Glossary

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

active management: The direct manipulation of habitats or wildlife populations to achieve specific objectives. Actions could include planting food plots, managing water levels, prescribed grazing or fire, or wildlife relocations.

adaptive resource management: The rigorous application of management, research, and monitoring to gain information and experience necessary to assess and change management activities; a process that uses feedback from research, monitoring, and evaluation of management actions to support or change objectives and strategies at all planning levels; a process in which policy decisions are carried out within a framework of scientifically driven experiments to test predictions and assumptions inherent in management plan. Analysis of results helps managers 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 (The Fish and Wildlife Service Manual, 602 FW 1.5).

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

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

appropriate use: A proposed or existing uses on national wildlife refuges that meet at least one of the following: (1) is a wildlife-dependent recreational use; (2) contributes to fulfilling refuge purposes, the Refuge System mission, or goals and objectives outline in a CCP; or (3) the refuge manager has evaluated the use and found it to be appropriate.

ATV: All-terrain vehicle.

AUM: Animal-unit month.

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

BCR: Bird conservation region.

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

biological integrity: Biotic composition, structure, and function at genetic, organism, and community levels.

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

BLM: *See Bureau of Land Management.*

Bureau of Land Management (BLM): A Federal agency that was established in 1946 through consolidation of the General Land Office and U.S. Grazing Service. The agency has a multiple-use mandate is responsible for a variety of programs for managing and conserving surface and subsurface mineral estates, mostly in the western United States.

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.

CCP: *See comprehensive conservation plan.*

CFR: *See Code of Federal Regulations.*

cervid: All members of the family Cervidae and hybrids including deer, elk, moose, caribous, reindeer, and related species.

CFR: *See Code of Federal Regulations.*

cfs: Cubic feet per second.

CO_2: Carbon dioxide.

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 (The Fish and Wildlife Service Manual, 603 FW 3.6). A compatibility determination supports the selection of compatible uses and identified stipulations or limits necessary to ensure compatibility.

comprehensive conservation plan (CCP): A document that describes the desired future conditions of the refuge and provides long-range guidance and management direction for the refuge manager to

accomplish the purposes of the refuge, contribute to the mission of the Refuge System, and to meet other relevant mandates (The Fish and Wildlife Service Manual, 602 FW 1.5).

concern: *See issue.*

conservation district: Organized in the 1930s as a response to the severe erosion problems, a district is often a political subdivision of a State. Money comes from assessments levied on real property within the boundaries of the district. It helps citizens in conserving renewable natural resources.

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

corridor: *See travel corridor.*

county road: In general, means any public highway opened, established, constructed, maintained, abandoned in accordance with State law.

cover, cover type, canopy cover: Present vegetation.

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

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

DNRC: Montana Department of Natural Resources and Conservation.

DOI: Department of the Interior.

EA: *See environmental assessment.*

ecological resilience: The ability to absorb disturbances, to be changed, and then to reorganize and still have the same identity, that is, keep the same basic structure and ways of functioning. A resilient system is forgiving of external shocks; a disturbance is unlikely to affect the whole. A resilient habitat (1) sustains many species of plants and animals and a highly variable structural composition; (2) is asymmetric; (3) exemplifies biological integrity, biological diversity, and environmental health; and (4) adapts to climate change.

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.

ecosystem resilience: *See ecological resilience.*

EIS: Environmental impact statement.

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

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

Enhancement Act: Title VIII of the Water Resources Development Act of 2000.

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

environmental health: Composition, structure, and functioning of soil, water, air, and other abiotic features.

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

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 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.

fire refugia: Those places within the landscape that due to size, soils, or topography do not burn as often, as intensely, or at all with frequent light ground fire. In landscapes with frequent fire return intervals, respect for fire refugia is essential for protection of fire intolerant plant species.

flora: All the plant species of an area.

fire management plan (FMP): A plan that identifies and integrates all wildland fire management and related activities within the context of approved land and resource management plans. The plan defines a program to manage wildland fires (wildfire and prescribed fire).

focal species: A multispecies approach where the ecological needs of a suite of species are used to define an ideal landscape to maintain the range of habitat conditions and ecological processes required by landbirds or other species. Focal species are considered most sensitive to or limited by certain ecological processes (such as fire or nest predation) or habitat attributes (such as patch size or snags).

The needs of a suite of focal species are then used to help guide management activities.

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

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

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

FWS: *See U.S. Fish and Wildlife Service.*

geocaching: A high-technology scavenger hunt in which objects are hidden at secret outdoor locations for participants to find using Global Positioning System positions posted on the Internet.

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

GIS: *See geographic information system.*

Global Positioning System (GPS): A navigational system involving satellites that a allows a user with a receiver to determine precise coordinates for their location on the earth's surface.

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

GPS: *See Global Positioning System.*

GS: General Schedule (pay rate schedule for certain Federal positions).

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

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

habitat management plan (HMP): A stepdown plan to a comprehensive conservation plan that identifies in detail how the objectives and strategies for uplands, riparian areas, river bottoms, and shorelines will be carried out.

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

HDP: *See height–density plot.*

height–density plot (HDP): Methods used to record the height of visual obstruction of plant cover. A measuring pole is observed at points along a line transect from a set distance and angle. It provides information on the adequacy of nesting cover for sharp-tailed grouse.

herbivory: Grazing of grass and other plants by any animal.

heterogeneity: diversity or dissimilar species within a landscape

HMP: *See habitat management plan.*

huntable: A species that can be hunted on the refuge in accordance with Federal and State regulations.

IMPLAN: Impact Analysis for Planning.

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

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

indigenous: Originating or occurring naturally in a particular place.

inholding: Non-Service land owned by private, other agency, or other group landowners that is within the boundary of a national wildlife refuge.

integrated pest management: 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 and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health.

invertebrates: An animal that lacks an internal skeleton or backbone such as insects, butterflies, and aquatic species like snails.

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

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 (The Fish and Wildlife Service Manual, 602 FW 1.5).

long-distance animal movement: The ability of a wildlife species to move greater distances in search of forage without fences.

lotic: Flowing water wetlands are associated with rivers, streams and drainage ways. These riparian wetlands contain a defined channel and floodplain.

management alternative: *See alternative.*

MFWP: Montana Department of Fish, Wildlife and Parks.

MIAG: Montana/Idaho Airshed Group.

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

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

mission: Succinct statement of purpose or reason for being.

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

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

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

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

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

National Wildlife Refuge System Improvement Act of 1997 (Improvement Act): Sets the mission and the administrative policy for all refuges in the National Wildlife Refuge System; defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife 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 parts of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966.

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

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

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

nongovernmental organization: Any group that is not a Federal, State, tribal, county, city, town, local, or other governmental entity.

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

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

NWR: National wildlife refuge.

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

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

patch burning: The use of prescribed fire each year in a different location or patch within a larger unfenced landscape. With an ecology-driven purpose, patch burning has high potential to increase biodiversity and wildlife habitat. This management practice creates a mosaic of heavily grazed and lightly grazed areas that provide a diverse vegetative structure and increase diversity in the same grazing unit.

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

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

preferred alternative: The Service's final selection (after analysis of alternatives in a draft National Environmental Policy Act document) of a management alternative to carry out, which is documented in a "record of decision" for an EIS or a "finding of no significant impact" for an environmental assessment and published in the Federal Register. The decision is based on the legal responsibility of the Service including the missions of the Service and the Refuge System, other legal and policy mandates, the purpose of the refuge, and the vision and goals in the final CCP. In addition, the Service considers public, tribal, and agency input along with land uses in the ecosystem, environmental effects, and budget projections.

prescribed fire: A wildland fire originating from a planned ignition to meet specific objectives identified in a written, approved, prescribed fire plan for which National Environmental Policy Act requirements (where applicable) have been met before ignition. These objectives could be hazardous fuel reduction, habitat- or wildlife-oriented, or other objectives in the prescribed fire burn plan.

prescriptive grazing: The planned application of livestock grazing at a specified season, duration and intensity to accomplish specific vegetation management objectives. The objectives are designed to achieve the broader habitat and wildlife goals.

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; Native American tribes; and foreign nations. It may include anyone outside the core planning team. It includes those who may or may not have shown an interest in Service issues and those who do or do not realize that Service decisions may affect them.

public domain: Lands that were not under private or State ownership during the 18th and 19th centuries in the United States, as the country was expanding. These lands were obtained from the 13 colonies, Native American tribes, or purchases from other counties. The domain was controlled by the Federal Government and sold to States or private interests through the General Land Office, which would eventually become the Bureau of Land Management.

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, a refuge unit, or a refuge subunit (The Fish and Wildlife Service Manual, 602 FW 1.5).

pyric herbivory: Grazing promoted through fire. The fire–grazing interaction is critical in maintaining heterogeneity (dissimilar species resulting in variety) of grassland ecosystems.

quality wildlife-dependent recreation: Programs are based on 11 criteria that defined under 605 FW1, "General Guidelines for Wildlife-Dependent Recreation." Quality programs include the following: safety of participants and compliance with laws and regulations; minimized conflicts with other goals or users; accessibility, stewardship, and availability to a broad spectrum of the American people; public understanding and appreciation of the natural resources; reliable and reasonable opportunities to experience wildlife; accessible facilities that blend in with the natural setting; and visitor satisfaction to help define and evaluate programs.

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

R.S. 2477: Revised Statute 2477. Section 2477 of the Revised Statutes emerged from section 8 of the Mining Act of 1866, which provided rights-of-way for the construction of highways over public lands, not reserved for public uses. It was repealed on October 21, 1976, under the Federal Land Policy and Management Act.

refuge purpose: *See purpose of the refuge.*

Refuge System: *See National Wildlife Refuge System.*

refuge use: Any activity on a refuge, except administrative or law enforcement activity, carried out

by or under the direction of an authorized Service employee.

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

resilience: The ability to absorb disturbances, to be changed and then to reorganize and still have the same identity (keep the same basic structure and ways of functioning).

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 and Wetland Research Program: A program through the University of Montana's Department of Forestry that the Service contracted with in 1999–2000 to look at water quality on the refuge.

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.

RLGIS: Refuge land geographic information system.

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

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

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

sentinel plant species: Plant species that vanish first when the ecological processes that occur within an ecosystem are out of balance (refer to appendix G).

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

shorebird: Any of a suborder (Charadrii) of birds such as a plover or a snipe that frequent the seashore or mudflats.

spatial: Relating to or having the character of space.

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

special use permit: A permit for special authorization from the refuge manager required for any refuge service, facility, privilege, or product of the soil provided at refuge expense and not usually available to the public through authorizations in Title 50 CFR or other public regulations (Refuge Manual, 5 RM 17.6).

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

stepdown management plan: A plan that provides the details necessary to carry out management strategies identified in the comprehensive conservation plan (Fish and Wildlife Service Manual, 602 FW 1.5).

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

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

target species: A species selected, because of specific biological or social reasons, for management and monitoring. A target species could be a focal, endangered, big game, or other species.

TEA–21: 1998 Transportation Equity Act for the 21st Century.

TES: Threatened and endangered species.

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 part of their range.

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

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

trust resource: *See Federal trust resource.*

trust species: *See Federal trust species.*

ungulate: A hoofed mammal such as horses, cattle, deer, pronghorn, and bighorn sheep.

USACE: *See U.S. Army Corps of Engineers.*

U.S. Army Corps of Engineers (USACE): The Federal agency whose mission is to provide vital public engineering services in peace and war to strengthen the Nation's security, energize the economy, and reduce risks from disasters.

U.S.C.: United States Code.

USDA: U.S. Department of Agriculture.

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

USFS: USDA Forest Service.

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

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.

USGS: *See U.S. Geological Survey.*

viability: Ability to survive and developing adequately. For a plant, the ability to survive and bear fruits or seeds without being fenced.

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 (The Fish and Wildlife Service Manual, 602 FW 1.5).

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

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

WG: Wage grade schedule (pay rate schedule for certain Federal positions).

wild bison: In Montana, wild buffalo are defined as buffalo or bison that have not been reduced to captivity per Montana Code Ann. §87–2–101(16). Bison that are free roaming and held in public trust are classified as a game species in Montana. The State of Montana's legal classification of bison changes based on whether they are found on commercial farms or in private conservation herds or whether they are found in the wild.

wildfire: An unplanned ignition of a wildland fire (such as a fire caused by lightning, volcanoes, and unauthorized and accidental human causes) and any escaped prescribed fire.

wildland fire: Any nonstructure fire that occurs in the wildland including wildfire and prescribed fire.

wildland–urban interface: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland and vegetative fuel.

wilderness review: The process used to identify and recommend for congressional designation Refuge System lands and waters that merit inclusion in the National Wilderness Preservation System. It is a required element of a CCP and includes three phases: inventory, study, and recommendation.

wilderness, also designated wilderness: An area designated in legislation and administered as part of the National Wilderness Preservation System.

wilderness, proposed: An area of the Refuge System that the Secretary of the Interior has recommended to the President for inclusion in the National Wilderness Preservation System.

wilderness, recommended: An area of the Refuge System that the Director of the Service has recommended to the Secretary of the Interior, through the Assistant Secretary for Fish and Wildlife and Parks, for inclusion in the National Wilderness Preservation System.

wilderness study area (WSA): An area the Service is considering for wilderness designation, which has been is identified and established through the inventory component of a wilderness review.

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 public uses of the Refuge System.

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

WSA: Wilderness study area.

Appendix A
Record of Decision

Record of Decision for the Final Comprehensive Conservation Plan and Environmental Impact Statement

Charles M. Russell National Wildlife Refuge
UL Bend National Wildlife Refuge

July 2012

INTRODUCTION

This record of decision provides the basis for management decisions for the final comprehensive conservation plan and environmental impact statement for Charles M. Russell National Wildlife Refuge and UL Bend National Wildlife Refuge (together, "the refuge"), Montana. We, the Fish and Wildlife Service (Service) manage these two national wildlife refuges as part of the National Wildlife Refuge System. UL Bend National Wildlife Refuge lies within Charles M. Russell National Wildlife Refuge; these two units are managed cohesively as one refuge. Unless otherwise specified in this record of decision, they are referred to as Charles M. Russell National Wildlife Refuge. As part of the National Wildlife Refuge System, the Charles M. Russell National Wildlife Refuge is managed for wildlife conservation above all else.

The comprehensive conservation plan (CCP) was prepared along with an environmental impact statement (EIS) in compliance with the National Environmental Policy Act and relevant planning policies. We published a notice of availability for the final CCP and EIS in the Federal Register on May 7, 2012 (FR 77 (88):26781–84).

In preparing the final CCP and EIS, we worked closely with several cooperating agencies and partners including: the U.S. Army Corps of Engineers; Bureau of Land Management; Montana Department of Fish, Wildlife, and Parks; Montana Department of Natural Resources; counties of Fergus, Petroleum, Garfield, McCone, Valley, and Phillips; and Missouri River Conservation Districts council (for the six districts that surround the refuge). Other tribal governments, Federal, State and local agencies, nongovernmental organizations, and individuals contributed input to the plan.

REFUGE BACKGROUND

The planning area is located in Fergus, Petroleum, Garfield, McCone, Valley, and Phillips Counties in Montana. The refuge headquarters is in Lewistown, Montana. Encompassing nearly 1.1 million acres, Charles M. Russell National Wildlife Refuge is one of the largest refuges in the lower 48 States. It extends west about 125 air miles along the Missouri River from Fort Peck Dam to the refuge's western edge at the boundary of the Upper Missouri River Breaks National Monument.

Refuge habitat includes native prairie, forested coulees, river bottoms, and badlands. Wildlife is as diverse as the topography and includes Rocky Mountain elk, mule deer, white-tailed deer, pronghorn, Rocky Mountain bighorn sheep, sharp-tailed grouse, prairie dogs, endangered black-footed ferrets, and over 236 species of birds.

More than 250,000 visitors take part in a variety of wildlife-dependent recreational activities every year. In particular, the refuge is renowned for its outstanding hunting opportunities. Other visitors enjoy viewing and photographing wildlife along the refuge's extensive network of roads. The Fort Peck Interpretive Center showcases many exhibits. Still others enjoy fishing along the Missouri River.

PURPOSE AND NEED FOR THE PLAN

The purpose of this final CCP and EIS is to identify actions necessary to accomplish the purposes of both refuges, identify the role the refuges will play in support of the mission of the National Wildlife Refuge System, and to provide long-term guidance for management of refuge programs and activities.

The CCP is needed:

- to communicate with the public and other partners in efforts to carry out the mission of the National Wildlife Refuge System;
- to provide a clear statement of direction for management of the refuge;
- to provide neighbors, visitors, and government officials with an understanding of the Service's management actions on and around the refuge;
- to ensure the Service's management actions are consistent with the National Wildlife Refuge Improvement Act of 1997;
- to ensure that management of the refuge considers other Federal, State, and county plans;
- to provide a basis for development of budget requests for the operation, maintenance, and capital improvement needs of the refuge.

We are committed to sustaining the Nation's fish and wildlife resources through the combined efforts of governments, businesses, and private citizens.

NATIONAL WILDLIFE REFUGE SYSTEM

Like all national wildlife refuges, Charles M. Russell and UL Bend National Wildlife Refuges are administered under the National Wildlife Refuge System.

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

REFUGE PURPOSES

Each national wildlife refuge is managed to fulfill the mission of the National Wildlife Refuge System, as well as the specific purposes for which that refuge was established.

In 1936, Charles M. Russell National Wildlife Refuge was established by Executive Order 7509 for the following purpose:

"That the natural forage resources therein shall be first utilized for the purpose of sustaining in a healthy condition a maximum of four hundred thousand (400,000) sharp-tailed grouse, and one thousand five hundred (1,500) antelope, the primary species, and such nonpredatory secondary species in such numbers as may be necessary to maintain a balanced wildlife population, but in no case shall the consumption of the forage by the combined population of the wildlife species be allowed to increase the burden of the range dedicated to the primary species: Provided further, That all the forage resources within this range or preserve shall be available, except as herein otherwise provided with respect to wildlife, for domestic livestock…And provided further, That land within the exterior limits of the area herein described…may be utilized for public grazing purposes only to the extent as may be determined by the said Secretary (Agriculture) to be compatible with the utilization of said lands for the purposes for which they were acquired."

UL Bend National Wildlife Refuge was established in 1969 "for use as an inviolate sanctuary, or for any other management purpose, for migratory birds" (16 U.S.C. 715d, Migratory Bird Conservation Act).

Other lands within both refuges subsequently have been acquired under a variety of transfer and acquisition authorities or have different designations including designated and proposed wilderness, giving both refuges more than one purpose.

VISION

At the beginning of the planning process, we developed a vision for the refuge that describes the focus of refuge management and portrays a picture of the refuge in 15 years:

> *Charles M. Russell National Wildlife Refuge's expansive badlands, cottonwood river bottoms, old-growth forested coulees, sagebrush steppes, and mixed-grass prairies appear out of the sea that is the northern Great Plains.*
>
> *Encompassing more than a million acres, the refuge affords visitors solitude, serenity, and unique opportunities to experience natural settings and wildlife similar to what Native Americans and, later, Lewis and Clark observed. The diversity of plant and animal communities found on the refuge stretch from the high prairie through the rugged breaks, along the Missouri River, and across Fort Peck Reservoir. The refuge is an outstanding example of a functioning, resilient, and intact landscape in an ever-changing West.*
>
> *Working together with our neighbors and partners, the Service employs adaptive management rooted in science to protect and improve the biological integrity, biological diversity, and environmental health of the refuge's wildlife and habitat resources.*

MANAGEMENT GOALS

We developed eight goals for the refuge based on the National Wildlife Refuge Improvement Act of 1997

and the refuge purposes, and we refined these goals as the planning process progressed. The goals direct work toward achieving the vision and purposes of the refuge and outline approaches for managing refuge resources.

HABITAT CONSERVATION

Conserve, restore, and improve the biological integrity, environmental health, and ecological diversity of the refuge's plant and animal communities of the Missouri river Breaks and surrounding prairies to support healthy populations of native populations of native plants and wildlife in a changing climate. Working with others, reduce and control the spread of nondesirable, nonnative, invasive plant and aquatic species for the benefit of native communities on and off the refuge.

THREATENED AND ENDANGERED SPECIES AND SPECIES OF CONCERN

Contribute to the identification, preservation, and recovery of threatened and endangered species and species of concern that occur or have historically occurred in the northern Great Plains.

RESEARCH AND SCIENCE

Advance the understanding of natural resources, ecological processes, and the effectiveness of management actions in a changing climate in the northern Great Plains through compatible scientific investigations, monitoring, and applied research.

FIRE MANAGEMENT

Manage wildland fire using a management response that promotes fire's natural role in shaping the landscape while protecting values at risk.

PUBLIC USE AND EDUCATION

Provide all visitors quality education, recreation, and outreach opportunities that are appropriate and compatible with the purpose and goals of the refuge and the mission of the National Wildlife Refuge System while maintaining the remote and primitive experience unique to the refuge.

WILDERNESS

Conserve, improve, and promote the wilderness character and associated natural processes of designated and proposed wilderness areas and wilderness study areas within the refuge for all generations.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Identify, value, and preserve the significant paleontological and cultural resources of the refuge to connect refuge staff, visitors, and the community to the area's prehistoric and historic past.

REFUGE OPERATIONS AND PARTNERSHIPS

Through effective communication and innovative use of technology and resources, the refuge uses funding, personnel, partnerships, and volunteer programs for the benefit of natural resources while recognizing the social and economic connection of the refuge to adjacent communities.

SIGNIFICANT ISSUES

In the EIS, we disclosed the effects of four management alternatives that were developed to address significant issues, which were derived from the scoping process. The significant issues in the final CCP and EIS include:

- habitat and wildlife
- water resources
- public use and access
- wilderness
- socioeconomics
- partnerships and collaboration
- cultural values, traditions, and resources

DECISION (Alternative D)

We select to implement Alternative D—Ecological Processes Emphasis. This alternative is selected for management because it will enable the Service to use natural, dynamic, ecological processes and management activities in a balanced responsible manner to restore and maintain the biological diversity, biological integrity, and environmental health of the Charles M. Russell National Wildlife Refuge and the UL Bend National Wildlife Refuge. Once natural processes are restored, a more passive approach (less human assistance) will be favored. There will be quality wildlife-dependent public uses and experiences. Economic uses will be limited when they are injurious to ecological processes.

Alternative D addresses the significant management issues raised during the planning process. This alternative best meets the purposes of the refuges,

the mission of the National Wildlife Refuge System, and the vision and management goals set for the refuge while adhering to the management policies of the Service. Additionally, this alternative balances the interests and perspectives of many agencies, organizations, tribes, and the public.

Alternative D was revised from the proposed action in the draft CCP and EIS after our consideration of many comments received from agencies, tribes, other stakeholder organizations, and the public, many of whom supported this approach, during the comment period.

The key actions of alternative D follow:

- We will apply management practices that mimic and restore natural processes on the refuge to manage for a diversity of plant species and wildlife species in uplands, riparian areas, and river bottoms. This will involve a concerted manipulation of habitats or wildlife populations (using prescribed fire, grazing, hunting, and other tools) through coordinated objectives. Management will evolve toward more passive approaches that allow natural processes such as fire, grazing, and flooding to occur with less human aid or money.
- We will maintain plant diversity and health using fire in combination with wild ungulate herbivory or prescriptive livestock grazing, or both, to ensure the viability of populations of sentinel plants (those plant species that decline first when management practices are injurious). Prescriptive livestock grazing will be implemented across 50–75 percent of the refuge within 6–9 years. We will communicate with permittees as new habitat management plans are developed.
- In collaboration with the Montana Department of Fish, Wildlife and Parks and others, we will maintain the health and diversity of all species' populations—including focal birds, migratory birds, threatened and endangered species, species of concern, game species, and nongame species—by restoring and maintaining balanced, self-sustaining populations. This could include manipulating livestock grazing and wildlife numbers, or both, if habitat monitoring determined conditions were declining or plant species were being affected by overuse. Predators will be managed to benefit the ecological integrity of the refuge. Limited hunting for mountain lion or other furbearers or predators will be considered only after monitoring verified that population levels could be sustained with a hunt.
- If the State of Montana moves forward with a plan to restore wild bison in Montana, we will cooperate with Montana Department of Fish, Wildlife and Parks; Montana Department of Natural Resources and Conservation; conservation organizations; and others to conduct the necessary biological, social, and economic research to determine the feasibility of restoration for wild bison on the surrounding landscape. Before any wild bison reintroduction could proceed, we would work with others to complete a cooperative wild bison management plan developed and agreed-on by all involved parties. A wild bison plan would address population objectives and management, movement of animals outside restoration areas, genetic conservation and management, disease management, and conflict-resolution procedures.
- We will cooperate with Montana Department of Fish, Wildlife and Parks to provide hunting experiences that keep game levels that meet or exceed State objectives, sustain ecological health, and provide opportunities not found on other public lands. We will develop cooperative programs with Montana Department of Fish, Wildlife and Parks for monitoring big game populations and habitat. During development of habitat management plans, we will establish population levels, sex and age composition targets, and harvest strategies that are jointly agreed to and tailored to the varied habitat potential on the refuge. To provide a variety of quality recreational opportunities, hunting regulations will include population objectives with diverse male age structures not generally managed for on other public lands.
- Refuge access will be managed primarily to benefit natural processes, but some improvements will be made to provide quality visitor experiences. Initially, we will close about 21 miles of roads, implement a seasonal closure along 2.4 miles of road 315 (Petroleum County), and designate 13 miles of roads on the northeast side of the refuge as game retrieval roads where seasonal closures will be applied. Other closures or modifications could be necessary after further review of the road program. This will encourage free movement of wildlife, permit prescribed fire or wildfire suppression, and increase effective harvest of wild ungulates. Additionally, we will consider (1) upgrading about 5 miles of roads to all-weather access (gravel) to allow for additional winter fishing access, and (2) adding trails, viewing blinds, and a science interpretive center to expand opportunities for quality wildlife observation, interpretation, and environmental education.
- We will expand or adjust existing proposed wilderness units by 19,942 acres in Alkali Creek, Antelope Creek, Crooked Creek, East Seven Blackfoot, Mickey Butte, Sheep Creek, Wagon Coulee, and West Hell Creek. UL Bend Wilderness Area will remain protected.

OTHER ALTERNATIVES CONSIDERED

The final CCP and EIS evaluated two other action alternatives and the no-action alternative.

ALTERNATIVE A: NO ACTION

Few changes would occur in the management of existing wildlife populations and habitat. Wildlife-dependent public uses and economic uses would continue at current levels. Key actions of alternative A follow:

- There would be a continued emphasis on big game management, annual livestock grazing, use of fencing for pastures, invasive species control, and water development. Habitat would continue to be managed in the 65 habitat units that the Bureau of Land Management established for livestock grazing purposes. Prescriptive grazing would be implemented gradually as units became available and habitat evaluations were completed (anticipated to be 50-percent implemented by year 15).
- Big game would be managed to achieve target levels as described in a 1986 record of decision on an earlier environmental impact statement for resource management.
- Select stock ponds would be maintained and rehabilitated. Riparian habitat would be restored where possible, and standard watershed management practices would be enforced.
- Access would be allowed on 670 miles of refuge roads.
- About 155,288 acres of proposed wilderness within 15 units of the Charles M. Russell Refuge would be managed in accordance with Service policy. UL Bend Wilderness Area would be protected.

Alternative A was not selected for implementation, because it would not meet the goals of the CCP for habitat and wildlife management. The continuation of existing management objectives and strategies would not restore biological integrity, environmental health, or ecological diversity (a primary element in the vision for the refuge) nor would it enable the refuge to manage wildlife and habitat in a comprehensive manner as was intended by the National Wildlife Refuge Improvement Act of 1997. There would be continued emphasis on managing wildlife habitats within the confines of the 65 habitat units that were originally established for domestic grazing purposes and not for wildlife. This alternative would only partially satisfy the goals for threatened and endangered species and species of concern, research and science, fire management, public use and education, wilderness, and refuge operations and partnerships.

Although alternative A would continue the transition toward implementing prescriptive fire and grazing strategies, it would largely maintain the current management emphasis of fire suppression and annual livestock grazing. The Great Plains evolved through a complex interaction of fire and grazing, and the continued emphasis on constant grazing and fire suppression across the uplands would greatly limit the composition, structure, and function of vegetation, resulting in the continued loss of plant diversity and habitat function. Although the gradual transition toward implementing prescriptive grazing over annual grazing has resulted in some minor benefits in localized areas across the refuge, these benefits have not resulted in a recovery of sentinel plants and may be offset by increases in native ungulates.

There would be few specific strategies undertaken to restore riparian areas and wetlands outside of what is currently done (keeping livestock away from riparian areas where possible and limited invasive species control). The continued transition toward implementing prescriptive grazing would result in minor incremental benefits to the overall health of riparian areas; however, localized sites would continue to experience a negative trend. Similarly, the continued use of water impoundments under this alternative would result in minor long-term impacts to riparian areas.

Alternative A would meet basic elements of the threatened, endangered, and species of concern goal. However, it would only maintain or continue existing efforts toward recovery or monitoring of special status species with limited efforts made at increasing protection efforts for special status species. Similarly, existing research programs would continue but would not increase.

There would not be a designated staff member to support public use and education. There would continue to be limited environmental education opportunities and few improvements for nonconsumptive, wildlife-dependent users.

