

# Glossary

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

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

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

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

**alleles**—An alternative form of a gene that is one member of a pair.

**alluvial**—Relating to, found in, or composed of sand, silt, clay, gravel, or other matter deposited by flowing water.

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

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

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

**belt-transect method**—An ecological survey method which divides the area being surveyed into long, narrow, rectangular plots, which is further divided into regular blocks.

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

**biological diversity, also biodiversity**—The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur

(Service Manual 052 FW 1.12B). The National Wildlife Refuge System’s focus is on indigenous species, biotic communities, and ecological processes.

**biotic**—Pertaining to life or living organisms; caused, produced by, or comprised of living organisms.

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

**biotic**—Pertaining to life or living organisms; caused, produced by, or comprised of living organisms.

**carbon sequestration**—The capture and secure storage of carbon that would otherwise be emitted or remain in the atmosphere.

**cervids**—Any of various hoofed mammals of the family Cervidae.

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

**compatibility determination**—*See* compatible use.

**compatible use**—A wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the director of the U.S. Fish and Wildlife Service, will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge (Draft Service Manual 603 FW 3.6). A compatibility determination supports the 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 Service Manual 602 FW 1.5).

**concern**—*See* issue.

**cool-season grasses**—Grasses that begin growth earlier in the season and often become dormant in the summer. These grasses will germinate at lower temperatures. Examples of cool-season grasses at the

refuge are western wheatgrass, needle and thread, and green needlegrass.

**coulee**—A valley or drainage landform such as a pond or creek.

**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 over 50 years old. They include prehistoric, historic, and architectural sites, artifacts, historical records, and traditional cultural properties—including traditional use areas for American Indians—that may or may not have material evidence.

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

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

**ecotonal**—Transitioning between two plant communities, such as forest to prairie.

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

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

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

**endemic**—Occurs naturally in a certain region or whose distribution is relatively limited to a particular locality.

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

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

**exudate**—Fluid found in lesions or areas of inflammation.

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

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

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

**flora**—All the plant species of an area.

**floristics**—The composition of plant associations.

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

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

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

**germ plasm**—A collection of genetic resources for an organism.

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

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

**graminoid**—Grasses or grasslike plants such as sedges and rushes.

**grassland tract**—A contiguous area of grassland without fragmentation.

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

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

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

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

**indigenous**—Originating or occurring naturally in a particular place.

**integrated pest management (IPM)**—Methods of managing undesirable species such as invasive plants; education, prevention, physical or mechanical methods of control, biological control, responsible chemical use, and cultural methods.

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

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

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

**lacustrine**—Of or pertaining to a lake.

**management alternative**—*See* alternative.

**mesic**—Of, pertaining to, or adapted to an environment having a balanced supply of moisture.

**meta-population**—A group of spatially separated populations of the same species which interact in some way.

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

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

**mission**—Succinct statement of purpose or reason for being, or both.

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

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

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

**moraine**—Unconsolidated debris deposited by a glacier.

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

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

**National Wildlife Refuge System Improvement Act of 1997 (Improvement Act)**—Sets the mission and the administrative policy for all refuges in the National Wildlife Refuge System; defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation, wildlife 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; requires a comprehensive conservation plan for each refuge by the year 2012. This Act amended portions of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966.

**native species**—A species that historically occurred or currently occurs in that ecosystem; does not include species that are present in an ecosystem as a result of an introduction.

**necropsy**—A postmortem examination.

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

**nongovernmental organization**—Any group that is not composed of federal, state, tribal, county, city, town, local, or other governmental entities.

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

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

**palustrine**—Relating to a system of inland, nontidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface). Palustrine wetlands range from permanently saturated or flooded land (as in marshes, swamps, and lake shores) to land that is wet only seasonally.

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

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

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

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

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

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

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

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

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

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

**refuge**—Sullys Hill National Game Preserve.

**refuge purpose**—*See* purpose of the refuge.

**Refuge System**—*See* National Wildlife Refuge System.

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

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

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

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

**riverine**—Living in or on the bank of a river. While riparian is primarily to refer to the living things on the banks of the river, riverine refers to living things occurring on the banks or in the river.

**scarification**—To slit or soften the outer coats of seeds to speed up germination. Fire can be used to scarify.

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

**scouring**—Removal of earth or rock by the action of running water or wind-eroding material.

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

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

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

**shorebird**—Any of a suborder (*Charadrii*) of birds, such as a plover or a snipe, that frequent the seashore or mud flat areas.

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

**step-down management plan**—A plan that provides the details necessary to implement management strategies identified in the comprehensive conservation plan (Draft Service Manual 602 FW 1.5).

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

**threatened species, federal**—Species listed under the Endangered Species Act of 1973, as amended, that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

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

**trophic level**—The position a species occupies in a food chain.

**trust resource**—See federal trust resource.

**trust species**—See federal trust species.

**U.S. Fish and Wildlife Service (Service, USFWS, FWS)**—The principal federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people. The Service manages the 93-million-acre National Wildlife Refuge System comprised of more than 530 national wildlife refuges

and thousands of waterfowl production areas. It also operates 65 national fish hatcheries and 78 ecological service field stations, the agency enforces federal wildlife laws, manages migratory bird populations, restores national significant fisheries, conserves and restores wildlife habitat such as wetlands, administers the Endangered Species Act, and helps foreign governments with their conservation efforts. It also oversees the federal aid program that distributes millions of dollars in excise taxes on fishing and hunting equipment to state wildlife agencies.

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

**ungulate**—A hooved animal such as a white-tailed deer or bison.

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

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

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

**wading bird**—A bird with long legs that enable it to wade in shallow water; wading birds include egrets, great blue herons, black-crowned night-herons, and bitterns.

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

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

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

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

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

**woodland**—Open stands of trees with crowns which do not usually touch, generally forming 25–60% cover.

# Appendix A

## *Key Legislation and Policies*

This appendix describes the guidance for the National Wildlife Refuge System and other policies and key legislation that guide the management of Sullys Hill National Game Preserve.

### **NATIONAL WILDLIFE REFUGE SYSTEM**

“The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Improvement Act of 1997)

#### **Goals**

- Fulfill our statutory duty to achieve refuge purposes and further the System mission.
- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- Perpetuate migratory bird, inter-jurisdictional fish, and marine mammal populations.
- Conserve a diversity of fish, wildlife, and plants.
- Conserve and restore, where appropriate, representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.
- Foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

#### **Guiding Principles**

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

- **Public Use**—The Refuge System provides important opportunities for compatible wildlife-dependent recreational activities

involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

- **Habitat**—Fish and wildlife will not prosper without high-quality habitat, and without fish and wildlife, traditional uses of refuges cannot be sustained. The Refuge System will continue to conserve and enhance the quality and diversity of fish and wildlife habitat within refuges.
- **Partnerships**—America’s sportsmen and women were the first partners who insisted on protecting valuable wildlife habitat within wildlife refuges. Conservation partnerships with other federal agencies, state agencies, tribes, organizations, industry, and the general public can make significant contributions to the growth and management of the Refuge System.
- **Public Involvement**—The public should be given a full and open opportunity to participate in decisions regarding acquisition and management of our national wildlife refuges.

### **LEGAL AND POLICY GUIDANCE**

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

#### **American Indian Religious Freedom Act**

**(1978)**—Directs agencies to consult with native traditional religious leaders to determine appropriate policy changes necessary to protect and preserve Native American religious cultural rights and practices.

#### **Americans with Disabilities Act (1992)**

—Prohibits discrimination in public accommodations and services.

#### **Antiquities Act (1906)**

—Authorizes the scientific investigation of antiquities on federal land and provides penalties for unauthorized removal of objects taken or collected without a permit.

#### **Archaeological and Historic Preservation Act**

**(1974)**—Directs the preservation of historic and archaeological data in federal construction projects.

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

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

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

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

**Executive Order No. 3596 (1921)**—Establishes Sullys Hill National Game Preserve “as a refuge and breeding ground for birds.”

**Executive Order 11988 (1977)**—Requires federal agencies to provide leadership and take action to reduce the risk of flood loss, minimize the impact of floods on human safety, and preserve the natural and beneficial values served by the floodplains.

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

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

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

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

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

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

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

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

**National Environmental Policy Act (1969)**—Requires all agencies, including the Service, to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate this Act with other planning requirements, and prepare appropriate documents to facilitate better environmental decision making [From the Code of Federal Regulations (CFR), 40 CFR 1500].

**National Historic Preservation Act (1966), as amended**—Establishes as policy that the federal government is to provide leadership in the preservation of the Nation’s prehistoric and historical resources.

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

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

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

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

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

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

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



# Appendix B

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

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# Appendix C

## *Public Involvement*

In 2006, Sullys Hill National Game Preserve initiated its planning process. A notice of intent was published in the *Federal Register* on May 23, 2006. A newsletter, comment and mailing list forms, along with a postage paid envelope, were mailed to over 320 individuals on the initial refuge planning mailing list. A public scoping meeting was held at the refuge education and visitor center in Fort Totten, North Dakota, on June 29, 2006. This meeting was attended by 10 community members who provided verbal and written comments.

In April 2006, the Service sent a letter to the North Dakota Game and Fish Department (NDGF) and several American Indian tribes to invite them to participate in the planning process. Staff from various divisions of NDGF participated in biological workshops and the vision and goals workshop. Members of the Spirit Lake Nation (chairwoman and several tribal members) participated in public meetings and planning workshops.

