ensure Compatibility

- Allow environmental education and interpretation only in designated areas or under the guidance of district staffs, volunteers, or trained teachers to ensure minimal disturbance to wildlife, minimal damage to vegetation, and minimal conflicts between groups.
- Prohibit vehicle access beyond parking lots.
- Develop trails and viewing areas that have minimal impact on wildlife and their habitats.
- Annually review environmental education and interpretation activities to ensure these activities are compatible.

Justification

Based on biological impacts addressed above and in the EA, it is determined that environmental education and interpretation within the nine wetland management districts will not interfere with or detract from the districts' purposes.

Environmental education and interpretation are priority public uses listed in the National Wildlife Refuge System Improvement Act of 1997. By facilitating environmental education, district visitors will gain knowledge and an appreciation of fish, wildlife, and their habitats, which will lead to increased public awareness and stewardship of natural resources. Increased appreciation for natural resources will support and complement the Service's actions in achieving the purposes of the districts and the mission of the Refuge System.

Mandatory 15-year Reevaluation Date: 2023

Description of Use:
Prescribed Grazing

Prescribed grazing is the use of livestock, usually cattle, to remove standing vegetation, reduce vegetative litter, suppress woody vegetation or invasive plants, open up vegetation-choked wetlands, and open up areas to sunlight and encourage native grass seeding and growth. During 1996–2000, the Service annually used prescribed grazing on approximately 470,000 acres of grasslands in fee title in North Dakota's WPAs.

Prescribed grazing is carefully timed and usually of short duration (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. The frequency and duration of prescribed grazing at any WPA will be based on site-specific evaluations of the grassland under management. The prescribed grazing period generally will take place between April and September. Early spring grazing (mid-April through late May) will target cool-season invasive species and encourage warm-season native grasses and forbs. Midseason grazing (June and July), especially on nonnative grasslands, stimulates fall regrowth. Late-season grazing (August and September) removes litter and encourages spring growth of cool-season natives or other cool-season species.

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

Availability of Resources

Developing grazing plans and special use permits and monitoring compliance and biological effects will require some Service resources. Most grazing management costs—fencing labor, monitoring and moving the livestock, and hauling water—are provided by the cooperator or permittee. Evaluation of the grasslands for grazing prescriptions and grassland response is part of each district's grassland management responsibilities.

The Service may use some alternative form of grassland management such as prescribed burning or haying where areas are not treated with prescribed grazing. Management of grasslands through permitted haying has comparable costs to management through a prescribed grazing program. Managed mowing is more expensive since the Service assumes all labor

costs. Prescribed fire can be an effective grassland management tool, but there are personnel and weather limitations on a burning program, as well as the fact that some tracts are not suited to use of prescribed fire. In addition, there is an ecological benefit to rotation of grassland management techniques such as grazing, burning, and haying, at different seasons, rather than reliance on one technique.

Anticipated Impacts of the Use

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 vegetation removal increases the vigor of the grassland, stimulates growth of desired species of grass and forbs, and reduces the abundance of targeted species such as cool-season invasive plants, noxious weeds and other invasive plants, woody species, and 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 grazed areas. Prescribed grazing is usually of short duration with the result of enhanced, more diverse, and vigorous grassland habitats. Grazing livestock may create a minor and temporary disturbance to wildlife, but generally does no harm.

Grazing on public wildlife lands can create an aesthetic issue of concern for some people, including visitors, who do not understand grassland management. There is a slight potential for conflict between the visiting public and the livestock or the permittee, particularly during fall hunting seasons. These situations can be limited by having livestock removed by the anticipated beginning of fall hunting seasons.

There will be no negative effects on cultural resources or threatened or endangered species.

To eliminate any appearance of favoritism or impropriety, managers follow "Refuge Manual" procedures for cooperator or permittee selection.

Determination

The use of grazing is compatible.

Stipulations Necessary to Ensure Compatibility

- Monitor vegetation and wildlife to assess the effects of the management tool.
- Require general and special conditions for each permit to ensure consistency with management objectives.
- Restrict the use of vehicles and motorized equipment to the minimum necessary to conduct operations to meet management objectives.

Justification

Upland and wetland habitat conditions will deteriorate without the use of a full range of management tools. Migratory bird habitat and ecological diversity will decrease as habitat suitability declines. Invasive plant species will increase and habitat diversity will decrease if grazing practices do not continue at the WPAs. To maintain and enhance habitat for migratory birds and other wildlife, habitat manipulation such as grazing needs to occur. Grazing will provide a means to restore degraded grasslands for the benefit of grassland-dependent species.

Mandatory 10-year Reevaluation Date: 2018

Description of Use:
Prescribed Haying of Grasslands

Haying is the cutting and removal, by baling and transport to an off-site location, of grass or other upland vegetation for the production of livestock forage. Haying for this purpose is typically done by a cooperating farmer acting under authority of a cooperative farming agreement or special use permit issued by the project leader or district manager. Prescribed haying in North Dakota averaged about 13,500 acres per year from 1996 to 2000.

Haying is an effective management tool as part of an overall grassland management plan to improve and maintain Service-managed grasslands for the benefit of migratory birds and other wildlife. Grasslands require periodic renovation to maintain vigor, diversity, and the structure necessary for migratory bird nesting. Haying can be an alternative to prescribed burning or grazing, which are the two other methods used to manage grassland habitats. If local conditions preclude the use of prescribed fire or livestock numbers are not available, removal of biomass through haying reduces unwanted overstory, including woody plants, and opens up the soil surface to sunlight. Such removal of vegetation allows for more vigorous regrowth of desirable species following the haying, although results are neither as dramatic nor positive as with fire or grazing.

Haying can be part of a strategy to seed native grass on newly acquired lands or on tame grass stands that need restoration. To reduce competition from invasive plants and minimize herbicide applications, the Service may use a cooperating farmer to apply the native grass seed mix and "interseed" with a cover crop. As a requirement of the special use permit, the Service will require the cooperator to cut, bale, and remove the cover crop before it matures and goes to seed. The resultant hay will be used for livestock feed. In addition, haying serves the biological purpose of releasing young native grass and forb seedlings for growth with minimal competition.

A third possible use of haying on Service-managed grasslands involves the initial steps of removing

unwanted vegetation prior to seeding the tract to native grasses. Haying of a nonnative cool-season stand of grass is an effective step before spraying the field with herbicide to kill all existing vegetation. Removal of the heavy grass overstory by haying allows herbicide to more effectively reach and treat the remaining target plants. Better removal of unwanted grasses, in turn, will ensure better success of planted grasses and forbs whether they are "interseeded" into the sod or into the soil turned and leveled prior to seeding.

Haying is sometimes used prior to treatment of invasive plants: the tract is hayed and after a period, the "flush" of invasive plants is treated with an herbicide application. Removal of vegetation through haying allows the herbicide to more effectively reach and treat the target plants.

A more limited application of haying on Service-managed lands involves its use to establish firebreaks for prescribed burns. The Service will permit a cooperating farmer to hay firebreak strips in the fall. Those areas will then have little standing dead vegetation in early spring, or will green up earlier in the spring, and allow use as a firebreak.

Availability of Resources

Funding and staff resources are sufficient at each field station to administer prescribed haying. Staff time will be needed to evaluate the use, prepare site-specific special use permits, and ensure compliance with the permit authorization and stipulations necessary to ensure compatibility. To lessen any appearance of favoritism or impropriety, managers follow "Refuge Manual" procedures for establishing rental rates and cooperator selection.

Anticipated Impacts of the Use

Haying will result in short-term disturbances to wildlife and long-term benefits to grasslands and the wildlife species that use these grasslands. Short-term impacts will include disturbance and displacement of wildlife typical of any noisy heavy-equipment operation. Cutting and removal of standing grass will result in the short-term loss (late summer to midsummer the following year) of habitat for those species requiring taller grass for feeding and perching. The Service will typically schedule prescribed haying after July 31 to avoid impacts to most nesting birds. Long-term benefits will accrue due to the increased vigor of regrown grasses or the establishment of highly desirable native grass and forb species, which will improve habitat conditions for the same species affected by the short-term removal of cover.

Long-term negative effects may occur to some resident wildlife species such as pheasant, which may lose overwinter habitat in hayed areas. Strict time constraints and limiting grass stands to no more than 50% being hayed at any one time will limit the anticipated effects on these species.

There will be no negative effects on cultural resources or threatened or endangered species.

Determination

Prescribed haying of grasslands is compatible.