Alternative A would maintain the status quo for wilderness protection but would not improve or promote these qualities on the refuge. This alternative would satisfy the goal for cultural and paleontological resource protection. We would continue to work with many partnership organizations; however, there would not be a volunteer program or the ability to increase conservation strategies across the landscape.

Some stakeholder agencies, organizations, and the public expressed support for all or elements of alternative A, primarily because it would maintain the emphasis on annual livestock grazing, wildland fire suppression, stock pond management, and inte-

rior fencing. Many oppose road closures, increases in wilderness protection, potential bison restoration, species reintroductions, and an increase in predators on the refuge. However, many stakeholders and the public did not support a continuation of existing management on the refuge and were emphatic about the need to manage the refuge for wildlife purposes.

ALTERNATIVE B: WILDLIFE POPULATION EMPHASIS

We would manage the landscape, in cooperation with our partners, to emphasize the abundance of wildlife populations using balanced natural ecological processes such as fire and herbivory by wild ungulates and responsible farming practices and tree planting. Wildlife-dependent public use would be encouraged, and economic uses would be limited when they compete for habitat resources.

We would actively manipulate habitat, thus creating a diverse plant community of highly productive wildlife food and cover. The management emphasis would be on habitat for target wildlife species, including focal bird species, in separate parts of the refuge. We would consolidate the 65 habitat units and write new habitat management plans based on field station boundaries and habitat evaluation for target species. We would work with others to develop methods to monitor and evaluate target or focal species and habitat needs. Prescriptive grazing would be implemented across 50–75 percent of the refuge within 4–7 years.

We would close about 106 miles of roads and would work with partners to develop a travel management plan and to secure access to the refuge through other lands.

We would expand or adjust by 25,869 acres the existing proposed wilderness units: Alkali Creek, Antelope Creek, Crooked Creek, East Seven Blackfoot, Mickey Butte, Sheep Creek, Wagon Coulee, West Beauchamp Creek, and West Hell Creek.

Alternative B was not selected for implementation. The overall effects on habitat quality, biological integrity, and ecological resilience (health) would vary geographically based on the target and focal species and the management tools that were used. This management approach would improve habitat conditions and habitat function, although maximizing wildlife populations would not necessarily improve biological diversity, biological integrity, or environmental health across the refuge. For example, potential increases in elk populations or invasive species could offset benefits in riparian areas, depending on livestock management and the interactions between wild and domestic ungulates and riparian habitat. Maximizing big game populations would likely necessitate further reductions in livestock grazing to reduce competition and to provide adequate forage and space for native ungulates without adversely affecting habitat quality and conditions for other wildlife species.

The closing of 106 miles of roads would have many benefits for wildlife security as well as for those hunters who desire more roadless hunting opportunities, but it could also limit harvest effectiveness in some locations or have other unintended consequences on access.

Alternative B would add one outdoor recreation planner, which would enable the refuge to improve visitor services over current conditions, but it would still be limited and would not increase wildlife-dependent public uses or environmental education programs to any degree. Visitation would likely remain stagnant over 15 years.

A large number of stakeholder organizations and the public expressed support for alternative B, primarily because of its emphasis on maximizing wildlife populations, increasing wilderness protection, and closing of 106 miles of roads. However, many local citizens and agencies oppose any road closures and many of the objectives and strategies in alternative B.

ALTERNATIVE C: PUBLIC USE AND ECONOMIC USE EMPHASIS

We would manage the landscape in cooperation with our partners to emphasize and promote the maximum, compatible, wildlife-dependent public use and economic uses while protecting wildlife populations and habitats to the extent possible. Damaging effects on wildlife habitats would be minimized by using a variety of management tools to enhance and diversify public and economic opportunities.

Alternative C was not selected for implementation; while it would enable us to take some steps toward improving existing conditions, it would only minimize damaging effects in other localized areas. It would not restore biological integrity, environmental health, or ecological diversity. Furthermore, this alternative would not advance the understanding of ecological processes or promote fire's natural role. With increased staff levels for outdoor recreation planners, the refuge could provide more visitors educational, interpretive, and recreational opportunities, although the emphasis would be on moderate increases in visitor numbers and not necessarily an emphasis on providing quality experiences.

As with alternative A, alternative C would maintain the status quo for wilderness protection, but it would not promote additional wilderness protection. Therefore, this alternative would not fully satisfy the goal for wilderness.

Alternative C would fully satisfy the goals for cultural and paleontological resources and an increase in partnerships across the landscape.

Some stakeholder agency or organizations and the public expressed support for some elements of alternative C but, overall, it was not widely supported by agencies, organizations, or the public. Many organizations and stakeholders felt it went too far in providing for economic uses, in spite of the fact that all public and economic uses are subject to compatibility requirements.

TRIBAL INVOLVEMENT AND CONSULTATION

At the start of the planning process in 2007, we sent notification letters including an invitation to participate on the CCP planning team to the following tribes: Arapahoe Business Council, Chippewa Cree Tribe, Crow Tribal Council, Fort Belknap Tribal Council, Fort Peck Tribal Council, and Northern Cheyenne Tribe. In early July 2009, we reached out to several of the closest tribes to the refuge—Fort Peck Tribes and Fort Belknap Tribes—and made arrangements to initiate government-to-government consultation (July 8–9, 2009). Subsequently, we advised the Fort Peck Tribes and the Fort Belknap Tribes on the important aspects of the plan. During the comment period for the draft CCP and EIS, a representative from the Fort Peck Tribes attended a public hearing held in Glasgow, Montana (October 2010), and we also received comments from the Fort Peck Tribes on the draft CCP and EIS.

On June 5–6, 2012, we continued our government-to-government consultation process with the Fort Peck Tribes and the Fort Belknap Tribes for briefing the tribes about important aspects of the final CCP and EIS.

PUBLIC INVOLVEMENT AND OUTREACH

The formal scoping period began on December 4, 2007, with the publication of a notice of intent in the Federal Register (FR72 (232):68174–76). Before this and early in the preplanning phase, we outlined a process that would be inclusive of diverse stakeholder interests and would involve a range of activities for keeping the public informed and ensuring meaningful public input. This process was summarized in a planning update titled Public Involvement Summary (October 2007). Soon after, we created a project Web site, and six additional planning updates and other project information have been added to the Web site. We have mailed all planning updates to the project mailing list.

During the initial scoping period, we received nearly 24,000 written responses. Hundreds of people attended seven public meetings across Montana and provided many verbal comments.

In the fall of 2008, we again reached out to the public and the cooperating agencies and sought additional input on four potential draft alternatives before fully developing and analyzing these alternatives. We held seven additional public meetings during this time and received hundreds of additional written and oral responses.

COMMENTS ON THE DRAFT PLAN AND EIS

A notice of availability for the draft CCP and EIS was published in the Federal Register on September 7, 2010 (FR75 (172): 54381–84) announcing the availability of the draft CCP and draft EIS, our intention to hold public meetings, and a request for comments. We published another notice in the Federal Register on November 1, 2010 (FR75 (210):67095), extending the comment period by 24 days to December 10, 2010. We held seven public meetings on the draft CCP and EIS. During the subsequent comment period, we received 20,600 letters, emails, or verbal comments. All substantive issues raised in the comments were addressed in volume 2 of the final CCP and EIS.

COMMENTS ON THE FINAL PLAN AND EIS

The notice of availability for the final CCP and EIS was published in the Federal Register on May 7, 2012 (FR77 (88): 26781–84). Subsequently, the Environmental Protection Agency published on May 18, 2012, its list of the environmental impact statements filed the previous week, and the 30-day waiting period ended on June 18, 2012.

We received one letter from the Environmental Protection Agency and one individual comment about the changes made to the final CCP and EIS and about the responses to comments.

SUMMARY OF COMMENTS

In general, we received support for the changes that were made in the final CCP and EIS. The only new concern raised was whether alternative B was the environmentally preferred alternative, which we discuss below.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is defined as the "alternative that will promote the national environmental policy as expressed in section 101 of the National Environmental Policy Act. Typically, this means the alternative that causes the least damage to the biological and physical environment. It also means the alternative that best protects, preserves and enhances historic, cultural and natural resources" (Forty Most Asked Questions Concerning Council of Environmental Quality's National Environmental Policy Act Regulations, 1981). We believe Alternative D—Ecological Processes Emphasis is the environmentally preferable alternative.

The primary focus of alternative D is to restore and maintain the biological diversity, biological integrity, and environmental health of the refuge. This alternative will promote ecological resilience, restore pyric herbivory, promote animal movement with long periods of abandonment, increase landscape species and structure heterogeneity, and improve wildlife diversity. This will be accomplished by (1) writing new habitat management plans including inventory and monitoring plans based on soil characteristics, historical fire occurrence, and hunting district boundaries; and (2) monitoring the focal bird species found on the uplands, river bottoms, riparian areas, and wetlands of the refuge. There will be increased efforts to reduce invasive species and restore degraded riparian areas. We will increase wilderness protection on 19,942 acres, initially close 21 miles of roads, and seasonally close 15 miles of roads if needed to protect wildlife. We will work with others to restore or establish new populations of species like Rocky Mountain bighorn sheep.

Alternative B shares many similar, if not identical, strategies as alternative D for improving habitat for wildlife populations. Nonetheless, there are several key differences in management approaches. Alternative D emphasizes the importance of building diverse and healthy habitats, which in turn should provide for diverse and abundant wildlife populations, whereas, under alternative B, we would target key wildlife species together with maximizing an abundance of wildlife.

Some aspects of alternative B could be considered to be more environmentally preferable than under alternative D. For example, more roads would be closed (106 miles versus 21 miles in alternative D), and more acres of wilderness would be protected (25,869 acres versus 19,942 acres in alternative D). Alternative B would also implement prescriptive grazing in a faster timeframe (4–7 years versus 6–9 years in alternative D); therefore, riparian areas could be restored at a slightly more aggressive rate (85 percent of the streams versus 75 percent in alternative D). However, with some exceptions, most of the roads found on the refuge are two-track roads that are lightly used, most often during hunting season. Therefore, closing roads may not equate to substantially less impact. Many areas of the refuge are inaccessible during the winter months or prolonged wet periods. None of the more heavily used roads (all-season gravel) would be closed under any of the action alternatives. By taking a slower approach to closing roads as identified under alternative D, we believe it will enable the refuge to achieve many of the same objectives as in alternative B for protecting habitat and wildlife. We will begin by developing a step-down transportation plan that includes monitoring boat use on the river, increasing wildlife security, and addressing future access needs. If future road closures are necessary, either through permanent or seasonal closures, we will have better information to make those determinations.

Conversely, we believe the magnitude of negative effects has the potential to be greater under alternative B than under alternative D. Maximizing wildlife populations in alternative B would not necessarily increase biological diversity, integrity, and environmental health nor would it increase the resiliency of the refuge due to climate change, drought, and invasive species. Although careful management of wild ungulates under alternative B should benefit habitat conditions overall if the objectives and strategies were implemented successfully, it could also result in minor to moderate negative effects due to overgrazing by all ungulates. Closing roads could have negative effects, particularly in riparian areas, if harvest objectives were not met. The attraction of wild ungulates to these areas could add to any negative effects that have occurred in the past. Overbrowsing by all ungulates, both domestic livestock and wild ungulates, has been found to negate efforts to restore riparian and wetland health on the refuge. In addition, the planting of nonnative monoculture crops to restore the river bottoms in alternative B could reduce the plant diversity in some areas in the river bottoms, limiting or reducing the availability of diverse habitats for some wildlife species.

MEASURES TO MINIMIZE ENVIRONMENTAL HARM

Throughout the planning process, we took into account all practical measures to avoid or minimize environmental impacts that could result from the implementation of alternative D. These measures include the following:

- To reduce the refuge's carbon footprint (carbon emissions), we will use strategies such as driving fuel-efficient vehicles, considering more road closures, upgrading offices to make them more energy-efficient, conducting more teleconferences, and recycling.
- We will minimize emissions and particulates by following the best management practices when using motorized equipment and conducting restoration activities. Reducing fuel buildup and restoring a more natural fire regime will reduce the risk of larger wildfires.
- Successful revegetation in the river bottoms and restoration of closed roads will reduce the effects of invasive species.
- Prescribed fire will be carried out under an approved fire plan and stringent smoke management plans. We will consider the application and timing of prescribed fire to reduce wildlife mortality, particularly during breeding seasons. Limiting the use of prescribed fire during drought conditions and using ignition techniques that lessen the intensity of the burn (small spot fires) will reduce soil erosion following fires.
- We will reduce potential negative effects on water quality by limiting the amount of bare soil using soil erosion barriers, limiting the use of herbicides, hardening popular public use areas, and implementing a prescriptive fire and grazing program.
- Careful planning in locating and building visitor facilities or road improvements will minimize disturbances to wildlife, particularly during critical breeding periods. Undertaking further studies to fully assess the effects of boating and fishing along the Missouri River will enable us to find ways to work with partners to reduce disturbances to threatened and endangered species and species of concern including many bird species.
- Moving toward a greater reliance on prescriptive grazing will enable us to fully assess the effects on plants by all ungulates. Soil erosion and impacts to water quality will be lessened with lighter grazing levels, limiting livestock grazing during the hot season, and fencing livestock out of riparian areas. The plan will incorporate the following measures: (1) controlling the numbers of domestic and wild ungulates; (2) using fire to move ungulates to other areas; (3) making reductions in livestock grazing; (4) expanding boundary fencing; (5) removing fencing, and (6) managing water structures. These actions will also benefit other species of concern including greater sage-grouse and Sprague's pipit.
- Permittees for paleontological excavations will be required to reclaim areas.
- Mitigation measures for cultural resources will be addressed with the State Historic Preservation Office if required as a result of an undertaking.

CONSULTATION REQUIREMENTS: SECTION 7 OF THE ENDANGERED SPECIES ACT

Several wildlife species with populations or habitat on the refuge are listed as threatened or endangered species under the Endangered Species Act or are candidate species being considered for listing. These species were documented through an intra-Service section 7 consultation. Three endangered species—black-footed ferret, least tern, and pallid sturgeon—and the threatened piping plover are found on the refuge. Two species, the endangered whooping crane and the threatened grizzly bear, are not found on the refuge but have been found nearby: (1) whooping cranes migrate through McCone, Valley, and Phillips Counties; and (2) several grizzly bears found on the east side of the Rocky Mountain Front have ventured toward the Missouri River corridor. Candidate species are greater sage-grouse and Sprague's pipit. The intra-Service consultation concluded that the preferred alternative (D) may affect but is not likely to adversely affect any protected species. Similarly, the preferred alternative may affect but is not likely to jeopardize candidate or proposed species or critical habitat for greater sage-grouse or Sprague's pipit.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

Activities outlined in alternative D have the potential to negatively affect cultural resources, either by direct disturbance during construction of habitat projects and facilities related to public use or administrative operations or indirectly by exposing cultural and historic artifacts during management activities such as habitat restoration or prescribed burning. Before any undertaking that is subject to section 106 of the National Historic Preservation Act, activities that could negatively affect cultural resources will be identified. Options for minimizing negative effects will be discussed before implementation of the preferred alternative including entering into consultation with the State Historic Preservation Officer and other parties as appropriate. We will protect all known gravesites.

PROTECTION OF RIPARIAN AREAS AND WETLANDS

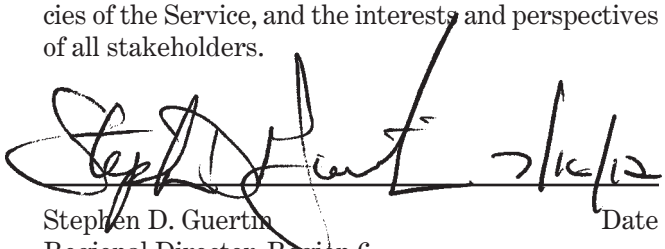
Many of the refuge's streams and riparian areas have seen improvements in overall health and function since 1995, when the University of Montana's

Riparian and Wetland Research Program evaluated riparian areas. However, not all riparian areas have improved equally, and problems remain. Activities outlined in alternative D are aimed at restoring several riparian areas and wetlands that were identified as nonfunctioning or functioning at risk during the most recent study completed by Ecological Solutions Group in 2009. Restoration measures will vary depending on the conditions and trends of riparian habitat. Most management actions identified in the preferred alternative (D) will provide many benefits and improvements to degraded riparian areas: establishing stream gauges on the refuge; restoring eroded streambanks; planting vegetation; fencing riparian areas; reducing livestock grazing or wild ungulate grazing in these areas; reducing invasive species; and restoring the function of streams that were once perennial. When water right issues for the refuge have been fully adjudicated (outside the scope of this record of decision) and the stock ponds provide no other wildlife benefit, we will eliminate stock ponds that are negatively affecting riparian areas downstream and are reducing the flow regime. We will incorporate applicable regulatory compliance such as wetland permitting and dam safety into any stock pond removal efforts.

FINDING AND BASIS FOR DECISION

I have considered the environmental and relevant concerns presented by agencies, tribes, organizations, and individuals on the proposed action to develop and implement a comprehensive conservation plan for Charles M. Russell National Wildlife Refuge and UL Bend National Wildlife Refuge. The substantive issues and comments raised have been addressed in the final CCP and EIS. Comments and responses on the final CCP and EIS are addressed above.

Based on the above information, I have selected alternative D for implementation, because it achieves a reasonable balance between significant resource management issues, the refuge purposes, National Wildlife Refuge System mission, management policies of the Service, and the interests and perspectives of all stakeholders.



Stephen D. Guertin Date
Regional Director, Region 6
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Lakewood, Colorado

Appendix B

List of Preparers and Contributors

This document is the result of the extensive, collaborative, and enthusiastic efforts by the members of the planning team, cooperating agencies, and other Service or agency contributors listed below.

U.S. FISH and WILDLIFE SERVICE STAFF on the PLANNING TEAM

Name	*Agency, position, and location*	*Education and experience*	*Contribution*
Laurie Shannon	U.S. Fish and Wildlife Service (USFWS) region 6 planning team leader; Lakewood, Colorado	B.S. recreation resources management; 27 years	Project coordination, organization, writing and review
Barron Crawford	Charles M. Russell Refuge project leader until 2010; Lewistown, Montana	B.S. and M.S. wildlife and fisheries science; 18 years	Project oversight, writing and review
Rick Potts	Charles M. Russell Refuge project leader from 2010; Lewistown, Montana	B.S. animal science, M.S. animal nutrition and wildlife management; 33 years	Project oversight and review
Bill Berg	Charles M. Russell Refuge deputy project leader; Lewistown, Montana	B.S. wildlife management and zoology; 29 years	Writing, review, and oversight
Trina Brennan	Charles M. Russell Refuge wildlife refuge specialist; Lewistown, Montana	B.S. fisheries and wildlife management; 5 years	Help with project coordination, organization and writing
Matt Derosier	Charles M. Russell Refuge, Sand Creek Field Station manager; Lewistown, Montana	B.S. wildlife management; 21 years	Writing and review
JoAnn Dullum	Charles M. Russell Refuge wildlife biologist; Lewistown, Montana	B.S. zoology, M.S. wildlife biology; 15 years	Writing and review
Mike Granger	Charles M. Russell Refuge fire management officer; Lewistown, Montana	B.S. and M.S. wildlife biology; 25 years	Writing and review
Paula Gouse	Charles M. Russell Refuge, Fort Peck Field Station wildlife refuge specialist; Fort Peck, Montana	B.S. biology; 13 years	Writing and review
Dan Harrell	Charles M. Russell Refuge habitat biologist; Lewistown, Montana	B.S. fish and wildlife management; 18 years	Writing and review
Nathan Hawkaluk	Charles M. Russell Refuge, Jordan Field Station manager; Jordan, Montana	B.S. fish and wildlife management; 7 years	Writing and review
Aaron Johnson	Charles M. Russell Refuge, Fort Peck Field Station manager; Fort Peck, Montana	B.S. wildlife management; 12 years	Writing and review
Neil Kadrmas	Charles M. Russell Refuge wildlife biologist; Lewistown, Montana	B.S. and M.S. wildlife and fisheries science; 5 years	Writing and review
Danielle Kepford	Charles M. Russell Refuge realty specialist; Lewistown, Montana	B.S. wildlife and fisheries sciences; 10 years	Realty and land acquisition review

U.S. FISH and WILDLIFE SERVICE STAFF on the PLANNING TEAM

Name	*Agency, position, and location*	*Education and experience*	*Contribution*
Randy Matchett	Charles M. Russell Refuge senior wildlife biologist; Lewistown, Montana	B.S. and M.S. wildlife biology; 27 years	Writing and review
Beverly Roedner Skinner	Charles M. Russell Refuge; wildlife refuge specialist, Lewistown, Montana	B.S. and M.S. wildlife management; B.S. agriculture and horticulture; teacher certificate (science for grades 5–12); 20 years	Writing and review
Bob Skinner	Charles M. Russell Refuge habitat biologist; Lewistown, Montana	B.S. zoology, M.S. wildlife management, Ph.D. wildlife management; 30 years	Writing and review

COOPERATING AGENCY MEMBERS

Name	*Agency, position, and location*	*Education and experience*	*Contribution**
Rich Adams	BLM HiLine district field manager; Malta, Montana	B.S. range and forest management; 31 years	Planning team member
Gary Benes	BLM district manager, Central Montana; Lewistown, Montana	B.A. geography and history, B.S. natural resource conservation	Planning team member
John Daggett	USACE operations project manager; Fort Peck, Montana	B.S. civil engineering; 20 years at Fort Peck	Planning team member
Lee Iverson	Petroleum County commissioner; Winnett, Montana	B.S. animal husbandry; 12 years	Planning team member
Vicki Marquis	Missouri River Conservation District Council coordinator; Great Falls, Montana	B.A. chemistry; 5 years on council	Planning team member
Darin McMurry	USACE lake manager; Fort Peck, Montana	B.S. wildlife science; 23 years	Planning team member
Chris Pileski**	DNRC, Eastern Land Office, acting area manager; Miles City, Montana	B.S. forestry; 14 years	Planning team member
Laurie Riley	Missouri River Conservation District Council coordinator; Great Falls, Montana	2 years on council	Planning team member
Lesley Robinson	Phillips County commissioner; Malta, Montana	5 years	Planning team member
Clive Rooney	DNRC, Northeastern Land Office, area manager; Lewistown, Montana	B.A. business administration; 20 years	Planning team member
Tom Stivers	MFWP wildlife biologist; Lewistown, Montana	B.S. wildlife biology, M.S. fish and wildlife management; 30 years	Planning team member
Mark Sullivan	MFWP region 6 wildlife program manager; Glasgow, Montana	B.S. biology, M.S. fish and wildlife management; 20 years	Planning team member

**Primary representative of respective agency at meetings: participated on planning team; helped identify issues; provided input on alternatives, objectives, and strategies; reviewed planning documents; and provided information as requested.*

***Replaced Rick Strohmyer.*

OTHER SERVICE or AGENCY CONTRIBUTORS

Name	*Agency, position, and location*	*Contribution*
John Chaffin	DOI Office of the Solicitor attorney advisor; Billings, Montana	Legal advisor to the Service
Erin Clark	Charles M. Russell Refuge wilderness fellow; Lewistown, Montana	Writing and review of the wilderness review
Richard Coleman, Ph.D.	USFWS region 6 assistant regional director; Lakewood, Colorado	Refuge System policy guidance
Mark Ely	USFWS region 6 GIS specialist; Lakewood, Colorado	GIS map preparation for document
Patti Fielder	USFWS region 6 hydrologist; Lakewood, Colorado	Help with writing water resources section
Jackie Fox	Charles M. Russell Refuge biological science technician; Lewistown, Montana	Help with document preparation
Shannon Heath	USFWS region 6 outdoor recreation planner; Helena, Montana	Help with developing public use objectives and overview of visitor services
Wayne King	USFWS region 6 wildlife biologist; Lakewood, Colorado	Review of region 6 fish and wildlife priorities
Brant Loflin	USFWS region 6 zone archaeologist; Bozeman, Montana	Help with cultural resources and paleontology information
David Lucas	USFWS region 6 chief, division of refuge planning; Lakewood, Colorado	Planning guidance
Dean Rundle	USFWS region 6 refuge supervisor (Montana, Wyoming, Utah, Colorado); Lakewood, Colorado	Refuge System policy guidance
Michael Spratt	USFWS region 6 chief, division of refuge planning (retired); Lakewood, Colorado	Planning guidance
Meg Van Ness	USFWS region 6 archaeologist; Lakewood, Colorado	Help with cultural resources objectives

OTHER CONSULTANTS

Name	*Agency and position*	*Contribution*
Roxanne Bash	Federal Highways Administration, Western Federal Lands Office; Vancouver, Washington	Help with transportation planning
Jessica Clement	Colorado State University; Fort Collins, Colorado	Help in facilitation of public use objectives workshop
George Fekaris	Federal Highways Administration, Western Lands Office; Vancouver, Washington	Help with transportation planning
Lynne Koontz, Ph.D.	USGS Fort Collins Science Center economist; Fort Collins, Colorado	Analysis of socioeconomic impacts
Mimi Mather	Shapins–Belt Collins planner; Boulder, Colorado	Facilitation of planning team and public meetings; help with document preparation

OTHER CONSULTANTS

Name	*Agency and position*	*Contribution*
Bill Mangle	ERO Resources natural resources planner; Denver, Colorado	Help with analysis and research for reasonably foreseeable activities and cumulative impacts, and other environmental analysis documentation
Natalie Sexton	USGS Fort Collins Science Center wildlife biologist (human dimensions); Fort Collins, Colorado	Facilitation and help with public use objectives and analysis of socioeconomic impacts
Rick Schroeder	USGS Fort Collins Science Center biologist (retired); Fort Collins, Colorado	Help with vision and goals; provided input on writing biological objectives

Many other individuals also provided invaluable help with the preparation of this CCP. The Service acknowledges the efforts of the following individuals and groups toward the completion of this plan. The diversity, talent, and knowledge contributed and dramatically improved the vision and completeness of this document.

- Mark Albers, BLM field manager; Malta, Montana
- Mary Bloom, BLM assistant field manager; Miles City, Montana
- Katie Butts, Charles M. Russell Refuge; Lewistown, Montana
- Clayton Christensen, Charles M. Russell Refuge; Lewistown, Montana
- John Esperance, USFWS region 6 planning branch chief (retired); Lakewood, Colorado
- Jim Forsythe, Charles M. Russell Refuge; Lewistown, Montana
- Kim Greenwood, USFWS region 6 tribal liaison; Lakewood, Colorado
- Glenn Guenther, Charles M. Russell Refuge; Fort Peck, Montana
- Pat Gunderson, MFWP; Glasgow, Montana
- Scott Haight, BLM assistant field manager; Lewistown, Montana
- Brian Haugen, Charles M. Russell Refuge; Lewistown, Montana
- Asuka Ishizaki, formerly with USGS Fort Collins Science Center; Fort Collins, Colorado
- Jody Jones, Charles M. Russell Refuge; Lewistown, Montana
- Bob King, Charles M. Russell Refuge; Lewistown, Montana
- Chris King, Petroleum County commissioner; Winnett, Montana
- Gerry Majerus, BLM; Lewistown, Montana
- Paul Pallas, Charles M. Russell Refuge; Lewistown, Montana
- Margaret Raper, BLM field manager; Miles City, Montana
- John Ritten, Ph.D., University of Wyoming professor; Laramie, Wyoming (helped USGS with the socioeconomic analysis)
- Carl Seilstad, Fergus County commissioner; Lewistown, Montana
- David Taylor, Ph.D., University of Wyoming professor; Laramie, Wyoming (helped USGS with the socioeconomic analysis)
- Dale Tribby, BLM; Miles City, Montana

Appendix C

Public Involvement Summary

Following the guidance found in the National Environmental Policy Act, the Improvement Act, and the Service's planning policy, the planning team has made sure all that all interested groups and the public have had an opportunity to be involved in the planning process. The term "stakeholder" is commonly used to refer to individual citizens; organizations; businesses; Native American tribes; Federal, State, and local governmental agencies; and others who have expressed an interest in the issues and outcomes of the planning process.

USFWS

Refuge staff talk about refuge management with the public.

C.1 PUBLIC SCOPING ACTIVITIES

The formal scoping period began on December 4, 2007, with the publication of a notice of intent in the Federal Register (FR 23467). The notice of intent notified the public of the Service's intent to begin the CCP and EIS process and solicited public comments.

OUTREACH ACTIVITIES

Early in the pre-planning phase and before publication of the notice of intent in the Federal Register, the Service outlined a process inclusive of diverse stakeholder interests and involving a range of activities for keeping the public informed and ensure meaningful public input. This process was summarized in a planning update titled Public Involvement Summary (FWS 2007a) and posted to the project Web site. The full report, titled "Charles M. Russell National Wildlife Refuge Public Involvement Process," was included as an appendix to the scoping report (FWS 2008b), which was posted on the project Web site. Throughout scoping, the planning team used various methods to solicit guidance and feedback from interested groups and the public. These methods included a variety of outreach materials, public meetings, cooperating agency meetings, briefings and presentations, as well as personal conversations, letters, email and telephone calls.

Planning Updates

A planning update (issue 1, January 2008) (FWS 2007a) was mailed to the initial mailing list of 625 people and businesses before the first round of public meetings. The planning update, together with the earlier Planning Involvement Summary (FWS 2007a), outlined the planning process, draft vision and goals for the CCP, and dates, times and locations of the public scoping meetings. Refuge staff handed out the updates at various local agency meetings. The planning update distribution list consisted of individuals, agencies, and organizations who had previously expressed an interest in refuge activities. Following the close of the public comment period for scoping, Planning Update, Issue 2, May 2008 (FWS 2007a) was mailed and posted to the planning Web site. This update summarized the comments and key findings from scoping.