When the scoping period ended on August 1, 2006, the planning team received over 183 written comments. Comments received identified biological, social, and economic concerns regarding refuge management.

On June 26, 2008, the Service published a notice of availability announcing the draft comprehensive conservation plan and environmental assessment was available for a 30-day review. Hard copies of the document and/or a planning update, summarizing the plan, were mailed to 238 federal, state, and local agencies, organizations and citizens. The document was also posted on the region 6 website. A public meeting was announced in the planning update and through state and local media outlets. Eleven people attended a public meeting held on July 22, 2008, in Fort Totten, North Dakota, which included a presentation and an opportunity for people to ask questions and offer comments. Meeting attendees complimented the staff on developing such an innovative plan and looked forward to its implementation. No other substantive public comments were received. A summary of the comments and responses can be found at the end of this appendix.

The mailing list for federal, state, local organizations, governments, tribes, other agencies, schools and

universities, media, and national organizations follows:

### **FEDERAL OFFICIALS**

U.S. Representative Earl Pomeroy, Washington DC  
Rep. Pomeroy's Area Director, Bismarck, ND

U.S. Senator Kent Conrad, Washington DC  
Sen. Conrad's Area Director, Bismarck, ND

U.S. Senator Byron Dorgan, Washington DC  
Sen. Dorgan's Area Director, Minot, ND  
Sen. Dorgan's Area Director, Bismarck, ND

### **FEDERAL AGENCIES**

USFWS Ecological Services, Bismarck, ND  
USFWS Habitat and Population Evaluation Team,  
Bismarck, ND  
USGS-Northern Prairie Wildlife Research Center,  
Jamestown, ND

### **TRIBAL OFFICIALS**

Spirit Lake Tribal Council, Fort Totten, ND  
Three Affiliated Tribes, New Town, ND  
Turtle Mountain Band of Chippewa, Belcourt, ND

### **STATE OFFICIALS**

Governor John Hoeven, Bismarck, ND  
Lance Gaebe, Governor's Office, Bismarck, ND  
Representative Thomas Brusegard, Gilby, ND  
Representative Lois Delmore, Grand Forks, ND  
Representative William Devlin, Finley, ND  
Representative Eliot Glassheim, Grand Forks, ND  
Representative Gil Herbel, Grafton, ND  
Representative Dennis Johnson, Devils Lake, ND  
Representative Joyce Kingsbury, Grafton, ND  
Representative David Monson, Osnabrock, ND  
Representative Jon Nelson, Wolford, ND  
Representative Eugene Nicholas, Cando, ND  
Representative Darrell Nottestad, Grand Forks, ND  
Representative Louise Potter, Grand Forks, ND  
Representative Jo Ann Rodenbiker, Rock Lake, ND  
Representative Arlo Schmidt, Maddock, ND  
Representative Ken Svedjan, Grand Forks, ND  
Representative Gerald Uglem, Northwood, ND  
Representative Don Vigessaa, Cooperstown, ND

Representative Amy Wamke, Grand Forks, ND  
 Representative Lonny Winrich, Grand Forks, ND  
 Senator Duane Espeguard, Grand Forks, ND  
 Senator Michael Every, Minnewauken, ND  
 Senator Ray Holmberg, Grand Forks, ND  
 Senator Duane Mutch, Larimore, ND  
 Senator Harvey Tallackson, Grafton, ND  
 Senator Ryan Taylor, Towner, ND  
 Senator John Traynor, Devils Lake, ND  
 Senator Thomas Trenbeath, Cavalier, ND

## STATE AGENCIES

NDGF, Bismarck, ND  
 State Historical Society, Bismarck, ND  
 Pembina State Museum, Pembina, ND  
 North Dakota Department of Transportation, Devils Lake, ND  
 North Dakota Tourism Division, Bismarck, ND  
 North Dakota State Water Commission, Bismarck, ND  
 North Dakota Forest Service  
 Devils Lake Basin Joint Water Board, Devils Lake, ND  
 Lake Region Human Service Center, Devils Lake, ND

## LOCAL GOVERNMENT

Nelson County Commission Chair Jack Davidson, Lakota, ND  
 Towner County Commission Chair Terry Johnson, Cando, ND  
 Grand Forks County Commission Chair Constance Triplett, Grand Forks, ND  
 Benson County Commissioner Chair Dwain Brown, Minnewauken, ND  
 Walsh County Commission Chair Tork Kilichowski, Grafton, ND  
 Ramsey County Commission Chair Joe Belford, Devils Lake, ND  
 Ramsey County Housing Authority, Devils Lake, ND

## ORGANIZATIONS

Sullys Hill Wildlife Refuge Society, Devils Lake, ND  
 Prairie Wetlands Resource Center, Bismarck, ND  
 Grand Cities Bird Club, Grand Forks, ND  
 Fort Totten State Historical Society  
 The Wildlife Society, Bismarck, ND  
 Audubon Society, Washington DC and Fargo, ND  
 ND Natural Resources Trust, Devils Lake, ND  
 Ducks Unlimited, Bismarck, ND  
 The Nature Conservancy, Minneapolis, MN  
 Sierra Club, Bismarck, ND  
 North American Nature Photography Association  
 Animal Protection Institute  
 Beyond Pesticides  
 Wildlife Management Institute  
 Defenders of Wildlife, Washington DC  
 The Wilderness Society, Washington DC

National Trappers Association  
 Fund for Animals  
 Bird Watchers Digest  
 Devils Lake Area Foundation, Devils Lake, ND  
 Grand Forks Convention and Visitors Bureau, Grand Forks, ND  
 Devils Lake Chamber of Commerce, Devils Lake, ND  
 Devils Lake Visitor Bureau, Devils Lake, ND

## UNIVERSITIES, COLLEGES, AND SCHOOLS

Lake Region State College, Devils Lake, ND  
 North Dakota State University, Fargo, ND  
 The University of North Dakota, Grand Forks, ND  
 Edmore Public School, Edmore, ND  
 St. Josephs School, Devils Lake, ND  
 Minnewauken Public School, Minnewauken, ND  
 Midkota High School, Glenfield, ND  
 Prairie View Elementary School, Devils Lake, ND  
 Central Middle School, Devils Lake, ND  
 Lake Region Special Education, Devils Lake, ND  
 Neche School District, Neche, ND  
 Lakota Elementary, Lakota, ND  
 Warwick Public School, Warwick, ND  
 Nash Public School, Grafton, ND  
 Cando Elementary, Cando, ND  
 Sheyenne Elementary School, Sheyenne, ND  
 Fordville-Lankin High School, Fordville, ND  
 Four Winds School, Fort Totten, ND  
 Edmore Public School, Edmore, ND  
 Devils Lake Public School, Devils Lake, ND  
 Ely Elementary School, Rugby, ND  
 Langdon Middle School, Langdon, ND  
 Minnie H School, Devils Lake, ND  
 Carrington Elementary School, Carrington, ND  
 Adams Public School, Adams, ND

## MEDIA

KZZY/KQZZ Radio  
 Grand Forks Herald  
 Devils Lake Journal  
 KDLR/KDVL Radio  
 North Dakota Living

## INDIVIDUALS

194 private individuals

## COMMENTS AND RESPONSES ON THE DRAFT CCP AND EA

*Comment 1*—Ban all prescribed fire on this refuge.

*Response 1*—Fire is an integral process in the northern mixed-grass prairie, as these grasslands evolved with interacting grazing and fire disturbances and climatic variability. Without these

disturbances, nutrient cycling is not achieved and not available to growing plants. Grasslands are not as healthy and diverse, and invasive species and noxious weeds, become established. The most efficient and effective way to maintain healthy grasslands is to attempt to mimic the natural processes through prescribed fire, grazing, and rest.

**Comment 2**—How will the refuge maintain the herds of elk, bison, and deer?

**Response 1**—As a big game preserve, the refuge is completely surrounded by a large electrified fence. This concentrates large ungulates, such as elk, deer, and plains bison. These large ungulates are voracious grazers and if allowed to increase, can have a catastrophic impact on refuge habitats. In addition, a large concentration of ungulates can facilitate the spread of disease, which can be transmitted to other native wildlife. The Service does remove some

animals from the refuge population. A small number of elk and deer are harvested by the Service. This is in coordination with periodic animal health checks, for such things as brain and lungworm, which can only be conducted through a necropsy. The plains bison are transferred to other refuges as part of a program to maintain the genetic integrity of a unique group of bison that most closely resembles the genetics of the native plains bison. There are no similar opportunities for transferring deer and elk due to policies and concerns related to diseases inherent in these animals. The refuge's purposes are as a big game preserve and as a refuge for migratory birds. Maintaining the ungulate population at proposed sizes will meet the game preserve purpose, while conserving supporting habitats not only for these animals, but for even more imperiled migratory birds dependent on the refuge's woodland and grassland habitats.