Stipulations Necessary to Ensure Compatibility

- Schedule prescribed haying to occur after July 31 in any given year, unless there are documented management reasons for prescribing an earlier hay date.
- Issue the permit subject to the revocation and appeals procedure contained in Title 50, Part 25 of the *Code of Federal Regulations*.
- Allow haying on no more than 50% of a tract in any one year, unless size restrictions or habitat conditions warrant haying more than half of the area.
- Couple prescribed haying with a light disking or dragging operation or an "interseeding" of desirable species of grass or legumes to further increase the vigor of the grass stand.
- Require removal of bales or stacks by September 10.

Justification

Upland habitat conditions will deteriorate without the use of a full range of management tools. Migratory bird habitat and ecological diversity will decrease as habitat suitability declines. Invasive plant species will increase and habitat diversity will decrease if haying practices do not continue at the WPAs. To maintain and enhance the habitat for migratory birds and other wildlife, habitat manipulation such as haying needs to occur. Haying will provide a means to restore degraded grasslands for the benefit of grassland-dependent species.

Mandatory 10-year Reevaluation Date: 2018

Description of Use:
Cooperative Farming

Cooperative farming is the term used for cropping activities done by a third party on lands that the Service owns in fee title or controls through a conservation easement (wetland, grassland, or FmHA). This activity is usually done on a short-term basis (3–4 years or less) to provide an optimal seedbed for establishment of native grasses and forbs or other desirable planted cover for wildlife. Cooperative farming on certain tracts can provide a fall food source for migratory waterfowl or a winter food source for resident wildlife. Farming is done by a cooperating farmer acting under authority of a cooperative farming agreement or special use permit issued by the project leader or district manager. Terms of the agreement

ensure that the farmer follows all current Service and district restrictions. North Dakota WPAs and refuges permitted an average of 6,400 acres of cooperative farming during 1996–2000.

Cooperative farming activities are generally limited to areas of former cropland or poor quality stands of tame or cool-season invasive grasses. Service policies do not allow tilling or cropping of highly erodible soils without an approved NRCS conservation plan.

The WPAs average about 200 acres in size. Generally, farmed areas (before reseeding to more desirable plant species) will not cover more than 50% of the tract. Areas at the WPAs planted for food plots will be limited to the size needed to provide sufficient food for the targeted wildlife species.

Availability of Resources

Staff time is available for development and administration of cooperative farming agreements. Most of the needed fieldwork to prepare and plan for this use will be done as part of routine grassland management duties. The decision to use a cooperating farmer will occur as part of the overall strategy for managing lands within a district. The additional time needed to coordinate issuance of the special use permit or cooperative farming agreement and oversight of the permit or agreement is relatively minor and within the districts' resources. In addition, the use of a cooperating farmer will free up Service employees who will otherwise have to conduct the farming operation.

In most cases, farmers conduct cooperative farming operations on Service lands on a share basis rather than for a fee. The Service typically receives its share as (1) harvested grain used for other management purposes such as standing grain left for wildlife food, (2) additional work such as control of invasive plants, cultivation, or additional seedbed preparation, or (3) supplies such as herbicide or grass seed to be used on the same tract of land. The Service deposits any fees or cash income related to the farming into the Refuge Revenue Sharing Account. The Service receives fair-market value consideration from cooperating farmers, but the generation of income is a secondary consideration when developing the terms and conditions of a special use permit or cooperative farming agreement. To lessen any appearance of favoritism or impropriety, managers follow "Refuge Manual" procedures for establishing rental rates and cooperator selection.

Anticipated Impacts of the Use

Cooperative farming to prepare suitable seedbeds for planting better cover and habitat will result in short-term disturbances and long-term benefits to both resident and migratory wildlife using the WPAs and easements. Short-term effects include disturbance and displacement of wildlife typical of any noisy heavy-equipment operation, and the loss of poor quality cover while the tract is farmed. Wildlife may use farmed areas as additional food sources during the farming period.

There will be long-term benefits due to the establishment of diverse or more desirable habitat for nesting, escape cover, perching, or noncrop feeding activities. The resulting habitat will generally improve conditions for most of the species negatively affected by the short period of farming activity.

There will be no negative effects on cultural resources or threatened or endangered species.

Determination

Cooperative farming is compatible.

Stipulations Necessary to Ensure Compatibility

- Monitor vegetation and wildlife to assess the effects of the management tool.
- Require general and special conditions for each permit to ensure consistency with management objectives.
- Restrict the use of vehicles and motorized equipment to the minimum necessary to conduct operations to meet management objectives.
- Restrict farming permittees to use of approved chemicals that are less detrimental to wildlife and the environment.

Justification

Habitat conditions will deteriorate without the use of a full range of management tools. Migratory bird habitat and ecological diversity will decrease as habitat suitability declines. Invasive plant species will increase and habitat diversity will decrease if farming practices do not continue at the WPAs. To maintain and enhance habitat for migratory birds and other wildlife, habitat manipulation such as farming needs to occur.

Mandatory 10-year Reevaluation Date: 2018

Signatures

Kim Hanson 9/30/08
Kim Hanson Date
Project Leader
Arrowwood National Wildlife Refuge Complex
(Arrowwood, Chase Lake, and Valley City
wetland management districts)

Lloyd Jones 9/30/08
Lloyd Jones Date
Project Leader
Audubon National Wildlife Refuge Complex
(Audubon Wetland Management District)

Roger Hollevoet 9/30/08
Roger Hollevoet Date
Project Leader
Devils Lake Wetland Management District Complex

Kelly Hogan 9/30/08
Kelly Hogan Date
Project Leader
J. Clark Salyer National Wildlife Refuge Complex
(J. Clark Salyer Wetland Management District)

Michael Erickson 9/30/08
Michael Erickson Date
Project Leader
Kulm Wetland Management District

David Gillund 9/30/08
David Gillund Date
Project Leader
Lostwood Wetland Management District Complex
(Crosby and Lostwood wetland management districts)

Reviewed

J. Paul Cornes 9-30-08
Paul Cornes Date
Refuge Supervisor
Region 6, National Wildlife Refuge System

Approved

Richard A Coleman 9/30/08
Richard A. Coleman, PhD Date
Assistant Regional Director
Region 6, National Wildlife Refuge System

Appendix G

Fire Management Program for Wetland Management Districts Within the Eastern North Dakota Fire District

The Service has administrative and fire management responsibility for approximately 200,000 acres in fee title within the Arrowwood, Chase Lake, Devils Lake, Kulm, and Valley City wetland management districts, which are within the Eastern North Dakota Fire District.

The Role of Fire

In ecosystems of the Great Plains, vegetation 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 disease, stimulating regeneration, cycling nutrients, and providing a diversity of habitats for plants and wildlife.

When fire or grazing is excluded from prairie landscapes, the fuel loadings increase quickly due to a build-up of thatch and invasion of woody vegetation. This increase in fuel loadings leads to a significant increase in a fire's resistance to control, which threatens firefighter and public safety as well as private and federal properties.

However, properly used fire can

reduce hazardous fuels buildup in both wildland–urban interface (WUI) and non-WUI environments;

improve wildlife habitats by reducing the density of vegetation and changing plant species composition;

sustain or increase biological diversity;

improve woodland and shrub land by reducing plant density;

reduce susceptibility of plants to insect and disease outbreaks;

improve the quality and quantity of livestock forage;

improve the quantity of water available for municipalities and activities dependent on wetlands for their water supply.

Wildland Fire Management Policy and Guidance

In 2001, the Secretaries of Interior and Agriculture approved an update of the 1995 "Federal Fire Policy." 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 nine 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 fire 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 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.

Land use resource plans such as CCPs should address fire management considerations, guidance, and direction. FMPs are step-down processes from the

land use and habitat management plans, with more detail on fire suppression, fire use, and fire management activities.

Management Direction

The Eastern North Dakota Fire District will protect life, property, and other resources from wildland fire by safely suppressing all wildfires. The Service will use prescribed fire as well as manual and mechanical fuel treatments in an ecosystem context to protect federal and private property and for habitat management. The Service will apply fuels reduction activities in collaboration with federal, state, private, and nongovernmental partners. In addition, the Service will set priorities for fuels treatment based on the guidance for prioritization established in the goals and strategies outlined in the "U.S. Fish & 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. The following CARs located near the districts were identified in the *Federal Register* (August 17, 2001):

- Fort Totten
- St. Michels
- Crow Hill
- Tokio

The development of CWPPs is an ongoing process; Griggs and Traill counties are currently undergoing the process. As of February 2008, the following counties with Service fee-title land have developed CWPPs:

- Barnes County
- Burleigh County
- Kidder County
- Stutsman County

The Service will conduct all aspects of the fire management program in compliance with applicable laws, policies, and regulations. The districts and refuges within the Eastern North Dakota Fire District will maintain an FMP to accomplish the fire management goals described below. The Service will apply prescribed fire and manual and mechanical fuel treatments in a scientific way under selected weather and environmental conditions.