News Release

A news release announcing the planning process and notifying the public of the schedule and location of the public meetings was sent to nearly 270 media organizations throughout Montana including congressional offices, other Federal and State agency offices, and tribal agencies. Several news articles featured the planning processed in newspapers, radio, TV, and online publications before the meetings. The Service distributed a second news release when one of the meetings (Bozeman) had to be rescheduled due to inclement weather.

Paid Advertisements

The Service placed paid advertisements in nine newspapers to publicize the project and invite the public to the scoping meetings. The advertisements, 3.75×6 inches, were placed in the Billings Gazette (January 24), Bozeman Daily Chronicle (January 24), Great Falls Tribune (January 24), Circle Banner (January 17), Glasgow Courier, Glendive Ranger Review (January 17), Jordan Tribune (January 25), Lewiston News–Argus (January 16), and Phillips County News (January 16).

Project Web Site

The Service established a project Web site <www.fws.gov/cmr/planning> in January 2008 (FWS 2007a). From the Web site, interested groups and the public could learn about meetings, download documents, get their name added to the project mailing list, and provide comments.

Public Scoping Meetings

Approximately 210 people attended one of seven public scoping meetings across Montana from January 29–February 21, 2008 in Great Falls, Fort Peck, Malta, Lewistown, Jordan, Billings, and Bozeman. The planning team listened to many ideas and concerns that were expressed and answered questions from a variety of interested groups and the public. The initial comment period was scheduled to end on February 4, 2008, but was extended to February 29, 2008.

Following a brief welcome and introduction, Service staff made a 15-minute presentation that outlined the following points:

- description of the Service and the purpose of the Refuge System
- key points of the legislation establishing the Charles M. Russell and UL Bend Refuges
- CCP and EIS process
- project schedule

The remainder of the meeting was broken up into two components: (1) a question and answer session; and (2) an opportunity for participants to make official public comments.

SCOPING SUMMARY and UPDATE

During the comment period for scoping, the Service received 23,867 (FWS 2008b) written responses in the form of letters, emails, or from the handout sheet provided at the public meeting. Twenty-three organizations submitted comments.

Following the comment period, the planning team prepared a scoping report summarizing the scoping phase. Copies of the report were provided to the cooperating agencies and posted to the project Web site. The comments were placed into a spreadsheet and included in the scoping report. Additionally, the team summarized the key activities in a second planning update (issue 2, January 2008) (FWS 2007a), which was mailed out to the entire mailing list and posted to the project Web site.

The comments were consolidated into seven significant topics of concern with several subtopics. The seven primary topics are habitat and wildlife, public uses and access wilderness, socioeconomic issues, water resources, adjacent lands and partnerships and cultural values, traditions, and resources. These are addressed in more detail in chapter 1.

C.2 COOPERATING AGENCIES and TRIBAL COORDINATION

In accordance with the Service's planning policy (FWS 2000c), the pre-planning and scoping process began with formal notification to Native American tribes and other Federal and State agencies with a land management interest and inviting them to participate as cooperating agencies and members of the planning team.

NATIVE AMERICAN TRIBES

The Service sent letters of notification about the planning process including an invitation to participate on the planning team to the following tribes: Arapahoe Business Council, Chippewa Cree Tribe, Crow Tribal Council, Fort Belknap Tribal Council, Fort Peck Tribal Council, and Northern Cheyenne Tribe. In July 2009, the Service reached out again to several of the closest tribes to the refuge, Fort Peck and Fort Belknap and made arrangements for a formal briefing and consultation (July 8–9, 2009).

FEDERAL, STATE, and LOCAL AGENCIES

In addition to notifying the tribes, the Service sent letters about the planning process including an invitation to participate on the planning team to the following agencies: USACE, BLM, MFWP, and DNRC. The Service sent notification letters to the Montana State Historic Preservation Office and to the six counties (Fergus, Garfield, McCone, Petroleum, Phillips, and Valley). In September 2007, Service staff met with representatives from the conservation districts and the counties to inform them of the CCP and EIS process and discuss the project.

As a result, the Service received formal letters requesting cooperating agency status from the six counties, the Garfield County Conservation District, and the Missouri River Conservation District Council. The Service granted the six counties cooperating agency status. Two representatives attended planning team meetings on behalf of all the counties. Additionally, the Service granted the six conservation districts that surround the refuge cooperating agency status, allowing for one representative to attend meetings on behalf of all the conservation districts.

In summary, the cooperating agencies included USACE, BLM, MFWP, DNRC, Fergus, Garfield, McCone, Petroleum, Phillips, and Valley Counties, and the Missouri River Conservation Districts. A memorandum of understanding was signed by all the agencies, and the signed document was posted to the planning Web site (FWS 2007a).

C.3 PLANNING TEAM MEETINGS

In November 2007, the planning team met with the Federal and State agencies. Following the addition of the counties and Missouri River Conservation Districts as cooperating agencies, in April 2008 the entire planning team met twice. The first meeting occurred April 15 for bringing all the cooperating agencies together, as several agencies had been added since the first meeting in the fall of 2007. Key topics included developing of the Memorandum of Understanding, discussion of the Scoping Report, the upcoming alternatives development workshop, and a preliminary discussion about alternative scenarios.

A second meeting occurred when the refuge staff met for a 3-day alternatives workshop, which included representation from most of the cooperating agencies involved in the project. At this workshop preliminary alternative concepts were further developed. Some agency representatives chose instead to take part in a 2-day briefing held June 17–18, 2008, to discuss the concepts that had been further refined and to go out onto the refuge to discuss specific issues. For this meeting, the Service mailed all of the cooperating agencies a copy of the revised draft alternatives table before the meeting. The cooperating agencies offered substantial input and feedback on the initial draft alternatives during the June briefing including written comments that were submitted by McCone County. The Service incorporated many of those comments and concerns before publishing the entire alternatives chart for the public on the Web site in early August.

In early January and February 2009, the planning team met twice to develop preliminary objectives and strategies for all the alternatives. In May of 2009, the Service held another planning team meeting, which included all the county commissioners for the purposes of discussing roads and the accuracy of the data the Service had acquired to date.

The Service provided the cooperating agencies with copies of the internal review document in April 2010. Following a 5-week review period, the Service met with the cooperating agencies in June 2010 to discuss the significant issues identified during their review. Before release of the public draft, the Service met again with the cooperating agencies to advise them of any significant changes to the document.

ALTERNATIVES DEVELOPMENT

The Service considers alternatives development as part of an iterative process in the development of the draft CCP and EIS (FWS 2000c). This phase of the project began in spring 2008, and public input ended in late fall 2008. Following input by the cooperating agencies and the public on the draft alternatives, detailed objectives and strategies for all the alternatives were developed in early 2009 with input by the cooperating agencies.

OUTREACH ACTIVITIES

In August 2008, the planning team presented four draft alternatives to the public including a no-action alternative. One alternative (D) was identified as the proposed action. The Service's planning policy (FWS 2000c) requires that one alternative be identified as the proposed action in an environmental analysis document per the National Environmental Policy Act. It is the alternative that the Service believed best fulfills the refuge purpose, mission, vision, and goals of the National Wildlife Refuge System. At this stage, the alternatives were described as conceptual approaches or themes including the type of management actions that would occur under each approach. For a planning process such as for the Charles M. Russell and UL Bend Refuges, where an EIS is being prepared, the Service often solicits feedback on the draft alternatives before full development of them. While not required under the National Environmental Policy Act, this allowed the public an opportunity to provide input earlier into the alternatives process. It also gave the refuge staff a chance to talk about what they wanted to achieve.

Planning Updates

Planning Update, Issue 3, August 2008, was mailed or handed out in the refuge headquarters to over 720 persons and businesses during the comment period with most of the updates mailed the week of August 4, 2008 (FWS 2007a). This planning update outlined the initial draft alternatives developed by the planning team and provided the dates, times, and locations of the public workshops. The distribution list consisted of individuals, agencies, and organizations who had previously expressed an interest in refuge activities. In addition, the planning update was handed out at the meetings.

The Service followed up with another update (Planning Update, Issue 4, January 2009), which summarized what had been learned during the comment period. Both updates and a more detailed summary of comments were posted on the project Web site.

News Release

On August 18, 2008, the Service issued a news release notifying the public of the schedule and location of the public meetings to nearly 270 media organizations throughout Montana including congressional offices, other Federal and State agency offices, and

tribal agencies. Several news articles about the planning process appeared in newspapers, radio, TV, and online publications before the meetings.

Paid Advertisements

The Service placed paid advertisements in nine newspapers to announce the 2008 meetings. The advertisements, 3.75×6 inches, were placed in the Billings Gazette (August 21), Bozeman Daily Chronicle (August 21), Great Falls Tribune (August 18), Circle Banner (August 21), Glasgow Courier, Glendive Ranger Review (August 20–21), Jordan Tribune (August 20–21), Lewiston News–Argus (August 20), and Phillips County News (August 20).

Public Workshops

One hundred and eighty-eight people attended one or more of the seven workshops from September 2–17, 2008, in Lewistown, Jordan, Malta, Glasgow, Billings, Bozeman, and Great Falls.

Following a brief welcome and introduction, the project leader made a short presentation highlighting the following:

- project schedule
- mission of the National Wildlife Refuge System and purposes of the refuge
- process for alternatives development
- definitions of reasonable alternatives, alternative concepts, objectives and strategies, and definition of proposed action versus preferred alternative (not until end of project)
- overview of the alternatives
- common issues

Following the presentation, the planning team used the remainder of the meeting to solicit feedback on the alternatives. For the first four meetings (Lewistown, Glasgow, Malta, and Jordan) participants broke into small working groups and rotated every 20–25 minutes through a discussion specific to each alternative. During the second week of meetings, audiences were small (average 15–25 people), and the Service held the discussions as one group. For all meetings, refuge staff presented information about each of the alternatives, and participants were asked to provide feedback and ask questions.

The Service did not use a public hearing format for public testimony, as the intent of the workshop format was to facilitate smaller group discussions during this phase of the project. Many participants liked this format, but others raised concerns in their written comments about not having an opportunity to provide scoping comments in a legal hearing format. The Service appreciates any feedback including criticism about the format used for meetings. A hearing format was used for the meetings on the draft CCP and EIS. The Service has fully followed the requirements set forth in the National Environmental Policy Act in addition to departmental and bureau policies during the scoping process.

Other Meetings with Individuals and Groups

When asked, refuge staff provided briefings and status updates to stakeholder groups including the Conservation Districts, the Wilderness Society, World Wildlife Fund, Ranchers Stewardship Alliance, Montana Association of State Grazing Districts, Kalispell Sportsmen group, Gallatin Wildlife Association, and others.

The Service held several seminars during the development of the draft CCP and EIS to provide information about the Service's plans to use prescribed fire and grazing to meet the objectives of the draft CCP. These seminars included presentations by Dr. Sam Fuhlendorf and Dr. Cecil Frost, who helped the Service in developing information for the analysis in the draft CCP and EIS. Many Federal, State, and local agencies, conservation organizations, and members of the public attended one or more of these sessions.

Other one-on-one discussions, briefings, and field trips occurred throughout the planning process. Service representatives engaged in many conversations with individuals that called or stopped by the refuge offices.

C.4 COMMENT PERIOD

The Service accepted comments from early August 2008 through October 31, 2008, but also informed the public that comments were welcome throughout the development and writing of the draft CCP and EIS until the formal comment period on the draft CCP and EIS ended. The Service established an ending date for comments on the draft alternatives to use the information learned to fully develop each alternative with detailed objectives and strategies that would form the basis of the environmental analysis. The Service received one written request from the Six County Fort Peck Road Group, a group formed earlier by the six counties next to the refuge, to extend the deadline for submitting comments on the draft alternatives. The Service denied the request and reiterated that comments were welcome past the October 31 deadline, but that the process needed to move forward, and sufficient time had been provided for review of the preliminary draft alternatives. The Service made all of its information available to the public in early August 2008, providing the public over 60 days to provide input. In addition, representatives of the cooperating agencies provided input into the alternatives concepts during several meetings held in April and June of 2008, and during the development

of objectives and strategies in early 2009. Members of the Six County Fort Peck Road Group (a group of county commissioners that address roads) were also given an opportunity to take part in a meeting that specifically addressed roads in May 2009.

METHODS for COMMENT COLLECTION and ANALYSIS

The Service's primary objective in providing the public an early opportunity to review the alternatives was to gather more input before writing the objectives and strategies and conducting the environmental analysis. The planning team made every effort to document all issues, questions, and concerns. Regardless of whether comments and questions were general in nature or about specific points of concern, they were identified.

All comments were considered to be of equal importance. While the planning team valued the comments made in support or opposition to a specific alternative or issue, the team also was seeking feedback on the range of alternatives, whether there were other reasonable alternatives that should be included in the analysis, and whether any of the alternatives should be changed in some way.

The comments, whether from written submissions or recorded at the public meetings, were organized by topic into a spreadsheet and coded for organizational purposes. Volume 2 of the final CCP and EIS contains the Service's summarization and response to public comments and testimony received during the public review of the draft CCP and EIS.

NUMBER and SOURCE of COMMENTS RECEIVED

During the course of the comment period, the planning team received hundreds of questions and comments during the seven public meetings held across Montana and nearly 300 written responses in the form of letters, emails, and from the handout sheet provided at the public meetings. Twenty-six agencies and organizations submitted comments; the breakdown of type and number of comments follows.

Type of Comment	*Number of Comments*
Public meetings	hundreds
Form letters	123
Individuals letters, emails, questionnaires	134
Agency, organizations (included two legal letters)	27

There were two distinct form-type letters. While similar in content, one was generated from the Garfield County Conservation District and sent to livestock owners and published in at least some of the local papers. Nine people submitted a second form-type letter and, while the affiliation is not known, most came from the Glasgow area. The key issues identified in both form letters follow:

- the importance of livestock grazing and general opposition to prescriptive grazing
- opposition to wildlife reintroduction
- opposition to removal of interior fences
- support for more water development in uplands and maintenance of current structures
- desire for access for recreation, fire suppression, and livestock management
- concern that Payment in Lieu of Tax payments are too low and do not represent fair market value
- desire for reevaluation of proposed wilderness units
- desire to keep wildlife on the refuge
- support for increased predator control
- concern that the refuge is the largest source of invasive plants
- desire for increased fire suppression and opposition to use of prescribed fire

An action alert by the Montana Wilderness Association generated many individual letters and emails containing the following key issues:

- support for alternative D
- support for reducing the 700-mile road network or limiting off-road travel
- support for wilderness values particularly the proposed wilderness units
- support for prescriptive grazing and restricting livestock grazing where needed to maintain wildlife habitat
- desire for removal of obsolete fencing and letting wildlife move more freely
- desire for a ban on hot-season grazing in the river bottoms and limiting livestock grazing in riparian areas

In addition, many other individuals and organizations voiced their concerns about other topics. Examples included concerns about boat access and types of boats, and hunting and general recreational access or the type of expertise the Service was using in the preparation of the CCP and EIS.

SUMMARY of COMMENTS

Commenters expressed highly varied opinions in support of or opposition to a range of topics including alternative preferences, habitat and wildlife management, prescriptive livestock grazing, wilderness, wildlife reintroductions, public access,

roads, commercial recreation, interior fencing, water development, and prescribed fire. A summary of the comments was posted on the project Web site, and another planning update (issue 4) was mailed to the mailing list (FWS 2007a).

Volume 2 of the final CCP and EIS contains detailed descriptions of the public comments and the associated responses provided by the Service.

C.5 CHANGES to the DRAFT ALTERNATIVES

From a review of all of the comments, no new significant topics or issues were identified that had not been identified during scoping (refer to chapter 1). All of the action alternatives were clarified or refined in some way as a result of the comments.

C.6 RELEASE of the DRAFT CCP and EIS

The draft CCP and EIS was released to the public for a 60-day review and comment period on September 7, 2010, following publication of a notice of availability in the Federal Register (75 FR 54381). A 60-day comment period for the document closed on November 16, 2010, and then was extended to December 10, 2010, following publication of a notice for extension in the Federal Register (75 FR 67095).

OUTREACH ACTIVITIES

A planning update (Issue 5, September 2010) was mailed to everyone on the project mailing list. The draft CCP and EIS was mailed to the entities listed in section C.10 below and to others who requested one. Before publishing the draft CCP and EIS, the Service mailed out a postcard to the mailing list asking recipients to identify their needs for reviewing the document (compact disc, full document, or executive summary). News releases, the project Web site, and paid newspaper advertising were also used to announce the availability of the document and the public hearing schedule.

The Service held public hearings in Montana in the following cities: Billings on September 28, 2010; Bozeman on September 29, 2010; Great Falls on September 30, 2010; Lewistown on October 12, 2010; Jordan on October 13, 2010; and Glasgow and Malta on October 14, 2010. The meetings were recorded by a court reporter and transcripts from those meetings are included in volume 2 of the final EIS and CCP. Three hundred twelve people attended the meetings with 39 at Billings, 51 at Bozeman, 37 at Great Falls, 33 at Lewistown, 55 at Jordan, 51 at Glasgow, and 46 at Malta. The public hearings began with a short presentation by the project leader, followed by an opportunity for all who wished offer public testimony 3 minutes to speak. Comment sheets were available for anyone who preferred to submit comments in writing. On request, the Service briefed several agencies and stakeholder groups on the draft CCP and EIS.

COMMENTS on the DRAFT CCP and EIS

Throughout the comment period, the Service received more than 1,700 comments from 919 individual submittal documents (primarily emails, letters, and verbal comments during public meetings), 53 letters from Federal, State, or local government agencies and organizations, and 19,627 form letters. Refer to volume 2 of the final EIS and CCP for an indepth description of the comments and the Service responses.

C.7 SIGNIFICANT CHANGES to the FINAL CCP and EIS

The following discussion summarizes significant changes that were made in the process of developing the final CCP and EIS.

WILDERNESS

Several changes were made to the wilderness inventory and review (appendix F). The acreage for the new wilderness study areas (alternatives B and D) was modified slightly due to a mapping error in the draft CCP and EIS (640 acres within East Seven Blackfoot were previously mislabeled as State lands). Under alternative D, Mickey Butte (550 acres) was added (previously in alternative B only). As a result, 25,879 acres under alternative B and 19,942 acres under alternative D were identified in the final CCP and EIS. No areas were added in alternative C. In consideration of significant public comment on the proposed wilderness areas and a review of the Service's wilderness policy (FWS 2008c), the Service found that the wilderness characteristics of the 15 proposed wilderness areas have not declined in any measurable way since 1974 when they were originally proposed. There is not sufficient justification for recommending to Congress the removal of any of the existing proposed wilderness. As a result, this consideration was rejected for both alternatives C and D.

ACCESS ROADS

Several changes were made to alternative D, which included changing road 315 from closed to seasonally closed from its junction with road 838 to its end.

About 13 miles of roads on the north side will be designated as game retrieval roads. These include roads 440, 331, 332, and 333. These roads will be open for retrieval of game for about 4 hours per day during hunting season. This will provide for greater wildlife security and as a result will likely enhance elk harvest in these areas. It will also provide greater accessibility particularly for hunters with disabilities to be able to retrieve game.

WILDLIFE OBJECTIVES

In response to public and agency comments on the draft CCP and EIS, the big game objectives were adjusted to clarify that big game management on the refuge will meet or exceed the objectives in approved State conservation plans. In accordance with national policy striving to the extent practicable to achieve consistency with State management objectives and regulations, refuge-specific abundance and population composition objectives could be established through the HMPs and will be tailored to regional habitat conditions, productivity and other considerations. Those objectives will consider naturally functioning ecosystem processes, biological integrity, hunting opportunities and quality of recreational experiences.

Information on threatened and endangered species and species of concern was updated as a result of status changes of several species including northern gray wolf, Sprague's pipit, mountain plover, and northern leopard frog.

HABITAT OBJECTIVES and STRATEGIES

Several organizational changes were made to clarify how the Service will achieve its habitat-based goals and objectives on the refuge. The definition of and use of prescription grazing as a management tool was clarified and expanded, and more details were provided. The Service has been transitioning away from annual grazing in favor of a habitat-based or prescriptive component for nearly 20 years and this will continue. Alternatives B and D would carry out this transition more quickly to adhere to Service legal mandates and policies. The timeframe for moving toward implementing prescriptive grazing was moved from the objective level to the strategy level, which is more consistent with Service planning policy. The objectives identify the specific measurable objectives for enhancing the diversity, viability, and resiliency of plant species on the refuge.

FOCAL BIRD SPECIES

The Service added a discussion and several tables describing focal bird species and included a description in the glossary and in "Appendix G, List of Plant and Animal Species." Previously, potential bird species were identified. These bird species represent a broader range of species with similar conservation needs and are often part of a larger landscape conservation effort (FWS 2011c; refer to "Bird Conservation" under section 1.4 in chapter 1). Greater connectivity between the focal bird species and the sentinel plant monitoring program was made, particularly in alternative D and to a lesser extent in alternative B. Focal birds were identified for each type of habitat: uplands, river bottoms, and riparian areas and wetlands. Focal birds were not identified for shoreline areas due to its highly dynamic nature.

RIPARIAN AREAS

The riparian area objectives were modified to better define the restoration goals and the measurements for achieving them within a 15-year timeframe based on emphasis of the alternative.

MINERALS

Several clarifications were made about mineral withdrawals on the refuge. The current mineral withdrawal applies to locatable minerals (diatremes or gems) and does not apply to leasable minerals (oil and gas). To date, no leasable minerals have been developed on the refuge. Currently, the Service is seeking an extension of the 20-year mineral withdrawal. Only Congress can designate a permanent withdrawal and the Service will seek this for protection of refuge habitat and wildlife values.

LAND ACQUISITION

Clarification was made that under all alternatives the Service would continue to acquire lands within its authorized boundary and in accordance with the Enhancement Act (refer to section 1.9 in chapter 1) based on a willing seller and buyer relationship.

LEGAL MANDATES

Additional clarification and information was provided on the passage of the Improvement Act, Service policies, other legal mandates, and the refuge's history.

WATER QUALITY and AIR MONITORING

Additional information and clarification were provided on water quality and air monitoring on the refuge. Other factual errors were corrected and updates were made where appropriate.

C.8 RELEASE of the FINAL CCP and EIS

The Service responded to all substantive comments that were received about the draft CCP and EIS.

The final CCP and EIS was released to the public on May 7, 2012, following publication of a notice of availability in the Federal Register (77 FR 26781). All interested groups and the public on the project mailing list (more than 800 names) received a copy of Planning Update, Issue 6, which summarized the contents of the final CCP and EIS.

COMMENTS on the FINAL CCP and EIS

The Service received two comments on the final CCP and EIS during the 30-day waiting period that ended June 18, 2012. These comments are addressed in the record of decision (appendix A).

C.9 RECORD of DECISION

The Regional Director for region 6 signed the record of decision on July 16, 2012 (appendix A), selecting alternative D of the final EIS to implement as the CCP.

C.10 LIST of ENTITIES RECEIVING the DRAFT and FINAL CCP and EIS

The following Federal and State agencies, along with nonprofit organizations, grazing or outfitting permittees, and other businesses received copies of the draft CCP and EIS and the final CCP and EIS.

FEDERAL ELECTED OFFICIALS

- U.S. House of Representatives, Montana Representative Dennis Rehberg
- U.S. Senate, Montana Senator Max Baucus
- U.S. Senate, Montana Senator Jon Tester

FEDERAL AGENCIES

- Bureau of Land Management: Field offices in Lewistown, Malta, and Miles City; Montana State Office in Billings
- Department of Agriculture, Natural Resource Conservation Service, Bozeman, Montana; Forest Service, Rocky Mountain Research Station, Ogden, Utah
- Environmental Protection Agency, Helena, Montana
- Federal Highways Administration, Western Lands Office, Vancouver, Washington
- U.S. Army Corps of Engineers, Fort Peck
- U.S. Fish and Wildlife Service: region 6 programs in Lakewood, Colorado; Invasive Strike Team in Great Falls, Montana; Ecological Services in Helena, Montana; region 9 in Washington, DC
- National Park Service, Lewis and Clark National Trail: Omaha, Nebraska; regional office in Lakewood, Colorado

TRIBES and TRIBAL ORGANIZATIONS

- Arapaho Business Council
- Assiniboine and Gros Ventre Tribes (Fort Belknap)
- Assiniboine and Sioux Tribes (Fort Peck)
- Chippewa Cree Tribe
- Northern Cheyenne Tribe
- Crow Tribe

MONTANA ELECTED OFFICIALS

- Governor Brian Schweitzer
- Representative Ed Butcher
- Representative Dave Kastin
- Representative Wayne Stahl
- Senator Jim Peterson
- Senator John Brenden
- Senator Johnathan Windy Boy

MONTANA STATE AGENCIES

- Department of Fish, Wildlife and Parks: director in Helena; region 4 in Great Falls; Lewistown Area Resource Office; region 6 in Glasgow; region 7 in Miles City; State Wildlife Grants in Great Falls
- Department of Natural Resources: director in Helena; Lewistown; Miles City
- Department of Transportation, Lewistown
- Montana Historical Society and Preservation Office
- Natural Heritage Program, Helena

COUNTY and LOCAL GOVERNMENTS and AGENCIES

- Fergus County Commissioners
- Garfield County Commissioners
- McCone County Commissioners
- Petroleum County Commissioners
- Phillip County Commissioners
- Valley County Commissioners
- Missouri River Council of Conservation Districts in Great Falls: Fergus County Conservation District, Garfield County Conservation District, McCone County Conservation District, Petroleum County Conservation District, Phillips County Conservation District, Valley County Conservation District

ORGANIZATIONS and EDUCATIONAL INSTITUTIONS

- American Bird Conservancy, The Plains, Virginia
- American Prairie Reserve, Bozeman, Montana
- Defenders of Wildlife, Bozeman, Montana, Missoula, Montana, Washington, DC
- Denver Museum of Nature and Science, Curator of Vertebrate Paleontology, Denver, Colorado
- Department of Natural Resource Ecology and Management, Iowa State University, Iowa
- Ducks Unlimited, Memphis, Tennessee
- Environmental Defense Center for Conservation Incentives, Boulder, Colorado
- Fort Peck Lake Association, Fort Peck, Montana
- Foundation for North American Wild Sheep, Cody, Wyoming
- Friends of the Missouri River Breaks, Lewistown, Montana
- Gallatin Wildlife Association, Bozeman, Montana
- Hellgate Hunters and Anglers, Missoula, Montana
- Izaak Conservation League, Gaithersburg, Maryland
- Maryland Ornithological Society, Ellicott City, Maryland
- Missouri River County, Wolf Point, Montana
- Montana Audubon, Helena, Montana
- Montana Farm Bureau, Bozeman, Montana
- Montana Mountain Bike Alliance, Bozeman, Montana
- Montana Petroleum Association, Helena, Montana
- Montana Trail Vehicle Riders Association, Great Falls, Montana
- Montana Trappers Association, Winnett, Montana
- Montana Wildlife Federation, Helena, Montana
- Montana Wilderness Association, Great Falls, Helena, Montana
- Montana Wildlands Association, Central and Eastern Association, Lewistown and Billings, Montana
- Mule Deer Foundation, Eastern, Bismarck, North Dakota
- Museum of the Rockies, Montana State University, Bozeman, Montana
- National Audubon Society: New York, Washington, DC
- National Trappers Association, New Martinsville, West Virginia
- National Wildlife Federation: Reston, Virginia; Northern Rockies Project Office in Missoula, Montana
- National Wildlife Refuge Association, Washington, DC
- Nature Conservancy, Matador Ranch, Dodson, Montana
- Our Montana, Inc., Billings, Montana
- Ranchers Stewardship Alliance, Malta, Montana
- Sierra Club, San Francisco, California
- The Wilderness Society, Bozeman, Washington, DC
- University of Montana, Missoula, Montana
- Upper Missouri Breaks Audubon, Great Falls, Montana
- U.S. Humane Society, Washington, DC
- Walleyes Unlimited of Montana, Big Sandy, Montana; Crooked Creek Chapter, Malta, Montana
- Western Watersheds Project, Inc., Mendon, Utah
- Wild Sheep Foundation, Montana Chapter
- Wildlife Conservation Society, Bozeman Montana
- World Wildlife Fund, Bozeman, Montana
- Yellowstone Buffalo Foundation, Bozeman, Montana
- Yellowstone Valley Audubon, Bozeman, Montana

PUBLIC LIBRARIES

- Colorado State University, Morgan Library, Fort Collins, Colorado
- Garfield County Library, Jordan Montana
- Glasgow Library, Glasgow, Montana
- Great Falls Public Library, Great Falls, Montana
- Lewistown Public Library, Lewistown, Montana
- McCone County Library, Circle, Montana
- Montana State University Libraries: Billings, Bozeman, Havre, Montana
- Phillips County Library, Malta, Montana
- Petroleum County Library, Winnett, Montana
- U.S. Fish and Wildlife Service, National Conservation Training Center Library, Shepherdstown, West Virginia

Appendix D

Compatibility Determinations

D.1 USES

This appendix contains compatibility determinations for the uses below:

- Hunting *(section D.5)*
- Fishing *(D.6)*
- Wildlife observation, photography, environmental education, and interpretation *(D.7)*
- Camping *(D.8)*
- Geocaching *(D.9)*
- Guided hunting (outfitting) *(D.10)*
- All-terrain vehicle, bicycle, and snowmobile use *(D.11)*
- Prescriptive grazing *(D.12)*
- Research *(D.13)*

D.2 REFUGE NAMES

- Charles M. Russell National Wildlife Refuge (Montana)
- UL Bend National Wildlife Refuge (Montana)

D.3 ESTABLISHING and ACQUISITION AUTHORITIES

The following laws and Executive order established the refuges and authorized acquisition of refuge lands.