# Appendix D

## Section 7 Biological Evaluation

### INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

For

**Issuance and Implementation of the Comprehensive Conservation Plan for the  
U.S. Fish and Wildlife Service  
Sullys Hill National Game Preserve**

**Originating Person:** Roger Hollevoet; form  
completed by Laura King—Planning,  
Region 6

**Telephone Number:** 701/662 8611

**Date:** July 8, 2008

**I. Region:** 6

**II. Service Activity (Program):** Sullys Hill National Game Preserve – Comprehensive Conservation Plan

**III. Pertinent Species and Habitat:**

**A. Listed species and/or their critical habitat within the action area:**

whooping crane, *Grus americana* (federally listed: endangered)  
piping plover, *Charadrius melodus*, (federally listed: threatened)

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

None

**C. Candidate species within the action area:** None

**IV. Geographic area or station name and action:**

**Station:** Sullys Hill National Game Preserve

**Action:** Development and implementation of Comprehensive Conservation Plan

**V. Location (attach map):** map attached (page 2 of the accompanying CCP)

**A. Ecoregion Number and Name:**

Sullys Hill National Game Preserve is located in Region 6, Mountain-Prairie Region, within the Hudson Bay watershed of the Missouri Main Stem River Ecosystem in northeastern North Dakota (Benson County).

**B. County and State:** Benson County, North Dakota

**C. Distance (miles) and direction to nearest town:** The Sullys Hill National Game Preserve headquarters is located 10 miles south of the city of Devils Lake, North Dakota.

**D. Species/habitat occurrence:**

**Whooping Crane:** There has never been a citing of a whooping crane on the refuge.

**Piping Plover:** There has never been a citing of a piping plover on the refuge, nor is it a suitable habitat.

**VI. Description of proposed action:**

This proposed action will implement the goals, objectives, and strategies of the Sullys Hill National Game Preserve Comprehensive Conservation Plan for the next 15 years, in addition to fulfilling the goals of the National Wildlife Refuge System.

Habitat management would address enhancing and restoring native prairie and promoting forest regeneration. Ungulate populations would be maintained at lower levels ( $\leq 20$  bison,  $\leq 18$  elk, and  $\leq 18$  white-tailed deer) to control the overgrazing and overbrowsing that has impacted refuge habitats. Management tools, including exclusion fences and other appropriate methods such as chemical, biological, and mechanical techniques (including prescribed fire) will be used to restore and enhance habitat for the benefit of forest interior breeding and grassland nesting birds. Selected hayland acres would be restored to native vegetation. Fuels treatment (including prescribed fire or other mechanical means) would also be used to reduce hazardous fuels, minimizing the threat to life and property. Invasive species would be treated and areas restored. The ungulate herd health program would take a more active disease surveillance and treatment approach, including timely introduction of ungulates to maintain genetic health, particularly for the refuge's plains bison.

There would be an increase in delivery of both on-site and off-site programming of youth environmental education programs. In cooperation with local teachers, a formal wetland and grassland conservation curriculum would be designed for targeted grade levels and meet local and state standards. The refuge's limited fishery would be used for educational programs only. There is no hunting permitted on the refuge, per its legislative purposes. Visitor, staff, facility, and wildlife safety would be improved through year-round patrols. A comprehensive cultural resource survey of the refuge would be completed in partnership with other agencies and organizations.

**VII. Determination of effects:**

**A. Explanation of effects of the action on species and critical habitats in items III. A, B, and C (attach additional pages as needed):**

**Whooping crane:** Implementing the CCP would not have detrimental effects on this migrant crane. Whooping cranes have not been documented to use this refuge. The actions proposed in the CCP may benefit potential migrants, and should not have any negative effects.

**Piping plover:** Implementing the CCP would not have detrimental effects on this plover species. Regardless, the refuge does not have suitable habitat for plovers and there have been no documented sightings.

**B. Explanation of actions to be implemented to reduce adverse effects:** None are necessary. All actions delineated in the CCP would be in accordance with provisions of protection and restoration plans for several species, as delineated by the Service and other Federal and State agencies.

**VIII. Effect determination and response requested: [\* = optional]**

**A. Listed species/designated critical habitat:**

<u>Determination</u>	<u>Response requested</u>
no effect to species/critical habitat (species/unit: <u>piping plover</u> )	<input checked="" type="checkbox"/> *Concurrence
may affect, but is not likely to adversely affect species/critical habitat (species/unit: <u>whooping crane</u> )	<input checked="" type="checkbox"/> Concurrence
may affect, and is likely to adversely affect species/critical habitat (species/unit: ( _____ ))	<input type="checkbox"/> Formal Consultation

**B. Proposed species/proposed critical habitat:**

Determination

Response requested

no effect on proposed species/proposed critical habitat  
(species/unit: \_\_\_\_\_)

\_\_\_ \*Concurrence

is likely to jeopardize proposed species/  
adversely modify proposed critical habitat  
(species/unit: \_\_\_\_\_)

\_\_\_ Conference

**C. Candidate species:**

Determination

Response requested

no effect  
(species: \_\_\_\_\_)

\_\_\_ \*Concurrence

is likely to jeopardize candidate species  
(species: \_\_\_\_\_)

\_\_\_ Conference

  
\_\_\_\_\_  
Roger Hollevoet, project leader  
Devil's Lake WMD  
Devil's Lake, ND

7/10/08  
Date

**IX. Reviewing ESO Evaluation:**

A. Concurrence \_\_\_\_\_ Nonconcurrence \_\_\_\_\_

B. Formal consultation required \_\_\_\_\_

C. Conference required \_\_\_\_\_

D. Informal conference required \_\_\_\_\_

E. Remarks (attach additional pages as needed):

  
\_\_\_\_\_  
Jeffrey K. Towner, field supervisor  
Ecological Services  
Bismarck, ND

7/14/08  
date

# Appendix E

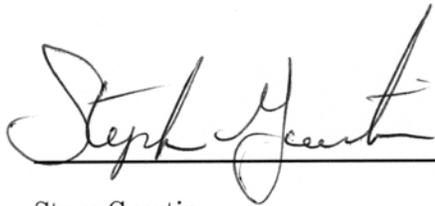
## *Environmental Compliance*

### **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.

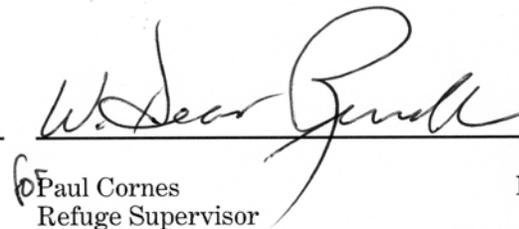
I have determined that the action of implementing the "Comprehensive Conservation Plan-Sullys Hill National Game Preserve" is found not to have significant environmental effects, as determined by the attached Finding of No Significant Impact and the environmental assessment as found with the draft comprehensive conservation plan.



8/29/08

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

Date



8/29/08

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

Date



8/29/08

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

Date



8/21/08

Roger Hollevoet  
Project Leader  
Devils Lake Wetland Management District  
Fort Totten, ND

Date

## Finding of No Significant Impact

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

Three management alternatives for Sullys Hill National Game Preserve were assessed as to their effectiveness in achieving the refuges' purposes and their impacts on the human environment.

- Alternative A, the "no-action" alternative, would continue current management.
- Alternative B, would begin to address reduced forest regeneration by managing the uncontrolled browsing of bison, elk, and white-tailed deer. Ungulates would be maintained, as per the "Fenced Animal Management Plan" (25-40 bison; 15-25 elk; 10-30 white-tailed deer). Native prairie would be enhanced through prescribed fire and grazing, and controlling invasive species. Visitors would be provided seasonal opportunities to view wildlife and learn about the refuge and additional on-site educational programs would be provided. There would be an increased law enforcement presence during peak visitor-use days.
- Alternative C, would begin to address forest regeneration, enhance native prairie, and restore selected haylands to native vegetation. Invasive species would be treated and areas restored. Ungulate populations would be maintained at  $\leq 20$  bison,  $\leq 18$  elk, and  $\leq 18$  white-tailed deer to control disease, overgrazing, and overbrowsing. Herd health programs would take a more active disease surveillance and treatment approach, including timely introduction of ungulates to maintain genetic health, particularly bison. Visitor services programs would be offered year-round along with law enforcement presence. There would be an increase in both on-site and off-site environmental education programs. A formal wetland and grassland conservation curriculum would be developed in cooperation with local teachers. Refuge staff would work with the Spirit Lake Nation schools and agencies to encourage students to pursue careers in refuge management.

Based on this assessment and comments received, I have selected alternative C as the preferred alternative for implementation. The preferred alternative was selected because it best meets the purposes for which the Sullys Hill National Game Preserve was established and is preferable to the

"no-action" alternative in light of physical, biological, economic, and social factors. The preferred alternative will continue to provide public access for wildlife-dependent recreation at Sullys Hill National Game Preserve (wildlife observation, photography, environmental education, and interpretation).

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 on 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 would 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.
- The state of North Dakota has been notified and given the opportunity to review the comprehensive conservation plan and associated environmental assessment.



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

Date

# Appendix F

## Species List

Below is a list of resident and migrant wildlife species that occur or have the potential to occur on or adjacent to Sullys Hill National Game Preserve. Following the wildlife list is a plant list that includes species mentioned throughout this CCP, as well as species confirmed and likely to occur at the refuge.

Refuge baseline and anecdotal data were used where possible to develop these lists; however much of the information used to develop the lists was obtained

from various sources that provided species lists and occurrences for North Dakota, including Wiehe and Cassel (1978), Iverson et al. (1967), McLaren (2001), Hoberg and Gause (1992), and Royer et al. (1998). The amphibians, reptiles, mammals, and fish are listed in taxonomic order following Banks et al. (1987). Bird species are listed in taxonomic order based on the “Check-list of North American Birds” (American Ornithologists Union 2005).