Fire Management Goals

The goals and strategies of the "U.S. Fish & Wildlife Service National Wildlife Refuge System Wildland Fire Management Program Strategic Plan" are consistent with policies of the U.S. Department of the Interior and the Service, "National Fire Plan" direction, the "President's Healthy Forest Initiative," the "10-Year Comprehensive Strategy and Implementation Plan," guidelines of the National Wildfire Coordinating Group, 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 the refuges vision statement for region 6: "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 districts and refuges in the Eastern North Dakota Fire District are to use prescribed fire and manual and mechanical treatments to (1) reduce the threat to life and property through hazardous fuels reduction treatments, 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 treatment methods to treat between 4,000 and 8,000 acres, on average, per year.

Strategies

The Service will use strategies and tactics that consider public and firefighter safety as well as resource values at risk. Wildland fire suppression, prescribed fire methods, manual and mechanical means, timing, and monitoring are described in more detail within the step-down FMP(s).

All management actions will use prescribed fire and manual 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 diverse ecosystem habitats.

The FMPs will outline the fuels treatment program for the districts. The Service will develop site-specific prescribed fire burn plans, 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. The districts will meet the Clean Air Act emission standards by adhering to the "North Dakota State Implementation Plan" requirements during all prescribed fire activities.

Fire Management Organization, Contacts, and Cooperation

Region 6 of the Service, using the approach of "fire management districts," will establish qualified fire management technical oversight for the districts. 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 (such as WPAs and refuges) and possibly that of interagency partners. The fire management workload consists of historical wildland fire suppression as well as historical and planned fuels treatments.

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

A new FMP will be developed for the entire Eastern North Dakota Fire District, which includes the five districts listed above, as well as the other districts and refuges within this fire district.

Appendix H

Fire Management Program for Wetland Management Districts Within the Western North Dakota Fire District

The Service has administrative and fire management responsibility for approximately 100,438 acres in fee title within the Audubon, Crosby, J. Clark Salyer, and Lostwood wetland management districts, which are within the Western North Dakota Fire District. This includes 374 WPAs, 9 national wildlife refuges, and 20 WDAs. The Service has no fire management responsibility for the approximate 292,440 acres of wetland and grassland easements it administers.

The Role of Fire

In ecosystems of the Great Plains, vegetation 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 disease, stimulating regeneration, cycling nutrients, and providing a diversity of habitats for plants and wildlife.

When fire or grazing is excluded from prairie landscapes, the fuel loadings increase quickly due to a build-up of thatch and invasion of woody vegetation. This increase in fuel loadings leads to a significant increase in a fire's resistance to control, which threatens firefighter and public safety as well as private and federal properties.

However, properly used fire can

reduce hazardous fuels buildup in both WUI and non-WUI environments;

improve firefighter ability to suppress unwanted wildfire;

improve native prairie habitats by reducing competition from invasive plant species and maintaining native vegetative composition;

reduce the encroachment of woody vegetation in prairie ecosystems;

sustain or increase biological diversity;

reduce susceptibility of plants to insect and disease outbreaks.

Wildland Fire Management Policy and Guidance

In 2001, the Secretaries of Interior and Agriculture approved an update of the 1995 "Federal Fire Policy." 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 nine 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 fire as an ecological process and natural "change agent" will be incorporated into the planning process.
- 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 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.

Land use resource plans such as CCPs should address fire management considerations, guidance, and direction. FMPs are step-down plans from the land use and habitat management plans, with more detail on fire suppression, fire use, and fire management activities.

Management Direction

The fire management goal for the wetland management districts is to use prescribed fire and manual, biological, and mechanical treatments to (1) reduce the threat to life and property through hazardous fuels reduction treatments, and (2) meet the habitat goals and objectives identified in this CCP.

The districts will protect life, property, and other resources from wildland fire by reducing the threat and severity of wildland fires through fuels reduction projects and safely suppressing all wildfires on Service lands. The Service will use prescribed fire as well as manual, biological, and mechanical fuel treatments to protect federal and private property by reducing hazardous fuels and to manage wildlife habitat. The Service will apply fuels reduction activities in collaboration with federal, state, private, and nongovernmental partners. In addition, the Service will set priorities for fuels treatment based on the guidance for prioritization established in the goals and strategies outlined in the "U.S. Fish & 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 CWPPs and CARs will be the primary focus. As of February 2008, no CARs as identified in the *Federal Register* are located within the Western North Dakota Fire District. Any additions or deletions to the CAR list are the responsibility of the state through coordination with interagency partners. The development of CWPPs is an ongoing process. As of February 2008, the following counties located within the Western North Dakota Fire District have developed CWPPs:

- Bottineau County
- McHenry County
- Mountrail County
- Williams County

The Service will conduct all aspects of the fire management program in compliance with applicable laws, policies, and regulations. On approval of the final CCP, the Service will develop an FMP for all district lands covered by the CCP. The FMP may require a separate environmental assessment if district managers deem necessary. The FMP may be done as (1) an FMP that covers the wetland management districts, (2) an FMP that covers the fire management district, or (3) an interagency FMP.

The Service will apply prescribed fire and manual, biological, and mechanical fuel treatments using the best available scientific guidance, given the existing weather and environmental conditions.

Fire Management Rationale and Considerations

Fire frequency in western and central North Dakota has been estimated to historically occur every 5–7 years (Barker and Whitman 1988). European settlement of North Dakota led to fire suppression or exclusion across the landscape. With this fire suppression and exclusion, woody vegetation encroached into both wetland and upland habitats.

The long-term goal of fire management across the Western North Dakota Fire District is to apply fire to the landscape at an interval that will maintain healthy native plant communities that are naturally resistant to catastrophic wildfire. Due to the suppression and exclusion of fire over the past several decades, a more aggressive approach is needed to address the buildup of hazardous fuel across the prairie.

Current fire occurrence within the districts has not been frequent enough to completely control invading shrubs and trees and reduce accumulated thatch. Monitoring of vegetation on Service lands in the Great Plains has shown that three to four prescribed fire treatments are usually needed to successfully reduce woody plant encroachment. Experience has shown prescribed fire to be much more efficient than mechanical or biological methods for reducing and removing woody plant encroachment and accumulated thatch. This level of application is needed at approximately 200 WPAs covering more than 45,000 acres. In addition to initial restoration, continued maintenance through periodic prescribed fires (once every 5–7 years) and biological treatments are needed on remaining areas.

A significant problem facing the districts in achieving fire management goals is the limited amount of qualified personnel available to plan and conduct prescribed fire and other fuels treatments. With additional staff and funding, the desired application of prescribed fire is to treat 15%–20% of the total burnable acreage with fire each year, which will return the historical fire regime to the landscape.

Prescribed fire temporarily reduces air quality by reducing visibility and releasing components through combustion. The Western North Dakota Fire District will meet the Clean Air Act emission standards by adhering to North Dakota Department of Health requirements during all prescribed fire activities.

The district staffs will work with partners to develop demonstrations, written information, and other methods of communicating to the public the benefits of prescribed fire. The Service will seek additional cooperative ventures for firefighter training and development of interagency agreements.