CHARLES M. RUSSELL NATIONAL WILDLIFE REFUGE

- Executive Order 7509, dated December 11, 1936
- Refuge Recreation Act
- Bankhead–Jones Farm Tenant Act
- Migratory Bird Conservation Act of 1929

UL BEND NATIONAL WILDLIFE REFUGE

- Fish and Wildlife Coordination Act
- Migratory Bird Conservation Act
- Fish and Wildlife Act 1956
- Refuge Administration Act
- Wilderness Act legislation

D.4 REFUGE PURPOSES

Each refuge was established for specific purposes, as described below.

CHARLES M. RUSSELL NATIONAL WILDLIFE REFUGE

- "For the conservation and development of natural wildlife resources and for the protection and improvement of public grazing lands and natural forage resources: Provided, That nothing herein contained shall restrict prospecting, locating, developing, mining, entering, leasing, or patenting the mineral resources of the lands under the applicable laws: … Provided, however, That the natural forage resources therein shall be first utilized for the purpose of sustaining in a healthy condition a maximum of four hundred thousand (400,000) sharp-tailed grouse, and one thousand five hundred (1,500) antelope, the primary species, and such nonpredatory secondary species in such numbers as may be necessary to maintain a balanced wildlife population but, in no case, shall the consumption of forage by the combined population of the wildlife species be allowed to increase the burden of the range dedicated to the primary species: Provided further, That all the forage resources within this range or preserve shall be available, except as herein provided with respect to wildlife, for domestic livestock." (Executive Order 7509, dated December 11, 1936)
- "Shall be administered by him [Secretary of the Interior] directly or in accordance with cooperative agreements ... and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon." (16 U.S.C. 664, Fish and Wildlife Coordination Act)
- "Suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species" (16 U.S.C. 460k–1), " the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors." (16 U.S.C. 460k–2,Refuge Recreation Act [16 U.S.C. 460k–460k–4], as amended)
- "Purposes of a land-conservation and land-utilization program." (7 U.S.C. 1011, Bankhead-Jones Farm Tenant Act)
- "Particular value in carrying out the national migratory bird management program." (16 U.S.C. 667b, An Act Authorizing the Transfer of Certain Real Property for Wildlife)
- "Conservation, management, and ... restoration of the fish, wildlife, and plant resources and their habitats ... for the benefit of present and future generations of Americans." (16 U.S.C. 668dd [a] [2], National Wildlife Refuge System Administration Act)
- "For use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (16 U.S.C. 715d, Migratory Bird Conservation Act)

UL BEND NATIONAL WILDLIFE REFUGE

- "For use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (16 U.S.C. § 715d, Migratory Bird Conservation Act), "reserved for the UL Bend National Wildlife Refuge" (Public Land Order 4588, dated March 25, 1969), "for the protection of lands for migratory waterfowl management." (Public Land Order 4826, dated May 15, 1970)
- "Shall be administered by him [Secretary of the Interior] directly or in accordance with cooperative agreements ... and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon." (16 U.S.C. § 664, Fish and Wildlife Coordination Act)
- "Particular value in carrying out the national migratory bird management program." (16 U.S.C. § 667b, An Act Authorizing the Transfer of Certain Real Property for Wildlife)

- "For the development, advancement, management, conservation, and protection of fish and wildlife resources." (16 U.S.C. § 742f [a] [4])
- "For the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude." (16 U.S.C. § 742f [b] [1], Fish and Wildlife Act of 1956)
- "Conservation, management, and ... restoration of the fish, wildlife, and plant resources and their habitats ... for the benefit of present and future generations of Americans." (16 U.S.C. § 668dd [a] [2], National Wildlife Refuge System Administration Act)
- "To secure for the American people of present and future generations the benefits of an enduring resource of wilderness … wilderness areas ... shall be administered for the use and enjoyment of the American people in such manner as would leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information about their use and enjoyment as wilderness." (16 U.S.C. 1131, Wilderness Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION

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

D.5 DESCRIPTION of USE: Hunting

The Charles M. Russell National Wildlife Refuge hunting program allows for the take of elk, pronghorn, white-tailed deer and mule deer, waterfowl (ducks and geese), upland gamebirds (turkey, ring-necked pheasant, mourning dove, sage-grouse, sharp-tailed grouse, Hungarian partridge) and coyotes. Season dates, limits, and harvest methods are generally consistent with State regulations, with the exception of mule deer and coyotes. Both have refuge-specific restrictions at the time of publishing. Specific regulations are available to the public at the Web site at www.fws.gov/cmr or at any office of the refuge (Lewistown, Sand Creek, Jordan, and Fort Peck).

In 2009, there was an estimated 103,000 hunter visits on the refuge, which is about 41 percent of the annual visitation for the refuge (annual visitation is about 250,000). The refuge is one of the most notable areas in the State of Montana for big game hunting. The refuge staff observes a small number of waterfowl and upland bird hunters each year. Hunting is one of the six wildlife-dependent recreational uses on the refuge. Managed hunting is a tool used by the Refuge System for control of wildlife populations to maintain biological diversity and mimic natural processes that are missing or diminished.

Hunting takes place refugewide with the exception of administrative areas, closed areas (Slippery Ann Elk View Area), and recreational areas. Dual collateral refuge officers and currently one full-time refuge officer monitor hunters and their take. Especially during the big game rifle season when use on the refuge reaches its peak, refuge officers work in coordination with other Federal officers and State game wardens to ensure the use of safe and legal hunting practices.

AVAILABILITY of RESOURCES

Adequate resources are available to manage the existing hunting program at the current level of participation. The current road system provides access for hunters onto the refuge for hunting. Most refuge roads become impassible with only a minimal amount of precipitation. During the hunting season, this may cause clustering of hunters in localized, accessible areas of the refuge.

Increased use of the river as a motorway for access has provided many the opportunity for solitude and a primitive and unconfined hunt. This allows for access to resources that cannot be attained via the road system or easily on foot. Several wilderness units are only accessible on foot or via the Missouri River.

Aerial big game surveys are used during the year to establish counts and population statistics on elk, mule deer, white-tailed deer, and pronghorn. These monitoring surveys help in managing the overall health of the populations, which could be used to establish limits or expand the hunting program. To help enforcement on the refuge, all four of the dual-function officers participate in a weekend rotation conducting law enforcement duties. The refuge currently has only one full-time officer. Additional needs are addressed in the CCP.

A refuge hunting regulation brochure is available to inform the public of hunting opportunities, refuge regulations, and safety precautions. Maps are also available, which show the location of roads, recreation areas, and those areas closed to hunting.

ANTICIPATED IMPACTS of the USE

Temporary disturbance will exist to wildlife near the activity. Animals surplus to populations will be removed by hunting. A temporary decrease in populations of wildlife might help ensure that carrying capacity (especially for big game species) is not exceeded. Closed areas will provide some sanctuary for game and nongame species, minimize conflicts between hunters and other visitors, and provide a safety zone around communities and administrative areas. The harvest of these species will be compensatory mortality, with minimal impact to the overall health of their populations.

Temporary negative effects on the habitat are expected due to the use of camping grounds, tree stands, and possible illegal off-road travel. To mitigate the possible impacts, the refuge has established camping areas providing parking and vault toilets. The Service also enforces a pack-in, pack-out policy encouraging folks to remove their trash.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Public hunting is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, hunting can occur on the refuge if the following stipulations are met:

1. Hunting is prohibited in all administrative sites, closed areas, and recreational areas.
2. Target shooting with firearms is prohibited at all times on the refuge.

3. Collection of antlers, artifacts, and fossils is prohibited.
4. All boats, trailers, and ATVs must be properly licensed from the State of origin. In addition, all ATVs must be street-legal, which requires brake lights and rear mirror in addition to licensing.
5. All vehicles including ATVs are only allowed on open, numbered roads.
6. Nonmotorized game carriers are allowed on the refuge except on the UL Bend Wilderness.
7. The use of firewood is allowed for those dead and downed trees. No live cutting is permitted.

Justification. Public hunting is a historical wildlife-dependent use of the refuge complex, and is designated as one of the priority public uses as specified in the Improvement Act. Infrastructure is already in place to support hunting programs, and current personnel levels and money are adequate. Special regulations are in place to minimize negative effects on the refuges and associated wildlife. Montana State law further controls hunter activities. Hunting is a legitimate wildlife management tool that can be used to control wildlife populations. Hunting harvests a small percentage of the renewable resources, which is in accordance with wildlife management objectives and principals.

Mandatory 15-Year Reevaluation Date: 2027.

D.6 DESCRIPTION of USE: Fishing

The refuge allows public fishing in accordance with the State fishing regulations and seasons, and in coordination with refuge and USACE regulations. The uses covered in the determination will be fishing on refuge reservoirs, fishing on the Missouri River, and fishing on the Fort Peck Lake as well as the use of boat ramps, parking areas, fishing areas, and other structures maintained to facilitate the refuge's fishing program.

During the months that ice fishing is available, icehouses are permitted on the Fort Peck Reservoir December 1 to March 31. The owner's name and address must be attached to the outside wall of the structure.

In 2009, the refuge had more than 60,000 visitors for fishing. Lake trout, salmon, bass and upriver paddle fish are some of the more popular species sought after. Fishing is allowed throughout the year; however, access is variable based on road conditions. Licensed vehicles and licensed ATVs are allowed on refuge numbered routes and the ice surface of Fort Peck Lake. Snowmobiles are only allowed to travel on the surface of Fort Peck Lake. Travel off Fort Peck Lake and numbered routes is not allowed with any vehicle (i.e., travel along the shoreline).

AVAILABILITY of RESOURCES

Anglers use the existing network of roads to access the river, lake, and various reservoirs of the refuge for fishing. There are twelve locations for launching boats; however, with the water level fluctuation of the Fort Peck Reservoir some boat ramps may be inaccessible to the water. The refuge complex has adequate administrative and management staff to manage its fishing program.

Annual funding is needed for seasonal workforce salary and for supplies to maintain fishing facilities (including mowing, painting, and repairing facilities; litter pick up; restroom cleaning supplies; and periodic pumping costs of vaulted toilets). Money is needed for law enforcement staff salaries, fuel costs, repairs, maintenance of patrol vehicles, and associated costs to support the law enforcement program. Routine law enforcement patrols occur year-round. The refuge is currently hiring an additional law enforcement officer at the Fort Peck Field Station and part of their duties will be to patrol fishing on the refuge.

ANTICIPATED IMPACTS of the USE

The anticipated impacts of fishing are considered minimal. Fishing is one of the six wildlife-dependent priority public uses identified by Service policy. These uses are encouraged when compatible with refuge purposes. The disturbance is expected to be limited in scope and duration. All motor vehicle use is restricted to numbered routes and parking areas, which reduces disturbance to wildlife. The vast size of the nearly 250,000-acre Fort Peck Reservoir allows for a large number of anglers and an opportunity for solitude.

The CCP recommends establishing clear access for ice fishing. This recommendation could help divert potential violators from disturbing shoreline and upland habitat to access the ice for fishing. Anglers occasionally violate regulations; however, these incidents usually have only minor negative effects on fish populations or refuge resources.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Public fishing is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, fishing can occur on the refuge if the following stipulations are met:

1. This use must be conducted in accordance with State and Federal regulations and applicable special refuge regulations published.
2. Travel is only permitted on numbered routes with licensed motor vehicles.
3. Travel is permitted on the surface of Fort Peck Reservoir with licensed motor vehicles and snowmobiles.
4. Shoreline travel is not permitted on the refuge.

Justification. Fishing is a historical wildlife-dependent use at Charles M. Russell National Wildlife Refuge and is one of the priority public uses as specified in the Improvement Act. Infrastructure is already in place to facilitate this activity. Current personnel levels and funding resources are adequate. Special refuge regulations are in place to minimize negative effects on refuge habitat and wildlife.

Mandatory 15-Year Reevaluation Date: 2027.

D.7 DESCRIPTION of USE: Wildlife Observation, Photography, Environmental Education, and Interpretation

Currently, the Service estimates the number of visitors who take part in nonconsumptive uses at about 87,100. This includes participants in wildlife observation, wildlife photography, environmental education, interpretation and other recreational participants. These activities may take place on foot, bicycle, automobile, motorized boat, canoe, horse, cross-county skis and snowshoes. The refuge complex is open from dawn to dusk, and entry into closed areas is allowed through a special use permit and special conditions that are evaluated on a case-by-case basis.

With four of the above accounted uses being one of the six priority public uses of the Refuge System, these uses are to be encouraged when found to be compatible with the refuge purpose.

Refuge staff will help with activities when available. Organized groups, such as schools, Scouts, and 4–H organizations, may have instructors or leaders who will use refuge habitat and facilities to conduct compatible programs. Ages of participants range from preschool to college and beyond.

AVAILABILITY of RESOURCES

The refuge provides outstanding opportunities for the above uses due to the abundance of deer, elk, eagles, prairie dogs, and other unique species that people find interesting. The opportunity for solitude and premier landscape views are numerous across the entire refuge.

The CCP recommends expanding interpretation and environmental education and maintaining wildlife observation programs and facilities. The interpretation and environmental education programs will emphasize the principles of natural plant and animal communities and ecological processes and restoration.

Implementing improvements or expanding public use opportunities will be addressed in future step-down management plans and through future money requests. Program expansion will require increased money for operations and maintenance. When money is not adequate to run and maintain programs, they will be reduced in scope or discontinued. Information kiosks, interpretive signs, and other infrastructure are in place for the present level of public use activities.

ANTICIPATED IMPACTS of the USE

The disturbance of wildlife is considered a minimal impact of public use. The disturbance is considered temporary and local, such as running off feeding deer and elk or the flushing of upland bird species. The benefits of educating the public and providing for a quality outdoor recreational experience are considered to outweigh the potential impacts of disturbing wildlife and the associated habitat.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Wildlife observation, photography, environmental education, and interpretation is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, wildlife observation, photography, environmental education, and interpretation can occur on the refuge if the following stipulations are met:

1. Managers need to monitor use patterns and densities and make adjustments in timing, location, and duration as needed to limit disturbance.
2. Use should be directed to public use facilities (both existing and in the future) or those areas appropriate for the use, which will not be within sensitive areas.
3. Observation areas need to provide wildlife information and safe areas for the public to pull the main roadway for view and photography.

Justification. Public use for wildlife observation, photography, environmental education, and interpretation is a historical wildlife-dependent use of the refuge. These activities are designated as priority public uses as specified in the Improvement Act. Special regulations are in place to minimize negative effects on the refuges and associated wildlife. The CCP supports the addition of two outdoor recreation specialists to help in the area of public use. Disturbance to wildlife is limited by the size and remote nature of large parts of the refuge. Disturbance is also generally short-term and only temporarily displaces wildlife and the adjacent wildlife habitat.

Mandatory 15-Year Reevaluation Date: 2027.

D.8 DESCRIPTION of USE: Camping

Camping is defined as erecting a tent or shelter, preparing a sleeping bag or other bedding material for use, parking of a motor vehicle or camper trailer fit for occupancy. The use of camping on the refuge is not considered one of the wildlife-dependent uses established in the Improvement Act, but it facilitates the use of all six uses considered wildlife-dependent. Due to the remote location of the refuge, it is necessary for the health and safety of those who are recreating on the refuge to be allowed to establish a location to camp. This use is being proposed due to the remote location of the refuge and as a necessary convenience when taking into consideration the health and safety of the recreationists using the refuge.

The refuge currently has 21 established camping areas. While camping is allowed refuge wide, these areas contain facilities that are not available everywhere. Driving off-road to establish a campsite is only allowed within 100 yards of a numbered route. Driving off-road for all other purposes is prohibited. Camping is allowed to occur at all times on the refuge. Most of the camping occurs during open hunting seasons in August through most of November. Most camping takes place within 100 yards of a numbered route and ranges in facilities such as a tent of natural or synthetic material or a camper trailer with minimal modern conveniences.

AVAILABILITY of RESOURCES

Resources Involved in the Administration and Management of the Use: Resources involved in the use of camping on the refuge will include law enforcement officers to ensure compliance with refuge regulations, maintenance of facilities available for recreationists and camping, and funding to produce refuge brochures explaining refuge regulations and mapping locations.

Maintenance Costs, Special Equipment, Facilities, or Improvements Necessary to Support the Use: Maintenance of current vault toilets and hardened campsites is minimal and although funding is not optimum, personnel is available to allow this use at current levels.

Offsetting Revenues: The refuge does not currently charge a fee or require a permit for camping.

ANTICIPATED IMPACTS of the USE

Short-Term Impacts: There will be localized disturbance of vegetation in the area where camping facilities are set up. Other uses such as setting up a campfire and general use of the area around the campsite will have an impact on the vegetation and cause a disturbance to wildlife in the area. Due to the refuge limit of camping for a maximum of 14 days within any 30-day period, these effects will be short term, and areas are expected to recover back to a natural state with little to no restoration conducted by refuge staff.

Long-Term Impacts: Due to the high number of campers during the hunting season, certain locations on the refuge receive a higher concentration of users. These areas have consistent use and require longer to recover back to a natural state. In these areas, not only is the refuge vegetation and wildlife heavily impacted, but refuge regulation violations can be high as well. During fishing and hunting season, it is more common to find violations due to dogs off leash, intoxication, illegal drugs, illegal firearm use, human waste, littering, disturbances to other users, and noise violations. This increase in refuge violations has become a recurring expense on the refuge law enforcement.

Cumulative Impacts: While certain times of year and locations receive a greater number of users and a higher potential for long-term impacts, the use of camping on the refuge is deemed to have a greater benefit to the public by supporting wildlife-dependent uses on the refuge.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Camping is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, camping can occur on the refuge if the following stipulations are met:

1. Vehicle access to camping areas is allowed, by the shortest route, within 100 yards of numbered roads except where closed. Off-road vehicle access to camp sites is not allowed in proposed wilderness, wilderness study areas, designated wilderness where habitat impacts warrant closing a site with a "No Vehicle" sign, and administrative areas that are posted as closed. Backpack camping is allowed throughout the refuge unless specifically closed.
2. All camping is limited to 14 days within any 30-day period. Any property including camping equipment, boats, trailers, and other personal property left unattended for a period in excess of 72 hours is subject to removal.

3. Use of dead and downed wood for campfires is allowed on the refuge. Removal of live limbs and trees is prohibited.
4. The pack-in, pack-out policy will be promoted for trash removal and campsite restoration.
5. Public use regulations will be enforced to protect habitat and limit disturbance to other refuge visitors.

Justification. Currently, all six of the wildlife-dependent uses are used on the refuge. Due to the remote location of the refuge, lodging establishments are nonexistent. For the health and safety of those who are using the resources of the refuge and taking part in recreational activities, camping is necessary. The time at which camping on the refuge is at its peak is not considered to be a critical period for wildlife on the refuge. In the fall during hunting season, all wildlife has produced young of the year and migratory bird species have completed nesting. The size of the refuge and difficulty of public access to certain locations provides alternative areas for disturbed wildlife.

While regulation violations and disturbance to other visitors can locally be a problem, with the cooperation of State and local law enforcement the workload is minimized. Due to the primitive nature of camping sites throughout the refuge and the existence of very few facilities, maintenance needs are minimal.

Given the above, camping does not materially interfere with the purposes of the refuge or the mission of the Refuge System.

Mandatory 10-Year Reevaluation Date: 2022.

D.9 DESCRIPTION of USE: Geocaching

Traditional geocaching (the burying, placement or removal of a physical cache) is generally not an appropriate use for national wildlife refuges in accordance with Service and Department of the Interior regulations and policies. However, other forms of geocaching have emerged that do not require burying, placing, or removing objects. Some of the most current types are Virtual Geocaching, Letterboxing, Earthcaching, Trail Link, and GPS Adventures. Geocaching is not a priority public use; however, certain types of geocaching may offer benefits to support the refuge's educational and interpretive programs and to learn more about refuge visitors.

The use of geocaching will be allowed refuge wide with the exception of closed areas. Those participating in geocaching will be responsible for following all rules and regulations required of all refuge users. Geocaching will be allowed year-round with the understanding that access to the refuge during the winter months is highly variable and most likely very limited. Refuge roads are often impassible due to the drifting of snow, and most roads are not maintained in the winter season. The refuge will evaluate the type of geocaching requested and how it benefits environmental education and interpretation. In accordance with refuge policy, refuge users are prohibited from disturbing archaeological resources, removing refuge resources such as plants, artifacts, and sheds, and abandoning property.

Geocaching has become a rapidly growing outdoor recreational activity. While traditional geocaching, which consists of burying or placing of a physical cache, could cause damage to the wildlife habitat, other forms of geocaching facilitates environmental education and interpretation, which are both wildlife-dependent priority public uses. By allowing geocaching to take place on the refuge, the Service is providing the opportunity for those who take part in the recreational activity to view wildlife and wildlife habitat.

AVAILABILITY of RESOURCES

Resources Involved in the Administration and Management of the Use: The issuance of special use permits to those wanting to participate in geocaching on the refuge will involve additional administrative action. The level of need for special use permits for geocaching is not known at this time. Depending on the number of user groups, it may be that the current level of refuge resources is sufficient, or it may show that there is a greater than anticipated interest and additional resources are necessary.

Special Equipment, Facilities, or Improvements Necessary to Support the Use: The refuge is not responsible for providing any additional equipment necessary to conduct this recreational use. The current refuge facilities that support refuge visitors are considered sufficient for the expected number of users.

Maintenance Costs: The maintenance of general recreational facilities is not expected to significantly increase due to the use of geocaching on the refuge.

Monitoring Costs: The increase in unfamiliar monitoring techniques using Web sites and additional monitoring methods with the frequently changing technological activities will require additional administrative resources. Web sites that track geocaches and allow for a central location for users to communicate can also be used if there is an unapproved cache or abuse of the use on the refuge by disabling the proposed activity from its Web pages and alerting its users of the inappropriate use.

Offsetting Revenues: None.

ANTICIPATED IMPACTS of the USE

Short-Term Impacts: The disturbance of wildlife, trampling of vegetation, and potential littering are all considered to be a minimal impact of public use. The prohibited practice of removing or leaving a cache on the refuge is considered to negatively affect the refuge resources, but by monitoring the use and communicating the rules and regulations, the benefits of educating the public and providing for a quality outdoor recreational experience are considered to outweigh the potential impacts.

Long-Term Impacts: There are no long-term impacts foreseen with the use of geocaching. By complying with refuge rules and regulations for this use, the long-term impacts are considered minimal to nonexistent.

Cumulative Impacts: The potential short-term and long-term impacts are considered to be minimal the use of geocaching on the refuge is considered to have a positive effect by facilitating environmental education, interpretation, and wildlife observation.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Geocaching is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, geocaching can occur on the refuge if the following stipulations are met:

1. All refuge recreationists are responsible for knowing and following all refuge regulations.
2. The removal of refuge resources is prohibited. That includes, but is not limited to, the illegal take of wildlife, vegetation, archaeological resources, antler sheds, and geological resources.
3. The burial of caches on the refuge is prohibited.
4. The abandonment or leaving of a cache on the refuge is prohibited.
5. Caches that deface public or private property, whether a natural or constructed object, to provide a hiding place, a clue or a logging method are prohibited.

Justification. The use of geocaching on the refuge is determined to be compatible with the refuge purpose and the mission of the Service. It allows an opportunity for the public to take part in wildlife observation, wildlife photography, environmental education, and interpretation, which are all considered priority public uses. With recreationists adhering to refuge regulations, it will minimize the negative effects on wildlife and wildlife habitat. By allowing the use of this rapidly growing activity, the refuge is providing the opportunity for the American public, not currently aware of the Refuge System's conservation mission, to be environmentally educated and involved in conservation.

Mandatory 10-year Reevaluation Date. 2022.

D.10 DESCRIPTION of USE:
Guided Hunting (Outfitting)

The refuge will authorize commercial hunting guide operations within the refuge, and regulate such use through the implementation of a hunting guide program and issuance of special use permits with conditions. This activity provides recreational opportunity for hunters who desire a successful, quality experience, but who may lack the necessary equipment, skills, or knowledge to hunt within the expansive Missouri River, Missouri River Breaks, and the rugged country the refuge encompasses. While guided hunts are not specifically identified as a priority public use, hunting is a priority public use.

Guided hunting operates under the same regulations as the public hunting. The use is allowed refuge wide with the exception of closed areas, recreational areas, and administrative sites. There are currently 11 special use permits issued to outfitters on the refuge to conduct guided hunts. These 11 are spread throughout the entire refuge. Guided hunts are under the same Federal and State regulations and must adhere to the same limits, season dates, and wildlife-specific regulations. All guided hunts take place during the big game hunting seasons starting with bow season in late August through the general rifle season in November.

The refuge has consistently issued special use permits and established special conditions in addition to the Service's general conditions for special use permits. Refuge law enforcement will be responsible for regulating the use and any compliance issues that arise. Each outfitter will receive an outfitter identification card for operations on the refuge. The permits are valid only within the Charles M. Russell National Wildlife Refuge and UL Bend National Wildlife Refuge Executive order boundaries. Including Service lands and USACE lands. All refuge outfitters must keep a log of use, and when requested by a refuge officer, State warden, or special agent, shall provide for inspection, current outfitter records as specified by 8.39.703 (Outfitters Records) of "Chapter 39—Montana Administrative Rules."

Based on the existing client demand for guide services, a significant number of the hunting public is willing to pay for the expertise and local knowledge provided by guides. To increase the chance of the public having a successful and quality hunting experience, the use of guides is a necessary approach due to the remote location and vast area of land.

AVAILABILITY of RESOURCES

Resources Involved in the Administration and Management of the Use: The use of refuge law enforcement in cooperation with other Federal, State, and local officers during the hunting season is no greater due to guided hunts than with the public hunters. The issuance of special use permits takes the time and effort of refuge staff with costs for printing the permits, issuing identification cards, and keeping records. The current staff is capable of issuing permits and managing the guided hunting program on the refuge.

Special Equipment, Facilities, or Improvements Necessary to Support the Use: The current equipment and facilities are adequate to meet the needs of the guided hunting program and the current participation levels.

Maintenance Costs: As with the public hunting program, maintenance of vault toilets and camping facilities is necessary during peak recreation times of the year. Starting in August with big game bow hunting through the end of the big game rifle season in November, maintenance of recreation areas, vault toilets, camping areas, and general use of the refuge is necessary.

Monitoring Costs: The cost of law enforcement, both full-time, dual collateral, other Federal, State, and local officers, is at its highest during the fall hunting season. The addition of a full-time refuge officer on the east end of the refuge will help with the heavy burden during this time of year. All other needs are addressed in the comprehensive conservation plan.

Offsetting Revenues: The current fee for an outfitting permit on the refuge is $250. This fee is kept by the refuge to use as discretionary funding whether to provide overtime for employees or to maintain and enhance current refuge facilities.

ANTICIPATED IMPACTS of the USE

Short-Term Impacts: It is anticipated that the disturbance of guided hunting will not be measurably greater than the disturbance from the general hunting public.

Temporary disturbance will exist to wildlife near the activity. Animals surplus to populations will be removed by hunting. A temporary decrease in populations of wildlife might help ensure that carrying capacity (especially for big game species) is not exceeded. Closed areas will provide some sanctuary for game and nongame species, minimize conflicts between hunters and other visitors, and provide a safety zone around communities and administrative areas. The harvest of these species will be compensatory mortality, with minimal impact to the overall health of their populations.

Temporary negative effects on habitat are expected due to the use of camping grounds, tree stands, and possible illegal off-road travel. To mitigate the possible impacts, the refuge has established camping areas providing parking and vault toilets. The Service also enforces a pack-in, pack-out policy encouraging folks to remove their trash.

Long-Term Impacts: The primary concern about commercial guided hunting activities is the potential for conflict between guided activities and other refuge users, particularly unguided hunters. Based on experiences on this refuge and on other national wildlife refuges, commercial guiding operations can increase user conflicts. An important part of this issue is public perception that hunting guides and clients have an advantage of equipment and technique and are taking game that would otherwise be available to regular hunters. Guides, because they are running a business, may also be viewed as more aggressive when compared to unguided hunters. The State and refuge regulations should help ease the tensions between guided hunters and the public hunters. However, this conflict between hunters could be considered a potential long-term impact.