### ANIMALS

#### CLASS AMPHIBIA

Order	Common Name	Scientific Name
Caudata	Tiger salamander	<i>Ambystoma tigrinum</i>
Anura	Canadian toad	<i>Bufo hemiophrys</i>
Anura	Great Plains toad	<i>Bufo cognatus</i>
Anura	Northern leopard frog	<i>Rana pipiens</i>
Anura	Western chorus frog	<i>Pseudacris triseriata</i>
Anura	Wood frog	<i>Rana sylvatica</i>

#### CLASS REPTILIA

Order	Common Name	Scientific Name
Testudines	Common snapping turtle	<i>Chelydra serpentina</i>
Testudines	Western painted turtle	<i>Chrysemys picta belli</i>
Squamata	Common garter snake	<i>Thamnophis sirtalis</i>
Squamata	Plains garter snake	<i>Thamnophis radix</i>
Squamata	Redbelly snake	<i>Storeria occipitomaculata</i>
Squamata	Smooth green snake	<i>Opheodrys vernalis</i>
Squamata	Western hognose snake	<i>Heterodon nasicus</i>

#### CLASS AVES

Order	Common Name	Scientific Name
Anseriformes	American black duck	<i>Anas rubripes</i>
Anseriformes	American pidgeon	<i>Anas Americana</i>
Anseriformes	Blue-winged teal	<i>Anas discors</i>
Anseriformes	Bufflehead	<i>Bucephala albeola</i>
Anseriformes	Canada goose	<i>Branta Canadensis</i>
Anseriformes	Canvasback	<i>Aythya valisineria</i>
Anseriformes	Common goldeneye	<i>Bucephala clangula</i>
Anseriformes	Common merganser	<i>Mergus merganser</i>
Anseriformes	Gadwall	<i>Anas strepera</i>

**CLASS AVES** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Anseriformes	Green-winged teal	<i>Anas crecca</i>
Anseriformes	Hooded merganser	<i>Lophodytes cucullatus</i>
Anseriformes	Lesser scaup	<i>Aythya afinis</i>
Anseriformes	Mallard	<i>Anas platyrhynchos</i>
Anseriformes	Northern pintail	<i>Anas acuta</i>
Anseriformes	Northern shoveler	<i>Anas clypeata</i>
Anseriformes	Redhead	<i>Aythya Americana</i>
Anseriformes	Ring-necked duck	<i>Aythya collaris</i>
Anseriformes	Ruddy duck	<i>Oxyura jamaicensis</i>
Anseriformes	Tundra swan	<i>Cygnus columbianus</i>
Anseriformes	Wood duck	<i>Aix sponsa</i>
Galliformes	Gray partridge	<i>Perdix perdix</i>
Galliformes	Ring-necked pheasant	<i>Phasianus colchicus</i>
Galliformes	Sharp-tailed grouse	<i>Tympanuchus cupido</i>
Galliformes	Wild Turkey	<i>Meleagris gallopavo</i>
Podicipediformes	Eared grebe	<i>Podiceps nigricollis</i>
Podicipediformes	Horned grebe	<i>Podiceps auritus</i>
Podicipediformes	Pied-billed grebe	<i>Podylimbus podiceps</i>
Podicipediformes	Western grebe	<i>Aechmophorus occidentalis</i>
Pelicaniformes	American white pelican	<i>Pelicanus erythrocephalus</i>
Pelicaniformes	Double-crested cormorant	<i>Phalacrocorax auritus</i>
Ciconiiformes	American bittern	<i>Botaurus lentiginosus</i>
Ciconiiformes	Black-crowned night-heron	<i>Nycticorax nycticorax</i>
Ciconiiformes	Great blue heron	<i>Ardea Herodias</i>
Ciconiiformes	Great egret	<i>Ardea alba</i>
Ciconiiformes	Green heron	<i>Boturides striatus</i>
Ciconiiformes	Turkey vulture	<i>Cathartes aura</i>
Falconiformes	American kestrel	<i>Falco sparverius</i>
Falconiformes	Bald eagle	<i>Haliaeetus leucocephalus</i>
Falconiformes	Broad-winged hawk	<i>Buteo platypterus</i>
Falconiformes	Cooper's hawk	<i>Accipitor cooperii</i>
Falconiformes	Golden eagle	<i>Aquila chrysaetos</i>
Falconiformes	Merlin	<i>Falco columbarius</i>
Falconiformes	Northern goshawk	<i>Accipiter gentiles</i>
Falconiformes	Northern harrier	<i>Circus cyaneus</i>
Falconiformes	Osprey	<i>Pandion haliaetus</i>
Falconiformes	Peregrine falcon	<i>Falco peregrinus</i>
Falconiformes	Red-tailed hawk	<i>Buteo jamaicensis</i>
Falconiformes	Sharp-shinned hawk	<i>Accipitor striatus</i>
Falconiformes	Swainson's hawk	<i>Buteo swainsoni</i>
Gruiformes	American coot	<i>Fulica Americana</i>
Gruiformes	Sora	<i>Porzana carolina</i>
Gruiformes	Virginia rail	<i>Coturnicops noveboracensis</i>
Charadriiformes	American avocet	<i>Recurvirostra americana</i>
Charadriiformes	American woodcock	<i>Scolopax minor</i>
Charadriiformes	Black tern	<i>Sterna niger</i>

**CLASS AVES** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Charadriiformes	California gull	<i>Larus californicus</i>
Charadriiformes	Common tern	<i>Sterna hirundo</i>
Charadriiformes	Forster's tern	<i>Sterna forsteri</i>
Charadriiformes	Franklin's gull	<i>Larus pipixcan</i>
Charadriiformes	Greater yellowlegs	<i>Tringa melanoleuca</i>
Charadriiformes	Killdeer	<i>Charadrius vociferous</i>
Charadriiformes	Lesser yellowlegs	<i>Tringa flavipes</i>
Charadriiformes	Marbled godwit	<i>Limosa fedoa</i>
Charadriiformes	Ring-billed gull	<i>Larus delawarensis</i>
Charadriiformes	Solitary sandpiper	<i>Tringa solitaria</i>
Charadriiformes	Spotted sandpiper	<i>Actitis macularia</i>
Charadriiformes	Upland sandpiper	<i>Bartamia longicauda</i>
Charadriiformes	Wilson's snipe	<i>Gallinago delicata</i>
Columbiformes	Mourning dove	<i>Zenaida macroura</i>
Columbiformes	Rock dove	<i>Columba livia</i>
Cuculiformes	Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>
Cuculiformes	Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Strigiformes	Eastern screech owl	<i>Otus asio</i>
Strigiformes	Great horned owl	<i>Bubo virginianus</i>
Strigiformes	Northern saw-whet owl	<i>Aegolius acadicus</i>
Strigiformes	Snowy owl	<i>Nyctea scandiaca</i>
Caprimulgiformes	Common nighthawk	<i>Chordeiles minor</i>
Apodiformes	Chimney swift	<i>Chaetura pelagica</i>
Apodiformes	Ruby-throated hummingbird	<i>Archilochus colubris</i>
Coraciiformes	Belted kingfisher	<i>Ceryle alcyon</i>
Piciformes	Downy woodpecker	<i>Picoides pubescens</i>
Piciformes	Hairy woodpecker	<i>Picoides villosus</i>
Piciformes	Lewis' woodpecker	<i>Melanerpes lewis</i>
Piciformes	Northern flicker	<i>Colaptes auratus</i>
Piciformes	Pileated woodpecker	<i>Dryocopus pileatus</i>
Piciformes	Red-bellied woodpecker	<i>Melanerpes carolinus</i>
Piciformes	Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
Piciformes	Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>
Passeriformes	Alder flycatcher	<i>Empidonax alnorum</i>
Passeriformes	American crow	<i>Corvus brachyrhynchos</i>
Passeriformes	American goldfinch	<i>Carduelis tristis</i>
Passeriformes	American redstart	<i>Setophaga ruticilla</i>
Passeriformes	American robin	<i>Turdus migratorius</i>
Passeriformes	American tree sparrow	<i>Spizella arborea</i>
Passeriformes	Baltimore oriole	<i>Icterus galbula</i>
Passeriformes	Bank swallow	<i>Riparia riparia</i>
Passeriformes	Barn swallow	<i>Hirundo rustica</i>
Passeriformes	Bay-breasted warbler	<i>Dendroica castanea</i>
Passeriformes	Black-and-white warbler	<i>Mniotilta varia</i>
Passeriformes	Black-billed magpie	<i>Pica hudsonia</i>
Passeriformes	Blackburnian warbler	<i>Dendroica fusca</i>