Fire Management Organization and Coordination

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

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

Appendix I

Bird Species of the Districts

Species	*USFWS Endangered Species List*	*North Dakota Species of Conservation Priority*	*Rare North Dakota Species*	*Birds of Conservation Concern*				*Species of Management Concern in Region 6*	*Game Birds Below Desired Condition*	*USFWS Migratory Bird Management Focal Species*	*PPJV Implementation Plan*	*PIF North American Landbird Conservation Plan*	*PIF Physiographic Area (PA) 37 Mixed-grass Prairie Plan*	*PIF PA 38 West River ES (No Plan)*	*PIF PA 40 Tall-grass Prairie Plan*	*North American Waterbird Conservation Plan*	*Northern Prairie and Parklands Waterbird Plan*	*U.S. Shorebird Plan, Northern Plains/ Prairie Potholes National and Regional Priority*	*Breeding Bird Survey Declining Species in North Dakota (1980–2005)*	*Breeding Bird Survey Declining Species in "Black" Prairie (1966–2005)*	*Breeding Bird Survey Declining Species in Drift Prairie (1966–2005)*	*Breeding Bird Survey Declining Species in Glaciated Missouri Plate (1966–2005)*	*Breeding Bird Survey Declining Species in Great Plains Roughlands (1966–2005)*	*National Audubon Society Watch List for North Dakota*	*Birds of the Prairie Pothole Region That Warrant Attention*
				BCR 11	*BCR 17*	*Region 6*	*National*																		
Citation Number (See end of table.)*	*1*	*2*	*3*	*4*				*5*			*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*					*15*	*16*
horned grebe		1									m		4				H								
eared grebe																	M								
pied-billed grebe													4		5										X
western grebe											m						H								
American white pelican		1															M								
double-crested cormorant								X		X															
American bittern		1		X				X			m		2		7		H								X
great blue heron																	M						X		
snowy egret																H									
green heron			S3																						
black-crowned night-heron																	M								
white-faced ibis								X								L									
trumpeter swan									X	X					1										
wood duck									X	X					2										
American wigeon									X	X															
mallard									X	X	w														
gadwall											w														
northern pintail		2							X	X	w														
northern shoveler											w														
cinnamon teal			S3																						
blue-winged teal											w										X				
canvasback		2						X	X																
redhead		2							X																
lesser scaup									X	X															
ringneck									X																
common goldeneye			S3																						
hooded merganser			S3												1										
northern harrier		2		X		X	X	X			l		2												X
Swainson's hawk		1		X		X	X	X			l	l													
ferruginous hawk		1		X	X	X	X			X	l		6												X
golden eagle		2	S3		X	X																			
bald eagle		2	S1					X			l		5		6										
merlin			S2																						
American kestrel																					X				

Species	USFWS Endangered Species List	North Dakota Species of Conservation Priority	Rare North Dakota Species	Birds of Conservation Concern				Species of Management Concern in Region 6	Game Birds Below Desired Condition	USFWS Migratory Bird Management Focal Species	PPJV Implementation Plan	PIF North American Landbird Conservation Plan	PIF Physiographic Area (PA) 37 Mixed-grass Prairie Plan	PIF PA 38 West River ES (No Plan)	PIF PA 40 Tall-grass Prairie Plan	North American Waterbird Conservation Plan	Northern Prairie and Parklands Waterbird Plan	U.S. Shorebird Plan, Northern Plains/ Prairie Potholes National and Regional Priority	Breeding Bird Survey Declining Species in North Dakota (1980–2005)	Breeding Bird Survey Declining Species in "Black" Prairie (1966–2005)	Breeding Bird Survey Declining Species in Drift Prairie (1966–2005)	Breeding Bird Survey Declining Species in Glaciated Missouri Plate (1966–2005)	Breeding Bird Survey Declining Species in Great Plains Roughlands (1966–2005)	National Audubon Society Watch List for North Dakota	Birds of the Prairie Pothole Region That Warrant Attention
				BCR 11	BCR 17	Region 6	National																		
Citation Number (See end of table.*)	1	2	3	4				5			6	7	8	9	10	11	12	13	14					15	16
prairie falcon		2	S3		X	X	X	X																	
peregrine falcon	E	3	S1	X	X	X	X			X															
sharp-tailed grouse		2									l	l	4												
greater prairie-chicken		2	S2								l	l	1		1										
greater sage grouse		2						X																	
American coot													4							X					
Virginia rail													4		7		M								X
sora													4		7										X
yellow rail		1	S2	X		X	X	X		X	m		1		1		H							X	X
whooping crane	E	3	G1							X															
sandhill crane										X															
American golden-plover					X	X	X			X	s							X							
piping plover	T	2	G3 S1 S2			X				X	s		1					X							X
American avocet		2									s							X							
solitary sandpiper				X		X	X																		
willet		1		X									2												X
upland sandpiper		1		X	X	X	X			X	s		4					X							
whimbrel							X																		
long-billed curlew		1	S2	X	X	X	X			X				X				X							X
Hudsonian godwit				X			X			X	s							X							
marbled godwit		1		X	X	X	X	X		X	s		1		3			X						X	X
ruddy turnstone											s							X							
red knot							X											X							
sanderling				X	X													X							
dunlin											s							X							
semipalmated sandpiper											s							X							
white-rumped sandpiper				X							s							X							
stilt sandpiper							X																		
short-billed dowitcher							X																		
buff-breasted sandpiper				X		X	X			X	s							X							
American woodcock									X	X	s							X							

Species	*USFWS Endangered Species List*	*North Dakota Species of Conservation Priority*	*Rare North Dakota Species*	*Birds of Conservation Concern*				*Species of Management Concern in Region 6*	*Game Birds Below Desired Condition*	*USFWS Migratory Bird Management Focal Species*	*PPJV Implementation Plan*	*PIF North American Landbird Conservation Plan*	*PIF Physiographic Area (PA) 37 Mixed-grass Prairie Plan*	*PIF PA 38 West River ES (No Plan)*	*PIF PA 40 Tall-grass Prairie Plan*	*North American Waterbird Conservation Plan*	*Northern Prairie and Parklands Waterbird Plan*	*U.S. Shorebird Plan, Northern Plains/ Prairie Potholes National and Regional Priority*	*Breeding Bird Survey Declining Species in North Dakota (1980–2005)*	*Breeding Bird Survey Declining Species in "Black" Prairie (1966–2005)*	*Breeding Bird Survey Declining Species in Drift Prairie (1966–2005)*	*Breeding Bird Survey Declining Species in Glaciated Missouri Plate (1966–2005)*	*Breeding Bird Survey Declining Species in Great Plains Roughlands (1966–2005)*	*National Audubon Society Watch List for North Dakota*	*Birds of the Prairie Pothole Region That Warrant Attention*
				BCR 11	*BCR 17*	*Region 6*	*National*																	
Citation Number (See end of table.)*	*1*	*2*	*3*	*4*				*5*			*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*					*15*	*16*
common snipe																				X					
Wilson's phalarope		1		X	X	X	X	X		X	s		2		7			X						X	X
Bonaparte's gull																M									
Franklin's gull		1									m		3		3	M	H								X
Caspian tern										X							M								
common tern							X			X							M								
least tern	E	2	S1				X	X		X			5			H									X
black tern		1						X		X	m		4		7		H			X					X
mourning dove										X															
black-billed cuckoo		1		X	X	X	X	X		X	l		4		1				X	X			X		
short-eared owl		2		X	X	X	X			X	l	l	3												X
burrowing owl		2		X	X	X	X			X	l		6									X			X
northern saw-whet owl										X															
red-headed woodpecker		2		X		X	X			X	l	l	3		2				X	X					
yellow-bellied sapsucker										X															
northern flicker											l				4				X	X	X		X		
pileated woodpecker			S3																						
olive-sided flycatcher							X			X		l													
willow flycatcher											l	l	4												
eastern kingbird													4												
western kingbird													4												
loggerhead shrike		2		X		X	X			X	l		6		7										X
warbling vireo													4												
Philadephia vireo			S3																						
Bell's vireo			S3			X	X				l	l	I											X	
American crow								X			l														
horned lark											l								X		X	X	X		
northern rough-winged swallow																				X					
bank swallow																			X						
house wren											l				5										
sedge wren		2					X			X	l		4		1										X
marsh wren											l		4		2					X					
veery								X													X				

Species	USFWS Endangered Species List	North Dakota Species of Conservation Priority	Rare North Dakota Species	Birds of Conservation Concern				Species of Management Concern in Region 6	Game Birds Below Desired Condition	USFWS Migratory Bird Management Focal Species	PPJV Implementation Plan	PIF North American Landbird Conservation Plan	PIF Physiographic Area (PA) 37 Mixed-grass Prairie Plan	PIF PA 38 West River ES (No Plan)	PIF PA 40 Tall-grass Prairie Plan	North American Waterbird Conservation Plan	Northern Prairie and Parklands Waterbird Plan	U.S. Shorebird Plan, Northern Plains/ Prairie Potholes National and Regional Priority	Breeding Bird Survey Declining Species in North Dakota (1980–2005)	Breeding Bird Survey Declining Species in "Black" Prairie (1966–2005)	Breeding Bird Survey Declining Species in Drift Prairie (1966–2005)	Breeding Bird Survey Declining Species in Glaciated Missouri Plate (1966–2005)	Breeding Bird Survey Declining Species in Great Plains Roughlands (1966–2005)	National Audubon Society Watch List for North Dakota	Birds of the Prairie Pothole Region That Warrant Attention
				BCR 11	BCR 17	Region 6	National																		
Citation Number (See end of table.*)	1	2	3	4				5			6	7	8	9	10	11	12	13	14					15	16
wood thrush							X			X														X	
Sprague's pipit		1	S3	X	X	X	X	X		X	l	l	1								X			X	X
chestnut-sided warbler			S3																						
ovenbird								X																	
dickcissel		2			X	X	X				l	l	3		3				X	X					
American tree sparrow											(l)	l													
clay-colored sparrow											l		4		7										X
Brewer's sparrow		3	S3		X	X	X																X		
Baird's sparrow		1		X	X	X	X	X		X	l	l	1	X					X				X	X	X
grasshopper sparrow		1		X	X	X	X	X		X	l	l	2		2				X	X			X		X
Le Conte's sparrow		2		X	X	X	X			X	l		1												X
Henslow's sparrow				X			X			X		l													
Nelson's sharp-tailed sparrow		1		X		X	X				l	l	1		1									X	X
vesper sparrow											l		4		5					X			X		
lark bunting		1						X			l	l	3	X					X						X
Harris' sparrow							X				(l)	l													
white-throated sparrow			S3																						
swamp sparrow			S3																						
McCown's longspur		3	S2	X	X	X	X	X			l	l	1	X										X	X
chestnut-collared longspur		1		X	X	X	X	X		X	l	l	4	X					X		X		X		
Smith's longspur							X			X	(l)	l													
Lapland longspur											(l)	l													
western meadowlark											l									X	X				
bobolink		2				X		X		X	l		3		1										X
brown-headed cowbird																				X	X				
yellow-headed blackbird											l									X					
red-winged blackbird											l														
rusty blackbird										X	(l)	l													
Total Number of Species	5	45	24	29	21	32	41	25	10	45	64	22	44	5	27	5	13	16	10	16	7	2	9	9	28

