Glossary

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

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

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

alluvial fan—A sedimentary deposit where a fast-flowing stream has flown into a flatter plain.

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

amphibian—A class of cold-blooded vertebrates that includes frogs, toads, and salamanders.

anastomosis—Reconnection of two streams that formerly had been separated.

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

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

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

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

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

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.

cfs—Cubic feet per second.

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 National Wildlife Refuge System or the purposes of the refuge (Draft Service Manual 603 FW 3.6). A compatibility determination supports the selection of compatible uses and identified stipulations or limits necessary to ensure compatibility.

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

concern—See issue.

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

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

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

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

disturbance—Significant alteration of habitat structure or composition. May be natural (for example,

fire) or human-caused events (for example, timber harvest).

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

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

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

EA—See environmental assessment.

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 U.S. Fish and Wildlife 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.

ecotype—A subspecies or race that is especially adapted to a particular set of environmental conditions.

EIS—Environmental impact statement.

Elderhostel—A not-for-profit organization established in 1975 that allows senior citizens to travel and take educational programs in the United States around the world.

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

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

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

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

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

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

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

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

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

flora—All the plant species of an area.

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.

fire management plan—Wildland fire management (wildfire and prescribed) and related activities within the context of approved land and resource management plans.

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

gallery forest (as it relates to the Bitterroot River floodplain)—The forested area found on the higher floodplains along natural levees and point bar terraces next to minor floodplain tributaries. It is more closely associated with backwater and overbank flooding. When flooding occurs, it is for short duration. This forest is dominated by mature black cottonwood and ponderosa pine along with an understory of large woody shrubs such as thin-leaved alder, river hawthorn, red osier dogwood, and Wood's rose. There may also be mixed grasses between the trees and shrubs (Heitmeyer et al. 2010).

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.

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

GS—General Schedule (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 type, also vegetation type, cover type—A land classification system based on the concept of distinct plant associations.

head cuts—abrupt changes in streambed elevation.

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

hydrogeomorphic methodology (HGM)—An interdisciplinary science that focuses on the interaction and linkage of hydrologic processes with landforms or earth materials and the interaction of geomorphic processes with surface and subsurface water in temporal and spatial dimensions.

hydroperiod—Period of time during which soils, waterbodies, and sites are wet.

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—See National Wildlife Refuge System Improvement Act of 1997.

indigenous—Originating or occurring naturally in a particular place.

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

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

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

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

IPM—See integrated pest management.

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

level ditching—Ditches developed to improve water distribution, provide open water for waterfowl, furnish nesting islands, and encourage aquatic vegetation for waterfowl and furbearers. The material removed and piled along the ditch edge provides nesting and loafing sites for waterfowl. The production of waterfowl from level ditching is dependent upon the suitability of the wetland.

management alternative—See alternative.

management plan—Plan that guides future land management practices on a tract of land.

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

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

mission—Succinct statement of purpose or reason for being.

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

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

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

National Wildlife Refuge System (Refuge System)—Various categories of areas administered by the Secretary of the 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; establish the responsibilities of the Secretary of the Interior for managing and protecting the Refuge System; requires a comprehensive conservation plan for each refuge by the year 2012. This Act amended portions of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966.

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

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

nest success—The chance that a nest will hatch at least one egg.

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

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

noxious weed—Any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, natural resources of the United States, public health, or the environment.

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 provides the basis for determining management strategies. Objectives should be attainable and time-specific and should be stated quantitatively to the extent possible. If objectives cannot be stated quantitatively, they may be stated qualitatively (Draft Service Manual 602 FW 1.5).

obligate—Necessary for survival.

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

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

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

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

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

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

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

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

plant 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 selected final alternative that becomes the final plan. It can be the proposed action, the no-action alternative, another alternative, or a combination of actions or alternatives discussed in the draft comprehensive conservation plan and National Environmental Policy Act document.

prescribed fire—A wildland fire originating from a planned ignition to meet specific objectives identified in a written and approved prescribed fire plan for which NEPA requirements (where applicable) have been met before ignition.

pristine—Typical of original conditions.

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

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

private organization—Any nongovernmental organization.

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 National Wildlife 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 expressed an interest in Service issues and those who do or do not realize that Service decisions may affect them.

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

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

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

refuge purpose—See purpose of the refuge.

Refuge System—See National Wildlife Refuge System.

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

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

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

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

riparian corridor—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.

riverfront forest (as it relates to the Bitterroot River floodplain)—The forested area next to the Bitterroot River that includes early successional species such as black cottonwood and sandbar willow. This early-successional vegetation is present on newly deposited and scoured gravelly-sand, sand, and fine silty loams near the active channel of the Bitterroot River and in outcrop sites next to floodplain drainages. This area is characterized by little, if any, understory. These sites have high water tables for most of the year and are inundated for short periods during high spring riverflows (Heitmeyer et al. 2010).

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

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

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

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

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

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

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

species of concern—Those plant and animal species, while not falling under the definition of special status species, that are of management interest by virtue of being Federal trust species such as migratory birds, important game species, or significant keystone species; species that have documented or apparent populations declines, small or restricted populations, or dependence on restricted or vulnerable habitats. Species that (1) are documented or have apparent population declines, (2) are small or restricted populations, or (3) depend on restricted or vulnerable habitats.

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

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

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

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

tame grasses—Nonnative species of grasses that are introduced to a site.

temporal—Of or relating to time.

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

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

tile drainage—In agricultural, a method of draining the soil subsurface to reduce moisture.

trust resource—See Federal trust resource.

trust species—See Federal trust species.

U.S. Fish and Wildlife Service (Service or USFWS)—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 that comprises more than 530 national wildlife refuges and thousands of waterfowl production areas. It also operates 65 national fish hatcheries and 78 ecological service field stations. The agency enforces Federal wildlife laws, manages migratory bird populations, restores national significant fisheries, conserves and restores wildlife habitat such as wetlands, administers the Endangered Species Act, and helps foreign governments with their conservation efforts. It also oversees the Federal aid program that distributes millions of dollars in excise taxes on fishing and hunting equipment to State wildlife agencies.

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

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

ungulate—A hoofed mammal.

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

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

waterbird—Birds dependent upon aquatic habitats to complete portions of their life cycles (for example, breeding).

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

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

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

WG—Wage Grade Schedule (pay rate schedule for certain Federal positions).

wildfire—Unplanned ignition of a wildland fire (such as a fire caused by lightning, volcanoes, unauthorized and accidental human-caused fires) and escaped prescribed fires.

wildland fire—A general term describing any nonstructure fire that occurs in the wild. There are two types of wildland fire, wildfire and prescribed fire.

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

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

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

Appendix A

Public Involvement

A.1 Public Involvement Activities

This appendix describes how the U.S. Fish and Wildlife Service (Service) conducted public involvement activities and considered the resulting information for developing the comprehensive conservation plan (CCP) for the Lee Metcalf National Wildlife Refuge. The appendix contains the following sections:

- A.1 Public Involvement Activities
- A.2 Public Mailing List
- A.3 Public Comments on the Draft Plan

A notice of intent to prepare a CCP was published in the Federal Register on September 30, 2009. The Service compiled a mailing list of more than 270 names during preplanning. The list included private citizens; local, regional, and State government representatives and legislators; other Federal agencies; and interested organizations.

Public scoping

Public scoping was announced through news releases and a mailed planning update; it provided information on the history of the refuge, an overview of the CCP process, and invitations to two public scoping meetings. The planning update included a form for providing written comments. Emails were also accepted at the refuge's email address: leemetcalf@fws.gov.

Two public meetings were held in the communities of Stevensville and Missoula, Montana on September 29 and October 1, 2009, respectively. There were 12 attendees, primarily local citizens and staff from Senator Max Baucus's local office. Following a presentation about the refuge and an overview of the CCP and National Environmental Policy Act processes, attendees were encouraged to ask questions and offer comments. Verbal comments were recorded, and each attendee was given a comment form to submit additional thoughts or questions in writing.

All written comments were due November 13, 2009; 20 emails and letters were received in addition to the verbal comments recorded at the public scoping meeting. All comments were shared with the planning team and considered throughout the planning process. In addition to 200 private individuals, the following organizations and agencies were given the opportunity to provide comments about this planning process.

Review of the draft plan

The draft CCP and final environmental assessment (EA) was released to the public on March 28, 2012, though a notice of availability published in the Federal Register (volume 77, number 60, pages 18852–18853). Copies of either the draft CCP and EA or a planning update were mailed to over 180 individuals or organizations on the planning mailing list. In addition, over 35 copies were distributed to visitors who came to the refuge headquarters requesting the document. The document was also available on the refuge Web site.

The public was offered 34 days to review this document and provide comments. On April 9, 2012, the Service held a public meeting attended by 44 participants at the refuge headquarters in Stevensville, Montana. Before this meeting, the Service's External Affairs Office issued a news release, and planning updates were mailed providing details on where and when this meeting would be held. It was also announced through the refuge's Web site. During this 2-hour meeting a presentation was given on the draft plan, followed by an opportunity for participants to ask questions and offer comments. In addition to the oral comments recorded at the meeting, 13 emails and 20 letters were received. All comments needed to be received or postmarked by April 30, 2012.

The planning team reviewed all the individual comments and met together as a team to discuss the responses to these comments and the proposed changes. These substantive comments and the Service responses are summarized in section A.3.

A.2 Public Mailing List

The Service sent planning updates to all individuals and organizations on the mailing list. In addition, many hard copies of the draft CCP and EA were distributed using the mailing list, additional requests, and through the refuge headquarters.