**CLASS AVES** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Passeriformes	Black-capped chickadee	<i>Poecile atricappila</i>
Passeriformes	Blackpoll warbler	<i>Dendroica striata</i>
Passeriformes	Black-throated green warbler	<i>Dendroica virens</i>
Passeriformes	Blue-headed vireo	<i>Vireo solitarius</i>
Passeriformes	Blue jay	<i>Cyanocitta cristata</i>
Passeriformes	Bobolink	<i>Dolichonyx oryzivorus</i>
Passeriformes	Bohemian waxwing	<i>Bombycilla garrulous</i>
Passeriformes	Brewer's blackbird	<i>Euphagus cyanocephalis</i>
Passeriformes	Brown creeper	<i>Certhia americana</i>
Passeriformes	Brown-headed cowbird	<i>Molothrus ater</i>
Passeriformes	Brown thrasher	<i>Toostoma rufum</i>
Passeriformes	Canada warbler	<i>Wilsonia Canadensis</i>
Passeriformes	Cape May warbler	<i>Dendroica tigrina</i>
Passeriformes	Cedar waxwing	<i>Bombycilla cedrorum</i>
Passeriformes	Chestnut-sided warbler	<i>Dendroica pensylvanica</i>
Passeriformes	Chipping sparrow	<i>Spizella passerina</i>
Passeriformes	Clay-colored sparrow	<i>Spizella pallida</i>
Passeriformes	Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Passeriformes	Common grackle	<i>Quiscalus quiscula</i>
Passeriformes	Common redpoll	<i>Carduelis flammea</i>
Passeriformes	Common yellowthroat	<i>Geothlipis trichas</i>
Passeriformes	Dark-eyed junco	<i>Junco hyemalis</i>
Passeriformes	Eastern bluebird	<i>Sialia sialis</i>
Passeriformes	Eastern kingbird	<i>Tyrannus forficatus</i>
Passeriformes	Eastern phoebe	<i>Saynoris phoebe</i>
Passeriformes	Eastern wood-pewee	<i>Contopus virens</i>
Passeriformes	Eastern towhee	<i>Pipilo erythrophthalmus</i>
Passeriformes	European starling	<i>Sturnus vulgaris</i>
Passeriformes	Evening grosbeak	<i>Coccothraustes vespertinus</i>
Passeriformes	Field sparrow	<i>Spizella pusilla</i>
Passeriformes	Fox sparrow	<i>Passerelia iliaca</i>
Passeriformes	Golden-crowned kinglet	<i>Regulus satrapa</i>
Passeriformes	Golden-winged warbler	<i>Vermivora chrysoptera</i>
Passeriformes	Grasshopper sparrow	<i>Ammodramus savannarum</i>
Passeriformes	Gray catbird	<i>Dumetella carolinensis</i>
Passeriformes	Gray-cheeked thrush	<i>Catharus minimus</i>
Passeriformes	Great crested flycatcher	<i>Myiarchus crinitus</i>
Passeriformes	Hermit thrush	<i>Catharus guttatus</i>
Passeriformes	Horned lark	<i>Eremophila alpestris</i>
Passeriformes	House finch	<i>Carpodacus mexicanus</i>
Passeriformes	House sparrow	<i>Passer domesticus</i>
Passeriformes	House wren	<i>Troglodytes aedon</i>
Passeriformes	Indigo bunting	<i>Passerina ciris</i>
Passeriformes	Lark sparrow	<i>Chondestes grammacus</i>
Passeriformes	Least flycatcher	<i>Empidonax minimus</i>
Passeriformes	Le Conte's sparrow	<i>Ammodramus leconteii</i>

**CLASS AVES** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Passeriformes	Lincoln sparrow	<i>Melospiza lincolni</i>
Passeriformes	Magnolia warbler	<i>Dendroica magnolia</i>
Passeriformes	Marsh wren	<i>Cistothorus palustris</i>
Passeriformes	Mountain bluebird	<i>Sialia currucoides</i>
Passeriformes	Nashville warbler	<i>Vermivora ruficapilla</i>
Passeriformes	Nelson's shart-tailed sparrow	<i>Ammodramus nelsoni</i>
Passeriformes	Northern cardinal	<i>Cardinalis cardinalis</i>
Passeriformes	Northern mockingbird	<i>Mimus polyglottos</i>
Passeriformes	Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Passeriformes	Northern shrike	<i>Lanius excubitor</i>
Passeriformes	Northern waterthrush	<i>Seiurus noveboracensis</i>
Passeriformes	Olive-sided flycatcher	<i>Contopus cooperi</i>
Passeriformes	Orange-crowned warbler	<i>Vermivora celata</i>
Passeriformes	Orchard oriole	<i>Icterus spurius</i>
Passeriformes	Ovenbird	<i>Seiurus aurocapillus</i>
Passeriformes	Palm warbler	<i>Dendroica palmarum</i>
Passeriformes	Philadelphia vireo	<i>Vireo philadelphicus</i>
Passeriformes	Pine siskin	<i>(Carduelis pinus</i>
Passeriformes	Purple finch	<i>Carpodacus purpureus</i>
Passeriformes	Purple martin	<i>Progne subis</i>
Passeriformes	Red-eyed vireo	<i>Vireo olivaceus</i>
Passeriformes	Red-winged blackbird	<i>Agelaius phoeniceus</i>
Passeriformes	Red-breasted nuthatch	<i>Sitta canadensis</i>
Passeriformes	Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>
Passeriformes	Ruby-crowned kinglet	<i>Regulus calendula</i>
Passeriformes	Rusty blackbird	<i>Euphagus carolinus</i>
Passeriformes	Savannah sparrow	<i>Passerculus sandwichensis</i>
Passeriformes	Scarlet tanager	<i>Piranga olivacea</i>
Passeriformes	Sedge wren	<i>Cistothorus platensis</i>
Passeriformes	Snow bunting	<i>Plectrophenax nivalis</i>
Passeriformes	Song sparrow	<i>Melospiza melodia</i>
Passeriformes	Sprague's pipit	<i>Anthus spragueii</i>
Passeriformes	Swainson's thrush	<i>Catharus ustulatus</i>
Passeriformes	Swamp sparrow	<i>Melospiza georgiana</i>
Passeriformes	Tennessee warbler	<i>Vermivora peregrina</i>
Passeriformes	Tree swallow	<i>Tachycineta bicolor</i>
Passeriformes	Veery	<i>Catharus fuscescens</i>
Passeriformes	Vesper sparrow	<i>Pooecetes gramineus</i>
Passeriformes	Warbling vireo	<i>Vireo gilvus</i>
Passeriformes	Western kingbird	<i>Tyrannus verticalis</i>
Passeriformes	Western meadowlark	<i>Sturnella neglecta</i>
Passeriformes	White-breasted nuthatch	<i>Sitta carolinensis</i>
Passeriformes	White-throated sparrow	<i>Zonotrichia leucophrys</i>
Passeriformes	White-winged crossbill	<i>Loxia leucoptera</i>
Passeriformes	Willow flycatcher	<i>Empidonax traillii</i>
Passeriformes	Wilson's warbler	<i>Wilsonia pusilla</i>

**CLASS AVES** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Passeriformes	Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
Passeriformes	Yellow-rumped warbler	<i>Dendroica coronata</i>
Passeriformes	Yellow-throated vireo	<i>Vireo flavifrons</i>
Passeriformes	Yellow warbler	<i>Dendroica petechia</i>

**CLASS MAMMALIA**

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Insectivora	Arctic shrew	<i>Sorex arcticus</i>
Insectivora	Masked shrew	<i>Sorex cinereus</i>
Insectivora	Northern short-tailed shrew	<i>Blarina brevicauda</i>
Insectivora	Pygmy shrew	<i>Sorex hoyi</i>
Chiroptera	Big brown bat	<i>Eptesicus fuscus</i>
Chiroptera	Hoary bat	<i>Lasiurus cinereus</i>
Chiroptera	Little brown bat	<i>Myotis lucifugus</i>
Chiroptera	Long-eared myotis	<i>Myotis evotis</i>
Chiroptera	Red bat	<i>Lasiurus borealis</i>
Chiroptera	Silver-haired bat	<i>Lasionycteris noctivagans</i>
Chiroptera	Western small-footed myotis	<i>Myotis ciliolabrum</i>
Carnivora	Badger	<i>Taxidea taxus</i>
Carnivora	Coyote	<i>Canis latrans</i>
Carnivora	Ermine	<i>Mustela erminea</i>
Carnivora	Fisher	<i>Martes pennanti</i>
Carnivora	Gray fox	<i>Urocyon cinereoargenteus</i>
Carnivora	Least weasel	<i>Mustela nivalis</i>
Carnivora	Long-tailed weasel	<i>Mustela frenata</i>
Carnivora	Marten	<i>Martes americana</i>
Carnivora	Mink	<i>Mustela vison</i>
Carnivora	Raccoon	<i>Procyon lotor</i>
Carnivora	Red fox	<i>Vulpes vulpes</i>
Carnivora	Striped skunk	<i>Mephitis mephitis</i>
Artiodactyla	American elk	<i>Cervus elaphus</i>
Artiodactyla	Bison	<i>Bison bison</i>
Artiodactyla	Pronghorn	<i>Antilocapra americana</i>
Artiodactyla	White-tailed deer	<i>Odocoileus virginianus</i>
Rodentia	Beaver	<i>Castor canadensis</i>
Rodentia	Deer mouse	<i>Peromyscus maniculatus</i>
Rodentia	Eastern chipmunk	<i>Tamias striatus</i>
Rodentia	Fox squirrel	<i>Sciurus niger</i>
Rodentia	Franklin's ground squirrel	<i>Mus musculus</i>
Rodentia	Gray squirrel	<i>Spermophilus franklinii</i>
Rodentia	House mouse	<i>Sciurus</i>
Rodentia	Meadow jumping mouse	<i>Zapus hudsonius</i>
Rodentia	Meadow vole	<i>Microtus pennsylvanicus</i>
Rodentia	Muskrat	<i>Ondatra zibethicus</i>
Rodentia	Northern grasshopper mouse	<i>Onychomys leucogaster</i>
Rodentia	Northern pocket gopher	<i>Thomomys talpoides</i>