Cumulative Impacts: Guide operations may increase use of some refuge facilities such as boat ramps, campsites, and other facilities frequented by general user groups. With the dispersal of outfitters throughout the entire refuge from one end to the other, this increase will not be significant compared to the overall use.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Guided hunting (outfitting) is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, guided hunting (outfitting) can occur on the refuge if the following stipulations are met:

1. Regulations for recreational users apply. See refuge guide map and information (revised 2004).
2. Outfitters and their licensed guides must have in their possession an outfitter identification card for the Charles M. Russell Refuge while operating on the refuge.
3. Charles M. Russell Refuge outfitter permits are valid only on lands administered by the Service within the boundary of the Charles M. Russell and UL Bend Refuges (including USACE lands within the refuge).
4. Charles M. Russell Refuge outfitter permits do not give exclusive use of any area.
5. All violations of refuge regulations, special conditions of an outfitter permit, MFWP statutes, or Board of Outfitters Rules by a Charles M. Russell Refuge outfitter, licensed guide, client, or a violation occurring in the presence of an outfitter or guide must be reported to the proper official immediately. Failure to report violations will be grounds for cancellation of the permit.
6. Permitted outfitters may not use licensed outfitters as guides.
7. Outfitters must meet State of Montana minimum insurance requirements. In addition, the policy shall (1) name the United States Government as coinsured, (2) specify that the insurance company shall have no right of subrogation against the United States of America, and (3) the permittee shall indemnify the United States. A current certificate of insurance must be provided to the refuge's Lewistown office.
8. All refuge outfitters on request of a refuge officer, State warden or special agent, shall provide for inspection, current outfitter records as specified by 8.39.703 (Outfitters Records) of "Chapter 39—Montana Administrative Rules."
9. Refuge outfitters are not allowed to use aircraft for locating game on the refuge.
10. Outfitter logs, along with hunter-use days are required to be turned into Charles M. Russell National Wildlife Refuge, P.O. Box 110, Lewistown, Montana 59457, by December 31 of each year. Failure to submit logs will be grounds for cancellation of the following year's permit.
11. Violation of any permit special conditions may be grounds for cancellation.
12. Outfitters who wish to keep their refuge permit and remain inactive with the State of Montana license requirements, must pay the $250 permit fee. Outfitters will be allowed to renew their permit with the Charles M. Russell Refuge for 2 years while remaining inactive with the State. If at the beginning of a third year, an outfitter is still inactive with the State, he or she will not be offered an opportunity to renew with the refuge.

Justification. With the current regulations specific to guided hunting, and the spatial distribution of the outfitters, allowing guided hunting on the refuge will not materially interfere with or detract from the purposes of the refuge or the mission of the Refuge System. By allowing guided hunts on the refuge, it will provide an opportunity for those hunters looking to have a quality hunting experience and a greater chance of a successful hunt by using the knowledge, skills and abilities of those with local experience and the necessary equipment.

Mandatory 10-Year Reevaluation Date. 2022.

D.11 DESCRIPTION of USE: All-Terrain Vehicles, Bicycles, and Snowmobiles

This applies to the proposed use and the restriction of use on the refuge uplands, Fort Peck Lake, and the Missouri River. Snowmobile use occurs during the winter season and is only allowed across the Fort Peck Lake. It is prohibited along the Missouri River and across the refuge uplands including all roads. ATV use occurs year-round and is allowed over the Fort Peck Lake during the winter season and on refuge numbered roads. ATV use is prohibited off-road on the refuge uplands and along the Missouri River. Bicycles are currently allowed on numbered roads including seasonally closed roads. These uses are not priority public uses according to the National Wildlife Refuge System Administration Act of 1997.

As the list below shows, ATV use will be allowed on refuge numbered routes and the Fort Peck Lake. Snowmobile access is only allowed over the Fort Peck Lake. Neither use is allowed along the Missouri River nor can either use take place off-road over the refuge uplands.

Vehicle type	*Fort Peck Lake*	*Missouri River*	*Refuge roads*
ATV	allowed	prohibited	allowed
bicycle	prohibited	prohibited	allowed
snowmobile	allowed	prohibited	prohibited

Use locations that are both allowed or prohibited by the use of snowmobiles and ATVs.

ATV use occurs year-round on refuge numbered routes and during the winter months over the Fort Peck Lake. Snowmobile use is only allowed over the Fort Peck Lake during the winter season when ice and snow are present. ATVs are required to use refuge roads, the Fort Peck Lake ice during winter months, and all must be street-legal. Montana residents must have a metal license plate and all operators must possess the proper driver's license. Nonresident operators who wish to operate their ATVs on the refuge should contact the refuge office about proper licensing requirements. Snowmobiles and their operators need to comply with State licensing requirements.

Due to the remote area in and around the refuge, the use of smaller and more navigable motorized vehicles is necessary to access or disperse access for wildlife dependent recreation. Snowmobiles and ATVs are both used to access the large Fort Peck Lake for ice-fishing opportunities away from the main access points. ATVs and, occasionally, bicycles are used on the refuge during hunting season and for general access year-round.

AVAILABILITY of RESOURCES

Resources Involved in the Administration and Management of the Use: The main cost of these uses is going to be the time and effort of regulating the use. With one full-time law enforcement officer and four dual-collateral officers to cover the 1.1 million-acre refuge are considered a marginal number of resources at best given the sheer size of the refuge and the number of users. Other Federal, State, and local law enforcement officers may help, as they are available.

Special Equipment, Facilities, or Improvements Necessary to Support the Use: Additional equipment and facilities are not necessary to monitor the use within the refuge and Fort Peck Lake.

Maintenance Costs: The most obvious maintenance cost is to the road system and to the vehicles used by refuge staff for patrolling the uses on the refuge.

Monitoring Costs: Monitoring use is the most expensive cost for the refuge. Either by plane or by vehicle, the cost of gas and staff time is significant. Due to the remote location and inaccessibility of certain areas, traversing the refuge is extremely time-consuming and a fast reaction to a refuge violation could take hours.

Offsetting Revenues: The refuge does not currently charge a fee for the use of the road system, or for access.

ANTICIPATED IMPACTS OF THE USE

Short-Term Impacts: Snowmobiling has little to no resource impact given the season of use and regulation confining snowmobiles to ice covered waters. Snowmobiles do generate noise that may disturb other users in the area. ATV and bicycle use have little to no resource impacts as they are restricted to refuge numbered routes and to ice covered waters. As with snowmobiles, ATVs generate a disturbance due to noise that may disturb wildlife as well as other users within the area. Neither is considered to have an impact on the refuge habitat, as both are restricted to roads and the ice.

Long-Term Impacts: There are no long-term impacts associated with the use of ATVs, bicycles, and snowmobiles due to the use restrictions. The refuge roads are already disturbed areas of the refuge, and the long-term negative effects on the Fort Peck Lake are considered nonexistent.

Cumulative Impacts: The greatest impact overall will be the disturbance to other users in the area with the use of ATVs, bicycles and snowmobiles. The noise generated from both snowmobiles and ATVs could disturb those who are viewing wildlife, hiking, snowshoeing, cross-country skiing, fishing, and hunters pursuing game.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

The use of ATVs, bicycles, and snowmobiles is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, the use of ATVs and snowmobiles can occur on the refuge if the following stipulations are met:

1. All appropriate State and Federal regulations for ATVs and snowmobiles apply.
2. ATVs belonging to Montana residents must be street-legal and have a metal license plate. Operators must also possess the proper driver's license. Nonresident ATV owners who wish to operate their ATVs on the refuge should contact the refuge staff about licensing requirements. Anyone intending to operate an ATV on the refuge should contact the refuge staff to ensure the ATV meets the necessary requirements for legal use.
3. ATVs are required to stay on refuge-numbered routes or over the ice on Fort Peck Lake. Bicycles are required to stay on refuge-numbered roads including seasonally closed roads. ATVs are not allowed on roads when they are seasonally closed.
4. Snowmobiles are only allowed use on the Fort Peck Lake.
5. Off-road operation of ATVs or bicycles, as well as all motor vehicles, is illegal.

Justification. Although there is a minor disturbance to wildlife and other refuge users, the use of snowmobiles, bicycles, and ATVs allows for greater access and more dispersed access benefiting wildlife-dependent public uses. It increases access into areas that may not be accessible with traditional motor vehicles or on foot. While snowmobiles and ATVs generate a noise disturbance, those who are looking for a solitude and quiet recreational experience have many opportunities elsewhere on the refuge. Disturbed wildlife also has many opportunities to retreat to a less disturbed area.

With stipulations in place, recreational snowmobiling, bicycling and ATV use, given the location and season of most use and the physical nature and size of the refuge, do not materially interfere with or detract from the conservation purposes of the refuge.

Mandatory 10-Year Reevaluation Date: 2022.

D.12 DESCRIPTION of USE:
Prescriptive Grazing

Prescribed grazing is the planned application of livestock grazing at a specified season, duration and intensity to accomplish specific vegetation management objectives. The objectives are designed to achieve the broader habitat and wildlife goals. Rather than managing refuge resources to support livestock grazing or other economic uses, livestock grazing is used as a habitat management tool to achieve wildlife habitat goals and objectives. The Service employs the strategy of adaptive management in the development of HMPs. Adaptive management is defined as a process that uses feedback from refuge research and monitoring and evaluation of management actions to support or change objectives and strategies at all planning levels.

Prescriptive grazing is used to improve or maintain the health and vigor of selected plants and to maintain a stable and desired plant community, provide or maintain food, cover, and shelter for animals of concern, maintain or improve water quality and quantity and reduce accelerated soil erosion and maintain or improve soil condition.

Prescriptive grazing will be carried out across the refuge to meet wildlife and habitat objectives as identified in various management plans. The Service has been gradually making the transition to prescribed grazing for over 20 years as a result of the 1986 EIS and existing Service policies, and has carried out prescriptive grazing on about 34 percent of the refuge. Most habitat units with annual grazing programs are not meeting residual grass cover for priority species. The use will be implemented across the refuge where the Service has control over the use. For example, habitat units that are fenced from common pastures will be the first units enrolled into prescriptive grazing. Habitat units that are not fenced from private or other government-owned lands will be managed under existing management plans.

The use will be conducted according to approved HMPs to meet specific wildlife and habitat objectives. Use could occur during any season depending on the specific objectives to be achieved. Prescriptive grazing will be administered through issuance of a special use permit. Permittees will be selected using the criteria identified in the Refuge Manual. Habitat management plans will identify season of use, number of animals and length of time to achieve the management objectives.

A critical step in developing an effective and ecologically sound prescriptive grazing program is establishing criteria by which the prescription's implementation and effectiveness will be measured. By collecting quantitative data over time, one is better equipped to detect trends toward or away from the desired effects of grazing treatments. Furthermore, monitoring during grazing treatments will help to determine whether grazing treatments are applied at the appropriate season, duration, frequency, and intensity to meet specific wildlife and habitat objectives.

This use will move from an annual grazing program to a prescriptive gazing program to meet specific wildlife and habitat management objectives. Currently, habitat surveys show that most grazed habitat units are not meeting the 70 percent residual grass cover as specified in the 1986 EIS. Residual grass cover is important for several grassland-nesting birds. In addition to the grass cover, new monitoring for highly palatable, first-to-decline forbs and shrubs (sentinel plants) are declining and being eliminated due to overuse and lack of natural ecological processes. These plants are extremely important to numerous wildlife species, especially birds and pollinators. The Great Plains have evolved over time through ecological disturbances like fire and grazing. These disturbances can be described as "pulse" and "press." A pulse occurrence occurs sporadically but still occurs, whereas a press disturbance is constant (Frost 2008). Like fire, originally, ungulate grazing (herbivory) was a pulse disturbance. Before 1882, there were many years with periods of abandonment by wild ungulates where less grazing took place due to its interaction with fire. Since 1882, it has become a press (constant) disturbance because of fences and fire control. As a result, highly palatable species (particularly shrubs and forbs such as chokecherry and white prairieclover) have dramatically declined. These species evolved with, and are highly adapted to, grazing when combined with several-year periods of abandonment for recovery. Palatable shrubs require several years to grow from seed to seed-bearing maturity and are alive above ground (or vulnerable to damage from grazing) 12 months of the year. Present-day livestock grazing systems typically only rest pastures for 1 entire year or less from livestock use (with no rest from wild ungulate use). A prescriptive grazing program will allow the refuge to fulfill the intent of the Improvement Act.

AVAILABILITY of RESOURCES

Resources Involved in the Administration and Management of the Use: Refuge staff will continue to monitor permittees for violations of permit conditions and trespass. Biologists and station managers will monitor habitat conditions using current HDP and sentinel plant species.

Special Equipment, Facilities, or Improvements Necessary to Support the Use: The refuge will continue to monitor grazing activities using ground surveys and aer-

ial counts. New permanent or temporary fences will need to be constructed to apply prescriptive grazing on common pastures. Temporary water developments may be necessary to facilitate prescriptive grazing in some habitat units to meet habitat objectives.

Maintenance Costs: Maintenance costs could be reduced due to the reduction in interior fences necessary to manage the prescriptive grazing program according to the CCP. There may be additional costs with the construction and maintenance of boundary fences, which will be constructed anyway to manage livestock in common pastures.

Monitoring Costs: Refuge personnel who are involved in administering the grazing program spend approximately 25–35 percent of their time issuing permits, monitoring for trespass livestock and habitat conditions, and communicating with permittees. The refuge monitors livestock trespass via fixed wing aircraft that costs $140 per hour with a monthly fixed cost of $770.

Offsetting Revenues: The refuge receives approximately $60,000 in 6860 (grazing) funds per year; however, these funds are being reduced each year due to the increase in oil and gas development on other refuges. Refuges receive a percentage of the amount of revenue that is generated from commercial activities on refuges. It is expected the revenue generated by grazing on the refuge will continue to decline over the years. These funds do not cover current expenses incurred managing current grazing program and probably will not cover the costs of implementing the prescriptive grazing program.

ANTICIPATED IMPACTS of the USE

Short-Term Impacts: Short-term impacts will include loss of vegetative cover, which could result in increased soil erosion. Highly palatable forbs and shrubs will be heavily impacted by grazing affecting a large number of wildlife species from pollinators to big game. However, the benefit will be to the wildlife species that require short cover such as prairie dogs, mountain plovers, and McCown's longspur and grazing ungulates (elk and deer) that will graze the fresh growth of grasses. Prescriptive grazing can reduce invasive species and reduce fuel in sage-grouse habitat. In weed-infested areas, grazing must be carefully managed to reduce rather than increase invasive plant establishment and spread. Ecologically based grazing prescriptions pay careful attention to positively directing plant community change, not just removing the weedy species (Sheley et al. 1996). Moving from annual grazing to prescriptive grazing could have an impact on some current permittees from an economic standpoint. Prescriptive grazing will be carried out over time and with input from current permittees to lessen potential financial impacts. Permittees that are able to meet refuge needs may benefit financially by taking advantage of increased grazing opportunities.

Long-Term Impacts: The habitats of the refuge evolved with a pulse fire–grazing interaction (pyric herbivory). As fires burned across the landscape, grazing ungulates grazed less selectively on all plant species and thus highly palatable shrubs and forbs benefited from less grazing pressure. This interaction resulted in highly resilient systems that have a great diversity of species that promote heterogeneity and ecological integrity. Restoring this historical process will promote healthy habitats that promote biodiversity and resiliency to climate change.

Cumulative Impacts: Changes in grazing management will likely reduce the availability of grazing land in the region. However, because the refuge supplies less than 1 percent of all AUMs in the region, the cumulative effect of implementing prescriptive grazing, when combined with other land management changes will be negligible.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Prescriptive grazing is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, prescriptive grazing can occur on the refuge if the following stipulations are met:

1. Habitat management plans will be developed with specific wildlife and habitat objectives.
2. Prescriptive grazing is one of the tools used to meet these objectives.

Justification. Sharp-tailed grouse, pronghorn, sage-grouse, large ungulates, and other wildlife species need a diversity of and abundant group of plants for food and cover all year. Refuge monitoring has shown that several highly palatable forbs and shrubs are declining due to the natural fire–grazing interaction being out of balance. Prescriptive grazing and other adaptive management strategies will permit flexibility necessary for the restoration of these important plant species. Prescriptive grazing is a valuable management tool that supports refuge objectives.

Mandatory 10-Year Reevaluation Date: 2022.

D.13 DESCRIPTION of USE: Research

The refuge allows research on a variety of biological, physical, archaeological, and social issues and concerns to address refuge management information needs or other issues not related to refuge management. Studies are conducted by Federal, State, and private entities including USGS, State agencies, State and private universities, and independent researchers and contractors.

Research is allowed refugewide and is addressed on a case-by-case basis for the need and potential impacts. The exact locations of the studies will be determined by the focus of the study. Research requests will be considered during all times of the year and on a case-by-case basis. Due to the difficulty in accessing the refuge lands during the winter months, studies at that time may be more heavily scrutinized as to their biological need and benefit. The location of the study may have an impact on when the use will be conducted, especially if it is during a specific hunting season.

Researchers will be required to submit a written proposal that outlines the methods, materials, timing, and justification for proposed projects. These proposals will be reviewed by refuge staff to assess the appropriateness of the research for the refuge, environmental impacts, assure that the projects do not interfere with the other resource operations, and provide suggested modifications to the project to avoid disruptions to refuge wildlife and operations. A special use permit is issued to those whose requests are deemed valid and necessary. The refuge staff will be responsible for monitoring their use and that it is appropriate and consistent with the terms and conditions in their special use permit.

Research on the refuge is allowed as a symbiotic relationship between the refuge research needs and the need for the requesting agency and individual to complete the research. The Service encourages and supports research and management studies on refuge lands that will improve and strengthen decisions on managing natural resources. All research requests will be evaluated on the refuge need and be in the best interest of wildlife and sound biological information.

AVAILABILITY of RESOURCES

Resources Involved in the Administration and Management of the Use: The refuge currently uses the existing staff to issue special use permits and to monitor researchers. Current staff resources are deemed adequate to manage issuing permits and monitoring the researchers for compliance at the existing levels.

Special Equipment, Facilities, or Improvements Necessary to Support the Use: The research group or individual will be responsible for supplying their own equipment necessary to complete the study.

Maintenance Costs: There are no foreseen maintenance costs with allowing research studies on the refuge.

Monitoring Costs: The current refuge staff is adequate to monitor the research completed by non-Service personnel. Research studies in access of available refuge resources will not be allowed.

Offsetting Revenues: The refuge does not charge a fee to conduct research studies on the refuge.

ANTICIPATED IMPACTS of the USE

Short-Term Impacts: Research activities have the potential to impact and disturb wildlife through observation, capture and release techniques, and banding or marking. The access of multiple research sites several times in a short period may noticeably disturb vegetation either by walking, trampling, or by the use of a motor vehicle. Efforts to capture wildlife may cause not only disturbance, but also injury or even death. The energy costs of disturbance may be appreciable in terms of disruption of feeding, displacement from preferred habitat, and the added energy expended to avoid the disturbance of the research being conducted.

Long-Term Impacts: None are anticipated for the approval of research studies on the refuge.

Cumulative Impacts: With most research taking place on the refuge during the summer, the compilation of several studies may be excessive disturbance on refuge resources. Even with this, no cumulative impacts are expected due to the ability of the refuge manager to control the location and timing of all research studies conducted. The size of the refuge is also considered to be such that the tolerance of several studies on the wildlife and habitat is high.

PUBLIC REVIEW and COMMENT

Public review and comment was solicited through posting of notices at the refuge, notices in local newspapers and the Federal Register, public meetings held during the CCP process, and formal public review of this compatibility determination as part of the draft CCP and EIS for the refuge.

DETERMINATION

Research is compatible.

Stipulations Necessary to Ensure Compatibility. To ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System, research can occur on the refuge if the following stipulations are met:

1. Before conducting investigations, researchers must obtain special use permits from the refuge

that make specific stipulations related to when, where, and how the research will be conducted. Managers have the option to prohibit research on the refuge that does not contribute to the purpose of the refuge or the mission of the Refuge System.

2. Researchers must possess all applicable State and Federal permits for the capture and possession of protected species, and for conducting all other regulated activities.
3. Research activities will be monitored for compliance with permit conditions and impacts.
4. If proposed research methods could impact or potentially impact refuge complex resources (habitat or wildlife), it must be shown that the research is necessary (i.e., critical to survival of a species, will enhance restoration activities of native species, will help in control of invasive species or provide valuable information that will guide future complex activities), and the researcher must identify the issues in advance of the impact.
5. Researchers must clearly mark posts, equipment platforms, fencing material, and other equipment left unattended so it does not pose a hazard. Such items shall be removed as soon as practicable on completion of the research.
6. Cultural and archaeological surveys will be coordinated with the Regional Historical Preservation Officer and the appropriate State Historic Preservation Officer to assure compliance with the Archaeological Resource Protection Act.
7. All research activities will be performed in accordance with stipulations in this determination and in specific special use permits.
8. Researchers will submit a final report concerning refuge research to the refuge manager.

Justification. Research is compatible with the mission of the Service and the purpose of the refuge. Research studies on the refuge can be used to manage trust resource responsibilities of the Service by providing information on a sound scientific basis. Research conducted on biological, physical, archaeological and social components of the refuge provide a means to analyze management actions, impacts from internal and outside forces, and ongoing natural processes within the refuge ecosystems. Research provides scientific evidence used to make management decisions and ensure the refuge is managed as intended during establishment by Congress.

Negative short-term impacts caused during the research activities will be minimized with the stipulations above and are not considered significant in nature. Conducting research studies on the refuge will not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purpose for which the refuge was established.

Mandatory 10-Year Reevaluation Date: 2022.

D.14 COMPATIBILITY DETERMINATION APPROVAL for the ABOVE USES

SIGNATURE

Richard Potts — Date
Project Leader
Charles M. Russell National Wildlife Refuge Complex
Lewistown, Montana

CONCURRENCE

Richard A. Coleman, Ph.D. — Date
Assistant Regional Director
National Wildlife Refuge System
U.S. Fish and Wildlife Service
Mountain–Prairie Region
Lakewood, Colorado

Appendix E
Key Legislation and Policy

This appendix briefly describes the guidance for the National Wildlife Refuge System and other policies and key legislation that guide the management of Charles M. Russell National Wildlife Refuge and the UL Bend National Wildlife Refuge.

E.1 NATIONAL WILDLIFE REFUGE SYSTEM

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

Goals

A. Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered.

B. Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges.

C. Conserve those ecosystems, plant communities, wetlands of national or international significance, and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts.

D. Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fish, wildlife observation and photography, and environmental education and interpretation).

E. Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.

Guiding Principles

There are four guiding principles for management and 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 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 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 about acquisition and management of national wildlife refuges.

E.2 OTHER LEGAL and POLICY GUIDANCE

Management actions on national wildlife refuges are constrained by many mandates including laws and Executive orders. The more common regulations that affect 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.

Bald and Golden Eagle Protection Act (1940): Provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds.

Bankhead–Jones Farm Tenant Act (1937): Some early refuges and hatcheries were established under the authority of this Act that required the Secretary of Agriculture to develop a program of land conservation and use.

Clean Air Act (1970, amended 1990): Restricts the amount of pollutants that can be emitted into the air. Designated wilderness areas including UL Bend National Wildlife Refuge have the highest standards (class I) for pollution and visibility and air quality is monitored at the refuge.

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

Data Quality Act (2001): Requires Government agencies to ensure and maximize the quality, objectivity, utility, and dissemination of information by Federal agencies.

Emergency Wetlands Resources Act (1986): Promotes wetland conservation for the public benefit to help fulfill international obligations in various migratory bird treaties and conventions. The act authorizes buying wetlands with Land and Water Conservation Fund monies.

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

Enhancement Act (2000): Public Law 106–54 authorized the Secretary of Army, working with the Secretary of Interior, to identify cabin sites suitable for conveyance to current lessees. The funds received will be used for acquiring other lands with greater wildlife and other public value for the refuge.

Executive Order 7509 (1936): Establishes the Fort Peck Game Range for the conservation and development of natural wildlife resources and for the protection and improvement of public grazing lands and natural forage resources. In 1963, it was renamed the Charles M. Russell National Wildlife Range (Public Land Order 2951).

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 and other 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.

Executive Order 13352, Cooperative Conservation (2004): Directs Federal agencies to implement laws relating to the environment and natural resources in a manner that promotes cooperative conservation with an emphasis on appropriate inclusion of local participation in Federal decisionmaking in accordance with respective agency missions and policies.

Executive Order 13443, Facilitation of Hunting Heritage and Wildlife Conservation (2007): Directs Federal land management and other agencies to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

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.

Game Range Act (1976): Public Law 94–223 transferred the management of all game ranges to the sole authority of National Wildlife Refuge System. This included Charles M. Russell Game Range and in 1978, the refuge was renamed Charles M. Russell National Wildlife Refuge (Public Land Order 5635).

Migratory Bird Conservation Act (1929): Establishes procedures for acquisition by purchase, rental, or gifts

of areas approved by the Migratory Bird Conservation Commission.

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

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

Native American Policy (1994): Articulates the general principles that guide the Service's government-to-government relationship to Native American governments in the conservation of fish and wildlife resources.

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 decisionmaking. [From the 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 Trails System Act (1968): Established a national trails system including provisions for national historic trails that follow as closely as possible the original trails or routes of travel of national historic significance.

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.

Paleontological Resources Preservation Act of 2009: Requires the Secretary of Interior and Agriculture to manage and protect paleontological resources on Federal land using scientific principles and expertise.

Public Land Order (4588): Establishment of UL Bend National Wildlife Refuge and revocation of Executive Order 7509 on these lands.

Public Law (94–557) of 1976: Designation of wilderness areas within the National Wildlife Refuge System including parts of UL Bend National Wildlife Refuge.

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

Rehabilitation Act (1973): Requires programmatic accessibility 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 before any work in, on, over, or under navigable waters of the United States.

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

Wild and Scenic Rivers Act (1968): Set aside certain rivers in the Nation to be preserved in free-flowing condition among other provisions. This included portions along the western boundary of the Refuge, which is part of the Upper Missouri National Wild and Scenic River most of which flows through the Upper Missouri Breaks National Monument (BLM). The act was modified in 1976 by Public Law 94–486 to apply the scenic designation to the river and its bed for the part that flows through the refuge.

Wilderness Act (1964): The act (Public Law 88–577) [16 U.S.C. 1131–36]) defines wilderness as "A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Approximately 20,819 acres within UL Bend National Wildlife Refuge are designated as wilderness, and approximately 176,140 acres within Charles M. Russell Refuge are proposed for inclusion in the National Wilderness Preservation System, and is managed as if were designated wilderness.

Appendix F

Wilderness Review and Summary

The Service has reviewed and updated existing lands within Charles M. Russell National Wildlife Refuge for current wilderness potential, as guided by the Wilderness Stewardship Policy (FWS 2008c), which provides an overview and foundation for implementing the Wilderness Act and the National Wildlife Refuge System Administration Act of 1966, as amended by the Improvement Act.

F.1 HISTORY of WILDERNESS at the CHARLES M. RUSSELL NATIONAL WILDLIFE REFUGE

With the passage of The Wilderness Act of September 3, 1964, (Public Law 88–577), the Secretary of Interior was required to review every roadless area of 5,000 acres or more and every roadless island, regardless of size, within the National Wildlife Refuge System within 10 years after the effective date of the act, and report to the President of the United States his recommendations as to the suitability or unsuitability of each such area or island for preservation as wilderness. See table A for a timeline of wilderness decisions and actions that affected the refuge.

Table A. Timeline for wilderness on the Charles M. Russell and UL Bend Refuges, Montana.

Date	*Action*
September 13, 1964	The Wilderness Act of 1964 is enacted and all agencies are given 10 years to provide recommendations for wilderness designations. (Public Law 88–577).
May 3, 1974	Directors of the Bureau of Sport Fisheries and Wildlife and BLM release a draft environmental impact statement for 13 proposed wilderness units within Charles M. Russell National Wildlife Refuge.
May 20–29, 1974	Public hearings are held in four Montana locations (Malta, Miles City, Billings, and Jordan) and Denver, Colorado, to ascertain public views on the desirability to include Charles M. Russell Refuge in the National Wilderness Preservation System. Public hearings results in the removal of three previously recommended units (Lost Creek, Sage Creek, and Snow Creek) and the addition of four (East Beauchamp, East Hell Creek, Wagon Coulee, and West Beauchamp) bringing the total number of recommended wilderness units to 15.
August 28, 1974	Assistant Secretary of the Interior officially forwards Charles M. Russell Refuge wilderness recommendations to the President of the United States.

Table A. Timeline for wilderness on the Charles M. Russell and UL Bend Refuges, Montana.

Date	*Action*
December 4, 1974	President Gerald R. Ford transmits proposals for 37 additions to the National Wilderness Preservation System (including Charles M. Russell Refuge's 15 units) to Congress. This act transitions the 15 Charles M. Russell Refuge units from wilderness study areas (WSA) to "proposed wilderness." From this point forward, all 15 units are to be managed as wilderness, per the tenets of The Wilderness Act of 1964. (House Document 94–403)
October 19, 1976	UL Bend Wilderness designated in part of UL Bend National Wildlife Refuge with wilderness areas totaling 20,890 acres. (Public Law 94–557)
October 31, 1983	28 acres of designated wilderness within UL Bend Refuge removed from the National Wilderness Preservation System to allow for fishing access. (Public Law 98–140)
July 29, 2002	All refuge roads on proposed wilderness areas closed per US DOI memo entitled, "Charles M. Russell Road Policy Challenged."

On May 3, 1974, the Directors of the Bureau of Sport Fisheries and Wildlife (the Service) and BLM released a draft environmental impact Statement for 13 proposed wilderness units within Charles M. Russell National Wildlife Refuge. Five separate public hearings were then held on the proposals in Malta, Miles City, Billings, Denver, and Jordan between May 20 and May 29, 1974. The comment period was extended until June 28, 1974, to allow for more written comments on the proposed wilderness units. A total of 283 individuals attended the five hearings with 101 statements read into the record. The public hearings resulted in the addition of two more Charles M. Russell Refuge units as viable wilderness, bringing the total recommended wilderness areas to 15 with a combined acreage of 155,288 acres.