Federal officials

U.S. Representative Dennis Rehberg, Washington, DC
U.S. Senator Jon Tester, Washington, DC
U.S. Senator Max Baucus, Washington, DC

Federal agencies

Bitterroot National Forest, USDA Forest Service, Hamilton, Montana
Lewis and Clark National Trail, National Park Service, Omaha, Nebraska
National Park Service, Denver, Colorado
Northern Rocky Mountain Science Center, Missoula, Montana
USDA Forest Service, Bitterroot National Forest, Stevensville, Montana
USDA Forest Service, Regional Office and Lolo National Forest, Missoula, Montana

Tribal officials

Confederated Salish and Kootenai Tribal Council, Pablo, Montana
Nez Perce Tribal Executive Council, Lapwai, Idaho

State officials

Governor Brian Schweitzer, Helena, Montana
Representative Ray Hawk, Florence, Montana
Representative Gary MacLaren, Victor, Montana
Representative Bob Lake, Hamilton, Montana
Senator Rick Laible, Darby, Montana
Senator Jim Shockley, Victor, Montana

State agencies

Travelers Rest State Park, Lolo, Montana
Montana Department of Environmental Quality, Helena, Montana
Montana Fish, Wildlife & Parks, Missoula, Montana
Montana Fish, Wildlife & Parks, Hamilton, Montana
Montana Fish, Wildlife & Parks, Helena, Montana
Montana Historical Society, Helena, Montana
Montana State Historic Preservation Office, Helena, Montana
Ravalli County Extension Office, Hamilton, Montana
Ravalli County Weed District, Stevensville, Montana

Local government

Mayor of Stevensville, Stevensville, Montana
Ravalli County Commissioners, Hamilton, Montana

Organizations

American Bird Conservancy, The Plains, Virginia
American Bird Conservancy, Kalispell, Montana
American Legion Post #94, Stevensville, Montana
Audubon Society, Helena, Montana
Audubon Society, Hamilton, Montana
Audubon Society, Missoula, Montana
Audubon Society, Washington, DC
Bitterroot Water Forum, Hamilton, Montana
Defenders of Wildlife, Washington, DC
Ducks Unlimited, Clancy, Montana
Ducks Unlimited, Memphis, Tennessee
Family of Peter Whaley, Missoula, Montana
Five Valleys Audubon Society, Missoula, Montana
Friends of Lee Metcalf National Wildlife Refuge, Stevensville, Montana
Institute for Bird Populations, Point Reyes Station, California
Isaak Walton League, Gaithersburg, Maryland
Missoula Convention & Visitors Bureau, Missoula, Montana
Montana Conservation Science Institute, Missoula, Montana
Montana Natural Heritage Program, Helena, Montana
Montana Natural Heritage Program, Missoula, Montana
Montana Natural History Center, Missoula, Montana
Montana Preservation Alliance, Helena, Montana
National Trappers Association, New Martinsville, West Virginia
National Wildlife Federation, Reston, Virginia and Helena, Montana
National Wildlife Refuge Association, Washington, DC
The Nature Conservancy, Helena, Montana
Ravalli County Fish & Wildlife Association, Hamilton, Montana
Ravenworks Ecology, Stevensville, Montana
Sierra Club, San Francisco, California
Stevensville Historical Museum, Stevensville, Montana
Stevensville Main Street Association, Stevensville, Montana
The Teller, Corvallis, Montana
Watershed Education Network, Missoula, Montana
The Humane Society, Washington, DC
The Wilderness Society, Washington, DC
Trout Unlimited, Missoula, Montana
The Wildlife Society, Townsend, Montana

Universities and schools

Colorado State University Libraries, Fort Collins, Colorado
Northwestern University, Evanston, Illinois
University of Montana, Missoula, Montana
Stevensville Public Schools, Stevensville, Montana

Media

Billings Gazette Online, Billings, Montana
The Billings Outpost, Billings, Montana
Bitterroot Star, Stevensville, Montana
Great Falls Tribune, Great Falls, Montana
The Missoulian, Missoula, Montana
Montana Public Radio, Missoula, Montana
Ravalli Republic, Hamilton, Montana
Stoneydale Press, Stevensville, Montana
Yellowstone Public Radio, Billings, Montana

Individuals

200 private individuals

A.3 Public Comments on the Draft Plan

In addition to the comments received at the public meeting, the refuge received 33 individuals letters or emails during the public review period for the draft CCP and EA. The Service read all comments and found the following comments to be substantive.

The Service developed responses to each of these comments after grouping them in the following topics:

- Kenai Nature Trail
- Pond 8 trail
- public access (roads and other trails)
- dogs on the refuge
- cultural and historical resources
- hunting and fishing
- law enforcement
- visitor services—general comments
- partnerships and community relations
- operations and facilities
- floodplain restoration
- wetland impoundments
- grassland and shrubland
- target species
- wildlife
- bull trout (threatened species) and other native salmonids
- mercury contamination
- invasive species
- planning process
- alternatives
- general comments

KENAI NATURE TRAIL

Comment 1. a. *On page 146 it states that the existing footprint of the Kenai Nature Trail would be moved east in select areas by 10–30 yards to lessen disturbance to waterbirds using the slough portion of Pond 8. It would be helpful to show where the trail will be relocated.*

b. *It is our judgment that the existing Kenai Trail by the slough portion of Pond 8 does not need to be moved to the east. This section has adequate distance and shrubbery to minimize the disturbance to waterfowl that use that slough. However, we do recommend that the portion of the trail that drops steeply down to the cattails be closed and that the trail be connected on the bench for the safety and ease of hiking for the participants.*

c. *I have heard there is a proposal to close the Kenai (I hope I have spelled that correctly) Nature Trail. If this is true, I am adamantly opposed to the idea. It is the best Nature Trail in the Bitterroot and Missoula Valleys. There does not exist another trail that gives you access to look down on large ponds.*

d. *Please do not close this trail. I use it regularly and look forward to being able to see the wildlife here that cannot be seen elsewhere. Closing this trail would be a sad loss to the community who enjoy the wildlife for with [Lee Metcalf Refuge] manages so well. If there are wildlife–human conflicts, then please try to address them in a manner that still allows enjoyment of the trail by foot traffic.*

e. *Do not remove portions of this trail to the existing road way. It is the 'ups and downs' of the trail that make it interesting and provide variety.*

f. *I would prefer that [the Kenai Nature Trail] be left as it is. It seems to meet the needs of those participants who frequent this area.*

g. *Access to view birds while walking close to the bank is much better than it would be if the trail is moved to the east. The trail should be open all year for wildlife viewing.*

h. *I am writing to oppose the abandonment of portions of the Kenai Nature Trail. Put portions of the trail on the existing two-track maintenance road as proposed, but leave the existing trail in place for those who prefer to walk on trails rather than maintenance roads.*

i. *Although there is nothing in the writeup to suggest that the beginning half of the existing Kenai Trail will become subject to the conditions of the seasonal trail around Pond 8, it needs to be clarified that only the new trail around Pond 8 will be closed during nesting season.*

j. *Page 120—Strategies for Wildlife Observation as appropriate, relocate portions of the Kenai Nature Trail to the adjacent upper road to provide a more level walking surface (average grade now is 3) and to reduce disturbance to waterfowl and other waterbirds, using the wetlands below the trail. The wetlands are nothing but a landscape of cattails with minimal water in the late spring if any water at all—two very poor excuses for relocating this portion of the trail.*

Response 1a–j. The proposed action (alternative B) did not recommend closing the Kenai Nature Trail or only allowing visitors to access it seasonally. We did propose to relocate two small sections of the trail to address disturbance to waterbirds that use the wetland impoundments along the trail and to create a more level walking surface. The final decision is to leave the Kenai Nature Trail unchanged but add an optional walking path to allow visitors to remain on the higher bench (figure 25 in the final CCP) where the trail drops down to the pond. Many visitors already cross on this upper bench, which is currently

in a closed area. This will give visitors who might not be able to walk this steeper portion of the trail the option to remain on a more level walking surface without violating a closed area boundary.

The refuge has and will continue to address the amount of cattails in wetlands that can be caused by keeping water levels static. The refuge has already begun drawing down and treating these large expanses of cattails to restore more open-water habitat.

Comment 2. *I personally like the portion of the trail from where it crosses the road and descends down to the slough, which it follows to the trail shelter; I appreciate not seeing houses and vehicles on Eastside Highway.*
Response 2. The draft CCP did not recommend any changes to this portion of the trail.

Comment 3. *The rationale for relocating the trail (p. 120) is to reduce disturbance to waterfowl and other waterbirds using the wetlands below the trail. Are there scientific studies which address this?*
Response 3. No, no studies specific to this area are available, but refuge staff have consistently observed waterbirds being flushed along the portion of the trail that comes close to the wetlands. Despite this resource disturbance, no portion of the trail will be relocated.

Comment 4. *The growing usage of the Kenai Trail suggests needs: widen the trail, provide more level grade, boardwalks where appropriate, hedge row of bushes or trees to block view of homes to the east.*
Response 4. We appreciate your suggestions to improve this trail. There may be opportunities in the future to continue improving the trail to provide for the safety and enjoyment of visitors.

Comment 5. *Page 91 and 145—Visitor Contact Area and the Kenai Nature Trail—second paragraph 7th sentence. The remaining trail is a soil footpath. [This] is not true. The remaining trail is 85 gravel and 15 soil.*
Response 5. The trail is now described as a gravel and soil footpath in the final CCP.

Comment 6. *Page 145. Third paragraph—At the visitor contact area—Then the fourth paragraph—Kenai Nature trail is 1.1 miles long. It starts at the refuge headquarters—Why two different names for the same starting point?*
Response 6. The visitor contact area and headquarters are located in the same building. The visitor contact area is open to the public, and the headquarters is the part of the building where the refuge offices are located.

Comment 7. *Page 95—What is the number of visitation for the Kenai Nature Trail and why has the counter been removed?*
Response 7. The counter no longer works and was removed. Over 6,000 people come to the visitor contact area annually, and many of these visitors walk at least a portion of the Kenai Nature Trail.