**CLASS MAMMALIA** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Rodentia	Norway rat	<i>Rattus norvegicus</i>
Rodentia	Prairie dog	<i>Cynomys ludovicianus</i>
Rodentia	Prairie vole	<i>Microtus ochrogaster</i>
Rodentia	Richardson's ground squirrel	<i>Spermophilus richardsonii</i>
Rodentia	Southern red-backed vole	<i>Clethrionomys gapperi</i>
Rodentia	Thirteen-lined ground squirrel	<i>Spermophilus tridecemlineatus</i>
Rodentia	Western harvest mouse	<i>Reithrodontomys megalotis</i>
Rodentia	White-footed mouse	<i>Peromyscus leucopus</i>
Rodentia	Woodchuck	<i>Marmota monax</i>
Lagomorpha	Eastern cottontail	<i>Sylvilagus floridanus</i>
Lagomorpha	Nuttall's cottontail	<i>Sylvilagus nuttallii</i>
Lagomorpha	Snowshoe hare	<i>Lepus americanus</i>
Lagomorpha	White-tailed jackrabbit	<i>Lepus townsendii</i>

**CLASS OSTEICHTHYES**

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Salmoniformes	Northern pike	<i>Esox lucius</i>
Cypriniformes	Common carp	<i>Cyprinus carpio</i>
Cypriniformes	Fathead minnow	<i>Pimephales promelas</i>
Cypriniformes	White sucker	<i>Catostomus commersoni</i>
Siluriformes	Black bullhead	<i>Ameiurus melas</i>
Perciformes	Yellow perch	<i>Perca flavescens</i>
Perciformes	Walleye	<i>Stizostedion vitreum</i>

**CLASS INSECTA**

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Lepidoptera	Aphrodite fritillary	<i>Speyeria aphrodite</i>
Lepidoptera	Banded hairstreak	<i>Satyrium calanus</i>
Lepidoptera	Black swallowtail	<i>Papilio polyxenes</i>
Lepidoptera	Callippe fritillary	<i>Speyeria callippe</i>
Lepidoptera	Canadian tiger swallowtail	<i>Pterourus canadensis</i>
Lepidoptera	Checkered skipper	<i>Pyrgus communis</i>
Lepidoptera	Checkered white	<i>Pontia protodice</i>
Lepidoptera	Clouded sulphur	<i>Colias philodice</i>
Lepidoptera	Common branded skipper	<i>Hesperia comma</i>
Lepidoptera	Common sooty wing	<i>Pholisora catullus</i>
Lepidoptera	Common wood nymph	<i>Cercyonis pegala</i>
Lepidoptera	Compton tortoise shell	<i>Nymphalis vaualbum</i>
Lepidoptera	Coral hairstreak	<i>Harkenclennus titus</i>
Lepidoptera	Delaware skipper	<i>Anatryone logan</i>
Lepidoptera	Dreamy dusky wing	<i>Erynnis icelus</i>
Lepidoptera	Dun skipper	<i>Euphyes vestris</i>
Lepidoptera	Dusted skipper	<i>Atrytonopsis hianna</i>
Lepidoptera	Eastern tiger swallowtail	<i>Pterourus glaucus</i>

**CLASS INSECTA** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Lepidoptera	Edwards' hairstreak	<i>Satyrium edwardsii</i>
Lepidoptera	European cabbage butterfly	<i>Artogeia rapae</i>
Lepidoptera	Eyed brown	<i>Satyrodes eurydice</i>
Lepidoptera	Garita skipperling	<i>Oarisma garita</i>
Lepidoptera	Gorgone checkerspot	<i>Charidryas gorgone</i>
Lepidoptera	Gray comma	<i>Polygonia proge</i>
Lepidoptera	Great spangled fritillary	<i>Speyeria cybele</i>
Lepidoptera	Hackberry butterfly	<i>Asterocampa celtis</i>
Lepidoptera	Harris' checkerspot	<i>Charidryas harrisii</i>
Lepidoptera	Hobomok skipper	<i>Poanes hobomok</i>
Lepidoptera	Hop merchant	<i>Polygonia comma</i>
Lepidoptera	Inornate ringlet	<i>Coenonympha inornata</i>
Lepidoptera	Juvenal's dusky wing	<i>Erynnis juvenalis</i>
Lepidoptera	Least skipper	<i>Ancyloxypha numitor</i>
Lepidoptera	Little wood satyr	<i>Megisto cymela</i>
Lepidoptera	Long dash	<i>Polites mystic</i>
Lepidoptera	Meadow fritillary	<i>Clossiana bellona</i>
Lepidoptera	Melissa blue	<i>Lycaeides melissa</i>
Lepidoptera	Milbert's tortoise shell	<i>Aglais milberti</i>
Lepidoptera	Monarch	<i>Danaus plexippus</i>
Lepidoptera	Mourning cloak	<i>Nymphalis antiopa</i>
Lepidoptera	Mustard white	<i>Artogeia napi oleracea</i>
Lepidoptera	Northern cloudy wing	<i>Thorybes pylades</i>
Lepidoptera	Northern pearl crescent	<i>Phyciodes tharos</i>
Lepidoptera	Northern pearly eye	<i>Enodia anthedon</i>
Lepidoptera	Orange sulphur	<i>Colias eurytheme</i>
Lepidoptera	Ottoo skipper	<i>Hesperia ottoe</i>
Lepidoptera	Painted lady	<i>Vanessa cardui</i>
Lepidoptera	Pawnee skipper	<i>Hesperia pawnee</i>
Lepidoptera	Pearl crescent	<i>Phyciodes tharos</i>
Lepidoptera	Peck's skipper	<i>Polites peckius</i>
Lepidoptera	Red admiral	<i>Vanessa atalanta</i>
Lepidoptera	Regal fritillary	<i>Speyeria idalia</i>
Lepidoptera	Roadside skipper	<i>Amblyscirtes vialis</i>
Lepidoptera	Saepiolus blue	<i>Plebejus saepiolus</i>
Lepidoptera	Silver-bordered fritillary	<i>Clossiana selene</i>
Lepidoptera	Silver-spotted skipper	<i>Epargyreus clarus</i>
Lepidoptera	Silvery blue	<i>Glaucopsyche lygdamus</i>
Lepidoptera	Silvery checkerspot	<i>Charidryas nycteis</i>
Lepidoptera	Sleepy dusky wing	<i>Erynnis brizo</i>
Lepidoptera	Spring azure	<i>Celastrina argiolus</i>
Lepidoptera	Striped hairstreak	<i>Satyrium liparops</i>
Lepidoptera	Tawny crescent	<i>Phyciodes batesii</i>
Lepidoptera	Tawny-edged skipper	<i>Polites themistocles</i>
Lepidoptera	Uhler's arctic	<i>Oeneis uhleri</i>
Lepidoptera	Variegated fritillary	<i>Euptoieta claudia</i>

**CLASS INSECTA** CONTINUED

<i>Order</i>	<i>Common Name</i>	<i>Scientific Name</i>
Lepidoptera	Viceroy	<i>Basilarchia archippus</i>
Lepidoptera	Western tailed blue	<i>Everes amyntula</i>
Lepidoptera	White admiral	<i>Basilarchia arthemis arthemis</i>

**PLANTS**

Plants are listed in alphabetical order by common name, and introduced species are noted with an “I.”

<i>Common Name</i>	<i>Scientific Name</i>
Absinth wormwood	<i>Artemisia absinthium</i> –I
Alum root	<i>Heuchera richardsonii</i> )
Alfalfa	<i>Medicago sativa</i> –I
Alumroot	<i>Heuchera richardsonii</i>
American basswood	<i>Tilia americana</i>
American elm	<i>Ulmus americana</i>
American plum	<i>Prunus americana</i>
Aspen	<i>Populus</i> spp.
Awned wheatgrass	<i>Agropyron subsecundum</i>
Beaked hazel	<i>Corylus cornuta</i>
Beggarticks	<i>Bidens</i> spp.
Big bluestem	<i>Andropogon gerardii</i>
Black-eyed susan	<i>Rudbeckia hirta</i>
Blanket flower	<i>Gaillardia aristata</i>
Blue-eyed grass	<i>Sisyrichium campestre</i>
Blue flax	<i>Linum perenne</i>
Blue grama	<i>Bouteloua gracilis</i>
Boxelder	<i>Acer negundo</i>
Breadroot	<i>Psoralea esculenta</i>
Buffaloberry	<i>Shepherdia argentea</i>
Bulrush	<i>Schoenoplectus</i> spp.
Bushy vetchling	<i>Lathyrus venosus</i>
Bur oak	<i>Quercus macrocarpa</i>
Burreed	<i>Sparganium</i> spp.
Canada anemone	<i>Anemone canadensis</i>
Canada goldenrod	<i>Solidago canadensis</i>
Canada thistle	<i>Cirsium arvense</i> –I
Caragana	<i>Caragana arborescens</i>
Cattail	<i>Typha</i> spp.
Chokecherry	<i>Prunus virginiana</i>
Cleavers	<i>Galium aparine</i>
Common bladderwort	<i>Utricularia vulgaris</i>
Common dandelion	<i>Taraxacum officinale</i> –I
Common milkweed	<i>Asclepias syriaca</i>
Common reed	<i>Phragmites australis</i>
Common yarrow	<i>Achillea millefolium</i>

**PLANTS** CONTINUED

Plants are listed in alphabetical order by common name, and introduced species are noted with an "I."