Species	*USFWS Endangered Species List*	*North Dakota Species of Conservation Priority*	*Rare North Dakota Species*	*Birds of Conservation Concern*				*Species of Management Concern in Region 6*	*Game Birds Below Desired Condition*	*USFWS Migratory Bird Management Focal Species*	*PPJV Implementation Plan*	*PIF North American Landbird Conservation Plan*	*PIF Physiographic Area (PA) 37 Mixed-grass Prairie Plan*	*PIF PA 38 West River ES (No Plan)*	*PIF PA 40 Tall-grass Prairie Plan*	*North American Waterbird Conservation Plan*	*Northern Prairie and Parklands Waterbird Plan*	*U.S. Shorebird Plan, Northern Plains/ Prairie Potholes National and Regional Priority*	*Breeding Bird Survey Declining Species in North Dakota (1980–2005)*	*Breeding Bird Survey Declining Species in "Black" Prairie (1966–2005)*	*Breeding Bird Survey Declining Species in Drift Prairie (1966–2005)*	*Breeding Bird Survey Declining Species in Glaciated Missouri Plate (1966–2005)*	*Breeding Bird Survey Declining Species in Great Plains Roughlands (1966–2005)*	*National Audubon Society Watch List for North Dakota*	*Birds of the Prairie Pothole Region That Warrant Attention*
				BCR 11	*BCR 17*	*Region 6*	*National*																		
Citation Number (See end of table.)*	*1*	*2*	*3*	*4*				*5*			*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*					*15*	*16*

**Citations*

1 USFWS Endangered Species List <http://ecos.fws.gov/tess_public/StateListing.do?state=ND&status=listed>
E=endangered, T=threatened

2 Comprehensive Wildlife Conservation Strategy
Table 1. North Dakota's 100 Species of Conservation Priority:
Level 1=Species having a high level of conservation priority in North Dakota or across their range, or a high rate of constituting the core of the species' breeding range, but non-"State Wildlife Grant" funding is not readily available to them.
Level 2=Species having a moderate level of conservation priority or a high level of conservation priority, but a substantial amount of non-"State Wildlife Grant" funding is available to them.
Level 3=Species having a moderate level of conservation priority, or a high level of conservation priority, but a substantial amount of non-"State Wildlife Grant" funding is available to them.

3 Rare North Dakota Species (North Dakota Natural Heritage Inventory 2002)
Natural Heritage Global Ranks:
G1=Critically imperiled. Critically imperiled globally because of extreme rarity or because of some factor of its biology making it especially vulnerable to extinction.
G2=Imperiled. Imperiled globally because of rarity or because of other factors demonstrably making it very vulnerable to extinction or elimination throughout its range.
G3=Vulnerable. Vulnerable globally either because it is very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction or elimination throughout its range.
Natural Heritage State Ranks:
S1=Critically imperiled. Critically imperiled in the state because of extreme rarity or because of some factor of its biology making it especially vulnerable to extirpation from the state.
S2=Imperiled. Imperiled in the state because of rarity or because of other factors making it very vulnerable to extirpation from the state.
S3=Vulnerable. Vulnerable in the state either because it is rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation.

4 Birds of Conservation Concern USFWS 2002.

5 USFWS Species of Management Concern 2005 <http://www.fws.gov/migratorybirds/reports/speccon/tblconts.html>

6 Prairie Pothole Joint Venture 2005 Implementation Plans
Waterfowl Plan: Focal species=w
Shorebird Plan: Conservation priority of regularly occurring shorebird species where the region is highly important to the population=s
Waterbird Plan: Conservation assessment of high in BCR 11=m
Landbird Plan: Native landbird species for which ≥25% of the continental population occurs in BCR 11 and Watch List=l or (l) for wintering

7 PIF North American Landbird Conservation Plan
Part 1, Table 1. PIF Species of Continental Importance for the United States and Canada.
Part 2, Table 7. Species of Continental Importance in the Prairie Avifaunal Biome.

8 PIF Bird Conservation Plan for the Northern Mixed-grass Prairie (Physiographic Area 37)—June 25, 1999
Table 1. Partners in Flight Priority Species.

9 PIF Bird Conservation Plan for the Northern Tallgrass Prairie (Physiographic Area 40)—August 4, 1998
Table 1. Partners in Flight Priority Species.

10 PIF West River Executive Summary (Physiographic Area 38) (*no plan*)
List of priority bird populations.

11 North American Waterbird Conservation Plan, version 1
Table 2. Conservation Status and Distribution of Colonial Waterbirds

12 Northern Prairie and Parklands Waterbird Conservation Plan—2004
Table 7. Conservation Vulnerability Rankings (High [H] and Moderate [M] Concern)

13 U.S. Shorebird Plan and Northern Plains/Prairie Potholes Regional Shorebird Plan
Table 2. National and Regional Priority Score ≥ 4

14 USGS North American Breeding Bird Survey Trend Results <http://www.mbr-pwrc.usgs.gov/bbs/reglist05.html>

15 National Audubon Society Watch List for North Dakota <http://audubon2.org/webapp/watchlist/viewWatchlist.jsp>

16 Conservation Planning in the Prairie Pothole Region of the United States: Integration Between an Existing Waterfowl Plan and an Emerging Non-game Bird Model (David N. Pashley and Rick Warhurst)
Table 1. Birds of the Prairie Pothole Region That Warrant Conservation Attention

Appendix J

Primary and Secondary Bird Species of the North Dakota Prairie

The characteristic breeding birds are categorized according to relative abundance, as follows:

- Primary species that are often common or abundant.
- Secondary species that are usually fairly common.
- Tertiary, or minor, species that are uncommon or rare.

The primary and secondary bird species in North Dakota are listed by habitat type below.

Mixed-grass Prairie

Primary Species

gadwall
mallard
northern pintail
blue-winged teal
northern shoveler
American coot
black tern
mourning dove
horned lark
western meadowlark
red-winged blackbird
yellow-headed blackbird
brown-headed cowbird
Savannah sparrow
clay-colored sparrow
chestnut-collared longspur

Secondary Species

eared grebe
pied-billed grebe
American bittern
black-crowned night-heron
American wigeon
green-winged teal
canvasback
redhead
ruddy duck
Swainson's hawk
red-tailed hawk
northern harrier
sharp-tailed grouse
ring-necked pheasant
gray partridge
sora
killdeer
upland plover
willet
marbled godwit
American avocet
Wilson's phalarope
Franklin's gull
ring-billed gull
black-billed cuckoo
northern flicker
eastern kingbird
western kingbird
willow flycatcher
bank swallow
barn swallow
cliff swallow
common crow
house wren
marsh wren
brown thrasher
gray catbird
American robin
cedar waxwing
yellow warbler
common yellowthroat
house sparrow
bobolink
common grackle
American goldfinch
lark bunting
Baird's sparrow
grasshopper sparrow
vesper sparrow
song sparrow
great horned owl

Tall-grass Prairie

Primary Species

mourning dove
horned lark
common crow
western meadowlark
common grackle
brown-headed cowbird

Secondary Species

red-tailed hawk
American kestrel
killdeer
black-billed cuckoo
great horned owl
northern flicker
eastern kingbird
western kingbird
barn swallow
blue jay
house wren
brown thrasher
gray catbird
American robin
cedar waxwing
starling
warbling vireo
yellow warbler
common yellowthroat
house sparrow
bobolink
red-winged blackbird
Baltimore oriole
American goldfinch
dickcissel
Savannah sparrow
vesper sparrow
clay-colored sparrow
song sparrow