Comment 8. *See Exhibit for a line diagram with distances to features along the trail. Note the two suggested segments of trail construction 1) Sta. 23 + 75 construct a 180' by pass for visitors not wanting to negotiate the short (240,) steep section of the trail, 2) construct a 700' loop on the west side of the trail, starting at Sta.31 +95 and returning to the trail at Sta. 36+20. This was originally planned as part of the Kenai Nature Trail but due to the now defunct pistol range was never built. This loop would be on the elevated ridge (probably part of a dike for a pond never completed) and give visitors a view of ponds to the west, without any disturbance to waterfowl.*
Response 8. The current path of the Kenai Nature Trail will not be altered, and no expansions of this trail are planned.

Comment 9. *Page 120—As appropriate, relocate portions of the Kenai Nature Trail to the adjacent upper road. In other words where the trail crosses the service road, near the Potato Cellar Pond, close the trail that drops down and parallels the marsh. The purpose of this segment was to give people the feeling that they were away from civilization for a while. Away from houses, power lines, Eastside Highway view and noises. Relocating this segment would also mean abandoning the 128 foot raised boardwalk. Forcing people to traverse a 12 foot wide service road is no longer a trail experience.*
Response 9. The draft CCP did not propose to close or relocate this portion of the trail.

Comment 10. *Page 146—there is very little disturbance to waterfowl, most of this area has brush and trees along the Pond 8 slough to screen the waterfowl from birders and photographers have walked this trail dozens of times and nine times out of ten any waterfowl that are on the slough do not flush. Also part of the handicap trail parallels the southern end of the Pond 8 slough, with no vegetation for screening, so are you planning on moving that segment of the handicap trail back so disabled people no longer will have the opportunity to view waterfowl?*
Response 10. The draft CCP did not propose to alter the universally accessible trail. The Kenai Nature Trail route will not be changed except for the added segment where visitors can stay on the upper bench if they do not want to follow the steeper grade to the pond (figure 25 in the final CCP).

POND 8 TRAIL

Comment 1. a. *I support the development of the walking trail around Pond 8 (page 42) to allow access to more of the refuge. The document states "This trail may only be opened seasonally…", but it did not explain which season(s).*

b. *Open the new Pond 8 Trail beyond just the winter months.*

Response 1a–b. It is unknown what level of disturbance will occur on this new trail. While birds are nesting or concentrated during migration, the trail would be closed to provide sanctuary. Refuge management will determine which months this trail will be opened after monitoring waterbird response to this new use.

Comment 2. *Will the Kenai Trail relocation and Pond 8 walking trail be included in the [stepdown] plans? Will more detailed information regarding the trails be available in the plans and will the public have the opportunity to provide comments on the proposed actions?*

Response 2. Yes, with appropriate resources a visitor services stepdown plan will be completed within 5 years of CCP completion. This stepdown plan will be available for public review.

Comment 3. a. *The March 2012 planning update states: "A seasonal hiking trail would be added around Pond 8" but that is simply untrue. What is being proposed is to allow the public to walk along refuge roads some times of the year. I can only conclude that the people who wrote the conservation plan don't recognize the difference between a road and a trail.*

b. *Page 121—Rationale—left column 3rd paragraph. The proposed trail around Pond 8, it's not a trail—tell it like it is. Seasonally visitors would be allowed to walk on the dike road around the northern end of Pond 8, then south along a service road adjacent to the former residence site and then connect to Wildfowl Lane and thence east along Wildfowl Lane to the visitor contact area. Refuge manager will set the dates for visitors to have access to this road system and dates may vary from year to year. NOTE: Everywhere the reference to around Pond 8 is written it should be changed to read around the north side of Pond 8, as the road doesn't circle Pond 8.*

Response 3a–b. The public will be able to walk this gravel Service road to access a previously inaccessible portion of the refuge. With the availability of this single-lane road, it is both fiscally and environmentally responsible to use the existing infrastructure for this new opportunity. The trail would ultimately make a wide loop around Ponds 8 and 6, although it would not be immediately next to Pond 8 along the entire length.

Comment 4. *If the Service road is developed in to a trail there would be no need to cross any wetlands. I would hope walking would be allowed most of the year, not just the winter months.*

Response 4. The trail is next to wetlands that are used by numerous waterbirds for migration and nesting, including a concentration of great blue herons. The seasonal closure of this trail will minimize disturbance to waterbirds, and when the trail is open, visitors will have an opportunity to visit an additional section of the refuge.

Comment 5. *It is not a good idea to have the last part of the trail [new Pond 8 trail] on the roadway. True, anyone can walk on the road now if they want but making it part of the trail is a very bad and dangerous idea. Perhaps the trail could go a certain distance around the pond and end. Then folks could just walk back the same way.*

Response 5. We appreciate your comment. This is one of the challenges in proposing to open this new area to the public. The refuge will consider your suggestion and also work with Ravalli County staff to determine the feasibility of creating a walking path next to the county road.

Comment 6. a. *Page 146—Paragraph 5—The Kenai Nature Trail would be extended westward using the Pond 8 dike road. By definition this is not an extension of the Kenai Nature Trail. Suggest it should read as follows—Where the Kenai Nature Trail (Sta. 39+27 Exhibit B page 8) crosses the upper maintenance road, the segment of the maintenance road going south would be open seasonally for pedestrian walking. Description: Walking south for 335 feet from the Kenai Nature Trail to the junction with the Pond 8 dike road then westerly to the junction of the residence maintenance road and then south to Wildfowl lane and then east on Wildfowl Lane to the visitor contact area.*

b. *The proposed trail around Pond 8 would be 1.25 miles in length. This trail would extend the Kenai Nature Trail westward, then loop south and connect to the county road and then east along the county road to the visitor center. Side of Pond 8. This is not an extension of the Kenai Nature Trail; it is a spur off of the Kenai Nature Trail. The term around Pond 8 is misleading, as the proposed service road system only travels along the north side of Pond 8.*

c. *Page 146—Third paragraph—The proposed extension of the Kenai Nature Trail may require the construction of a boardwalk in wet areas. First this is not an extension of the Kenai Nature Trail, secondly why go off the maintenance roads for a short distance and construct a true trail section? The cost of construction and maintenance doesn't justify it. Third and last it is unlikely that the area would be wet in the winter when the area is open.*

Response 6a–c. In order to access this new trail from the east, visitors will need to use the Kenai Nature

Trail; the proposed trail is a spur off the existing Kenai Nature Trail. The trail will remain on the current Service roads and not require a boardwalk to be constructed. The current descriptions are meant to note its location.

Comment 7. *Page 145 Last sentence—This spur to the Kenai Nature Trail would provide additional education opportunities for wildlife viewing and photography, environmental education and interpretation. Page 95. Most wildlife observers visit in the spring and summer when the greatest number of migratory birds inhabit the area. So how does a seasonal (winter) opening of this road for pedestrians meet the Statement in the last sentence of paragraph 5 above starting with—This spur to the Kenai Nature Trail?*
Response 7. The trail will be opened seasonally beyond the winter months to provide wildlife viewing and photography, education, and interpretation opportunities.

Comment 8. *We use different terms for the proposed Pond 8 Trail. Suggests we choose one. By definition this is not a trail, it's more of a pedestrian walking area on refuge service roads and a county road. Suggests calling is Pond 8 dike road.*
Response 8. The new trail spur has not been officially named. Once it is opened, refuge staff will work with the public to select a new name for this seasonal trail. The current descriptions are meant to note its location.

Comment 9. *Suggest we add the description of the Pond 8 trail: Beginning at the intersection of the Kenai Nature Trail and the service road approximately Sta. 39+27—(see—Kenai Nature Trail map pg. 8) then south 335 feet to the intersection with the Pond 8 dike road, then west along the dike road to the intersection with the residence road, then south along this service road to the intersection with Wildfowl Lane, then east along Wildfowl Lane to the visitor contact area. All wording stating 'around Pond 8", should be changed to "around the north side of Pond 8 ". Around Pond 8 gives the impression that the walking area on the service roads circles Pond 8.*
Response 9. Although the proposed location does encircle Pond 8, this is the general description of the area where the new trail will be located.

Public Access (Roads and Other Trails)

Comment 1. *What is the possibility of opening more of the refuge to visitors, particularly those using nonmotorized means of travel? It seems as though hunters have access to much more of the refuge than wildlife observers/photographers and recreationists.*
Response 1. The refuge was established to manage for migratory birds and other wildlife. All national wildlife refuges are closed until portions are specifically opened for compatible public uses. Hunting use is seasonal and more limited in the number of participants compared with wildlife observation and wildlife photography, which account for most visitations and occur year-round. Archery hunting for deer also serves a management purpose to disperse and help control the deer population. Waterfowl hunting is limited to 654 acres of the refuge, and hunters must be within 10 feet of a Service hunting blind. The refuge does provide several trails for wildlife observation and photography, including blinds, and we will be adding 1.25 miles of trail along Pond 8 to create more wildlife observation and photography opportunities in a new part of the refuge.

Comment 2. *Was any thought given to developing a hiking trail or walking path in the northern portion of the Refuge, by Ponds 11, 12, 13, and Otter? This area could be accessed utilizing the road which takes off from the Hunter Access Parking Area and kiosk located on the Eastside Highway. That way visitors would have access to the southern, central, and northern portions of the Refuge.*
Response 2. No, but based on other public comments, the Service will determine the feasibility of constructing a viewing platform in this or a different portion of the refuge that is accessible to vehicles.

Comment 3. *The Friends of Lee Metcalf Refuge, in association with the refuge staff, offered motorized tours of the refuge. This was a great way to see areas of the refuge normally off-limits to the public. What is the possibility of the refuge staff offering such tours to the public as part of the Visitor Services actions? The tours were greatly appreciated by the members of the Friends Group.*
Response 3. Thank you for your comment. The refuge will continue to provide staff-led programs in places where, and at times when, the refuge is not open to general public access. Typically these special programs will be planned during special celebrations such as National Wildlife Refuge Week or International Migratory Bird Day. Such events will be preplanned by the visitor services staff in the station's annual work plan and publicized well in advance. In the past, such events have included special youth fishing events that are held in areas normally closed to the public; special guided nighttime events to provide opportunities for the public to listen for owls; and special guided programs for college and university students as part of the refuge's environmental education programs. Any special interpretive or wildlife observation programs offered will be open to the general public and will not be conducted for a select group.