<i>Common Name</i>	<i>Scientific Name</i>
Coontail	<i>Ceratophyllum demersum</i>
Coralroot	<i>Corallorhiza</i> spp.
Cottonwood	<i>Populus deltoids</i>
Cow parsnip	<i>Heracleum sphondylium</i>
Crested wheatgrass	<i>Agropyron cristatum</i>
Daisy fleabane	<i>Erigeron philadelphicus</i>
Dogbane	<i>Apocynum cannabinum</i>
Dotted blazing star	<i>Liatris punctata</i>
Downy paintbrush	<i>Castilleja sessiliflora</i>
Duckweed	<i>Lemna</i> spp.
Fall rosette grass	<i>Dichantheium wilcoxianum</i>
False dandelion	<i>Agoseris glauca</i>
False gromwell	<i>Onosmodium molle</i>
Floodman's thistle	<i>Cirsium flodmanii</i>
Foxtail barley	<i>Hordeum jubatum</i>
Fringed puccoon	<i>Lithospermum incisum</i>
Goat's beard	<i>Tragopogon dubius</i>
Goldan Alexander	<i>Zizia aurea</i>
Golden aster	<i>Chrysopsis villosa</i>
Goldenrod	<i>Solidago</i> spp.
Green ash	<i>Fraxinus pennsylvanica</i>
Green foxtail	<i>Setaria veridis</i> -I
Green milkweed	<i>Asclepias viridiflora</i>
Green needlegrass	<i>Nasella viridula</i>
Groundplum milkvetch	<i>Astragalus crassicaarpus</i>
Harebell	<i>Campanula rotundifolia</i>
Hawksbeard	<i>Crepis runcinata</i>
Heath aster	<i>Aster ericoides</i>
Hedge nettle	<i>Stachys palustris</i>
Hoary puccoon	<i>Lithospermum canescens</i>
Hooker's oat grass	<i>Helictotrichon hookeri</i>
Intermediate wheatgrass	<i>Agropyron intermedium</i> -I
Juneberry	<i>Amelanchier alnifolia</i>
Kentucky bluegrass	<i>Poa pratensis</i> -I
Lamb's quarters	<i>Chenopodium album</i> -I
Large beardtongue	<i>Penstemon grandiflorus</i>
Lead plant	<i>Amorpha canescens</i>
Leafy spurge	<i>Euphorbia esula</i> -I
Lichens	<i>Lycopodium</i> spp.
Little bluestem	<i>Schizachyrium scoparium</i>
Marsh marigold	<i>Caltha palustris</i>
Marsh muhly	<i>Muhlenbergia racemosa</i>
Maximilian sunflower	<i>Helianthus maximiliani</i>

**PLANTS** CONTINUED

Plants are listed in alphabetical order by common name, and introduced species are noted with an “I.”

<i>Common Name</i>	<i>Scientific Name</i>
Meadow rue	<i>Thalictrum</i> spp.
Meadow-sweet	<i>Spirea alba</i>
Mustard	spp.–I
Needlegrass	<i>Hesperostipa curtiseta</i>
Northern bedstraw	<i>Galium boreale</i>
Northern hawthorn	<i>Crataegus rotundifolia</i>
Pasque flower	<i>Anemone patens</i>
Pin cushion cactus	<i>Coryphantha vivipara</i>
Pineapple weed	<i>Matricaria matricarioides</i> –I
Plains muhly	<i>Muhlenbergia cuspidata</i>
Pliant milkvetch	<i>Astragalus flexuosus</i>
Poison ivy	<i>Toxicodendron radicans</i>
Pondweeds	<i>Potamogeton</i> spp.
Porcupine grass	<i>Hesperostipa spartea</i>
Prairie cordgrass	<i>Spartina pectinata</i>
Prairie coneflower	<i>Ratibida columnifera</i>
Prairie goldenrod	<i>Solidago missouriensis</i>
Prairie junegrass	<i>Koeleria macrantha</i>
Prairie sagewort	<i>Artemisia frigida</i>
Prairie sandreed	<i>Calamovilfa longifolia</i>
Prairie smoke	<i>Geum triflorum</i>
Prairie wild rose	<i>Rosa arkansana</i>
Purple coneflower	<i>Echinacea angustifolia</i>
Purple prairie clover	<i>Dalea purpurea</i>
Redoiser dogwood	<i>Cornus stolonifera</i>
Red raspberry	<i>Rubus idaeus</i>
River-bank grape	<i>Vitis riparia</i>
Rushes	<i>Juncus</i> spp.
Scarlet gaura	<i>Gaura coccinea</i>
Sedges	<i>Carex</i> spp.
Showy lady's slipper	<i>Cypripedium reginae</i>
Sideoats grama	<i>Bouteloua curtipendula</i>
Silky wormwood	<i>Artemisia dracunculus</i>
Silverberry	<i>Elaeagnus commutate</i>
Silverleaf scurfpea	<i>Psoralea argophylla</i>
Slender penstemon	<i>Penstemon gracilis</i>
Sloughgrass	<i>Beckmannia syzigachne</i>
Smartweed	<i>Polygonum</i> spp.
Smooth brome	<i>Bromus inermis</i> –I
Smooth sumac	<i>Rhus glabra</i>
Softstem bulrush	<i>Schoenoplectus validus</i>
Sow thistle	<i>Sonchus arvensis</i> –I
Stiff goldenrod	<i>Solidago rigida</i>

**PLANTS** CONTINUED

Plants are listed in alphabetical order by common name, and introduced species are noted with an "I."

<i>Common Name</i>	<i>Scientific Name</i>
Stiff sunflower	<i>Helianthus rigidus</i>
Stinging nettle	<i>Urtica dioica</i>
Sun sedge	<i>Carex heliophyila</i>
Swamp vervain	<i>Verbena hastata</i>
Sweet clover	<i>Melilotus</i> spp.
Switchgrass	<i>Panicum virgatum</i>
Tall cinquefoil	<i>Potentilla arguta</i>
Thimbleweed	<i>Anemone cylindrica</i>
Three-square bulrush	<i>Schoenoplectus americanus</i>
Toothed evening primrose	<i>Calylophus serrulatus</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>
Western ragweed	<i>Ambrosia psilostachya</i>
Western snowberry	<i>Symphoricarpos occidentalis</i>
Western wild rose; Woods' rose	<i>Rosa woodsii</i>
Western wheatgrass	<i>Agropyron smithii</i>
White birch	<i>Betula</i> spp.
White sage	<i>Artemisia ludoviciana</i>
Wild bergamot	<i>Mondara fistulosa</i>
Wild licorice	<i>Glycyrrhiza lepidota</i>
Wild onion	<i>Allium stellatum</i>
Wild sarsaparilla	<i>Aralia nudicaulis</i>
Wood anemone	<i>Anemone quinquefolia</i>
Wood lily	<i>Lilium philadelphicum</i>
Yellow coneflower	<i>Ratibida columnifera</i>

# Appendix G

## *Fire Management Program*

The Service has administrative responsibility including fire management for Sullys Hill National Game Preserve, which covers approximately 1,675 acres.

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

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

However, fire when properly utilized, can:

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

### WILDLAND FIRE MANAGEMENT POLICY AND GUIDANCE

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

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

The standardization of policies and procedures among federal agencies is an ongoing objective.

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

## MANAGEMENT DIRECTION

The Devils Lake Wetland Management District Complex office and the Eastern North Dakota Fire District will protect life, property, and other resources from wildland fire by safely suppressing all wildfires. Prescribed fire, as well as manual and mechanical fuel treatments, will be used in an ecosystem context to protect both federal and private property and for habitat management purposes. Fuel reduction activities will be applied in collaboration with federal, state, private, and NGO partners. In addition, fuel treatments will be prioritized based on the guidance for prioritization established in the goals and strategies outlined in the “U.S. Fish & Wildlife Service National Wildlife Refuge System Wildland Fire Management Program Strategic Plan 2003–2010” and “Region 6 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 are located near the refuges and were identified in the *Federal Register* (8/17/2001): Ft. Totten, North Dakota; St. Michael, North Dakota; Tokio, North Dakota; and Crow Hill, North Dakota.

The development of CWPPs is an ongoing process. As of October 9, 2007, the four communities listed above have developed CWPPs or CWPP-equivalent documents required by the Bureau of Indian Affairs.

All aspects of the fire management program will be conducted in a manner consistent with applicable laws, policies, and regulations. Sullys Hill National Game Preserve will be included in the “Eastern North Dakota Fire District Fire Management Plan” to accomplish the fire management goals described below. Prescribed fire and manual and mechanical fuel treatments will be applied in a scientific way under selected weather and environmental conditions.

### FIRE MANAGEMENT GOALS

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

The “Region 6 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 Sullys Hill National Game Preserve 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 100 and 500 acres over a 5-year average.

### Strategies

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

All management actions will use prescribed fire, 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 fuels treatment program will be site specific and follow the most recent interagency burn plan template.

Prescribed fire temporarily reduces air quality by reducing visibility and releasing components through combustion. The refuges 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

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

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

On approval of this CCP, new FMPs will be developed for the Eastern North Dakota Fire District. The FMPs may be prepared as a (1) FMP that covers each individual refuge and wetland management district; (2) FMP that covers the area identified within this CCP; (3) FMP that covers the Fire Management District; or (4) interagency FMP.