Turtle Mountains

Primary Species

mallard
blue-winged teal
broad-winged hawk
red-tailed hawk
ruffed grouse
yellow-bellied sapsucker
northern flicker
least flycatcher
common crow
American robin
veery
red-eyed vireo
yellow warbler
American redstart
red-winged blackbird
brown-headed cowbird
Baltimore oriole
rose-breasted grosbeak
clay-colored sparrow

Secondary Species

common loon
red-necked grebe
eared grebe
horned grebe
pied-billed grebe
double-crested cormorant
American bittern
American wigeon
green-winged teal
northern shoveler
canvasback
redhead
ring-necked duck
ruddy duck
Cooper's hawk
northern harrier
sora
American coot
killdeer
spotted sandpiper
Wilson's phalarope
black tern
mourning dove
black-billed cuckoo
great horned owl
common nighthawk
belted kingfisher
ruby-throated hummingbird
hairy woodpecker
eastern kingbird
willow flycatcher
tree swallow
purple martin
barn swallow
black-capped chickadee
house wren
long-billed marsh wren
short-billed marsh wren
brown thrasher
gray catbird
cedar waxwing
warbling vireo
northern waterthrush
common yellowthroat
mourning warbler
bobolink
western meadowlark
yellow-headed blackbird
common grackle
American goldfinch
Savannah sparrow
vesper sparrow
chipping sparrow
song sparrow

Appendix K

Evaluation Criteria for Easements

The Prairie Pothole Region of the United States supports some of the highest breeding duck populations in the nation and is particularly important to upland-nesting species such as mallard, northern pintail, gadwall, blue-winged teal, and northern shoveler. The Prairie Pothole Region of North Dakota and South Dakota has approximately 7% of the principal breeding area for ducks in North America; this area supported >20% of all breeding ducks in the traditional survey area during 1996–2005. In addition to the importance of the Prairie Pothole Region to duck populations, the region also provides critical breeding and migration habitat for many species of shorebirds, waterbirds, and grassland birds.

The Small Wetlands Acquisition Program was created to perpetuate migratory bird populations, particularly waterfowl, by acquisition and maintenance of critical breeding habitat in the Prairie Pothole Region. The Service acquires waterfowl production areas comprised of fee-title lands and grassland and wetland easements to fulfill the goals of this program.

Conservation Strategy

To guide the acquisition of grassland and wetland easements in the Prairie Pothole Region of region 6, the "Dakota Working Group" developed and adopted a conservation strategy in 2004 that focuses on the five primary upland-nesting ducks, which provided for benefits to other trust species. This strategy applies an adaptive approach to integrate biological priorities with current socioeconomic threats to habitat to target acquisition of grassland and wetland easements for the Small Wetlands Acquisition Program. The goal of this strategy is to permanently protect adequate grassland and wetland habitat to support >90% of the duck productivity observed in the region between 1987 and 1998. This goal equates to approximately 3.6 million breeding duck pairs and a recruitment rate of 0.6.

The conservation strategy consists of two primary elements:

- Protection of the capacity of the landscape to attract breeding ducks through the acquisition of wetland easements.
- Protection of the productivity of breeding ducks through the acquisition of grassland easements.

The Service used models developed by the HAPET to identify the extent and location of grasslands and wetlands required to meet the protection goal. These models indicated that protection of all grasslands and wetlands within areas accessible to >25 pairs of ducks, plus a 1-mile buffer, would meet the conservation goal of protecting adequate habitat to support >90% of the duck productivity. It is currently estimated that an additional 1.4 million high-priority wetland acres and 10.4–16 million grassland acres are needed to meet the goal.

This conservation strategy is based on the knowledge that breeding duck distribution is determined by the wetland community, while reproductive success is determined by the characteristics of surrounding wetlands and uplands and is positively related to the amount of perennial grass cover in the landscape. Due to the willingness of hens to travel some distance from core wetlands to nesting cover, grassland protection is most effective when applied to areas accessible to the greatest number of hens. HAPET models indicated that if all grasslands accessible to >25 duck pairs were protected, they would be accessible to >90% of the breeding duck population. Due to the landscape influences of surrounding grassland on duck nest success, a 1-mile buffer was added to the >25 duck pair zone. It is assumed that protection of grasslands accessible to >25 duck pairs, plus supporting grassland within 1 mile of these areas, will maintain adequate nesting habitat. In addition, protection of wetlands within this same area will maintain adequate breeding pair and brood habitat for >90% of the duck population.

Wetland Easement Prioritization

Priority areas will be identified by HAPET models and updated as new information becomes available. The Service will also periodically update short-term objectives to reflect changes in opportunities and risks. Opportunities for new protection will decrease through time as more of the remaining habitat is either protected or converted to cropland.

Acknowledging that, in addition to ducks, many other trust species benefit from wetland protection and that risk of wetland drainage varies among wetlands, the Service adopted a decision tree to integrate the benefits and risk factors of multiple trust species into the prioritization process for wetland easements.

Decision Tree

The decision tree identifies hierarchical priorities that incorporate risk of drainage and consider benefits to other priority trust species, while preventing lower priorities from inappropriately influencing higher-level priorities. The decision tree (see figure 13, chapter 4) portrays the structure of the decisionmaking process, while the associated map (see figure 12, chapter 4) shows the distribution of conservation opportunities resulting from application of spatial models driven by the decisionmaking process.

Duck Biological Factors

Protection of wetlands in areas accessible to >25 duck pairs, plus a 1-mile buffer, is the primary determinant for prioritizing wetland easements. In order for areas identified as high priority for acquisition of grassland easements (nesting habitat) to continue to be productive, the associated high-priority wetlands, which attract and support breeding duck pairs to an area, also must be protected. However, protection of these wetlands is necessary regardless of the habitat within which they occur.

Temporary wetlands, seasonal wetlands, and small (<1 acre) semipermanent wetlands attract higher densities of ducks than more permanent and larger wetlands, although all associated wetlands contribute to attracting duck pairs, Short-term objectives were set to prioritize wetlands supporting the highest densities of breeding pairs. These wetlands were divided into the following three categories:

- temporary wetlands, seasonal wetlands, and semipermanent wetlands ≤1 acre
- semipermanent wetlands >1–25 acres
- semipermanent wetlands >25 acres and lakes

Risk Factors

Because the risk of wetland drainage differs among wetlands, risk criteria were incorporated into the prioritization process. These risk criteria consider size and class of the wetland and surrounding land use. Drainage history in the Prairie Pothole Region, as well as numerous past efforts to modify or remove "Swampbuster Provisions" of the farm bill, demonstrate that the risk of wetland drainage is highest and most immediate for the smaller, less permanent wetlands embedded in cropland.

Current information suggests that about 70% of all breeding waterfowl pairs in the Prairie Pothole Region occur in wetlands in crop fields. The Service adopted short-term objectives for new wetland easement acquisitions to allow a reasonable level of flexibility to accommodate local opportunities and needs, maximize acquisition of the highest priority wetlands, and remain consistent with biological priorities. These short-term objectives apply five priority levels to wetlands within priority waterfowl areas, based on the risk of wetlands being drained and the capacity of wetlands to attract duck pairs.

Wetlands Embedded in Cropland

Priority 1: Temporary wetlands, seasonal wetlands, or semipermanent wetlands <1 acre

Priority 2: Semipermanent wetlands or lake wetlands <25 acres

Wetlands Embedded in Grassland

Priority 3: Temporary wetlands, seasonal wetlands, or semipermanent wetlands <1 acre

Priority 4: Semipermanent wetlands or lake wetlands <25 acres

Wetlands Embedded in Cropland or Grassland

Priority 5: Wetlands >25 acres

The Service applies these priority levels to potential easement tracts based on the highest priority (1–5) wetland associated with a tract. Wetland easement offers under consideration should be prioritized to acquire the highest priority tracts available for priorities 1–4. Although acquisition of some priority 5 wetlands may be necessary to acquire higher priority wetlands, this should be minimized when possible. Priority 5 wetlands are generally at low risk of drainage due to their large size and water permanency.

Non-duck Biological Factors

Secondary priorities focus on wetland easements that would benefit recovery efforts for listed species (endangered or threatened); these are noted as A or B in the decision tree (figure 13, chapter 4). Wetland easements that would be appropriate conservation actions for migratory birds (excluding the five primary upland-nesting duck species) are the third highest priority; these are noted as C or D in the decision tree (figure 13, chapter 4).