Comment 4. a. *Paved trail from the south viewing area needs to be in a condition to allow wheelchair access.*

Many families walk the trail pushing a stroller they also need a good surface.

b. *Repave portions of the trail in the wildlife viewing area—it is no longer accessible to wheelchairs. Although there is erosion occurring in this area, the trail will not be washed away for years. In the meantime, the trail should be repaired.*

c. *The paved trail does not need to be replaced and smoothed out. There is no area on that trail that has holes to walk over. It is a trail that is very well smooth for people in wheelchairs going to the end and around and back.*

Response 4a–c. We agree that the trail needs to be maintained, and this issue will be addressed in future.

Comment 5. *Provide skiing and mountain biking on of the existing trails and roads on the refuge.*

Response 5. All of these activities are permitted on the county road. It would be difficult to accommodate both biking and walking on refuge trails; however, the refuge may permit snowshoeing and cross country skiing in support of wildlife observation and photography activities during the winter months when adequate snow cover is available.

Comment 6. *Identify plants along some of the refuge trails.*

Response 6. The refuge is currently working on this, and it was proposed in the draft CCP.

Comment 7. a. *The Lee Metcalf Refuge is a very important part of the social fabric of the Bitterroot Valley especially for older and handicapped individuals. There are limited areas on the Refuge that [are] accessible to these individuals and at least one of those areas is threatened by unnatural bank erosion caused by rock stabilization of banks upstream installed by private land owners. Floodplain Objective 1 states "Remove or replace hard points along Bitterroot River Channel unless they are protecting Non-service property or structures. The popular and well used handicapped access trail down to the river is a site that will be lost to erosion with no action. This area could be protected with a river friendly engineered log jam that would deflect the flow away from the bank, reduce water velocity and provide valuable fish habitat. I agree strongly with the plan about removal of rip rap but engineered log Jams have been used on many salmon streams in the Northwest to protect infrastructure, provide fish habitat and mimic natural river processes. This is a proven and ecologically friendly technique that mimics natural processes on rivers such as the Bitterroot which contain large amounts of woody debris and should be considered as a technique to protect important features on the refuge in an environmentally friendly manner. I believe that this technique would fit in well with the philosophy and goals of the CCP.*

b. *Page 102—Floodplain Objective 1—Strategies—3rd paragraph 4th line: education to inform visitors with information about the benefits of this process and the Service's plans to relocate facilities and eroded trails as appropriate. Where is there any benefit to losing any portion of the 188 acre WVA [wildlife viewing area]? Seems like a weak excuse for ignoring the situation.*

Response 7a–b. Due to the recent significant erosion of the wildlife viewing area and associated habitat, the Service will investigate this and other options for potentially slowing the erosion. The decision to move forward will be based on cost, effectiveness, and impacts on the environment and the river system.

Comment 8. *On page 20 of your draft plan you discuss working with the county to develop Wildfowl Lane. I hope you consider keeping the roadway safe and allowing for pedestrians and bicyclists as opposed to a major emphasis on motorized traffic. Slow speed limits and possibly signs noting multiple users may help in this regard.*

Response 8. Yes, we agree but this is a Ravalli County–maintained road. The Service has and will continue to work closely with the county to provide for the safety of visitors using this roadway to view wildlife.

Comment 9. *I am against making Wildfowl Lane into an auto tour route. There is plenty of traffic there as it is and keeps growing each year. Leave it alone.*

Response 9. In addition to providing interpretation of the resources along this road, the objective of designating this road as an auto tour route is to improve the safety of visitors who use it. Wildfowl Lane is used by approximately 143,000 visitors annually. These visitors pull off the road, stop in the middle of the road, and get out of their vehicles to view and photograph wildlife. These uses will likely increase as the communities around the refuge expand, regardless if the road is officially designated as an auto tour route. By working with Ravalli County staff to provide pulloffs and a walking or biking path, refuge staff will help increase the safety of visitors who use this road. In addition, providing interpretation of the refuge habitats that visitors can see from the road will improve their understanding and appreciation of the resource.

Comment 10. *Do not put new signs out on highway 90 and 93. This is very unnecessary and will cost a lot of money.*

Response 10. The benefit of providing this additional signage is to better orient visitors who are new to the area. The feasibility of placing a sign on Interstate 90 is very low. There is signage on highway 93 that the Service would like to improve to give better directions to the refuge. Additional details will be provided in the visitor services plan.

Comment 11. *I would like to see more hiking trails in areas in the north end of the refuge.*
Response 11. After reviewing options for providing additional trails for visitors, the decision was made to provide a new walking trail around Pond 8 (the central portion of the refuge).

Comment 12. *Page 46—Improve access to the WVA by replacing the gate with bollards (large rocks) that allow wheelchairs to pass through. How would Sweet Pea Sanitation Service be able to access the toilets? In addition refuge ATVs, side by side Mule and other small vehicles would require either a front end loader or a backhoe to move the bollards. An alternative would be to widen the existing paved path on the south side of the hinge gate post. This might require kind of a railing as the ground slopes off along the edge.*
Response 12. The bollards can be removed as needed. The bollards the Service is proposing to use would not require this type of heavy equipment to move. However, the Service will consider other options for improving access for visitors who use wheelchairs.

Comment 13. *Middle column—No public roads (namely Wildfowl Lane) would be eliminated. Why is this sentence even in here? The refuge has no jurisdiction over the county road.*
Response 13. We added this statement so that the public would understand that the Service does not propose to reduce vehicle access by existing public roads (including Wildfowl Lane).

Comment 14. a. *Page 90—Wildlife Viewing Area—the WVA has three pedestrian trails that total about 2.0 miles: Ponderosa Trail, Metcalf Trail and Slough Trail. Due to erosion by the Bitterroot River and deadfall the Cottonwood Trail is no longer maintained and impassable in a significant portion of the trail.*

b. *Page 145—Wildlife Observation and Noncommercial Photography—right column—2nd paragraph—the WVA located in the southwest comer of the refuge, has four trail segments that total 2.5 miles. The majority of the Cottonwood Trail has been lost due to the erosion actions of the Bitterroot River and is no longer a viable trail. Paragraph should now read—The WVA, located in the southwest corner of the Refuge, has three trail segments that total 0 miles.*
Response 14a–b. This is true; the Cottonwood Trail is gone. However, in total 2.5 miles of the trail remain. Internally, the refuge does not use these separate trail names. They are referred to as the WVA trails. For consistency, the individual trail names have been removed from this final CCP and will now be referred to as the WVA trail system.

Dogs on the refuge

Comment 1. *The problem with irresponsible dog owners is severely and negatively impacting the wildlife habitat. The sign at the bridge [in the WVA] is ignored.*
Response 1. We agree, and it is a continuing challenge for refuge management with current staffing. If this continues to be a significant issue, the Service will prohibit all dogs on refuge trails or minimize public access to areas that are being abused.

Cultural and historical resources

Comment 1. *The Lewis and Clark National Historic Trail is listed as a special value in Section 2.5 of the draft CCP. We noted the statement on page 20 that the Refuge "contains portions of the Ice Age Trail, the Nez Perce Trail and the actual (not officially designated) Lewis and Clark Trail." As stewards of the Trail charged with identifying the historic route, the NPS [National Park Service] is interested in learning more about this implied discrepancy in designation. The Trail is defined in the National Trails System Act as the outbound and inbound routes of the Expedition, extending from Wood River, Illinois, to the mouth of the Columbia River in Oregon. We recognize that the exact historic route of the Expedition in the area of the Refuge is open to interpretation. Current research that we're aware of shows the Trail bracketing the eastern and western borders of the Refuge. This research indicates that the Expedition likely did travel in and very near the current Refuge boundaries. The NPS would welcome a discussion on the historic Trail location in the area.*
Response 1. The document has been modified to reflect your comments, and we welcome any future dialogue about the value of the refuge to this historic trail.

Hunting and fishing

Comment 1. *Summary Page—"The Refuge", hunting is mentioned as a wildlife dependent compatible public use. This concept should again be mentioned and carried through in all goal statements in the rest of the plan. Otherwise it gets lost in the rest of the text.*
Response 1. Congress has deemed hunting one of the six appropriate wildlife-dependent uses of refuges, and this use is supported in this document. Hunting was described as a wildlife-dependent public use throughout the draft CCP including the summary and chapters 1, 3, 4, 5; the glossary; appendix A; and appendix D.

Comment 2. *Page 89, Visitor Services—Hunting and fishing. Text should make clear that these activities would continue and be major visitor uses.*
Response 2. Having objectives and strategies in the plan for both of these activities, including compatibility determinations, confirms the refuge's commitment that these uses will continue.

Comment 3. *Page 109, general discussion of ponds—Will proposed pond management allow the same number of duck blinds in the future for hunting as was permitted in say 2010? What will be the proposed number of increase or decrease of blinds with the approved CCP?*
Response 3. The goal is to increase the quality of the hunt by maintaining the same number of blinds while replacing some of them and increasing the distance between them. There are other improvements including replacing kiosks, improving parking areas, ensuring more consistent water delivery, and improving wetland and upland habitat.

Comment 4. *I am not in favor of charging fees for use of hunting blinds because it is [a] restrictive measure and affects the youth and retired hunters with an unfair disadvantage. If waterfowlers have to pay a fee than birdwatchers and other users should also be taxed.*
Response 4. The draft CCP did not propose a user fee for using the waterfowl blinds.

Comment 5. *Development of furthering pheasant and waterfowl hunting opportunities on refuge for youth should be given high consideration. Managing populations by harvest is biologically essential.*
Response 5. Given the size of the refuge it is difficult to accommodate multiple uses, particularly when introducing firearms. The refuge is not opposed to providing additional hunting opportunities for youth, but refuge management will need to determine if it can be provided without compromising the safety of other visitors.