# Appendix H

## Compatibility Determinations

**Refuge Name:** Sullys Hill National Game Preserve

**County:** Benson County, North Dakota

**Establishing and Acquisition Authorities:** Migratory Bird Conservation Act, Executive Order 7168

### Purposes

“All the lands that are now reserved or may hereafter be included within the boundaries of the ... Sullys Hill National Park Game Preserve ... are hereby further reserved and set apart for the use ... as refuges and breeding grounds for birds.” (Executive Order 3596, December 21, 1921)

“As a big game preserve, refuge, and breeding grounds for wild animals and birds ... provided, that the said game preserve is to be made available to the public for recreational purposes in so far as consistent with the use of this area as a game preserve ... provided further, that hunting shall not be permitted on said game preserve.” (46 Stat. 1509, act of March 3, 1931)

### 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: Fishing

*What is the use? Is the use a wildlife-dependent public use?*

Fishing is one of the six wildlife-dependent public uses specified in the Improvement Act.

*Where will the use be conducted?*

The use will be restricted to Sweet Water Lake and those areas of Fort Totten Bay (Devils Lake) accessible by refuge lands.

*When will the use be conducted?*

Fishing will be permitted only during special events for environmental education purposes.

*How will the use be conducted?*

All of the access to fishing opportunities will be walk-in only.

*Why is this use being proposed?*

Fishing is one of the six wildlife-dependent, priority public uses specified in the Improvement Act. It can be allowed at the refuge without interfering with the migratory bird and big game resources. It also provides an opportunity to educate youth on the benefits of and how to enjoy natural resources in an environmentally conscience manner.

### Availability of Resources

*Resources involved in the administration and management of the uses:* Minimal. Fishing will be part of the environmental education program on Sullys Hill National Game Preserve and will be administered by the refuge staff.

*Special equipment, facilities, or improvements necessary to support the uses:* Minimal.

*Maintenance costs:* Minimal.

*Monitoring costs:* None.

*Offsetting revenues:* None.

### Anticipated Impacts of Use

*Short-term impacts:* There will be temporary disturbance to wildlife near the activity.

*Long-term impacts:* None.

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

### Determination

Fishing is a compatible use at Sullys Hill National Game Preserve.

### Stipulations Necessary to Ensure Compatibility

Fishing will be offered only on a special youth event basis. Fishing will be allowed primarily for environmental education purposes to complement

the existing outdoor education program. Fishing techniques and regulations will comply with NDGF regulations and must be observed while fishing at the refuge. Refuge will determine days or seasons when fishing is open.

## Justification

Fishing is a legislated, wildlife-dependent, priority public use. No long-term or significant adverse impacts on wildlife resource are expected from the primary or supporting uses.

Mandatory 10- or 15-Year Reevaluation Date: 2023

## Description of Use: Wildlife Observation and Photography

*What are the uses? Are the uses wildlife-dependent public uses?*

The uses will be continuation of existing public use programs and activities of and related to wildlife observation and photography. Wildlife observation and photography will be the primary uses. Vehicle access, walk-in-access (including the hiking trail), snowshoeing, and cross-country skiing will be supporting uses.

Wildlife observation and photography are two of the six wildlife-dependent public uses specified in the Improvement Act.

*Where will the uses be conducted?*

The uses will occur over the entire refuge, with the exception of the area closed to the public surrounding the residences and shop. Vehicle access will be restricted to the auto tour route. Walk-in access will be restricted to existing refuge trails and not allowed in areas closed to foot traffic (big game enclosure area and other limited access area).

*When will the uses be conducted?*

Wildlife observation and photography will be allowed year-round. However, access into the refuge will be limited during inclement weather and from sunrise thru sunset conditional on the refuge being open.

The refuge manager will open and close the auto tour route as road conditions allow.

*How will the uses be conducted?*

The refuge will be open for wildlife observation and photography. Their supporting use (access) will be controlled and regulated through brochures, the education and visitor center desk, and through information posted at the kiosks. The auto tour route and the hiking trail will be maintained by refuge staff.

*Why are these uses being proposed?*

Wildlife observation and photography are two of the six wildlife-dependent, priority public uses

specified in the Improvement Act. These uses and their supporting access-related uses can be allowed at the refuge without interfering with the migratory bird and big game resources. They also provides an opportunity to educate visitors on the benefits of National Wildlife Refuges.

## Availability of Resources

*Resources involved in the administration and management of the uses:* This use will require 10% of a full-time GS-9 park ranger, 20% of a seasonal biological technician, and 50% of a YCC crew (3-4 members) for 3 months. Maintenance employees will spend approximately 2% of their time associated with this use.

*Special equipment, facilities, or improvements necessary to support the uses:* This use requires the maintenance of the auto tour, trail system, four viewing platforms, two restrooms, eight waste barrels, and directional signage.

*Maintenance costs:* YCC \$4,435; biological technician \$1,915; two maintenance staff \$2,529; ranger \$8,165.

*Materials:* \$500.

*Total:* \$17,544.

*Monitoring costs:* Minimal, traffic counter data collection random law enforcement patrols.

*Offsetting revenues:* Recreational fee collection.

## Anticipated Impacts of Use

*Short-term impacts:* There may be temporary disturbance to wildlife near the activity. Direct short-term impacts may include minor damage from traffic to refuge roads and trails when wet and muddy.

*Long-term impacts:* None.

*Cumulative impacts:* There will be no direct nor indirect cumulative impacts anticipated with these uses.

## Determination

Wildlife observation and photography, along with their supporting uses and stipulations are compatible uses at Sullys Hill National Game Preserve.

## Stipulations Necessary to Ensure Compatibility

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

## Justification

Wildlife observation and photography are legislated, wildlife-dependent public uses. No long-term or significant adverse impacts on wildlife resource are expected from the primary or supporting uses.

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

Mandatory 15-year Reevaluation Date: 2023

## Description of Use: Environmental Education and Interpretation

*What are the uses? Are the uses wildlife-dependent public uses?*

The uses will be continuation of interpretative and environmental education programs at current and increased levels. The refuge will be used as an outdoor classroom and tour site for visiting school and nonprofit groups. Interpretation and environmental education are two of the six wildlife-dependent public uses specified in the Improvement Act.

*Where will the uses be conducted?*

Environmental education and interpretation will take place over the entire refuge. However, most activities will be on the auto tour route, and the refuge education and visitor center and its facilities will be used in presenting programs. In addition, the refuge's hiking, snowshoeing, and ski trails will be incorporated into the overall program.

*When will the uses be conducted?*

These activities will primarily be held during the daytime, most frequently while school is in session (September–May). Less frequently, nonprofit groups and other groups will be hosted throughout the year.

*How will the uses be conducted?*

Refuge staff and volunteers will provide the instruction and host classroom tours in most cases. Someone other than refuge personnel may lead activities.

*Why are these uses being proposed?*

Interpretation and environmental education are two of the six wildlife-dependent, priority public uses specified in the Improvement Act. These uses can be allowed at the refuge without interfering with the migratory bird and big game resources.

## Availability of Resources

*Resources involved in the administration and management of the uses:* This use requires 50% of a full-time GS-9 park ranger, 25% of a seasonal biological technician (6 months), and 50% of a YCC crew (3–4 members) for 3 months. Maintenance employees will spend approximately 5% of their time associated with

this use. A private cleaning contractor will also be required.

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

*Maintenance costs:* Cleaning contract \$1,617; YCC \$4,435; biological technician \$2,395; two maintenance staff \$6,322; ranger \$40,826.

*Materials:* \$5,000.

*Total:* \$60,595.

*Monitoring costs:* Minimal; visitor use data collection.

*Offsetting revenues:* Volunteer program, grants, recreational fee collection.

## Anticipated Impacts of Use

*Short-term impacts:* There may be temporary disturbance to wildlife near the activities.

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

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

## Determination

Interpretation and environmental education are compatible uses at Sully Hill National Game Preserve.

## Stipulations Necessary to Ensure Compatibility

Anticipated impacts are assumed to be light; however, stipulations will still be necessary to ensure that wildlife resources are adequately protected. Disturbance is almost an unavoidable impact of the interpretive and environmental education programs. However, it is through these activities that visitors will receive an understanding of proper etiquette while visiting the refuge and the impact people have on habitat and wildlife. This information and refuge-specific regulations will be available through visitor contacts, brochures, and kiosks. Periodic law enforcement will ensure compliance with regulations and area closures.

## Justification

Interpretation and environmental education are legislated, wildlife-dependent priority public uses. Other than minor disturbance, these uses will have no impact on resources. These uses will contribute to the mission of the Refuge System by increasing knowledge and support of the stewardship of natural resources.

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

Mandatory 15-year Reevaluation Date: 2023

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**Signature**

 10/31/08

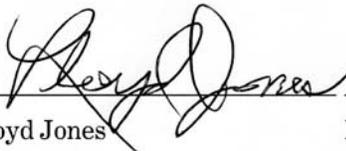
Roger Hollevoet Date  
Project Leader, Sullys Hill National Game Preserve  
USFWS, Region 6

**Concurrence**

 11/7/08

Richard A. Coleman, PhD Date  
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**Review**

 10/31/08

Lloyd Jones Date  
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USFWS, Region 6

 11/7/08

Paul Cornes Date  
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USFWS, Region 6

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