Managers will determine when and which species to incorporate into the prioritization process for their respective areas of responsibility. The HAPET will provide assistance with model development and integration of these additional species.

Pending incorporation of endangered species or other migratory bird priorities, wetland easement prioritization will occur based solely on the duck prioritization criterion. Inclusion of endangered species and other migratory birds will further refine selections within, but not between, priority 1–5 wetland tracts (for example, priority 2–5 tracts with endangered species or other migratory bird benefits do not rise to a higher priority than priority 1 tracts without these additional species benefits).

Additional Criteria

After using the decision tree to identify the biological priority zone for a tract, the below criteria will be applied prior to final acceptance of a tract for easement

purchase. These criteria provide additional guidance on current policies and logistical and economic considerations relevant to wetland easement acquisition.

Highest Habitat Value per Dollar Spent

For tracts within the same biological priority zone, preference will be given to parcels where the Service can acquire the best habitat at the lowest financial and administrative cost. The "Government Accounting Office Report of September 2007" (page 31) stated that "analysis indicate that an important opportunity for gains in efficiency would be for the Service to target the lowest cost easements in the high priority zone." In addition to biological prioritization, the following guidance will further aid in reaching the Service's acquisition goals as quickly and efficiently as possible:

1. When funds are limiting, place emphasis on acquisition of tracts that are the lowest cost per acre.
2. When personnel needed to complete the required evaluations, site visits, document preparation, etc., are limiting, place emphasis on acquisition of larger tracts.

Other Funding Sources

If a district has secured a partner(s) and additional funding and the proposed acquisition lies in a biological priority area, the Service may consider meeting the terms of the partner's contribution. For example, if a tract would be excluded based on the "highest habitat value per dollar" criterion, but the partner(s) are willing to contribute adequate support to overcome the deficit, the tract should be acquired.

Circumstances in a particular district may require the easement acquisition be completed using grants through the North American Wetlands Conservation Act, Ducks Unlimited contributions, Pheasants Forever monies, or any other special funds that may become available. Acquisitions of this type need to be coordinated with the regional realty division chief, to make the realty division aware of the special monies available.

Funding Restrictions

In North Dakota, the Service's ability to acquire wetland easements is limited by an agreement with the governor of North Dakota. This agreement places a county-level cap on the number of wetland acres that the Service can acquire under easement using funds from the MBCF. As a result, the Service should use funds from the MBCF only for the highest risk wetlands (priorities 1 and 2) in North Dakota and should use other funding sources for acquisition of lower risk wetlands (priorities 3 and 4).

Grassland Easement Prioritization

Priority areas will be identified by HAPET models and updated as new information becomes available. The Service will also periodically update short-term objectives to reflect changes in opportunities and risks. Opportunities for new protection will decrease through time as more of the remaining habitat is either protected or converted to cropland.

Acknowledging that, in addition to ducks, many other trust species benefit from grassland protection and that risk of grassland loss is high throughout the Prairie Pothole Region, the Service adopted a decision tree to integrate the benefits and risk factors of multiple trust species into the prioritization process for grassland easements.

Decision Tree

The decision tree identifies hierarchical priorities that incorporate risk of loss and consider benefits to other priority trust species, while preventing lower priorities from inappropriately influencing higher-level priorities. The decision tree (see figure 15, chapter 4) portrays the structure of the decisionmaking process, while the associated map (see figure 14, chapter 4) shows the distribution of conservation opportunities resulting from application of spatial models driven by the decisionmaking process.

Duck Biological Factors

Grasslands accessible to the greatest number of breeding duck pairs will be the primary determinant for prioritizing grassland easements. Although the long-term goal for grassland protection includes all grasslands accessible to >25 duck pairs, plus a 1-mile buffer, short-term objectives were developed. These objectives were set to prioritize grasslands accessible to the greatest number of breeding ducks. Grasslands were divided into the following three categories:

- grassland accessible to >60 duck pairs
- grassland accessible to 40–60 duck pairs
- grassland accessible to 25–40 duck pairs

Risk Factors

Threats to grasslands are extremely high throughout the Prairie Pothole Region due to (1) the pervasive and dynamic nature of grassland loss resulting from changes in landowner demographics, (2) farm implement size, efficiency, and capability, (3) crop genetics and types, and (4) markets for agricultural commodities. In addition to these risk factors, waterfowl distribution varies spatially and temporally due to variations in precipitation.

Because of the high degree and broad distribution of risks and the spatial and temporal variation in habitat conditions in the Prairie Pothole Region, the Service's

best strategy for grassland protection is to apply the above prioritization within each district to protect the best areas within each district, rather than focusing efforts on any particular district.

The Service adopted short-term objectives for new grassland easement acquisitions to allow a reasonable level of flexibility to accommodate local opportunities and needs, maximize acquisition of the highest priority grasslands, and remain consistent with biological priorities. Three priority levels are based on the risk of grassland conversion and the accessibility of grasslands to nesting ducks. Within these priority levels, annual targets will ensure that new grassland easements are accessible to the greatest number of duck pairs.

- *Priority 1:* Acquire ≥80% of new acres in areas accessible to >60 duck pairs per square mile.
- *Priority 2:* Acquire ≤15% of new acres in areas accessible to 40–60 duck pairs per square mile.
- *Priority 3:* Acquire ≤5% of new acres in areas accessible to 25–40 duck pairs per square mile.

Non-duck Biological Factors

Secondary priorities focus on grassland easements that would benefit recovery efforts for listed species (endangered or threatened); these are noted as A or B in the decision tree (figure 15, chapter 4). Grassland easements that would be appropriate conservation actions for migratory birds (excluding the five primary upland-nesting duck species) are the third highest priority; these are noted as C or D in the decision tree (figure 15, chapter 4).

Managers will determine when and which species to incorporate into the prioritization process for their respective areas of responsibility. The HAPET will provide assistance with model development and integration of these additional species.

Pending incorporation of endangered species or other migratory bird priorities, grassland easement prioritization will occur based solely on the duck prioritization criterion. Inclusion of endangered species and other migratory birds will further refine selections within, but not between, priority 1–3 grassland tracts (for example, priority 2 or 3 tracts with endangered species or other migratory bird benefits do not rise to a higher priority than priority 1 tracts without these additional species benefits).

Additional Criteria

After using the decision tree to identify the biological priority zone for a tract, the following criteria will be applied prior to final acceptance of a tract for easement purchase. These criteria provide additional guidance on current policies and logistical and economic considerations relevant to grassland easement acquisition.

Highest Habitat Value per Dollar Spent

For tracts within the same biological priority zone, preference will be given to parcels where the Service can acquire the best habitat at the lowest financial and administrative cost. The "Government Accounting Office Report of September 2007" (page 31) stated that "analysis indicate that an important opportunity for gains in efficiency would be for the Service to target the lowest cost easements in the high priority zone." In addition to biological prioritization, the following guidance will further aid in reaching the Service's acquisition goals as quickly and efficiently as possible:

1. When funds are limiting, place emphasis on acquisition of tracts that are the lowest cost per acre.
2. When personnel needed to complete the required evaluations, site visits, document preparation, etc., are limiting, place emphasis on acquisition of larger tracts.

Vegetation Type

For tracts within the same biological priority zone, preference will be given to unbroken prairie. Protection of all grassland habitats within priority areas is necessary to meet the conservation strategy goals. Tame grass is not precluded from acquisition; however, preference will be given to unbroken prairie for the following reasons:

1. The biological diversity and ecological functions associated with native prairie habitats are of value to numerous trust species. Although some of the diversity and functionality can be restored, it is unlikely that the full functionality of native prairie ecosystems can ever be fully restored once lost.
2. Planted grass requires greater long-term management input by landowners and, therefore, increased support and enforcement efforts by the Service.
3. Conservation of unbroken prairie is more acceptable to state and local governments, and, therefore, receives greater support than conservation of planted grass. Many view conservation of unbroken prairie as being supportive of the ranching industry, while others view conservation of planted grass as a conflict with the farming industry. Sensitivity to these views will enable the Service to more effectively acquire grassland easements.

Other Funding Sources

If a district has secured a partner(s) and additional funding and the proposed acquisition lies in a biological priority area, the Service may consider meeting the terms of the partner's contribution. For example, if a tract would be excluded based on the "highest habitat value per dollar" criterion, but the

partner(s) are willing to contribute adequate support to overcome the deficit, the tract should be acquired.

Circumstances in a particular district may require the easement acquisition be completed using grants through the North American Wetlands Conservation Act, Ducks Unlimited contributions, Pheasants Forever monies, or any other special funds that may become available. Acquisitions of this type need to be coordinated with the regional realty division chief, to make the realty division aware of the special monies available.