Comment 6. *My impression is that archery hunting for whitetail deer is not reducing the population enough. If a short season at the end of, or in lieu of, the last ten days of archery season were open to shotgun, slug only, the whitetail overpopulation problem could be reduced.*
Response 6. The CCP proposes that refuge staff work with the State to determine if a firearm hunting season is feasible.

Comment 7. *As a lifelong resident of Montana who spent 20 years of my life in the Bitterroot Valley, I would really like to see hunting opportunities continued and expanded upon for the Lee Metcalf Wildlife Refuge. As more and more of the prime river bottom country in the Bitterroot posts No Hunting or Fishing signs, the places that we can take our kids to pass on the hunting and fishing tradition shrinks. As a place that is easily accessible and holds lots of game like the Lee Metcalf becomes more accessible and more opportunities are opened up, the more we get our kids involved in the outdoor sports, the better we are.*
Response 7. The refuge contributes significant time and resources to provide quality hunting opportunities including improving waterfowl hunting blinds, providing parking areas, and providing law enforcement. The Service will continue to determine if additional opportunities can be provided without decreasing the quality of the hunt or significantly impacting other users or wildlife.

Comment 8. *I'd prefer to see the hunting blinds separated out further and have more opportunities that require longer walks to access the blinds but have a reward of being farther from other hunters.*
Response 8. The refuge is currently replacing multiple blinds and relocating some of them to better distribute hunters.

Comment 9. *I am against using shot guns and muzzle loaders for deer hunting. I hope you do not plan on all hikers to wear hunter orange! You mention having too many deer and yet we rarely see very many when driving through (regardless of the time of day) compared to the late 90's when we would consistently count 20 to 30 (even 40) when driving thru.*
Response 9. A significant consideration when determining with the State whether to pursue a limited firearm harvest will be the safety of visitors and neighboring landowners. If it cannot be done safely and it does not support management objectives, the Service would not pursue it.

Comment 10. *Can you open some of the ponds for bass fishing for the public during the fishing season? It's stated that bass are becoming an invasive problem in the draft CCP. You have hunters in the refuge in the hunting season.*
Response 10. The area where the bass are located is also a waterbird nesting and migratory area (spring through fall). Allowing fishing along these ponds would disturb these birds. Fishing is permitted in the WVA and along the Bitterroot River. Future seasonal drying of these ponds will decrease bass numbers and increase more desirable subaquatic vegetation for waterfowl and other waterbirds.

Comment 11. *Page 144—Anticipated Impacts of Use—right column last sentence—Furthermore, despite the potential impacts of hunting, a goal of Lee Metcalf Refuge is to provide opportunities for quality wildlife-dependent recreation. Why is this statement not included under Wildlife Observation and Noncommercial Photography. Hunting seems to be the number one priority under current management.*
Response 11. We did not intend to highlight one wildlife-dependent recreational opportunity over any others. All current compatible wildlife dependent recreational programs will continue, with many being improved or expanded.

Law enforcement

Comment 1. *Trash is a growing problem.*
Response 1. We agree. This is always a challenge when areas are opened for public use. If these types of impacts are significant enough, they can affect the compatibility of that permitted activity with the purposes of the refuge. We will continue to educate visitors and patrol areas for littering. Some of this litter floats into the refuge through the canals and during flood events. We are fortunate to have a group of dedicated volunteers who assist with periodically collecting trash and educating visitors about the impacts of littering.

Comment 2. *Page 23—Refuge law enforcement officers have monitored diversions along this ditch in the past. Why has there been no enforcement of the ditch water rights?*
Response 2. Refuge staff currently inspect all three lateral ditches to clean them and monitor water use. The Service is currently in the process of piping these ditches to better manage the timing and application of the refuge-allocated share of water for wildlife management and irrigation.

Visitor services—general comments

Comment 1. *Under Chapter 1 Introduction it states, the Refuge has 143,000 visitors each year. Where is the factual evidence for this number? On page 97 it states an estimated 143,000 visitors." There is no check-in point along Wildfowl Lane. There is no way to determine who is a "visitor" on this road.*
Response 1. The refuge has a car counter on Wildfowl Lane, which travels through the refuge. Although we can't say for certain if each motorist is there to visit the refuge, each passes through the refuge (refuge land lies under Wildfowl Lane) and is counted as a visitor. In addition volunteers keep a count of visitors who come to the visitor contact area. Hunter visits are also counted, and there is a people counter in the WVA. The visitors on the west side of the refuge or floating the Bitterroot River through the refuge are not counted. The number 143,000 is an average of total visits spanning the years 2005 through 2011.

Comment 2. *Page 127, rational, sixth line. The refuge hosts over 143,000 visitors annually. Currently, most visitors are greeted in the small visitor contact area—Misleading statement, this implies that the majority of the 143,000 visitors annually visit the small visitor center. According to your report on page 49 & 95, the number visiting the visit center is around 6,000 annually.*
Response 2. This has been corrected in this final document.

Comment 3. a. *How can more traffic, more people, more encroachment, and more dogs not negatively impact this "sanctuary" as it has already done?*

b. *First of all, the refuge is a wildlife refuge, not a people refuge. So when you talk about staffing up with three more positions aimed at people, I object. Wildfowl Lane is for the people, the headquarters complex is for the people and the various programs are for the people and that is, by and large, enough of that...Now let's put together a plan—for the wildlife…*
Response 3a–b. We agree that refuges should be managed for wildlife first. That is why the Service has appropriate use and compatibility policies to ensure that any activity permitted on the refuge does not materially detract from the purposes for which it was established. Balancing the desires of visitors with the needs of wildlife is always a challenge for any refuge staff. On Lee Metcalf Refuge, the Service attempts to manage uses and other disturbances to wildlife through time and space, and a vast majority of the refuge is only open seasonally to protect migratory birds and other Federal trust species. We must provide for wildlife first, and only then, whenever compatible with this objective, can we also manage for wildlife-dependent public uses of the refuge.

Comment 4. *We recommend that a permanent group viewing blind that can accommodate up to 20 people be constructed that would overlook one of the ponds at the Refuge. This will add to the viewing pleasure for visitors without disturbing the wildlife.*
Response 4. The Service currently provides two wildlife viewing and photography blinds and will be providing two mobile blinds. In addition, waterfowl hunting Blind 2 will be converted to a seasonal, universally accessible photography blind. A blind that could accommodate 20 visitors would require a significant footprint along the refuge wetland impoundments.

Comment 5. *We do not share the vision for expansion of the visitor contact area. The Refuge is only 2,800 acres and the expansion plans take up more space which only reduces the area left for wildlife. Any expansion of facilities should take place off the Refuge.*
Response 5. The expansion would be next to the current refuge facility in an area that is already designated as a headquarters site—a disturbed area.

Comment 6. *Page 90, Wildlife viewing area—1st sentences states 4 trails, but map on page 41 show only 3 trails.*
Response 6. The trails on page 90 refer to the WVA.

Comment 7. *I like the expansion of educational programs into the schools. Great idea.*
Response 7. Thank you for your comment.

Comment 8. *Expansion of Visitor Center: Is it necessary? How many of the visitors counted actually enter the center?*

Response 8. Expanding the visitor center will allow the refuge to accommodate larger groups and provide additional areas for interpretation of refuge resources and management programs. Currently, 6,000 visitors enter the visitor contact area. Also, on many occasions this space is filled to capacity by visitors and groups.

Comment 9. *Do not enlarge the visitor center or bring in professionals to design it. This will cost a fortune and you have great displays as it is now. True, it is small, but it is friendly, homey, and reflects Stevensville's small town way of life.*
Response 9. The visitor center expansion will accommodate larger groups, many of which only stop at the contact area, and provide additional area for interpretation of refuge resources and management direction. Any structure will retain the characteristics of the refuge and the community and will be a welcoming environment.

Comment 10. *We believe a continued strong emphasis on education is essential to the long term future of [Lee Metcalf Refuge]. We also believe managing for a diversity of habitats and species provides much greater educational value than managing only for waterfowl.*
Response 10. We agree and feel we have integrated these concepts into this CCP.

Comment 11. a. *It would be nice to have a viewing platform in the parking area on the south end that can be used for photography (Hollingsworth Area).*

b. *Need additional platforms for viewing and photographing wildlife.*

c. *Page 146—An 18 to 20 foot high observation tower built on the west side of Wildfowl Lane, would afford wildlife viewers the opportunity to view the waterfowl & waterbirds using the Hollingsworth Wetland Project. As it is now there is very little opportunity to view the birds. A feasible location would be about 0.2 of a mile north of the gate entrance to the duck hunter sign in. This location is flat and construction of a three car parking would require little effort.*
Response 11a–c. We will be investigating opportunities to provide a wildlife viewing platform (that is compatible with our primary purposes) without impacting the view and experience for other visitors.

Comment 12. *I hope you continue to allow adventure races or similar events that have been held in the past. These were held in areas that the public is not normally allowed, but no wildlife seemed to be disturbed during this event. I think they served an environmental education purpose.*
Response 12. Any activities such as these will need to be deemed appropriate and compatible if they are permitted to take place on the refuge.

Comment 13. *In general plan B wants to greatly increase visitor use of the refuge. I am wondering if bringing all those extra people to observe wildlife will simply cause the wildlife the retreat further back into the areas we cannot go. Therefore you would be defeating your purpose. Instead of a wildlife refuge it might become a "people park". I am not against education and having more folks enjoy the refuge and all it has to offer—but this must be done with much discretion.*
Response 13. The refuge is constantly balancing its primary purpose of managing and protecting areas for wildlife while providing opportunities for the public to engage in compatible wildlife-dependent recreation. There are large portions of the refuge that are not accessible to the public most of the year. The objective is to provide refuge areas, particularly when migratory birds are present. We appreciate your comment and will always use much discretion when expanding refuge access.

Comment 14. *Is it possible to allow ice skating on one of the ponds when cold enough (if it wouldn't disturb the wildlife).*
Response 14. This is not considered a wildlife-dependent priority public use and could be very dangerous given the lack of suitable ice in the winter due to springs in the ponds.