On December 4, 1974, President Gerald Ford, via House Document No. 93–403 recommended that the selected 155,288 acres of the Charles M. Russell National Wildlife Refuge keep their pristine character through protection as proposed wilderness units (Note: The proposal that went to Congress identified 155,388 acres, but the actual acreage was 155,288 acres and is considered to be legal acreage). The 155,288 acres was divided among 15 units (identified in table B in section F.3 below).

With advances in technology, the Service has since refined all of the proposed wilderness units and entered them into GIS. Through the minimization of errors and correction of boundaries, the acreage the Service recognizes today as proposed wilderness units is closer to 158,619 acres.

Section "F.2, Current Proposed Wilderness" provides a complete description of each area currently managed as proposed wilderness. As directed by Congress, the Service is required to manage all proposed wilderness units to maintain their wilderness character based on these qualities: an untrammeled and natural state, a lack of development, and the capacity for solitude or primitive and unconfined recreation.

F.2 CURRENT PROPOSED WILDERNESS

The management direction map (figure 41 in chapter 4) and the wilderness map (figure A) in this appendix show the locations of proposed wilderness units. The wilderness character of all designated and proposed wilderness areas within Charles M. Russell Refuge will be reevaluated through the creation of a wilderness stewardship plan following finalization of the CCP.

The next section describes the basic geography and topography of the 15 existing proposed wilderness units.

1. East Seven Blackfoot—11,744 acres

BLM's wilderness study area surrounds the southern boundary of East Seven Blackfoot. This unit, like the Billy Creek Unit and West Seven Blackfoot Unit, is extremely rugged with high ridges and numerous side drainages and coulees. Slaymaker Ridge is the most notable physical feature, running north and south in the middle of the proposed wilderness unit. Vegetation types include limited forested areas, grassy benches, and sagebrush and greasewood flats. Much of the land is barren due to the soils, slope, and topography.

2. Mickey Butte—16,893 acres

Mickey Butte is situated on the east side of the UL Bend Refuge, contiguous with the UL Bend Wilderness. This unit is characterized by high bluffs on the northwest side yielding to steep, rugged coulees draining the area to the east and southeast. The coulees are relatively short as they rise to the bluffs. Forested areas become more sparse in this area, compared to the western part of the refuge, with grasses, sagebrush, and greasewood increasing in percentage of ground cover.

3. Burnt Lodge—21,576 acres

Burnt Lodge is one of the most rugged and scenic areas within the Missouri River Breaks. The area varies from rolling Bear Paw shale hills in the west to the extremely rugged eastern part, which is an extension of the Larb Hills. Scattered patches of ponderosa pine and juniper dominate the north slopes and high bench lands. Grasses, sagebrush, and greasewood predominate in the area west of Killed Woman Creek. The northern boundary of this unit abuts a BLM wilderness study area.

4. Billy Creek—10,916 acres

Billy Creek is extremely rugged with short, steep-sided drainages. Much of the area is inaccessible to livestock with dominant grass, sagebrush, and greasewood vegetation. Forested areas are isolated and occur only where soil, slope, and aspects are conducive to their growth.

5. West Seven Blackfoot—6,456 acres

A BLM wilderness study area surrounds the southern boundary of West Seven Blackfoot. The unit is similar to the East Seven Blackfoot. A long, high ridge running west to east and paralleling the reservoir dominates the unit. Vegetation is similar to adjacent proposed wilderness units, with increased forest cover.

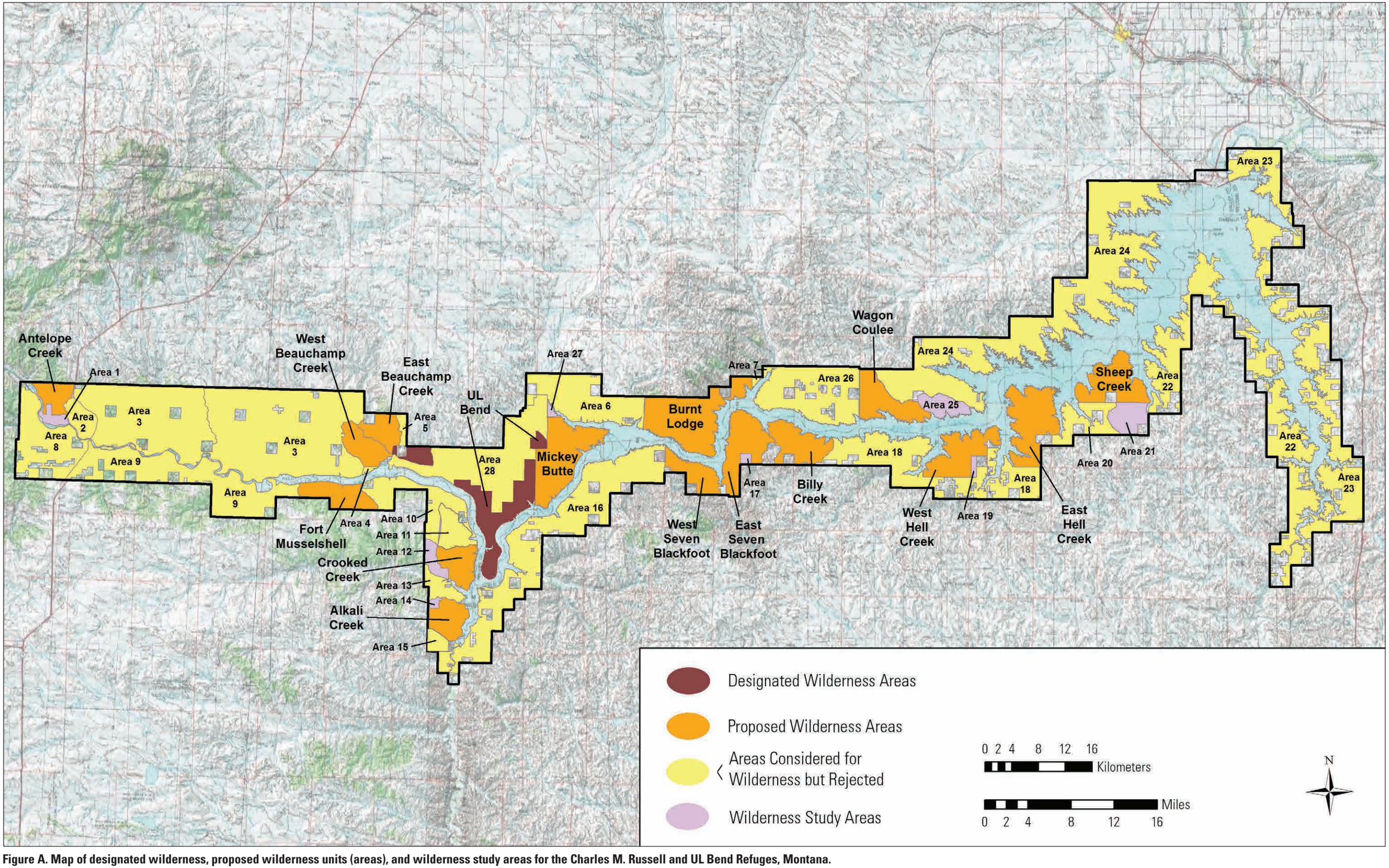

Figure A. Map of designated wilderness, proposed wilderness units (areas), and wilderness study areas for the Charles M. Russell and UL Bend Refuges, Montana.

6. Antelope Creek—5,062 acres

Antelope Creek is forested with long and geologically well-developed drainages. The bordering ridges are steep and relatively narrow-crested. It is located in the very northwest corner of the refuge contiguous to the Upper Missouri River National Monument WSA administered by BLM.

7. West Hell Creek—11,896 acres

West Hell Creek provides a physical transition between the badlands to the east and the Missouri River Breaks to the west. Forest cover is more plentiful in this unit than in the area east of Hell Creek, but the landscape is still dominated by grass, sagebrush, and other shrubs.

8. Fort Musselshell Unit—8,303 acres

Fort Musselshell contains major drainages that run parallel to Fort Peck Reservoir, in contrast to the perpendicular drainages in most areas. The slopes are well vegetated with conifers, grass, sagebrush, and other shrubs.

9. Sheep Creek—11,784 acres

Sheep Creek is situated between Cracker Creek Bay and Gilbert Creek Bay west of the Sage Creek Proposed Wilderness. The topography reflects inconsistent erosion. Grass with some sagebrush and other shrubs dominate the landscape. Trees are virtually absent.

10. West Beauchamp Creek—6,736 acres

West Beauchamp Creek comprises three short coulees between ridges that start from CK Ridge and proceed in a southeasterly direction, ending at the Missouri River. These coulees are characterized by scattered stands of ponderosa pine and juniper, and ridge tops of sagebrush shrub mixed with western and bluebunch–wheatgrass grassland.

11. Wagon Coulee—10,480 acres

Wagon Coulee contains the most rugged parts of the south-facing aspect of Harper's Ridge. It includes the lower 2 miles of the Cabin Coulee drainage and an approximately 2-mile section of the middle reaches of Carpenter Creek. The coulees within the unit contain healthy stands of ponderosa pine with ridge tops consisting of primarily grass and scattered sage.

12. Alkali Creek—6,592 acres

Alkali Creek is characterized by short drainages, which produce a jumbled appearance. Slopes are forested and, due to the northern exposure, well vegetated with grasses, sagebrush, and other shrubs.

13. Crooked Creek—6,842 acres

Crooked Creek drainages are relatively short with well-forested side slopes. Away from the reservoir, the forest is interspersed with small grassy parklands.

14. East Hell Creek—14,744 acres

East Hell Creek is physically similar to the West Hell Creek proposed wilderness unit. Landscapes include grassy, flat ridge tops or mesas, gentle rolling breaks, and numerous steep drainages and canyons nearer the lake. Vegetation is typical of the Missouri River Breaks with a mix of forested areas and juniper patches, grasslands, and sagebrush flats.

15. East Beauchamp Creek—5,264 acres

East Beauchamp Creek comprises the lower reaches of the Beauchamp Creek drainage, which is a 20-mile-long watershed. A wide, intermittent drainage within the East Beauchamp unit has the potential for excellent riparian habitat. Secondary side coulees are characterized by ponderosa pine and juniper.

F.3 WILDERNESS INVENTORY

There are three phases to the wilderness review process: (1) inventory, (2) study, and (3) recommendation. Areas that meet the minimum criteria for wilderness are identified in the inventory phase. These areas are called wilderness study areas (WSAs). These areas must be roadless and meet one of the following size criteria:

- greater than 5,000 acres
- a roadless island of any size
- less than 5,000 acres but of sufficient size to be practicably managed as wilderness

A wilderness study area must also be natural and provide opportunities for solitude or primitive recreation.

Table B reflects the evaluation of existing wilderness and nonwilderness units within Charles M. Russell Refuge against the criteria for inclusion in the National Wilderness Preservation System. (Refer to the final CCP and EIS for the evaluation of wilderness under all alternatives.)

Table B. Wilderness inventory for the Charles M. Russell and UL Bend Refuges, Montana.

Evaluation criteria ("yes" or "no" for meeting criteria, with comments)

(1) At least 5,000 acres of land	(2) Affected primarily by forces of nature, with the imprint of human work substantially unnoticeable	(3a) Outstanding opportunities for solitude (3b) Outstanding opportunities for primitive and unconfined recreation	(4) Ecological, geological, or other features of scientific, educational, or historical value	*QUALIFIES as a wilderness study area (meets criteria 1, 2, and 3a or 3b)*
AREA 1 • NORTH: Antelope Creek proposed wilderness • SOUTH, WEST: Missouri River				
(1) No 1,836 acres	(2) Yes No bisecting roads.	(3a) Yes, (3b) Yes Bounded by the Missouri River and Antelope Creek proposed wilderness, connecting to BLM Upper Missouri River Breaks National Monument WSA. Opportunities for land and water recreation (Missouri River).	(4) Yes River edge is important habitat for spiny softshell turtle and the American white pelican.	YES
AREA 2 • NORTH, WEST: Antelope Creek proposed wilderness, inventory unit 1 • SOUTH: Missouri River • EAST: Highway 191				
(1) No 4,606 acres	(2) No Eastern boundary is Highway 191 along with State-maintained power lines. Refuge road 305 within this unit.	(3a) No, (3b) Yes Proximity to State highway, auto tour route, and developed Kipp Recreation Area reduces solitude. Opportunities for land and water recreation (Missouri River).	(4) No	NO
AREA 3 • NORTH: Refuge boundary • SOUTH: Missouri River • WEST: Highway 191 • EAST: Refuge boundary, State section, refuge road 201, West Beauchamp proposed wilderness				
(1) Yes 108,397 acres	(2) No Contains the auto tour route visited by 10,000 vehicles each year and the Slippery Ann elk-viewing area. Parts of road 201, main artery on the north side of the refuge, pass through unit. Contains four State sections and three privately owned tracts.	(3a) No, (3b) No Auto tour route and Slippery Ann viewing area results in significant vehicular traffic. Recreation opportunities are disrupted by roads and year-round closure of the Slippery Ann area.	(4) Yes Important elk breeding habitat.	NO

Table B. Wilderness inventory for the Charles M. Russell and UL Bend Refuges, Montana.

Evaluation criteria ("yes" or "no" for meeting criteria, with comments)

(1) At least 5,000 acres of land	(2) Affected primarily by forces of nature, with the imprint of human work substantially unnoticeable	(3a) Outstanding opportunities for solitude (3b) Outstanding opportunities for primitive and unconfined recreation	(4) Ecological, geological, or other features of scientific, educational, or historical value	*QUALIFIES as a wilderness study area (meets criteria 1, 2, and 3a or 3b)*
AREA 4 • NORTH, EAST: West Beauchamp Creek proposed wilderness; WEST: Refuge roads 201 and 302 • SOUTH: Missouri River				
(1) No 359 acres	(2) Yes Bordered by roads 201 and 302, but does not contain any bisecting roads.	(3a) No, (3b) Yes Too small to offer solitude. Adjacency to Missouri River provides water recreation access.	(4) No	NO
AREA 5 • NORTH, EAST: Refuge boundary • WEST: East Beauchamp proposed wilderness • SOUTH: State section				
(1) No 1,348 acres	(2) No No roads present, but provides vehicular access to the State lease south of unit.	(3a) No, (3b) No Dominated by a steep, eroded coulee.	(4) No	NO
AREA 6 • NORTH, WEST: Refuge boundary • SOUTH: UL Bend National Wildlife Refuge, Missouri River • EAST: Burnt Lodge proposed wilderness				
(1) Yes 21,061 acres	(2) No Contains the Fourchette Creek Recreation Area. Intersected by five refuge roads. Contains three State parcels.	(3a) No, (3b) No Recreation area visited by hunters and recreationists year-round. Installations and development at recreation areas preclude primitive recreation.	(4) No	NO
AREA 7 • NORTH: Refuge boundary • WEST: Burnt Lodge proposed wilderness • SOUTH, EAST: Timber Creek, Missouri River				
(1) No 833 acres	(2) No Road 339 bisects the northern half of unit and provides access to Timber Creek Bay.	(3a) No, (3b) No A road disrupts solitude. The small size limits recreation opportunities.	(4) No	NO

Table B. Wilderness inventory for the Charles M. Russell and UL Bend Refuges, Montana.

Evaluation criteria ("yes" or "no" for meeting criteria, with comments)

(1) At least 5,000 acres of land	(2) Affected primarily by forces of nature, with the imprint of human work substantially unnoticeable	(3a) Outstanding opportunities for solitude (3b) Outstanding opportunities for primitive and unconfined recreation	(4) Ecological, geological, or other features of scientific, educational, or historical value	*QUALIFIES as a wilderness study area (meets criteria 1, 2, and 3a or 3b)*
AREA 8 • NORTH: Missouri River • WEST , SOUTH: Refuge boundary • EAST: Highway 191				
(1) Yes 18,913 acres	(2) No Contains privately owned land, two State sections, and four refuge roads. Along the Highway 191 corridor.	(3a) No, (3b) No Private inholdings and trafficked roads preclude solitude. Mosaic of roads and inholdings disrupt opportunities for unconfined recreation.	(4) No	NO
AREA 9 • NORTH: Missouri River West, Highway 191 • SOUTH: Refuge boundary • EAST: Fort Musselshell proposed wilderness				
(1) Yes 32,929 acres	(2) No Along the Highway 191 corridor. Contains Sand Creek Field Station and administrative area, multiple privately owned tracts, and three State sections.	(3a) No, (3b) No Contains the major east–west refuge road on the south side of the Missouri River and the Sand Creek Field Station. Contains significantly developed areas such as the Sand Creek Field Station.	(4) No	NO
AREA 10 • NORTH, EAST: Missouri River • SOUTH: Refuge road 315, Wilderness Inventory Unit C • WEST, SOUTH: Refuge boundary				
(1) Yes 12,560 acres	(2) No Borders private inholdings, State lands, and several refuge roads.	(3a) No, (3b) No Contains road 315, which borders private lands and State lands leased by the refuge and provides recreational access. Several roads and the narrow refuge property along the Missouri River confines recreation.	(4) No	NO
AREA 11 • NORTH, EAST: Refuge road 315, Missouri River • WEST: Refuge road 838 • SOUTH: Crooked Creek proposed wilderness				
(1) Yes 5,568 acres	(2) Yes No interior roads. Bordered by refuge roads 311, 315, and 838.	(3a) Yes, (3b) Yes Bordering roads allow for hunting access and wildlife observation.	(4) Yes Important sage-grouse habitat.	NO

Table B. Wilderness inventory for the Charles M. Russell and UL Bend Refuges, Montana.

Evaluation criteria ("yes" or "no" for meeting criteria, with comments)

(1) At least 5,000 acres of land	(2) Affected primarily by forces of nature, with the imprint of human work substantially unnoticeable	(3a) Outstanding opportunities for solitude (3b) Outstanding opportunities for primitive and unconfined recreation	(4) Ecological, geological, or other features of scientific, educational, or historical value	*QUALIFIES as a wilderness study area (meets criteria 1, 2, and 3a or 3b)*
AREA 12 • NORTH: Refuge road 311 • SOUTH: Refuge road 411, Missouri River • EAST: Crooked Creek proposed wilderness • WEST: Refuge boundary				
(1) No 2,826 acres	(2) Yes No interior roads. Bordered by roads 311, 377, and 411.	(3a) No, (3b) Yes Surrounded by refuge roads on two sides. Close to Crooked Creek Recreation Area. Bordering roads allow for hunting access and wildlife observation.	(4) No	YES
AREA 13 • NORTH: Crooked Creek drainage, refuge road 411 • WEST: Refuge boundary • SOUTH: Refuge road 103 to intersection with Crooked Creek				
(1) No 4,046 acres	(2) No Contains the Crooked Creek Recreation Area managed by USACE.	(3a) No, (3b) No Contains USACE facilities. Development at Crooked Creek Recreation Area precludes primitive recreation.	(4) No	NO
AREA 14 • NORTH: County road, Crooked Creek Road • SOUTH, EAST: Alkali Creek proposed wilderness • WEST: Refuge boundary				
(1) No 640 acres	(2) Yes Contains no roads. Bordered on the north by refuge road 103.	(3a) No, (3b) No Traffic on Crooked Creek Road is visible from the unit.	(4) No	YES
AREA 15 • NORTH: Alkali Creek proposed wilderness • SOUTH, WEST: Refuge boundary				
(1) No 2,240 acres	(2) Yes No established roads in or next to the unit.	(3a) Yes, (3b) Yes Only accessible via foot.	(4) No	YES

Table B. Wilderness inventory for the Charles M. Russell and UL Bend Refuges, Montana.

Evaluation criteria ("yes" or "no" for meeting criteria, with comments)

(1) At least 5,000 acres of land	(2) Affected primarily by forces of nature, with the imprint of human work substantially unnoticeable	(3a) Outstanding opportunities for solitude (3b) Outstanding opportunities for primitive and unconfined recreation	(4) Ecological, geological, or other features of scientific, educational, or historical value	*QUALIFIES as a wilderness study area (meets criteria 1, 2, and 3a or 3b)*
AREA 16 • NORTH: Missouri River • SOUTH, WEST: Refuge boundary • EAST: West Seven Blackfoot proposed wilderness				
(1) No 50,074 acres	(2) No Multiple, privately owned parcels, roads (refuge and county), and the Devils Creek Recreation Area.	(3a) No, (3b) No Substantial private traffic and public traffic on county route 245. Unit is a mosaic broken up by refuge and county roads. Significant private and refuge installations and development.	(4) Yes Pronghorn migration route across Missouri River.	NO
AREA 17 • NORTH, EAST, WEST: East Seven Blackfoot proposed wilderness • SOUTH: Refuge boundary				
(1) No 640 acres	(2) Yes No established roads.	(3a) Yes, (3b) Yes Surrounded on all sides by East Seven Blackfoot proposed wilderness and BLM Seven Blackfoot WSA.	(4) No	YES
AREA 18 • NORTH: Missouri River, West Hell Creek proposed wilderness, Hell Creek Bay, East Hell Creek proposed wilderness • SOUTH, EAST: Refuge boundary • WEST: Billy Creek proposed wilderness				
(1) Yes 32,359 acres	(2) No Contains the Hell Creek Recreation Area, which has a campground, marina, boat ramp, and multiple private inholdings.	(3a) No, (3b) No County road provides public access to the Hell Creek Recreation area and near Round Butte. A mosaic of private and refuge lands. Contains refuge developments at Hell Creek Recreation Area.	(4) No	NO
AREA 19 • NORTH, WEST: West Hell Creek proposed wilderness • EAST: State section				
(1) Yes 641 acres	(2) Yes No established roads.	(3a) Yes, (3b) Yes Contiguous on two sides with West Hell Creek proposed wilderness.	(4) No	YES

Table B. Wilderness inventory for the Charles M. Russell and UL Bend Refuges, Montana.

Evaluation criteria ("yes" or "no" for meeting criteria, with comments)

(1) At least 5,000 acres of land	(2) Affected primarily by forces of nature, with the imprint of human work substantially unnoticeable	(3a) Outstanding opportunities for solitude (3b) Outstanding opportunities for primitive and unconfined recreation	(4) Ecological, geological, or other features of scientific, educational, or historical value	*QUALIFIES as a wilderness study area (meets criteria 1, 2, and 3a or 3b)*
AREA 20 • NORTH: Fort Peck Reservoir, Sheep Creek proposed wilderness, refuge road 357 • EAST: Refuge road 357 • SOUTH: Refuge boundary; West: Township line R38E				
(1) Yes 8,225 acres	(2) No Contains two private inholdings, one State section, and five refuge roads.	(3a) No, (3b) No Mosaic of roads and private and State lands with associated traffic.	(4) No	NO
AREA 21 • NORTH: Sheep Creek proposed wilderness • SOUTH, EAST: Refuge boundary • WEST: Refuge roads 356 and 357				
(1) Yes 5,726 acres	(2) Yes Only one adjacent road: refuge road 356/357.	(3a) Yes, (3b) Yes Adjacent roads provide hunting access and water recreation access via Gilbert Creek Bay.	(4) No	YES
AREA 22 • NORTH: Fort Peck Reservoir, Big Dry Arm • WEST: West Gilbert Creek drainage • SOUTH: Refuge boundary • EAST: Fort Peck Reservoir, Big Dry Arm, Big Dry Creek				
(1) Yes 48,835 acres	(2) No Contains multiple roads and private inholdings. Inholdings and roads break up the unit, so there is not a single, contiguous 5,000-acre block. Includes Rock Creek Recreation Area. Consists of multiple, privately owned cabin sites.	(3a) No, (3b) No Primitive nature of unit is broken up by many transecting roads.	(4) Yes Area contains significant paleontological resources.	NO
AREA 23 • NORTH, SOUTH, EAST: Refuge boundary • WEST: Big Dry Arm of the Fort Peck Reservoir				
(1) Yes 57,446 acres	(2) No Several USACE recreation areas and multiple State sections. Includes more than a dozen refuge roads. Contains Fort Peck Dam spillway.	(3a) No, (3b) No Includes three recreation areas with developed structures. Riddled with roads and developed structures.	(4) No	NO

Table B. Wilderness inventory for the Charles M. Russell and UL Bend Refuges, Montana.

Evaluation criteria ("yes" or "no" for meeting criteria, with comments)

(1) At least 5,000 acres of land	(2) Affected primarily by forces of nature, with the imprint of human work substantially unnoticeable	(3a) Outstanding opportunities for solitude (3b) Outstanding opportunities for primitive and unconfined recreation	(4) Ecological, geological, or other features of scientific, educational, or historical value	*QUALIFIES as a wilderness study area (meets criteria 1, 2, and 3a or 3b)*
AREA 24 • NORTH: Refuge boundary, refuge road 331 • SOUTH: Fort Peck Reservoir • WEST: Refuge road 327, Wagon Coulee proposed wilderness • EAST: Duck Creek Road				
(1) Yes 82,160 acres	(2) No Contains four partial or full State sections, multiple private inholdings, and refuge roads. Includes the Pine Recreation Area.	(3a) No, (3b) No Many refuge roads and structures.	(4) No	NO
AREA 25 • NORTH: Refuge road 327 • SOUTH, EAST: Missouri River • WEST: Wagon Coulee proposed wilderness				
(1) No 4,843 acres	(2) Yes No interior roads or installed structures except a navigational marker on the shoreline.	(3a) Yes, (3b) Yes Limited access on adjacent refuge road 327.	(4) No	YES
AREA 26 • NORTH: Refuge boundary • EAST: Wagon Coulee proposed wilderness • SOUTH: Fort Peck Reservoir • WEST: Timber Creek Bay				
(1) Yes 23,560 acres	(2) No Contains Bone Trail Boat Ramp and multiple private inholdings.	(3a) No, (3b) No Provides vehicular access to Fort Peck Reservoir.	(4) No	NO
AREA 27 • NORTH, EAST: Fort Peck Lake • SOUTH: Mickey Butte proposed wilderness				
(1) No 550 acres	(2) Yes No roads adjacent or within area.	(3a) Yes, (3b) Yes No roads adjacent or within area.	(4) No	YES
AREA 28 • UL BEND NATIONAL WILDLIFE REFUGE: all land currently not part of the UL Bend Wilderness				
(1) Not known	(2) No A network of roads crosses the center of UL Bend Refuge.	(3a) No, (3b) No Popular access to fishing and hunting. Roads disrupt opportunities for unconfined recreation.	(4) Yes Habitat for the endangered black-footed ferret and associated black-tailed prairie dog.	NO

**Wilderness inventory numbers in this table reference labeled areas on figure A.*

F.4 WILDERNESS STUDY

The wilderness inventory identified nine areas within eight proposed wilderness units on the Charles M. Russell and UL Bend Refuges that possess the required wilderness character for potential inclusion in the National Wilderness Preservation System as defined by The Wilderness Act of 1964. All areas are next to existing proposed wilderness areas on the refuge. Each of these areas was further evaluated through the refuge planning process to determine their suitability for designation, management, and preservation as wilderness. This evaluation considered the following:

- quality of wilderness values
- evaluation of resource values, public uses, and associated management concerns
- capability for management as wilderness

All recommended wilderness study areas resulting from this review assume the name of the adjacent proposed wilderness area. For example, the area abutting Antelope Creek proposed wilderness is known as the Antelope Creek WSA.

Evaluation of Wilderness Values

BLM currently manages several wilderness study areas next to the refuge (see the management direction map, figure 41, in chapter 4). These areas were taken into consideration in reviewing refuge lands that contain wilderness character and potential areas that could be suited for wilderness proposal and designation. In three general areas along the refuge boundary, there are either BLM wilderness study areas or the Upper Missouri River Breaks National Monument. These protected areas provide crucial unobstructed corridors for wildlife migration in central Montana.

Naturalness. All of the recommended wilderness study areas generally appear to have been affected primarily by nature, with the imprint of human uses and activities substantially unnoticeable. The recommended wilderness study areas are free from private inholdings and interior roads and are next to existing, proposed Charles M. Russell Refuge wilderness areas.

Several of the recommended wilderness study areas exhibit excellent, natural, active, riparian systems such as Antelope Creek WSA and West Beauchamp Creek WSA.

Outstanding Opportunities for Solitude and Primitive Recreation. All of the recommended, wilderness study areas offer outstanding opportunities for both solitude and primitive recreation. Although several are less than 5,000 acres, all wilderness study areas are contiguous with already existing proposed wilderness areas in Charles M. Russell Refuge and serve to further enhance the size of existing areas available for solitude and primitive recreation.

The following areas are not bounded by refuge roads or the refuge boundary and, therefore, will provide particularly quality opportunities for solitude and primitive recreation: East Seven Blackfoot WSA, Mickey Butte WSA, and West Hell Creek WSA.

Quality of Supplemental Values. Some of the recommended wilderness study areas provide important habitat for federally warranted and State-listed plant and animal species such as greater sage-grouse, ferruginous hawk, American white pelican, spiny softshell turtle, and northern leopard frog.

Evaluation of Manageability and Other Resource Values and Uses. Each of the recommended wilderness study areas on the refuge can be managed to preserve their wilderness character in perpetuity, recognizing that a "minimum requirement" approach is required. There are no valid, existing private rights included in any recommended wilderness study areas.

Currently, game carts are allowed in existing proposed Charles M. Russell Refuge wilderness units, and this provision will be common to all newly recommended wilderness study areas. The UL Bend Wilderness will still prohibit the use of game carts.