Appendix L

North Dakota's Threatened and Endangered Species

Group	*Common Name*	*Scientific Name*	*Status*
Plants	western prairie fringed orchid	*Platanthera praeclara*	threatened
Insects	Dakota skipper	*Hesperia dacotae*	candidate
Birds	interior least tern	*Sterna antillarum*	endangered
	whooping crane	*Grus americana*	endangered
	piping plover	*Charadrius melodus*	threatened
Fishes	pallid sturgeon	*Scaphirhynchus albus*	endangered
Mammals	black-footed ferret	*Mustela nigripes*	endangered
	gray wolf	*Canis lupus*	endangered

Appendix M

Priority-setting Example for Native Prairie Portions of Fee-title Lands

The following is an example of a district-specific step-down plan (from J. Clark Salyer Wetland Management District) for setting priorities for native prairie portions of fee-title lands. The example is based on vegetative data collected by district staff using the belt-transect method.

(Example) Grassland Objective 1

By 3 years after CCP approval, use current vegetation inventory data and landscape considerations to prioritize each grassland tract with ≥55 acres of native prairie as either high or low management priority. Identify areas that are in the most pristine condition and areas with the highest restoration potential.

Criteria for High-priority Units

Floristic composition: Vegetation is characterized by >30% mean frequency of pristine, native herbaceous types (plant groups 41–43, and 46–48 (Grant et al. 2004), plus native herbaceous-dominated vegetation with Kentucky bluegrass as the main subdominant (plant group 53).

Floristic potential: Vegetation is characterized by <30% mean frequency of smooth brome-dominated vegetation (plant groups 61–62).

Landscape context: (1) The unit is contiguous with the best examples of local native prairie habitat; or (2) the unit is adjacent to other high-priority, prairie tracts or tracts of native prairie adjacent to district lands under non-Service ownership (especially important if the unit has relatively little native prairie, that is <40 acres).

Criteria for Low-priority Units

Floristic composition: Vegetation is characterized by <30% mean frequency of pristine, native herbaceous types (plant groups 41–43 and 46–48 (Grant et al. 2004), plus native herbaceous-dominated vegetation with Kentucky bluegrass as the main subdominant (plant group 53).

Floristic potential: Vegetation is characterized by >30% mean frequency of smooth brome-dominated vegetation (plant groups 61–62).

Landscape context: The unit is small (<100 acres) and/or is not contiguous with significant native prairie habitat.

Rationale

Target threshold percentages for determining high-priority units and low-priority units is subjective and based on district lands' grassland intactness or resources. Staff at J. Clark Salyer Wetland Management District used recent inventory data to set threshold percentages for floristic composition and floristic potential. As staff increases, threshold levels could be lowered as more time and resources are dedicated to restoration. Recent inventory data suggest that relatively intact native herbaceous flora is uncommon in the district—about 13% of tracts are dominated by native grasses and forbs. Native warm-season grasses are especially uncommon. Under appropriate management, warm-season grasses can displace introduced cool-season grasses such as smooth brome or Kentucky bluegrass, if the former are sufficiently abundant (>20% frequency) (Todd Grant, biologist, USFWS, North Dakota, personal communication).

(Example) Grassland Objective 2

On high-priority units, use precisely timed disturbance (principally fire and grazing) to restore or maintain vegetation to the following standards:

- Composition on each unit includes (1) >75% pristine native and native-dominated/bluegrass-subdominant vegetation (plant groups 41–43, 46–48, and 53), (2) <30% smooth brome-dominated vegetation (plant groups 61–62), and (3) <20% low shrub-dominated vegetation (plant groups 11–17) (based on percentage frequency of occurrence on belt transects, per Grant et al. 2004).
- Native trees and tall shrubs are absent or nearly so, comprising <0.1% land cover on each unit; nonnative or planted vegetation is rare.
- Leafy spurge is decreased by >50% on each unit, to <1% frequency (frequencies per belt transects; most high-priority units currently have little to no spurge), absinth wormwood is actively controlled, and yellow toadflax and other newly appearing species of noxious weed that pose a threat to the drift prairie are eliminated within 5 years of initial detection.

Strategies

– Defoliate, typically by livestock grazing or fire, at least 2 of every 3 years. An ideal management

sequence over 5 years might be BGGGR (burn, graze, graze, graze, rest), and then reinitiate the sequence. The area covered by trees, tall shrubs, and low shrubs would be incrementally reduced with this burning frequency.

– Primarily use prescribed fire when smooth brome plants are at least in the 4- to 5-leaf stage, but not yet showing an inflorescence, this generally occurs during a narrow mid-May through early June window (may vary by area). A less preferred option is to burn in fall in anticipation of a negative, winter drought effect on smooth brome and Kentucky bluegrass.

– Graze mainly during May through August or September, via a rotation approach with many (7–10) relatively small grazing cells (for example, 40–60 acres) per unit and short grazing periods (4–7 days per cell). Adjust stocking rates to facilitate regrazing of individual smooth brome plants at least once within a grazing period, but move livestock to the next cell before native plants are regrazed. Season-long grazing may be acceptable when logistics preclude rotational grazing.

– Apply early season, high-intensity grazing that targets brome grass.

– Annually survey for noxious weeds on native prairie tracts.

Rationale

This objective focuses on the restoration of floristic composition. Smooth brome, Kentucky bluegrass, and other introduced plants are prevalent in native prairie across North Dakota. Kentucky bluegrass tends to increase under prolonged rest or with grazing, but decreases with fire especially when burning occurs during stem elongation or in dry years. Smooth brome also increases under rest, but (in contrast to Kentucky bluegrass) appears sensitive to repeated grazing but unaffected or variably affected by prescribed fire. A strategy to improve competitive abilities of native herbaceous plants should match the types, timing, and frequencies of disturbances under which these plants evolved. Target threshold percentage goals for the high-priority units are subjective and based on the district's grassland intactness and staff resource levels. The district staff used recent inventory data to set the threshold percentages for floristic composition and floristic potential. It is anticipated these threshold levels are based on grassland intactness specific to J. Clark Salyer Wetland Management District and will not change due to staff or resources.

At the district, smooth-brome-dominated plant groups may be less dominant than Kentucky-bluegrass-dominated plant groups. This may not be true in other districts in North Dakota. Smooth brome may be less competitive than native plants or Kentucky bluegrass in the relatively poor sandy soils of McHenry and Pierce counties, where the majority of the WPAs are located within J. Clark Salyer Wetland Management District. Of the two invasive grass species, smooth brome generally seems more difficult to control once established and more significantly alters the quality and structure of native prairie. Therefore, restoration management should focus on strategies to reduce brome.

(Example) Grassland Objective 3

On low-priority prairie units, apply disturbance (principally fire or grazing) every 5–8 years to remove plant litter, restore plant vigor, reverse woody plant expansion, and provide a mix of structural types that include (1) relatively short–sparse vegetation for species such as northern pintail, killdeer, horned lark, and Brewer's blackbird, (2) moderately short vegetation for species such as blue-winged teal and upland sandpiper, and (3) tall–dense vegetation for species such as mallard, short-eared owl, Le Conte's sparrow, and bobolink.

Although varying widely across units, total area (the sum of all units) should have the following characteristics:

- One-fourth of the area in 0- to 1-year postdisturbance, one-fourth in 2–3 years postdisturbance, and one-half in 4–6+ years postdisturbance—corresponding roughly to a structure of <2 inches VOR, 2–3.9 inches VOR, and >3.9 inches VOR (mean VORs in early spring, per Robel et al. 1970).
- Native trees and tall shrubs compose <0.2% land cover on each tract and all nonnative woody vegetation and planted, native woody vegetation is eliminated from at least half of the units.
- Leafy spurge frequency is maintained at <2% frequency, absinth wormwood is actively controlled and yellow toadflax and other newly appearing species of noxious weed that pose a threat to native prairie are eliminated within 5 years of initial detection.

Rationale

This objective focuses on providing vegetation structural diversity, emphasizing structure that is moderately short to tall–dense. Given current and projected staff and funding, low-priority native prairie tracts are unlikely to be restored to a state where native herbaceous vegetation is a widely noticeable or otherwise common vegetative component. However, with modest effort, the prevalent, introduced cool-season grasses and scattered low shrub can be managed to provide a mix of postdisturbance structural types attractive to a broad array of waterfowl and other grassland bird species.

These units can provide structural diversity in vegetation height and density, while preserving extensive grasslands used by species of birds that require large undisturbed grassland patches. Effects associated with edge-dominated, highly fragmented grassland are also reduced.

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