Comment 15. *Please keep signs within the refuge very limited and discreet. You don't want to lose the open, wild environment with distracting signs all over. Especially for photography.*
Response 15. We agree, and any added signs will be evaluated for their value to our visitors.

Comment 16. *Page 149—Commercial Filming, Audio Recording and Still Photography—Page 150—Justification—At the end of this paragraph add—The above restrictions do not apply to these activities within the boundaries of Wildfowl Lane and county ROW [right-of-way].*
Response 16. The refuge owns the land under the county road bed and has the authority to enforce refuge regulations; however, this is difficult to enforce in right-of-way areas, including the county road.

PARTNERSHIPS AND COMMUNITY RELATIONS

Comment 1. *The refuge is a community asset and as such the input of community representation should be sought on decision that will impact the refuge. I would hope that such a philosophy would be reflected in the plan.*
Response 1. We agree, and the CCP process incorporated public involvement including requesting comments such as those found in this appendix.

Comment 2. *Page 20, Special values—long list of developments on refuge. The former "Friends" partnership should be credited and referenced on the items they enabled. Without "Friends" assistance, likely the refuge would not have accomplished those items. Page 24, Visitor Services—again credit "Friends" partnership for making possible many of these facilities/services. Page 93, Kiosks—State these were made possible by the assistance of the former "Friends" partnership.*
Response 2. In the history of the refuge there have been innumerable contributions to the refuge including groups and individuals. It would be difficult to list all partners without risking excluding some. We do appreciate and recognize the contribution of all partners, past and present.

Comment 3. a. *I was bothered by the fact that your planning team skirted the issue of the huge cleavage the FWS [U.S. Fish and Wildlife Service] has created in the Stevensville and Bitterroot community by its handling of its relationship to the local public and friends group here.*

b. *Under partnerships I encourage you to work with Friends of the Refuge groups, as opposed to the status quo of not working with them.*

c. *The term Partnerships is mentioned at least 30 times in the document, but nowhere is a Friends Organization mentioned Quote from The US. Fish & Wildlife Service Publication—Conserving the Future wildlife Refuges in the Next Generation—"Develop and nurture active, vibrant friends groups on every refuge'. So why is this not addressed in this CCP?*
Response 3a–c. The Service is not opposed to partnerships that support the goals, objectives, and priorities of refuge management. The Service has added language to the document that in the future the refuge staff would pursue and foster a refuge advocacy group that will support refuge management priorities including the achievement of the goals and objectives described in this and other refuge planning documents.

Comment 4. *A more concerted effort to recruit volunteers and non-profit wildlife groups will benefit the refuge. Volunteers from Ducks Unlimited, Pheasants Forever, Rocky Mountain Elk foundation etc. would gladly expand and improve recreational opportunity on the refuge without needing to fund additional staffing.*
Response 4. We have a large group of dedicated volunteers to work on many refuge programs; however, volunteers need direction and oversight by a Service employee. This can be very time consuming, although the overall benefits are substantial and outweigh the effort. By recruiting an additional visitor services staff person, the refuge would be able to recruit and train additional volunteers that could assist with implementing the programs described in this document, offsetting costs.

Comment 5. *Chapter 2 The Refuge—seem to me there should be explained the history of the [Ducks Unlimited] partnership that allowed for and accomplished the construction of many of the dams and levees for wetland creation. Likely without that partnership the FWS would not have had the funds to build these ponds, or at least not as many of them. This [Ducks Unlimited] partnership should also be mentioned again on page 21 bottom of page in "Wetland Impoundment" text. Suggest Metcalf get signs and put them up at prominent places.*
Response 5. The refuge has erected signs that acknowledge the contribution of partners including Ducks Unlimited; however, signs can create visual clutter. The Service appreciates the contributions of these organizations as well as their biological expertise and commitment to the refuge. Since the refuge was established in 1964, there have been dozens of partners that have completed work on the refuge. It would difficult to list them all in this in document without risking excluding an individual or group.

Operations and Facilities

Comment 1. a. *The refuge is proposing to increase staff by 3.5 individuals. I suggest that with consistency in management there would be no reason for that increase in staff.*

b. *In general I am in favor of plans that don't expand the staffing unless the refuge were to expand in size.*
Response 1a–b. One of the goals of completing a CCP is to provide consistency in management and build upon successful programs. There are new and expanding challenges to refuge management, including invasive species, contaminants, declining migratory bird species, infrastructure maintenance, and habitat restoration. Many of these issues have been ongoing and not adequately addressed. The refuge has actually lost staff members as these challenges increased. With a clearer direction and implementation of this plan, refuge habitats will improve, and the visitors will be provided quality programs. This direction will not change even if no staff members are added; however, some of the actions will require additional staff members to accomplish.

Comment 2. a. *Under Alternative B "Proposed Action" solutions put forth such as hiring an assistant manager, biological technician and visitor center coordinator, improve road, professional signs, and updated buildings. How do you justify more cost to the taxpayer who is already overburdened with ever expansive Federal bureaucracy while the taxpayer becomes poorer and poorer?*

b. *With all the changes mentioned in Plan B, just where is the money coming from? The federal government is broke, economy is terrible. I suggest you come*

up with a plan that does only what is necessary at first with long goals as the money becomes available.
Response 2a–b. Some of the objectives and strategies described in the final CCP can be accomplished using current resources—that is a benefit of this type of long-term planning. Even if the refuge doesn't receive any additional resources, particularly in this economy, this plan helps the refuge staff ensure that they are using what resources they have on the highest priority habitats, species, programs, and issues. Additional funding, including staff, will be dependent on available funds and regional priorities for the Service as stated in beginning of this document:

> The CCP details program planning levels that are sometimes substantially above current budget allocations and thus are primarily for Service strategic planning purposes. The CCP does not constitute a commitment for staff increases, operation and maintenance increases, or funding for future land acquisition.

Comment 3. *With today's emphasis' on reduced Federal government funding, I don't see Metcalf refuge getting the funds to implement Alternative B, let alone maintain existing management, Alternative A. This makes renewing the "Friends" partnership more compelling. Somewhere in the text of the plan, creating a Friends partnership should be a program objective and clearly spelled out. If it is in there, I did not see it.*
Response 3. See responses to comments 3a–3c under the section above entitled "Partnerships and Community Relations." The Service has added language to the document stating that in the future, the refuge staff will pursue and foster a refuge advocacy group that will support refuge management priorities including the achievement of the goals and objectives described in this and other refuge planning documents.

Comment 4. *Further discussion justifying the need of a deputy refuge manager (admin position [at] GS–11) instead of a full-time wildlife biologist would help. Having a certified [wildlife biologist] on board could possibly negate the necessity of employing a biological science technician in addition to the seasonal biology technician and provide consistent effort in accomplishing refuge scientific conservation goals.*
Response 4. The intent is to recruit an assistant manager with a strong biological background to assist with both administrative and management activities along with the biological program. Much of the work, including controlling invasive species and monitoring, would be more appropriate for a science technician directed by this assistant and the manager.

Comment 5. *Bringing aboard a visitor services specialist to augment the duties of the current outdoor recreation planner seems a bit unnecessary in view of the refuge's plan to involve more volunteers to perform this task. As you are aware, one of the main goals of government is fiscal responsibility and adding a full-time GS–7/9 to staff a reception area that is busy only about three–four months of the year may not be appropriate.*
Response 5. Staffing the information desk in the visitor contact area would be a very small part of the assigned work duties for a visitor services specialist. Typical assignments would include developing new programs for students, teachers, and adults; leading tours and presentations; assisting with special events; leading onsite and offsite environmental education programs for a variety of audiences; and recruiting, training, and supervising current and new volunteer staff. As described in this plan, there are many more opportunities to interact with and provide new, quality programs for the public, students, and the surrounding communities.

Comment 6. *Use the value of gravel from dikes to pay for the cost of removal (sell the gravel).*
Response 6. This is a good suggestion; however, the refuge would have to determine if this commercial use is feasible and compatible. Funding from the sale of refuge resources would be deposited into the government's general fund, rather than into the refuge budget.

Comment 7. *I am a hunter education instructor that teaches at Lee Metcalf. I am very thank full to see that you want to continue to support our efforts in teaching youth how to be safe with firearms. From what I can see in the plan I see that the support will be continuing, however there has been some question as to whether or not we will be able to continue doing the live fire exercise for our field courses on the range by pond 8. I do not see anything in the plan that addresses the continued use of that range area or the removal of the range. We only use 22's on the range and it only occurs twice a year once in the spring and once in the fall for only a few hours. I appreciate the use of the facilities for the hunter education courses and would like to ask that the continued use of the range be allowed for our live fire exercise. I would be more than willing to donate my time to remove unused structures within the range area and work on that area so it is not as visually unappealing and more aesthetically appealing to others who do not want to see that kind of thing on the refuge.*
Response 7. The refuge will continue to support and participate in hunter education programs; however, the firing range is to be closed within a year (a decision made outside the scope of this plan), so any fire range activities would have to take place off-refuge in the future.

Comment 8. *Page 46—Roads & Trails—Action—Left column—Maintain 18.1 miles of existing roads, including 2.8 miles of public roads. (Wildfowl Lane) Why is this in here? The refuge doesn't maintain the county road!*
Response 8. In this instance (alternative A) the word "maintain" meant that the refuge does not have any plans to reduce the number of miles of roads on the refuge. Perhaps the word "keep" would have been a better choice and less confusing.

Comment 9. *Page 91—Environmental Education—[states] there is an amphitheater and an outdoor pavilion. The previous manager named it the Environmental Education Shelter and a plaque at the site bears that name. Page 92—Schools—2nd paragraph [calls it an] outdoor education shelter.*
Response 9. In the final CCP the name "environmental education shelter" has been consistently used when referring to the structure behind the refuge headquarters.