None of the current or expected refuge management activities and public uses will diminish the wilderness character. These include hunting, scientific research, resource monitoring, commercial services such as guided wildlife hunting, environmental education, and low-impact recreational activities. There are no plans to construct permanent facilities or structures to accommodate these uses.

In summary, wilderness designation and management of the wilderness study areas is fully compatible with refuge management under this CCP, and none of the resource values identified above will be foregone or adversely affected as a result of designation.

F.5 MANAGEMENT DIRECTION

The Service evaluated four alternatives in the final CCP and EIS for managing wilderness on the refuge; alternative D was selected in the record of decision (refer to appendix A). The resulting CCP wilderness recommendations are described below, and all adhere to the overarching CCP goal for wilderness:

> *Conserve, improve, and promote the wilderness quality and associated natural processes of designated, proposed, and wilderness study areas within Charles M. Russell National Wildlife Refuge for all generations.*

The Service will expand or adjust eight proposed wilderness units by recommending nine adjacent wilderness study areas be considered for inclusion in the National Wilderness Preservation System. A net gain of 19,942 acres will allow more efficient management of large landscapes to address the overall emphasis on natural ecological processes with minimal management to promote biological diversity, biological integrity, and environmental health.

Table C lists the recommended wilderness study areas, which are shown on the management direction map, figure 41, in chapter 4. These areas will be designated as proposed wilderness units following transmission to the United States President (per 610 FW 4.23). An act of Congress is required for all proposed wilderness units to become designated wilderness.

Table C. Wilderness study areas recommended in the CCP for the Charles M. Russell and UL Bend Refuges, Montana.

*Wilderness study area unit**	*Unit name*	*Acres*
1 (A)	Antelope Creek	1,836
12 (D)	Crooked Creek 2	2,826
14 (E)	Alkali Creek 1	640
15 (F)	Alkali Creek 2	2,240
17 (G)	East Seven Blackfoot	640
19 (H)	West Hell Creek	641
21 (I)	Sheep Creek	5,726
25 (J)	Wagon Coulee	4,843
27 (K)	Mickey Butte	550
	Total	19,942

**Wilderness study area unit numbers in this table reference the labeled areas in figure A and in figure 41 in chapter 4.*

Two potential wilderness study areas were not recommended in the record of decision:

- Crooked Creek 1 WSA was not recommended to allow the most management options for (1) wildlife-dependent recreational use and (2) the use of prescribed fire and livestock grazing in this area's habitat unit.
- West Beauchamp WSA is bordered by heavily recreated refuge road 302. To maintain access for wildlife-dependent recreation, this area was excluded.

F.6 DEFINITIONS

Several definitions are used in this wilderness review.

Wilderness Definition and Criteria. The definition of wilderness is in section 2(c) of the Wilderness Act:

> "A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and that (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value."

Designated Wilderness. An area designated in legislation and administered as part of the National Wilderness Preservation System.

Proposed Wilderness. An area of the Refuge System that the Secretary of the Interior (Secretary) has recommended to the President for inclusion in the National Wilderness Preservation System. The President then transmits the wilderness proposal to Congress. Once the Secretary transmits the recommendation to the President, the Service considers the area proposed wilderness and will manage it as designated wilderness.

Recommended Wilderness. An area of the Refuge System that the Director of the Service has recommended to the Secretary through the Assistant Secretary for Fish and Wildlife and Parks for inclusion in the National Wilderness Preservation System.

Wilderness Review. The inventory, study, and decisionmaking process the Service uses to determine whether to recommend Refuge System lands and waters for wilderness designation.

Wilderness Study Area. A wilderness study area is an area the Service is considering for wilderness designation. The Service identifies and establishes wilderness study areas through the inventory component of a wilderness review. The study areas include all areas that are still undergoing the review process.

Wilderness Values. Wilderness values are biophysical (ecosystems, scenery, and natural processes), psychological (opportunity for solitude or primitive and

unconfined recreation), symbolic (national and natural remnants of American cultural and evolutionary heritage), and spiritual (sense of connection with nature and values beyond one's self).

Appendix G

List of Plant and Animal Species

This appendix contains the common and scientific names of plants, amphibians, reptiles, fish, birds, and mammals of the Charles M. Russell National Wildlife Refuge and the UL Bend National Wildlife Refuge.

SENTINEL PLANT SPECIES

Sentinel plants are those species that vanish first when the ecological processes that occur within an ecosystem are out of balance. The following sentinel plant species occur on the upland plains and draws and north slopes on the Charles M. Russell National Wildlife Refuge and UL Bend National Wildlife Refuge. The list is not inclusive of all possible species, or custom to a specific locale, and are intended to be adaptive to new information obtained through management or research.

The "fire sentinel" plants listed below are fire-intolerant species. Unlike the sentinel shrubs, trees, and warm-season forbs that are currently declining, the fire sentinels are abundant on the refuge. However, fire sentinels are important species to monitor because of their significance to wildlife and ecological processes.

SHRUBS and TREES

rubber rabbitbrush, *Chrysothamnus nauseosus* spp. *nauseosus*
green rubber rabbitbrush, *Chrysothamnus nauseosus* spp. *graveolens*
saltbush, *Atriplex aptera*
winterfat, *Krascheninnikovia lanata*
silver buffaloberry, *Shepherdia argentea*
chokecherry, *Prunus virginiana*
boxelder, *Acer negundo*
green ash, *Fraxinus pennsylvanica*
plains cottonwood, *Populus deltoides*
redosier dogwood, *Cornus stolonifera*
golden current, *Ribes aureum*
quaking aspen, *Populus tremuloides*
peachleaf willow, *Salix amydaloides*

WARM-SEASON FORBS

purple coneflower, *Echinacea angustifolia*
stiff sunflower, *Helianthus pauciflorus*
dotted gayfeather, *Liatris punctata*
white prairieclover, *Dalea candida*
purple prairieclover, *Dalea purpurea*
Maximilian sunflower, *Helianthus maximiliani*

FIRE SENTINELS

big sagebrush, *Artemisia tridentata tridentata*
Rocky Mountain juniper, *Juniperus scopulorum*
ponderosa pine, *Pinus ponderosa*
Douglas-fir, *Pseudotsuga toxifolia*

FOCAL BIRD SPECIES

On the refuge, the following focal bird species are considered most sensitive to or limited by certain ecological processes (such as fire or nest predation) or habitat attributes (such as patch size or snags). Some of the sentinel species listed above are important for focal birds and are being used to help guide management activities.

UPLAND

long-billed curlew, *Numenius americanus*
Sprague's pipit, *Antus spragueii*
Baird's sparrow, *Ammodramus bairdii*
brown creeper, *Certhia americana*
sharp-tailed grouse, *Tympanuchus phasianellus*
greater sage-grouse, *Centrocercus urophasianus*

RIVER BOTTOM

ovenbird, *Seiurus aurocapillus*
Cordilleran flycatcher, *Empidonax occidentalis*
black-billed cuckoo, *Coccyzus erythropthalmus*
western wood-pewee, *Contopus sordidulus*

RIPARIAN AREA and WETLAND

red-eyed vireo, *Vireo olivaceus*
Brewer's blackbird, *Euphagus cyanocephalus*
veery, *Catharus fuscescens*

PLANT LIST

Scientific name	*Common name*
Aceraceae	**Maple family**
Acer negundo	boxelder
Agavaceae	**Century-plant family**
Yucca glauca	soapweed yucca
Alismataceae	**Water plantain family**
Alisma gramineum	narrowleaf water plantain
A. triviale	northern water plantain
Sagittaria cuneata	arumleaf arrowhead
S. latifola	bulltongue arrowhead
Amaranthaceae	**Amaranth family**
Amaranthus albus	prostrate pigweed
A. arenicola	sandhill amaranth
A. blitoides	mat amaranth
A. californicus	California amaranth
A. retroflexus	redroot amaranth
Anacardiaceae	**Sumac family**
Rhus trilobata	skunkbush
Toxicodendron rydbergii	western poision ivy
Apaceae	**Carrot family**
Cymopterus acaulis	plains spring parsley
Heracleum sphondylium	eltrot
Lomatium foeniculaceum	dessert biscuitroot
Musineon divaricatum	wild parsley
Osmorhiza longistylis	longstyle sweetroot
Sium suave	hemlock waterparsnip
Apocynaceae	**Dogbane family**
Apocynum cannabinum	Indianhemp
Asclepiadaceae	**Milkweed family**
Asclepias speciosa	showy milkweed
A. verticillata	whorled milkweed
Asteraceae	**Aster family**
Achillea millefolium	common yarrow
Acroptilon repens	hardheads
Agoseris glauca	pale agoseris
Ambrosia artemisifolia	annual ragweed
Antennaria dimorpha	low pussytoes
A. microphylla	littleleaf pussytoes
A. neglecta	field pussytoes
A. parvifolia	small-leaf pussytoes
A. rosea	rosy pussytoes
Arctium lappa	greater burdock
Arnica sororia	twin arnica
Artemisia absinthium	absinthium
A. biennis	biennial wormwood
A. campestris	field sagewort
A. cana	silver sagebrush
A. dracunculus	tarragon
A. frigida	prairie sagewort
A. longifolia	longleaf wormwood
A. ludoviciana	white sagebrush
A. tridentate tridentata	big sagebrush
Aster brachyactis	aster brachyactis
A. falcatus	white prairie aster

Scientific name	Common name
Bidens cernua	nodding beggartick
B. frondosa	devil's beggartick
Brickellia eupatoroides	false boneset
Centaurea stoebe	spotted knapweed
Chaenactis douglasii	Douglas' dustymaiden
Chrysothamnus viscidiflorus	yellow rabbitbrush
Cirsium arvense	Canadian thistle
C. flodmanii	Flodman's thistle
C. undulatum	wavyleaf thistle
C. vulgare	bull thistle
Conzya canadensis	Canadian horseweed
Crepis atribarba	largeflower hawksweed
C. occidentalis	largeflower hawksweed
C. runcinata	fiddleleaf hawksweed
Cyclachaena xanthifolia	giant sumpweed
Dyssodia papposa	field marigold
Echinacea angustifolia	blacksamson echinaceae
Ericameria nauseosa ssp. *nauseosa* var. *glabrata*	rubber rabbitbrush
E. nauseosa ssp. *nauseosa* var. *nauseosa*	rubber rabbitbrush
Erigeron caespitosus	tufted fleabane
E. compositus	cutleaf daisy
E. corymbosus	longleaf fleabane
E. ochroleucus	buff fleabane
E. pumilus	shaggy fleabane
E. strigosus	prairie fleabane
Gallardia aristata	common gallardia
Gnaphalium palustre	western marsh cudweed
Grindelia squarrosa	curlycup gumweed
Gutierrezia sarothrae	broom snakeweed
Helenium autunmale	common sneezeweed
Helianthus annuus	common sunflower
H. maximiliani	Maximilian sunflower
H. pauciflorous	stiff sunflower
H. petiolaris	prairie sunflower
Heterotheca villosa	hairy false golden aster
Hieracium umbllatum	narrowleaf hawkweed
Hymenopappus polycephalus	manyhead hymenopappus
Hymenoxys richardsonii	pingue rubberweed
Iva axillaris	poverty weed
Lactuca tatarica	blue lettuce
Latuca punctata	dotted blazing star
Lygodesmia juncea	rush skeletonplant
Machaeranthera canescens	hoary tansyaster
M.grindelioides	rayless tansyaster
M. pinnatifida	lacy tansyaster
M. tanacetifolia	tansyleaf tansyaster
Microseris nutans	nodding microceris
Nothocalais cuspidata	sharppoint prairie-dandelion
Packera cana	wolly groundsel
Picradeniopsis oppositifolia	opposite leaf bahia
Ratibida columnifera	upright prairie coneflower
Senecio integerrimus	lambstongue ragwort
S. serra	tall ragwort
Solidago canadensis	Canada goldenrod
S. missouriensis	Missouri goldenrod

Scientific name	*Common name*
S. mollis	velvety goldenrod
S. rigida	stiff goldenrod
Sonchus arvensis spp. *uliginosus*	moist sowthistle
S. oleraceus	common sawthistle
Stenotus acaulis	stemless mock goldenweed
Stephanomeria runcinata	desert wirelettuce
Symphyotrichum ericoides var. *pansum*	manyflowered aster
S. laeve	smooth blue aster
Taraxacum laevigatum	rock dandelion
T. officinale	common dandelion
Townsedia exscupa	stemless Townsend daisy
Townsendia hookeri	Hooker's Townsend daisy
Tragopogon dubius	yellow salsify
Xanthium strumarium	rough cocklebur
Boraginaceae	**Borage family**
Cryptantha celosioides	buttecandle
Cryptantha spiculifera	Snake River cryptantha
Hackelia deflexa	nodding stickseed
Lappula redowskii	flatspine stickseed
L. squarrosa	European stickseed
Lithospermum incisum	narrowleaf stoneseed
Plagiobothrys leptocladus	finebranched popcorn flower
Brassicaceae	**Mustard family**
Alyssum desertorum	desert madwort
Arabis hirsuta	hairy rockcress
A. holboellii	Holboell's rockcress
Armoracia rusticans	horseradish
Camelina microcarpa	littlepod false flax
Cardaria draba	whitetop
Chorispora tenella	crossflower
Conringia orientalis	hare's ear mustard
Descurainia richardsonii	mountain tansy mustard
Draba albertina	slender draba
D. nemorosa	woodland draba
D. reptans	Carolina draba
Erysimum asperum	western wallflower
E. inconspicuum	shy wallflower
E. cheiranthoides L.	wormseed wallflower
Hesperis matronalis	dames rocket
Lepidium densiflorum	common pepperweed
L. perfoliatum	clasping pepperweed
Lesquerella alpina	alpine bladderpod
L. ludoviciana	foothill bladderpod
Physaria didymocarpa	common twinpod
Rorippa sinuata	spreading yellowcress
Sisymbrium altissimum	tall tumbleweed mustard
Thelypodium paniculatum	northweastern thelypody
Thlaspi arvense	field pennycress
Callitrichareae	**Water-starwort family**
Callitriche hermaphroditica	northern water-starwort
Campanulaceae	**Bellflower family**
Campanula rotundifolia	bluebell bellflower
Triodanis leptocarpa	slimpod Venus looking glass
Capparidaceae	**Caper family**
Cleome serrulata	Rocky Mountain beeplant

Scientific name	Common name
Polanisia dodecandra spp. *trachysperma*	sandyseed clammyweed
Caprifoliaceae	**Honeysuckle family**
Symphoricarpos albus	common snowberry
S. occidentalis	western snowberry
Caryophyllaceae	**Pink family**
Arenaria lateriflora	bluntleaf sandwort
Cerastium arvense	field chickweed
C. nutans	nodding chickweed
Paronychia sessiliflora	creeping nailwort
Silene latifolia	bladder campion
S. menziesii	Menzies' campion
S. oregana	Oregon silene
Cactaceae	**Cactus family**
Coryphantha missouriensis	Missouri pincushion
C. vivipara	purple pincushion
Opuntia fragilis	brittle prickly pear
O. poluacantha	plains prickly pear
Chenopodiaceae	**Goosefoot family**
Atriplex argentea	silverscale saltbush
A. canescens	fourwing saltbush
A. confertifolia	shadescale saltbush
A. gardneri	Gardner's saltbush
A. patula	spear saltbush
A. powellii	Powell's saltbush
A. rosea	tumbling saltbush
Bassia scoparia	burning bush
Chenopodium album	lambsquarter
C. atrovirens	pinyon goosefoot
C. desiccatum	aridland goosefoot
C. fremontii	Fremont's goosefoot
C. glaucum	oakleaf goosefoot
C. leptophyllum	narrowleaf goosefoot
C. pratericola	desert goosefoot
C. rubrum	red goosefoot
C. subglabrum	smooth goosefoot
Endolepis diocicia	Suckley's endolepis
Krascheninnikovia lanata	winterfat
Monolepis nuttalliana	Nuttall's povertyweed
Salicornia rubra	red swapfire
Salsola tragus	prickly Russian thistle
Sarcobatus vermiculatus	greasewood
Suaeda calceoliformis	Pursh seepweed
Suaeda moquinii	Mojave seablite
Commelinaceae	**Spiderwort family**
Tradescantia occidentalis	prairie spiderwort
Convolvulaceae	**Morning glory family**
Calystegia sepium	hedge false bindweed
Convolvulus arvensis	field bindweed
Cornaceae	dogwood
Cornus sericea spp. *sericea*	redosier dogwood
Cupressaceae	**Cypress family**
Juniperus communis	common juniper
J. horizontalis	creeping juniper
J. scopulorum	Rocky Mountain juniper
J. scopulorum × *horizontalis*	hybrid of creeping and Rocky Mountain junipers

Scientific name	*Common name*
Cyperaceae	**Sedge family**
Carex brevior	shortbreak sedge
C. douglasii	Douglas sedge
C. duriusula	needleleaf
C. filifolia	threadleaf sedge
C. hoodii	Hood's sedge
C. lanuginosa	American willyfruit sedge
C. pensylvanica	Pennsylvania sedge
C. rossii Boott.	Ross' sedge
C. sprengelii	Sprengel's sedge
C. vulpinoidea	fox sedge
C. xerantica	whitescale sedge
Eleocharis acicularis	needle spikerush
E. palustris	common spikerush
Schoenoplectus acutus	hardstem bulrush
S. americanus	chairmaker's bulrush
S. maritimus	cosmopolitan bulrush
S. tabernaemontani	softstem bulrush
Dryopteridaceae	**Wood fern family**
Cystopteris fragilis	brittle bladder fern
Woodsia oregana	Oregon cliff fern
Elaeagnaceae	**Oleaster family**
Elaeagnus angustifolia	Russian olive
E. communtata	silverberry
Shepherdia argentea	silver buffaloberry
Elatinaceae	**Waterwort family**
Elatine triandra	threestamen waterwort
Equisetaceae	**Horsetail family**
Equisetum arvense	field horsetails
E. hyemale	scouringrush horsetails
E. laevigatum	smooth horsetail
E. variegatum	variegated scouringrush
Euphorbiaceae	**Spurge family**
Euphorbia brachycera	horned spurge
Euphorbia esula	leafy spurge
Euphorbia glyptosperma	ribseed sandmat
Euphorbia serpyllifolia	thymeleaf sandmat
Euphorbia spathulata	water spurge
Fabaceae	**Legume family**
Astragalus agrestis	purple vetch
A. bisulcatus	two grooved milkvetch
A. canadensis	Candian milkvetch
A. crassicarpus	groundplum milkvetch
A. flexuosus	flexile milkvetch
A. geyeri	Geyer's milkvetch
A. gilviflorus	plains milkvetch
A. gracilis	slender milkvetch
A. grummondii	Drummonds milkvetch
A. kentrophyta	spiny milkvetch
A. laxmanni var. *robustior*	prairie milkvetch
A. lentiginosus	freckled milkvetch
A. lotiflorus	lotus milkvetch
A. purshii	woolypod milkvetch
A. spatulatus	tufted milkvetch
Caragana arborescens	Siberian peashrub

Scientific name	Common name
Dalea candida	white prairie clover
D. purpurea	purple prairie clover
Glycyrrhiza lepidota	American licorice
Lupinus argenteus	silvery lupine
L. pusillus	rusty lupine
Medicago lupulina	black medrich
M. sativa	alfalfa
Melilotus officinalis	yellow sweetclover
Oxytropis besseyi	Bessey's locoweed
O. lambertii	purple locoweed
O. monticola	yellow flower locoweed
O. sericea	white locoweed
Pediomelum argophyllum	silverleaf breadroot
P. esculentum	large indian breadroot
P. lanceolatum	lemon scurfpea
P. tenuiflorum	slimflower scurfpea
Thermopsis rhombifolia	prairie thermopsis
Trifolium hybridum	alsike hybridum
Trifolium repens	white clover
Vicia americana	American vetch
Geraniaceae	**Geranium family**
Geranium carolinianum	Carolina geranium
Grossulariaceae	**Currant family**
Ribes americanum	American black currant
R. aureum	golden currant
R. cereum	wax currant
R. setosum	inland gooseberry
R. viscosissimum	sticky currant
Haloragidaceae	**Water milfoil family**
Myriophyllum spicatum	Eurasian water milfoil
Hydrophyllaceae	waterleaf
Ellisia nyctelea	Aunt Lucy
Nemophila breviflora	basin nemophila
Phacelia linearis	threadleaf phacelia
P. thermalis	heated phacelic
Iridaceae	**Iris family**
Sisyrinchium montanum	strict blue-eyed grass
Juncaceae	**Rush family**
Juncus balticus	Baltic rush
J. bufonius	toad rush
J. interior	inland rush
J. tenuis	Poverty rush
J. torreyi	Torrey's rush
Juncaginaceae	**Arrowgrass family**
Triglochin concinnum	slender arrowgrass
Lamiaceae	**Mint family**
Dracocephalum parviflorum	American dragonhead
Hedeona drummondii	Drummond's false pennyroyal
Hedeona hispida	false penny royal
Lycopus asper	rough bungleweed
Mentha arvensis	wild mint
Monarda fistulosa	wild bermont (beebulm)
Nepeta cataria	catnip
Lemnaceae	**Duckweed family**
Lemna minor	common duckweed

Scientific name	*Common name*
Liliaceae	**Lily family**
Allium textile	textile onion
Asparagus officinalis	garden asparagus
Calochortus nuttallii	sego lily
Fritillaria pudica	yellow fritillary
Maianthemum stellatum	starry false lily of the valley
Prosartes trachycarpa	rough fruit fairybells
Smilax herbacea	smooth carrionflower
Zigadenus venenosus	meadow deathcamas
Linaceae	**Flax family**
Linum lewisii	Lewis flax
L. rigidum	stiffstem flax
Loasaceae	**Loasa family**
Mentzelia albicaulis	whitestem blazingstar
M. decapetala	ten petal blazingstar
M. laevicaulis	smooth stemmed blazingstar
Malvaceae	**Mallow family**
Malva parviflora	cheeseweed mallow
Sphaeralcea coccinea	scarlet gold mallow
Najadaceae	**Waternymph family**
Najas guadalupensis	southern waternymph
Nyctaginaceae	**Four o'clock family**
Mirabilis linearis	narrowleaf four o'clock
Oleaceae	**Olive family**
Fraxinus pennsylvanica	green ash
Onagraceae	**Evening primrose family**
Calylophus serrulatus	yellow sundrops
Epilobium angustifolium	fireweed
E. ciliatum	fringed willow herb
E. pbrachycarpum	tall annual willowherb
E. pygmaeum	smooth spike primrose
Gaura coccineae	scarlet beeblossom
Oenothera albicaulis	whitest evening primrose
O. biennis	common evening primrose
O. cespitosa	gumbo evening primrose
O. flava	yellow evening primrose
O. nuttllii	Nuttall's evening primrose
O. villosa	hairy evening primrose
Orbanchaceae	**Broomrape family**
Orobanche fasciculata	clustered broomrape
O. ludoviciana	Louisiana broomrape
Pinaceae	**Pine family**
Pinus flexis	limber pine
Pinus ponderosa	ponderosa pine
Pseudotsuga menziesii	Douglas-fir
Plantaginaceae	**Plantain family**
Plantago aristata	largebracted plantain
P. elongata	prairie plantain
P. lanceolata	narrow leaf plantain
P. major	common plantain
P. patagonica	hairy plantain (Indian wheat)
Poaceae	**Grass family**
Achnatherum hymenoides	indian ricegrass
Agropyron cristatum	crested wheatgrass
Agrostis sabra	rough bentgrass

Scientific name	Common name
Agrostit stolonifera	creeping bentgrass
Andropogon hallii	sand bluestem
Avena sativa	common oat
Beckmannia syzigachne	American sloughgrass
Bouteloua dactyloides	buffalo grass
B. gracilis	blue grama
Bromus arvensis	field brome (Japanese brome)
B. carinatus	California brome
B. ciliatus	fringed brome
B. commutatus	bald brome
B. inermis	smooth brome
B. inermis spp. *pumpellianus*	Pumpelly's brome
B. tectorum	cheatgrass
Calamagrostis canadensis	bluejoint
C. montanensis	plains reedgrass
Calamovilfa longifolia	prairie sandreed
Dactylis glomerata	orchardgrass
Danthonia unispicata	onespike danthonia
Distichlis stricta	saltgrass
Echinochloa crus-galli	barnyard grass
Elymus canadensis	Canada wildrye
E. elymoides	squirreltail
E. lanceolatus	thickspike wheatgrass
E. repens	quackgrass
E. trachycaulum	slender wheatgrass
Eragrostis cilianensis	stinkgrass
E. pectinacea	tufted lovegrass
Festuca rubra	red fescue
Glyceria striata	fowl mannagrass
Hesperostipa comatga	needle and thread
Hordeum jubatum	foxtail barley
H. pusillum	little barley
Koeleria macrantha	prairie Junegrass
Leymus triticoides	heartless wildrye
Muhlenbergia asperifolia	scratchgrass
M. cuspidata	plains muhly
Munroa squarrosa	false buffalo grass
Nassella viridula	green needlegrass
Panicum cappillare	witchgrass
Pascopyrum smithii	western wheatgrass
Phalaris arundinaceae	reed canarygrass
Phleum pratense	timothy
Piptatherum micrantha	littleseed ricegrass
Poa annua	annual bluegrass
P. arida	plains bluegrass
P. bulbosa	bulbous bluegrass
P. compressa	Canada bluegrass
P. cusickii	Cusick's bluegrass
P. palustris	fowl bluegrass
P. pratensis	Kentucky bluegrass
P. secunda	Sandberg bluegrass
Polypogon monspeliensis	annual rabbit's foot grass
Pseudoroegneria spicata	bluebunch wheatgrass
Puccinellia nuttalliana	Nuttall's alkali grass
Schedonnardus paniculatus	tumble grass

Scientific name	*Common name*
Schizachyrium scoparium	little bluestem
Setaria viridis	green bristlegrass
Spartina gracilis	alkali cordgrass
Sporobolus airoides	alkali sacaton
S. cryptandrus	sand dropseed
Thinopyrum intermedium	intermediate wheatgrass
Torreyochloa pallida	pale false mannagrass
Triticum aestivum	common wheat
Vulpia octoflora	sixweeks fescue
Polemoniaceae	**Phlox family**
Collomia linearis	tiny trumpet
Microsteris gracilis	slender phlox
Phlox alyssifolia	alyssumleaf phlox
P. hoodii	spiny phlox
Polygalaceae	**Milkwort family**
Polygala alba	white milkwort
P. verticillata	whorled milkwort
Polygonaceae	buckwheat
Eriogonum annuum	annual buckwheat
E. cernuum	nodding buckwheat
E. flavum	alpine golden buckwheat
E. ovalifolium	cusion buckwheat
E. pauciflorum	few flower buckwheat
Polygonum aviculare	prostate knotweed
P. convolvulus	black bindweed
P. erectum	erect knotweed
P. lapathifolium	curlytop knotweed
P. punctatum	dotted smartweed
P. ramossissimum	bushy knotweed
Rumex acetosella	common sheep sorrel
R. aquaticus	western dock
R. crispus	curly dock
R. maritimus	golden dock
R. salicifolius	willow dock
R. venosus	veiny dock
Portulaceae	**Purslane family**
Claytonia perfoliata	miner's lettuce
Portulaca oleracea	little hogweed
Potamagetonaceae	**Pondweed family**
Potamogeton diversifolius	waterthread pondweed
P. foliosus	leafy pondweed
P. praelongus	whitesteam pondweed
P. pusillus	small pondweed
Stuckenia pectinat	sago pondweed
Primulaceae	**Primrose family**
Androsace filiformis	filiformis rockjasmine
A. occidentalis	western rockjasmine
Ranunculaceae	**Buttercup family**
Anemone cylindrica	candle anemone
A. multifida	Pacific anemone
Clematis ligusticifolia	western white clematis
Delphinium bicolor	little larkspur
Pulsatilla patenes	cutleaf anemone
Ranunculus aquatilis	white water crowfoot
R. cymbalaria	alkali buttercup

Scientific name	Common name
R. glaberrimus	sagebrush buttercup
R. macounii	Macoun's buttercup
R. sceleratus	cursed buttercup
Thalictrum venulosum	veiny meadow-rue
Rosaceae	**Rose family**
Amelanchier alnifolia	Saskatoon serviceberry
Crataegus chrysocarpa	fineberry hawthorn
Fragaria virginiana	Virginia strawberry
Geum aleppicum	yellow avens
G. triflorum	prairie smoke
Potentilla anserina	silverweed cinquefoil
P. arguta	tall cinquefoil
P. biennis	biennial cinquefoil
P. gracilis	slender cinquefoil
P. paradoxa	paradox cinquefoil
P. pensylvanica	Pennsylvania cinquefoil
Prunus virginiana	chokecherry
Rosa acicularis spp. *sayi*	prickly rose
R. arkansana	prairie rose
R. woodsii	Woods' rose
Rubiaceae	**Bedstraw family**
Galium aparine	stickywilly (catchweed bedstraw)
G. boreale	northern bedstraw
G. trifidum	threepetal bedstraw
Salicaeae	**Willow family**
Populus deltoides	eastern cottonwood
P. tremuloides	quaking aspen
P. balsamifera	balsam poplar
Salix amygdaloides	peachleaf willow
S. bebbiana	Bebb willow
S. exigua	narrowleaf willow
S. fragilis	crack willow
S. lasiandra	Pacific willow
S. lutea	yellow willow
Santalaceae	**Sandalwood family**
Comandra umbellata	bastard toadflax
Saxifragaceae	**Saxifrag family**
Heuchera parvifolia	littleleaf alumroot
Scrophulariaceae	**Figwort family**
Bacopa rotundifolia	disk waterhyssop
Besseya wyomingensis	Wyoming besseya
Castilleja sessiliflora	downy paintedcup
Collinsia parviflora	maiden blue eyed Mary
Limosella aquatica	water mudwort
Orthocarpus leteus	yellow owl's clover
Penstemon albidus	white penstemon
P. nitidus	waxleaf penstemon
Veronica anagallis-aquatica	water speedwell
V. pergrina	neckweed
Selaginellaceae	**Spikemoss family**
Selafinella densa	lesser spikemoss
Solanaceae	**Potato family**
Solanum rostratum	buffalo nightshade
S. triflorum	cutleaf nightshade

Scientific name	*Common name*
Tamaricaceae	**Tamarisk family**
Tamarix chinensis	five stamen tamarisk (saltcedar)
Typhaceae	**Cattail family**
Typha latifolia	broadleaf cattail
Urticeae	**Nettle family**
Parietaria pensylvanica	Pennsylvania
Urtica dioica	stinging nettle
Verbenaceae	**Verbena family**
Verbena bracteata	bigbract verbena
Violaceae	**Violet family**
Viola adunca	hookedsur violet
V. canadensis	Canadian white violet
V. nephrophylla	northern bog violet
V. nuttallii	smooth stemmed blazing star
Vitaceae	**Grape family**
Parthenocissus inserta	Virginia creeper
Zannichelliaceae	horned pondweed family
Zigadenus venenosus	meadow deathcamas

ANIMAL LIST

BUTTERFLIES

Source: Butterflies and Moths of North America 2011.