Comment 10. *Page 127—Facilities, Equipment and Supplies Objective. Purchase an excavator to complete proposed restoration projects. To buy an American built excavator you are looking at a cost of $150 K to $185K. This doesn't include all the fuel and maintenance cost, all these cost for a piece of equipment that would be used about six months out of the year at best. It would be more economical to contract with a local excavation contractor.*
Response 10. We don't disagree with your comments. The refuge is currently renting and borrowing equipment as needed, but over time, purchasing this piece of equipment would be more economical. The refuge will first pursue opportunities to borrow or receive transferred equipment from other Service stations at no cost prior to purchasing any equipment.

Comment 11. *Page 145. Fifth Paragraph—second line—Blind 1 is located one-third of a mile from the visitor contact area on Pond 8. Path from trail to blind is 150 feet. Sixth line—Blind 2 is located one-third of a mile from the visitor contact area. Blind 2 is located 1.0 mile from the visitor contact area. Path from trail to blind is 970 feet.*
Response 11. These corrections were made in the final CCP.

Floodplain Restoration

Comment 1. *The EPA [U.S. Environmental Protection Agency] considers the protection, improvement, and restoration of riparian and wetlands areas to be a high priority, since wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. We support the proposed actions that would promote a more naturally functioning aquatic ecosystem through reconnection of floodplain habitats with the Bitterroot River, and increasing opportunities for overbank and backwater flooding into and out of the floodplain. While the proposed actions would decrease lentic wetland habitats created by impounding water at the refuge, soil types and historical vegetation data suggest that several of the impoundments or ponds were once forested or consisted of native grasslands. The proposed actions would restore natural riparian habitats and expand cottonwood gallery and riverfront forest habitat for migratory birds and other wildlife.*
Response 1. We agree. Thank you for your comment.

Comment 2. *River and stream connectivity would be reestablished, fish passage improved, and native cold water fisheries would be enhanced through restoration of Francois Slough and North Burnt Fork Creek.*
Response 2. We agree, and these long-term benefits were part of the decision to propose this restoration project.

Comment 3. *Since the primary focus of the National Wildlife Refuge system was to create wetlands, the proposed action to encourage the expansion of the Bitterroot River floodplain by sacrificing ponds near the river is counter to that purpose. We would like for the Refuge to retain the current ponds, especially Ponds 11 and 12. The ponds add diversity to the Refuge. By expanding the river riparian zone, the bird diversity will decrease, and the Refuge will be adding the same habitat that exists for miles upstream and downstream from the Refuge.*
Response 3. The primary focus of the National Wildlife Refuge System is to protect migratory birds and other Federal trust resources (wildlife that migrates and threatened and endangered species) and their habitats. There has never been any mandate or primary focus to create wetlands; nevertheless, this has happened on many refuges, including Lee Metcalf. The intent of creating these wetlands was to impound water for wildlife, particularly waterfowl, which has always been a priority species for the National Wildlife Refuge System. We have learned over time that impounding water at the sacrifice of native habitats was not the best and highest use of these lands, particularly refuges that are outside the Prairie Pothole Region of North Dakota, South Dakota, and eastern Montana. Historically there were few natural lentic (still, fresh-water) wetlands on Lee Metcalf Refuge and it has never been a major contributor to the continental population of waterfowl; nevertheless, over a third of the refuge is covered by wetland impoundments. Ponds 11, 12, and 13 were constructed near the migrating river channel. They are experiencing a high degree of erosion into the channel. By returning a portion of these impoundments to a stream channel,

riparian areas (such as cottonwood forests) would be restored. These forests are some of the most productive habitat in Montana and are home to a wide variety of birds, mammals, reptiles, and amphibians. In addition, the Service is proposing to retain almost all of the remaining wetland impoundments found on the refuge. In the short term, the structures will be replaced for management of these impoundments until the Service receives the funding to work with an engineer and hydrologist to reconnect Three Mile Creek to the Bitterroot River through this area. There will be a decrease in waterbird use once the structures are removed, but there will be an increase in habitat diversity and restoration of biological integrity of the historical gallery and riverfront forest.

Comment 4. *This floodplain refuge which provides a diversity of habitats for a balanced species base should continue to be managed for them but don't overlook the fact that waterfowl were a primary reason for this landscape to become preserved and this fact should not be compromised.*
Response 4. The plan does not overlook waterfowl. There is a goal and numerous objectives for managing wetland impoundments for waterbirds, including waterfowl.

Comment 5. *North Burnt Fork Creek on the Refuge: This segment of the creek has water control structures that need well-planned, consistent management. Water control structures result in temperatures and instream flow problems, unnatural water level fluctuations are likely to be slowing native riparian vegetation establishment, and are document as barriers [to] aquatic movement of fish and other species.*
Response 5. The CCP does propose to work with engineers to remove those barriers in North Burnt Fork Creek (including structures) that impede native fish movements. The long-term goal is to restore this stream section and associated riparian habitat.

Comment 6. *The plan talks about dropping the water levels on ponds to restore gallery forest. Do you know how many acres of the ponds will be converted back to this forest habitat?*
Response 6. At this time, we cannot say definitively where the water level would be, but it will be below the highest areas of that part of the floodplain. The first part of this process will be to survey the area and then determine the types of soil in this part of the impoundments to help evaluate where this restoration would be most successful. We would also use benthic maps to select the most appropriate areas to expose for planting and restoration.

Comment 7. *The preferred alternative described in the CCP Environmental Assessment recognizes the natural geomorphic and hydrologic processes of the Bitterroot River. Allowing these processes to function in a more natural manner within the Refuge will increase the likelihood of achieving long-term restoration of native habitats both along the river and in upland areas. Focusing on native habitat restoration will benefit a wide range of vertebrate species and in turn, attract diverse recreational interests. The NPS [National Park Service] supports this holistic, ecosystem-based approach and encourages adoption of the preferred alternative.*
Response 7. That is our long-term goal—well said.

Comment 8. *I am not in favor of trying to manipulate the river to prevent it from changing its channel. That is a necessary part of a healthy river system and the long term effects of excessive channeling and diking can be seen in many other areas in a lack of fish and river biomass.*
Response 8. We agree, and we are trying to facilitate the river's more natural fluctuations within the refuge; however, this will be a slow process that will take careful planning and monitoring.

Comment 9. *I have read through much of the CCP for the Lee Metcalf Refuge and I am very impressed with the effort that has been made in this plan. I am focusing my comments on Section 5.2 and agree completely with the spirit of the strategies. I think this plan will greatly improve the ecological functions of the Refuge by restoring the natural river and flood plain functions. However, the Bitterroot River is highly manipulated both upstream and downstream of the Refuge and natural processes will never be completely restored so I believe that the Floodplain Objective 2 should take into consideration this reality.*
Response 9. We agree and have considered these factors as we developed these objectives and strategies.

Comment 10. *Page XIII—The first of at least 23 times that gallery forest is mentioned and never a definition of what a gallery forest is. Add it to the Glossary on page 129 with a definition. Also add Tame Grasses with a definition.*
Response 10. We have added definitions of these terms to the glossary.

Comment 11. *Page 30—Flood Plain Actions—transition Ponds 11, 12 and 13—or portions of these pools to riparian and gallery forest. From the Eastside Highway Pond 13 affords a spectacular view of marsh land, pool water and the Bitterroot Mountains. See reference in Exhibit—A page 7.*
Response 11. We agree that this is a good place for visitors to see the refuge from the road. The proposed restoration of this area will be visible and interpreted for visitors. Until this takes place, the Service will

be replacing or maintaining the water management structures.

Comment 12. *At approximate Mile Marker 6.8 the refuge boundary Carsonite post are 139 feet west of the edge of Eastside Hwy 203. However the four strand barbwire fence is only 36 feet from the edge of the Eastside Hwy. This discrepancy runs north for approximately 1,100 feet. The Barbwire fence should be moved back to the correct boundary. This would also allow birders & photographers the opportunity to view the Bitterroot River.*

Response 12. The recent U.S. Bureau of Land Management survey better described the boundary along this and other areas of the refuge. Moving this and other fences (which are not exactly on the refuge boundary) would not improve wildlife habitat but could provide additional public access to visitors if the refuge opens this area to public use. Current trespass onto closed areas of the refuge from this road is a problem. The Montana Department of Transportation has an expanded right-of-way in this area with plans to improve the roadway. The refuge will evaluate placing a public viewing platform in this general area. The refuge will continue to work with the Montana Department of Transportation to provide quality wildlife viewing opportunities and appropriate and compatible access.

Comment 13. *Diversity drives wildlife volume as far as I'm concerned—and the refuge offers a lot of it to be sure. But management should be aiming more aggressively toward diversification and habitat improvement. Looking at figures 7 and 19, it is readily apparent that there is quite a bit of water available in the form of ponds, sloughs, creeks and even ditches. Wildlife thrives near water. I favor alternative C because, as I read it, it has the most aggressive approach to maintaining and improving that resource and others. When I hear you talk of letting swampy areas or ponds go back to forest or grassland, I cringe. The dikes and ponds should be aggressively replaced, maintained and controlled to maximize the wetland habitats.*

Response 13. We agree that habitat diversity is very important to wildlife, and this is why the Service has proposed to enhance the diversity of the refuge habitats by restoring and enhancing riparian habitat on the refuge. This habitat type covered larger areas of the refuge at one time and is very important to a whole variety of wildlife. In addition, the majority of the wetland impoundments will also be maintained and enhanced.

Comment 14. *You speak of favoring the improvement of gallery forests. I've been a professional forester, for just short of half a century and I don't know what a gallery forest is. I have a good idea of what you are talking about but I could not find a definition any where in the text, perhaps I missed it, nor is it listed in the glossary. Be that as it may, those old forests were largely destroyed by the white man's agricultural movement and they need to be replaced if you want to return to the old days with refuge management. I would really recommend a large scale tree and shrub planting effort.*

Response 14. We have added a definition of gallery and riverfront forest to the glossary. This plan does propose to expand this forest type, which may require planting to facilitate the natural regeneration processes.