Scientific name	*Common name*
Nymphalidae	**Brush-footed butterflies**
Limenitidinae	**Admirals and relatives**
Limenitis arthemis	red-spotted purple
L. archippus	viceroy
L. weidemeyerii	Weidemeyer's admiral
L. arthemis arthemis	white admiral
Heliconiinae	**Longwings**
Speyeria aphrodite	Aphrodite fritillary
S. callippe	callippe fritillary
S. coronis	coronis fritillary
S. edwardsii	Edwards' fritillary
S. egleis	great basin fritillary
S. cybele	great spangled fritillary
S. hydaspe	hydaspe fritillary
S. mormonia	Mormon fritillary
S. hesperis	northwestern fritillary
S. zerene	Zerene fritillary
Boloria bellona	meadow fritillary
B. selene	silver-bordered fritillary
Euptoieta claudia	variegated fritillary
Nymphalinae	**True brush-foots**
Nymphalis vaualbum	Compton tortoiseshell
N. antiopa	mourning cloak
Euphydryas editha	Edith's checkerspot
E. gillettii	Gillette's checkerspot
E. chalcedona	variable checkerspot
Phycoides pulchellus	field crescent
P. cocyta	northern crescent

Scientific name	Common name
P. pallid	pale crescent
P. tharos	pearl crescent
P. batesii	tawny crescent
Chlosyne gorgone	Gorgone checkerspot
C. palla	northern checkerspot
C. acastus	sagebrush checkerspot
Polygonia progne	gray comma
P. faunus	green comma
P. gracilis	hoary comma
P. satyrus	satyr comma
Aglais milberti	Milbert's tortoiseshell
Vanessa cardui	painted lady
V. atalanta	red admiral
V. annabella	west coast lady
Riodinidae	**Metalmarks**
Apodemia mormo	Mormon metalmark
Parnassiinae	**Parnassians**
Parnassian smintheus	Rocky Mountain parnassian
Papilioninae	**Swallowtails**
Papilio zelicaon	anise swallowtail
P. canadensis	Canadian tiger swallowtail
P. machaon	Old World swallowtail
P. eurymedon	pale swallowtail
P. multicaudata	two-tailed swallowtail
P. rutulus	western tiger swallowtail

AMPHIBIANS and REPTILES

Ambystomatidae	**Mole salamanders**
Ambistoma tigrinum	tiger salamander
Hylidae	**Chorus frogs**
Pseudacris triseriata	western chorus frog
Ranidae	**True frogs**
Rana pipiens	northern leopard frog
Bufonidae	**True toads**
Bufo woodhousei	Woodhouse's toad
B. cognatus	Great Plains toad
Scaphiopodidae	**Spadefoots**
Scaphiopus bombifrons	plains spadefoot
Chelydridae	**Snapping turtles**
Chelydra serpentin	snapping turtle
Emydidae	**Pond turtles**
Chrysemys picta	painted turtle
Trionychidae	**Softshell turtles**
Trionyx spiniferus	spiny softshell
Colubridae	**Colubrid snakes**
Coluber constrictor	racer
Thamnophis elegans	terrestrial garter snake
T. radix	plains garter snake
T. sirtalis	common garter snake
Lampropeltis triangulum	milk snake
Pituophis catenifer	gopher snake or bullsnake
Heterodon nasicus	western hog-nosed snake
Viperidae	**Vipers**
Crotalus viridus	prairie rattlesnake

FISHES

Source: Bramblett and Zale 1999.

Scientific name	*Common name*
Acipenseridae	**Sturgeons**
Scaphirhynchus albus (N)	pallid sturgeon
S. platorynchus (N)	shovelnose sturgeon
Polyodontidae	**Paddlefishes**
Polyodon spathula	paddlefish
Lepisosteidae	**Gars**
Lepisosteus platostomus	shortnose gar
Hiodontidae	**Mooneyes**
Hiodon alosoides	goldeneye
Salmonidae	**Trout**
Oncorhynchus mykiss	rainbow trout
Salmo trutta	brown trout
Salvelinus namaycush	lake trout
Coregonus artedi	cisco
Cyprinidae	**Minnows**
Hybognathus hankinsoni	brassy minnow
H. placitus	plains minnow
H. argyritis	western silvery minnow
Cyprinus carpio	common carp
Notropis atherinoides	emerald shiner
Pimephales promelas	fathead minnow
Hybopsis gracilis	flathead chub
Couesius plumbeus	lake chub
Rhynichthys cataractae	longnose dace
Phoxinus eos	northern redbelly dace
P. eos × *P. neogaeus*	northern redbelly dace × finescale dace
Notropis hudsonius	spottail shiner
N. ludibundus	sand shiner
Semotilus atromaculatus	creek chub
Macrhybobsis gelida	sturgeon chub
M. meeki	sicklefin chub
Castostomidae	**Suckers**
Catostomus catostomus	longnose sucker
C. commersoni	white sucker
Carpoides carpio	river carpsucker
Cycleptus elongate	blue sucker
Ictiobus bubalus	smallmouth buffalo
I. cyprinellus	bigmouth buffalo
Moxostoma macrolepidotum	shorthead redhorse
Ictaluridae	**Bullheads and catfishes**
Ictalurus melas	black bullhead
I. punctatus	channel catfish
Noturus flavus	stonecat
Esocidae	**Pikes and pickerels**
Esox lucius	northern pike
Gadidae	**Burbot**
Lota lota	burbot
Gasterosteidae	**Sticklebacks**
Culaea inconstans	brook stickleback
Centrarchidae	**Sunfishes**
Pomoxis nigromaculatus	black crappie
P. annularis	white crappie

Scientific name	*Common name*
Lepomis cyanellus	green sunfish
L. macrochirus	bluegill
Micropterus salmoides	largemouth bass
Percidae	**Perches**
Etheostoma exile	Iowa darter
Stizostedion canadense	sauger
S. vitreum	walleye
Perca flavenscens	yellow perch
Sciaenidae	**Drums**
Aplodinotus grunniens	freshwater drum
Fundulidae	**Killfishes**
Fundulus zebrinus	plains killfish

BIRDS

Of the bird species recorded, there are the following:

- 5 introduced species
- 1 extinct species
- 2 extirpated species
- 125 breeding species
- 2 federally endangered species
- 2 federally threatened species

The order of birds below follows the American Ornithologists' Union checklist of Northern American birds (2000).
** indicates a documented breeding record*
 # indicates a migratory nongamebird species of management concern in the United States (FWS 1995)

Gaviidae	**Loons**
Gavia immer	common loon#
G. stellata	red-throated loon
G. pacifica	Pacific loon
G. adamsii	yellow-billed loon
Podicipedidae	**Grebes**
Podilymbus podiceps	pied-billed grebe*
Podiceps auritus	horned grebe*
P. grisegena	red-necked grebe
P. nigricollis	eared grebe*
Aechmophorus occidentalis	western grebe*
A. clarkia	Clark's grebe*
Pelicanidae	**Pelicans**
Pelecanus erythrorhynchos	American white pelican*
Phalacrocoracidae	**Cormorants**
Phalacrocorax auritus	double-crested cormorant*
Ardeidae	**Bitterns, herons, and egrets**
Botaurus lentiginosus	American bittern*#
Ardea herodias	great blue heron*
A. alba	great egret
Egretta thula	snowy egret
Nycticorax nycticorax	black-crowned night-heron
Threskiornithidae	**Ibises and spoonbills**
Plegadis chihi	white-faced ibis
Cathartidae	**New World vultures**
Cathartes aura	turkey vulture
Anatidae	**Swans, geese, and ducks**
Anser albifrons	greater white-fronted goose
Chen caerulescens	snow goose
C. rossii	Ross' goose

Scientific name	*Common name*
Branta canadensis	Canada goose*
Cygnus columbianus	tundra swan
Aix sponsa	wood duck
Anas strepera	gadwall*
A. americana	American wigeon*
A. rubripes	American black duck
A. platyrhynchos	mallard*
A. discors	blue-winged teal*
A. cyanoptera	cinnamon teal*
A. clypeata	northern shoveler*
A. acuta	northern pintail*
A. crecca	green-winged teal*
Aythya valisineria	canvasback*
A. americana	redhead*
A. collaris	ring-necked duck*
A. affinis	lesser scaup*
Melanitta fusca	white-winged scoter
Clangula hyemalis	long-tailed duck
Bucephala albeola	bufflehead*
B. clangula	common goldeneye
B. islandica	Barrow's goldeneye
Lophodytes cucullatus	hooded merganser
Mergus merganser	common merganser
M. serrator	red-breasted merganser
Oxyura jamaicensis	ruddy duck*
Accipitridae	**Osprey, kites, hawks, and eagles**
Pandion halliaetus	osprey
Haliaeetus leucocephalus	bald eagle (threatened)
Circus cyaneus	northern harrier
Accipiter striatus	sharp-shinned hawk
A. cooperii	Cooper's hawk
A. gentilis	northern goshawk
Buteo platypterus	broad-winged hawk
B. swainsoni	Swainson's hawk
B. jamaicensis	red-tailed hawk*
B. regalis	ferruginous hawk
B. lagopus	rough-legged hawk
Aquila chrysaetos	golden eagle*
Falconidae	**Falcons and caracaras**
Falco sparverius	American kestrel
F. columbarius	merlin
F. rusticolus	gyrfalcon
F. peregrinus	peregrine falcon
F. mexicanus	prairie falcon
Phasianidae	**Gallinaceous birds**
Perdix perdix	gray partridge (introduced)
Phasianus colchicus	ring-necked pheasant (introduced)
Centrocercus urophasianus	greater sage-grouse
Tympanuchus phasianellus	sharp-tailed grouse
Meleagris gallopavo	wild turkey
Rallidae	**Rails**
Rallus limicola	Virginia rail
Porzana carolina	sora
Fulica americana	American coot

Scientific name	*Common name*
Gruidae	**Cranes**
Grus canadensis	sandhill crane
Charadriidae	**Plovers**
Pluvialis squatarola	black-bellied plover
P. dominica	American golden-plover
Charadrius semipalmatus	semipalmated plover
C. melodus	piping plover (threatened)
C. vociferous	killdeer
C. montanus	mountain plover
Recurvirostridae	**Stilts and avocets**
Himantopus mexicanus	black-necked stilt
Recurvirostra americana	American avocet
Scolopacidae	**Sandpipers and phalaropes**
Tringa melanoleuca	greater yellowlegs
T. flavipes	lesser yellowlegs
T. solitaria	solitary sandpiper
Actitus macularius	spotted sandpiper
Catoptrophorus semipalmatus	willet
Artramia longicauda	upland sandpiper
Numenius borealis	Eskimo curlew (extirpated)
N. phaeopus	whimbrel
N. americanus	long-billed curlew
Limosa fedoa	marbled godwit
Arenaria interpres	ruddy turnstone
Calidris alba	sanderling
C. pusilla	semipalmated sandpiper
C. mauri	western sandpiper
C. minutilla	least sandpiper
C. fuscicollis	white-rumped sandpiper
C. bairdii	Baird's sandpiper
C. melanotos	pectoral sandpiper
C. alpine	dunlin
C. himantopus	stilt sandpiper
Limnodromus scolopaceus	long-billed dowitcher
Phalaropus tricolor	Wilson's phalarope
P. lobatus	red-necked phalarope
Tryngites subruficollis	buff-breasted sandpiper
Gallinago delicate	Wilson's snipe
Laridae	**Gulls, terns, and jaegers**
Larus pipixcan	Franklin's gull
L. philadelphia	Bonaparte's gull
L. delawarensis	ring-billed gull
L. californicus	California gull
L. thayeri	Thayer's gull
L. hyperboreus	glaucous gull
L. canus	mew gull
L. argentatus	herring gull
L. glaucescens	glaucous-winged gull
L. marinus	great black-backed gull
Sterna caspia	Caspian tern
S. hirundo	common tern
S. forsteri	Forster's tern
S. antillarum	least tern (endangered)
Chlidonias niger	black tern
Xema sabini	Sabine's gull

Scientific name	*Common name*
Rissa tridactyla	black-legged kittiwake
Stercorarius pomarinus	pomarine jaeger
Columbidae	**Pigeons and doves**
Columba livia	rock dove (introduced)
C. fasciata	band-tailed pigeon
Zenaida macroura	mourning dove
Ectopistes migratorius	passenger pigeon (extinct)
Cuculidae	**Cuckoos and anis**
Coccyzus erythropthalmus	black-billed cuckoo
Strigidae	**Owls**
Bubo virginianus	great horned owl
Nyctea scandiaca	snowy owl
Surnia ulula	northern hawk-owl
Athene cunicularia	burrowing owl
Asio otus	long-eared owl
A. flammeus	short-eared owl
Glaucidium gnoma	northern pygmy-owl
Aegolius acadicus	northern saw-whet owl
Caprimulgidae	**Goatsuckers and allies**
Chordeiles minor	common nighthawk
Phalaenoptilus nuttallii	common poorwill
Apodidae	**Swifts**
Chaetura pelagica	chimney swift
Aeronautes saxatalis	white-throated swift
Trochilidae	**Hummingbirds**
Archilochus colubris	ruby-throated hummingbird
Selasphorus rufus	rufous hummingbird
Alcedinidae	**Kingfishers**
Ceryle alcyon	belted kingfisher
Picidae	**Woodpeckers**
Melanerpes erythrocephalus	red-headed woodpecker
Picoides pubescens	downy woodpecker
P. villosus	hairy woodpecker
Colaptes auratus	northern flicker
Sphyrapicus nuchalis	red-naped sapsucker
Tyrannidae	**New World flycatchers**
Contopus sordidulus	western wood-pewee
Empidonax traillii	willow flycatcher
E. minimus	least flycatcher
E. oberholseri	dusky flycatcher
E. occidentalis	Cordilleran flycatcher
Sayornis saya	Say's phoebe
Tyrannus verticalis	western kingbird
T. tyrannus	eastern kingbird
T. vociderans	Cassin's kingbird
Laniidae	**Shrikes**
Lanius ludovicianus	loggerhead shrike
L. excubitor	northern shrike
Vireonidae	**Vireos**
Vireo gilvus	warbling vireo
V. philadelphicus	Philadelphia vireo
V. olivaceus	red-eyed vireo
Corvidae	**Crows, jays, and magpies**
Cyanocitta cristata	blue jay
Pica hudsonia	black-billed magpie

Scientific name	Common name
Corvus brachyrhynchos	American crow
C. corax	common raven
Gymnorhinus cyanocephalus	pinyon jay
Nucifraga columbiana	Clark's nutcracker
Alaudidae	**Larks**
Eremophila alpestris	horned lark
Hirundinidae	**Swallows**
Tachycineta bicolor	tree swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Riparia riparia	bank swallow
Petrochelidon pyrrhonota	cliff swallow
Hirundo rustica	barn swallow
Tachycineta thalassina	violet-green swallow
Paridae	**Chickadees and titmice**
Poecile atricapilla	black-capped chickadee*
P. gambeli	mountain chickadee
Sittidae	**Nuthatches**
Sitta canadensis	red-breasted nuthatch
S. carolinensis	white-breasted nuthatch
Certhiidae	**Creepers**
Certhia americana	brown creeper
Troglodytidae	**Wrens**
Troglodytes aedon	house wren
Cistothorus palustris	marsh wren
Salpinctes obsoletus	rock wren
Cinclidae	**Dippers**
Cinclus mexicanus	American dipper
Regulidae	**Kinglets**
Regulus satrapa	golden-crowned kinglet
R. calendula	ruby-crowned kinglet
Turdidae	**Thrushes**
Sialia sialis	eastern bluebird
S. currocoides	mountain bluebird
Myadestes townsendi	Townsend's solitaire
Catharus fuscescens	veery
C. minimus	gray-cheeked thrush
C. ustulatus	Swainson's thrush
C. guttatus	hermit thrush
Turdus migratorius	American robin
Mimidae	**Mockingbirds, thrashers, and allies**
Dumetella carolinensis	gray catbird
Toxostoma rufum	brown thrasher
Mimus polyglottos	northern mockingbird
Oreoscoptes montanus	sage thrasher
Sturnidae	**Starlings**
Sturnus vulgaris	European starling (introduced)
Motacillidae	**Wagtails and pipits**
Anthus ruescens	American (water) pipit
A. spragueii	Sprague's pipit
Bombycillidae	**Waxwings**
Bombycilla garrulus	Bohemian waxwing
B. cedrorum	cedar waxwing
Parulidae	**New World warblers**
Vermivora peregrina	Tennessee warbler
V. celata	orange-crowned warbler

Scientific name	*Common name*
Dendroica petechia	yellow warbler
D. magnolia	magnolia warbler
D. tigrina	Cape May warbler
D. coronata	yellow-rumped warbler
D. townsendi	Townsend's warbler
D. palmarum	palm warbler
D. striata	blackpoll warbler
Mniotilta varia	black-and-white warbler
Setophaga ruticilla	American redstart
Seiurus aurocapillus	ovenbird
S. noveboracensis	northern waterthrush
Oporornis tolmiei	MacGillivray's warbler
Geothlypis trichas	common yellowthroat
Wilsonia pusilla	Wilson's warbler
W. canadensis	Canada warbler
Icteria virens	yellow-breasted chat
Thraupidae	**Tanagers**
Piranga ludoviciana	western tanager
Emberizidae	**Buntings and seedeaters**
Pipilo maculatus	spotted towhee
Spizella arborea	American tree sparrow
S. passerina	chipping sparrow
S. pallida	clay-colored sparrow
S. breweri	Brewer's sparrow
S. pusilla	field sparrow
Pooecetes gramineus	vesper sparrow
Chondestes grammacus	lark sparrow
Calamospiza melanocorys	lark bunting
Passerculus sandwichensis	Savannah sparrow
Ammodramus savannarum	grasshopper sparrow
A. bairdii	Baird's sparrow
Melospiza melodia	song sparrow
M. lincolnii	Lincoln's sparrow
Zonotrichia alicollis	white-throated sparrow
Z. querula	Harris' sparrow
Z. leucophrys	white-crowned sparrow
Junco hyemalis	dark-eyed junco
Calcarius mccownii	McCown's longspur
C. lapponicus	Lapland longspur
C. ornatus	chestnut-collared longspur
Plectrophenax nivalis	snow bunting
Pipilo chlorurus	green-tailed towhee
Melospiza georiana	swamp sparrow
Zonotrichia atricapilla	golden-crowned sparrow
Cardinalidae	**Saltators, cardinals, and allies**
Pheucticus ludovicianus	rose-breasted grosbeak
P. melanocephalus	black-headed grosbeak
Passerina amoena	lazuli bunting
Cardinalis cardinalis	northern cardinal
Passerina cyanea	indigo bunting
Icteridae	**Blackbirds and orioles**
Dolichonyx oryzivorus	bobolink*
Agelaius phoeniceus	red-winged blackbird*
Surnella neglecta	western meadowlark*
Xanthocephalus xanthocephalus	yellow-headed blackbird*

Scientific name	*Common name*
Euphagus carolinus	rusty blackbird
E. cyanocephalus	Brewer's blackbird*
Quiscalus quiscula	common grackle*
Molothrus ater	brown-headed cowbird*
Icterus spurius	orchard oriole*
I. galbula	Baltimore oriole*
I. bullockii	Bullock's oriole
Fringillidae	**Finches and crossbills**
Pinicola enucleator	pine grosbeak
Carduelis flammea	common redpoll
C. hornemanni	hoary redpoll
C. pinus	pine siskin
C. tristis	American goldfinch
Leucosticte tephrocotis	gray-crowned rosy-finch
Pinicola enucleator	pine grosbeak
Loxia curvirostra	red crossbill
L. leucoptera	white-winged crossbill
Coccothraustes vespertinus	evening grosbeak
Passeridae	**Old World sparrows**
Passer domesticus	house sparrow (introduced)

MAMMALS

Sources: Burt and Grossenheider 1980, Hoffman and Pattie 1968, Foresman 2001, and Montana Natural Heritage Program.

Soricidae	**Shrews**
Sorex cinereus	cinereus (masked) shrew*
S. merriami	Merriam's shrew
S. haydeni	Hayden's shrew (R)
S. monticolus	montane shrew
Vespertilionidae	**Vesper bats**
Myotis evotis	long-eared myotis
M. lucifugus	little brown myotis*
M. ciliolabrum	western small-footed myotis
M. thysanodes	fringed myotis
M. volans	long-legged myotis
Lasiurus borealis	eastern red bat
L. cinereus	hoary bat
Lasionycteris noctivagans	silver-haired bat
Eptesicus fuscus	big brown bat
Corynorhinus townsendii	Townsend's big-eared bat
Leporidae	**Hares and rabbits**
Sylvilagus nuttalli	mountain cottontail
S. audubonii	desert cottontail
Lepus townsendii	white-tailed jackrabbit*#
Sciuridae	**Squirrels**
Tamias minimus	least chipmunk
T. amoenus	yellow-pine chipmunk
T. ruficaudus	red-tailed chipmunk
Spermophilus richardsonii	Richardson's ground squirrel*#
S. tridecemlineatus	thirteen-lined ground squirrel*#
Cynomys ludovicianus	black-tailed prairie dog
Marmota flaviventris	yellowbelly marmot (R)
Geomyidae	**Pocket gophers**
Thomomys talpoides	northern pocket gopher*#
Heteromyidae	**Pocket mice and kangaroo rats**
Perognathus fasciatus	olive-backed pocket mouse*#

Scientific name	*Common name*
Dipodomys ordii	Ord's kangaroo rat
Castoridae	**Beavers**
Castor canadensis	American beaver*
Muridae	**Mice, voles, rats, and lemmings**
Reithrodontomys megalotis	western harvest mouse
Peromyscus leucopus	white-footed mouse
P. maniculatus	deer mouse*#
Onychomys leucogaster	northern grasshopper mouse*#
Neotoma cinerea	bushy-tailed woodrat
Mus musculus	house mouse*
Microtus ochrogaster	prairie vole*
Lemmiscus curtatus	sagebrush vole*
Ondatra zibethicus	common muskrat*#
Microtus longicaudus	long-tailed vole
Dipodidae	**Jumping mice**
Zapus princeps	western jumping mouse(#?)
Erethizontidae	**New World porcupines**
Erethizon dorsatum	common porcupine*
Canidae	**Wolves, coyotes, and foxes**
Canis latrans	coyote*#
C. lupus	gray wolf*# (extirpated)
Vulpes velox	swift fox*#
V. vulpes	red fox*
Ursidae	**Bears**
Ursus americanus	black bear*
U. arctos	grizzly (brown) bear* (extirpated)
Procyonidae	**Raccoons**
Procyon lotor	raccoon*
Mustelidae	**Weasels**
Mustela frenata	long-tailed weasel*#
M. nigripes	black-footed ferret
M. nivalis	least weasel*
M. vison	American mink*
M. ermine	short-tailed weasel
Gulo gulo	wolverine*
Taxidea taxus	American badger*#
Lontra canadensis	northern river otter
Mephitidae	**Skunks**
Mephitis mephitis	striped skunk*#
Felidae	**Cats**
Felis catus	feral cat* (introduced)
Lynx rufus	bobcat*
Puma concolor	mountain lion
Cervidae	**Deer, moose, and elk**
Cervus elephus	Wapiti (elk)*
Odocoileus hemionus	mule deer*
O. virginianus	white-tailed deer*
Alces alces	moose
Antilocapridae	**Pronghorn**
Antilocapra americana	pronghorn*#
Bovidae	**Bison, goats, and sheep**
Bos bison	American bison (extirpated)
B. taurus	domestic cattle
Ovis canadensis	bighorn sheep

Appendix H

Section 7 Biological Evaluation

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

Final Comprehensive Conservation Plan and Environmental Impact Statement
Charles M. Russell National Wildlife Refuge; UL Bend National Wildlife Refuge

Originating Person: Bill Berg
Telephone Number: 406-535-2800 X13
Date: 3/23/12

I. Region: 6
II. Service Activity (Program): Refuges
III. Pertinent Species and Habitat:

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

- Black-footed ferret (endangered) occurs on the refuge in about 5,000-12,000 acres of prairie dog habitat. An ongoing recovery effort is in progress.
- Least tern (endangered) nesting has been documented on islands below the dam just outside of the refuge.
- Pallid sturgeon (endangered) occurs in the Missouri River portion of the refuge. An ongoing recovery effort is in progress. Fewer than ten naturally occurring adults have been documented. Several hundred hatchery reared sub-adults have been reintroduced to the system above Fort Peck Dam.
- Piping plover (threatened) have been documented nesting on shorelines of Fort Peck Lake in the vicinity of the Big Dry Arm.
- Grizzly bear (threatened) have been documented approximately 100 miles west of the west boundary of the refuge as recently as 2010.
- Whooping crane (endangered) is a migrant in McCone, Phillips, and Valley Counties

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

C. Candidate species within the action area: Greater sage grouse, Sprague's pipit

IV. Geographic area or station name and action: Charles M. Russell National Wildlife Refuge and UL Bend National Wildlife Refuge

V. Location: Montana

A. Ecoregion number and name: N/A

B. County and State: Phillips, Valley, McCone, Garfield, Petroleum, and Fergus Counties, Montana

VI. Description of preferred alternative: Final Comprehensive Conservation Plan and Environmental Impact Statement for Charles M. Russell National Wildlife Refuge and UL Bend National Wildlife Refuge

Alternative D-Ecological Processes Emphasis

In cooperation with partners, the Service would use natural, dynamic ecological processes and management activities in a balanced, responsible manner to restore and maintain the biological diversity, biological integrity, and environmental health of the refuge. Once natural processes are restored, a more passive approach (less human assistance) would be favored. There would be quality wildlife-dependent public uses and experiences provided. Economic uses would be limited when they are injurious to ecological processes.

VII. Determination of effects:

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

In general the preferred alternative would have beneficial effects for threatened and endangered species or would be neutral. Maintenance, restoration, and enhancement of special status species is a key component of restoration of natural ecological processes.

The Service has actively released and monitored ferrets at UL Bend refuge since 1994 and has worked collaborative with other partners, and these efforts would continue under the preferred alternative. Habitat management plans will include detailed prescriptions for habitat management and protocols for monitoring the status of these species.

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

By 2014, the Service would evaluate and prioritize the protection of special status species, determining which species require active management and the level and type of management needed. The Service would use criteria including listing status, implementation of actions identified in recovery plans, status within Montana, population size on the refuge. Public use activities would be monitored to ensure adverse effects to special status species do not occur. Prescribed fire would be used in areas to achieve resource objectives but would not be used in areas where adverse effects to special status species occurred. These areas would be identified in the fire management plan.

VIII. Effect determination and response requested:

A. Listed species/designated critical habitat:

Determination	**Response Requested**
No effect/no adverse modification (Species:)	_____Concurrence

May affect, but not likely to adversely affect species/adversely modify critical habitat
(Species: black-footed ferrets) **X Concurrence**

May affect, and is likely to adversely affect species/adversely modify critical habitat (Species:)

____Formal Consultation

B. Proposed species/proposed critical habitat: N/A

	Determination Response Requested
no effect on proposed species/no adverse modification of proposed critical habitat	____Concurrence
is likely to jeopardize proposed species/ adversely modify proposed critical habitat	_____Concurrence

C. **Candidate species:**	Determination Response Requested
no effect or not likely to adversely effect: Greater sage grouse, Sprague's pipit)	X Concurrence
is likely to jeopardize candidate species	_____Conference

W. J. Berg
Signature of Originating Person

3-23-12
Date

Reviewing Ecological Services Office Evaluation (check all that apply):

A. **Concurrence** X

B. **Nonconcurrence** _____

Explanation for non-concurrence:

B. Formal consultation required _____
List species or critical habitat unit

C. Conference required _____
List species or critical habitat unit

Name of Reviewing ES Office Helena Montana Ecological Services

R. Mark Wilson
Signature

3-26-12
Date

Revised 3/2010

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