Comment 15. *I'd like to see a significant timber stand installed all along the southeastern border of the refuge from the Wildfowl Lane on the south clear up to the Potato Cellar Pond in the north. Small stands of one to five acres could be scattered throughout the grasslands. Plans should include future intervals of addition and replacement to all of these stands to provide eventual diversification in age classes to maintain health of the stands.*

Response 15. This 15-year CCP proposes to begin restoring historically forested areas. This will be a slow process but should restore some of the natural diversity found in this part of the valley. Historically, the part of the refuge you describe was more grassland and sagebrush.

Comment 16. *The wildfire north of Johnny Houtchens old house destroyed a number of big willows and pines; these trees need to be replaced as well.*

Response 16. The big willows are a nonnative species (*Salix alba*) and are resprouting on their own. In the future, it is likely that native willow species, pines, and cottonwoods will be planted in the area as well as other native shrubs for species dependent on riparian vegetation.

Wetland Impoundments

Comment 1. *On page 109, it states that "Overall, it is suspected that the refuge's past water regime has not provided the optimal habitat for target wetland species." Suspected? Shouldn't you have to prove this point rather than suspect it, particularly if you're basing decision on it? And if it's due to past mismanagement, as you say, why not suggest that we correct that mismanagement?*

Response 1. Historically, natural wetlands in this area were primarily seasonal in nature, filling with spring runoff and then slowly drying through the summer. It is well documented in the literature that seasonal drying is often desired for the management of productive wetlands (Eldridge 1990, Fredrickson 1991, Fredrickson and Reid 1988, Weller 1978) and that productivity often declines with static water level management (Kadlec 1962). Although providing important habitat, many of the wetlands have not been

historically managed for optimal habitat conditions. Many of the wetlands do not provide quality habitat for wetland-dependent species. This has decreased the health and productivity of these wetlands and in some cases, created large monocultures of cattails, which has reduced open water habitat. The preferred alternative does provide new management options for improving the health of these wetlands.

Comment 2. *The CCP/EA indicates that algal blooms have diminished the clarity and quality of refuge waters. We note that recent studies have shown that even low nutrient levels can promote excessive algal and aquatic vegetative growths leading to undesirable conditions (i.e. nitrogen and phosphorus levels well below 1 mg/L can lead to undesirable conditions). Accordingly it may be of interest to know that the State of Montana is proposing to develop numeric criteria for nutrients in surface waters to better manage nutrient levels.*
Response 2. The refuge does receive runoff and drainage from surrounding agricultural lands. We agree that this influx of nutrients may be contributing to the algal blooms and other management challenges. The State is currently monitoring the quality of surface and subsurface water flows into the refuge. We would be interested in learning more about the work the State of Montana is doing to better manage this issue.

Comment 3. *We encourage the Refuge to manage for a gradual drying in the summer and fall so as to provide mud flats for the migrating shorebirds.*
Response 3. The preferred alternative for wetland impoundment management does recommend this type of management, which will create foraging habitat for shorebirds during drawdown cycles.

Comment 4. *I sense a shifting away from providing adequate waterfowl nesting habitats and replacing with more emphasis on shorebirds. A balance for both would be preferred.*
Response 4. The refuge has always tried to provide habitat for both groups of species. Through better water level management capabilities, the Service is proposing to provide even more productive feeding, nesting, and resting areas for these and other wetland-dependent Federal trust species.

Comment 5. *Alternating the drawdown of water on ponds currently in use has a positive effect on the variety of species enjoying the landscape.*
Response 5. We will alternate drawdown and secondary treatment in the future to improve the health and productivity of the wetland impoundments.

Comment 6. *Water levels in the ponds should be maintained at a level adequate for migratory birds to rest and feed.*
Response 6. Maintaining water at static levels often decreases wetland productivity (Kadlec 1962). Natural wetlands in the mountain west dry and flood seasonally. The refuge will attempt to mimic this wet and dry cycle in the wetland impoundments to improve their health and productivity for a variety of wetland-dependent wildlife. Some wetland impoundments will also be drawn down to provide opportunities to treat large expanses of cattails that can negatively impact habitat for waterfowl and other waterbird species.

Comment 7. *Several of the ponds managed by the refuge are occupied by non-native species (i.e. largemouth bass). The refuge is the primary source of these non-native species that enter the Bitterroot River.*
Response 7. The refuge is aware of the nonnative bass population and that they do enter the Bitterroot River. The refuge is not managing these impoundments for bass. The restoration proposals and improved water level management of these impoundments should reduce the number of bass.

Comment 8. *The thermal effects of the pond network raises water temperatures at the local and potentially reach scales in the main stem Bitterroot River. Increases in water temperature, especially when climate change is occurring, are likely to favor non-native and invasive species.*
Response 8. The wetland impoundments are not natural wetlands nor are they the cold-water systems typically found in the Bitterroot Valley. These types of wetlands do favor more nonnative aquatic species. In this 15-year plan we will begin to address this issue by first returning and restoring North Burnt Fork Creek and Three Mile Creek to their historical channels. Portions of Ponds 11, 12, and 13 will also be restored back to riparian habitat. Most of the remaining wetlands will continue to be managed for the benefit of migratory birds during the life of this CCP.

Comment 9. *I think cattails must be controlled by whatever means possible without hurting the wildlife. They have really taken over a lot of pond area.*
Response 9. We agree, and the refuge has already started to address this issue by drawing down some of the ponds and treating these areas, primarily through grazing and fire. This should restore more open-water habitat, but further management will be necessary to continue to reach a desirable mix of emergent vegetation and open water.

Comment 10. *page 27—Right column 2nd paragraph where is Pond D? Not shown on the map. Right column 3rd paragraph the pool height of Ponds 8 & 10 would be*

lowered—how much lower? Again page 32,106,107, and pages 108 & 109 includes Otter Pond. Page 30—Wetland Impoundments—Actions 3rd paragraph where is Pond D? Last paragraph—Maintain Ponds 8 and 10 at a lower elevation to allow for the reestablishment of gallery forest. Page 33—third paragraph—where is Pond D? last paragraph—maintain Ponds 8 & 10 at a lower elevation to allow for the reestablishment of gallery forest.

Response 10. Pond D is actually now known as Pond 7b, which is identified on the map. We have corrected this in the final CCP. If the railroad bed was to be decommissioned and a portion removed, restoration of the gallery forest would be more probable on Otter Pond. Until this occurs, restoration of gallery forest would be challenging and probably require the relocation of levees to expose the area needed for restoration. The language reflecting this position has been added to the final document.

Comment 11. *Page 43—Figure 7 Ponds and Upland Fields. Why was this map used to show the ponds when Figure 19 page 70 shows a more accurate map of the existing ponds?*

Response 11. These two figures serve different purposes. Figure 7 in the draft CCP is used to note the general location and shape of the ponds and fields along with the supporting management structures. Figure 19 in the draft CCP is an accurate depiction of the ponds and classes of vegetation.

Comment 12. *Potato Cellar Pond (Table 10)—Wetland impoundment target species and their habitat needs the Marbled Godwit, Long-billed Dowitcher and the American Bittern all require Mudflats, 0–4 inches of water, early July to early September. It would seem logical to maintain Potato Cellar Pond under these conditions, rather than returning it to native grasses.*

Response 12. The hydrology of this impoundment is very seasonal, and it doesn't hold water very well.

Comment 13. *Page 30—Transition Ponds 11, 12 & 13 or portions of these ponds to riparian and gallery forest. Again, repeated on page 104. Pond 13 affords a great view of a pond/marsh land habitat with the bitterroot Mountains in the background Development of small parking area off the Eastside Highway would create a great Wildlife Viewing Area and with some signage promote the Lee Metcalf Refuge encouraging tourist to visit the refuge. See Exhibit A Page.*

Response 13. We agree that this may be a good place for visitors to observe the refuge if it can be accommodated safely with the Eastside Highway traffic. The proposed restoration of the area will be visible and interpreted for visitors. Until this takes place, the Service will be replacing the water management structures on this wetland impoundment to better manage and treat the large expanse of cattails that have covered much of the open water in this impoundment. This will benefit long-term gallery forest and stream channel restoration projects.

Comment 14. *Page 21, 960 acres and page 77, 958 acres, and page 93, 800 Acres*

Response 14. The first reference to wetlands on page 21 was preceded by the word "approximately." The acreage figure on page 93 of the draft CCP reflects those wetlands over which the refuge has adequate water level management capabilities. The acreage figure 958 is the most accurate and is used in the first reference in chapter 2 in the final CCP.

GRASSLAND AND SHRUBLAND

Comment 1. *Native Vegetation Restoration—Environmental Consequences—reduction in density of upland nesting waterfowl until native species are fully established—how many years? This seems like a drastic trade off with no guarantee that the refuge would have the manpower to implement this project.*

Response 1. The productivity of the dense nesting cover on the refuge has a lifespan (typically 15 years) and has deteriorated. It no longer provides adequate nesting habitat for grassland-dependent birds. The Service needs to take action to improve this habitat. The process to restore native species will be systematic and not occur all at once given the challenges of this type of restoration. The long-term objective is to restore large expanses of intact native grassland and shrubland habitat. This is a process that will extend far beyond the life of this CCP.

Comment 2. *[Conflicting upland habitat acreage figures] Page 18 Bottom of photo, 1,218 acres [and on] pages 17 [and] 75 [it says] 1,186 acres*

Response 2. The photograph caption has been corrected.

Comment 3. *page 72. Last paragraph [states that] "Certain upland areas were converted to warm or cool-season grasses for dense nesting cover for waterfowl and two predator exclusion fences were built around some fields and a levee." The past refuge manager ordered these fences removed in 2009.*

Response 3. These fences were removed in 2010. This section has been modified in the final CCP to include that information.

Comment 4. *There is way too much open grassland. I'm not opposed to grassland; I just think, especially if you are not planning to farm it, that it needs to be broken up a bit. Fields like S–l, S–2 and S–1 through I–5 which is really all one big field, the field between the golf course and Wildfowl Lane and the fields north of Pond 5A should be broken up and diversified. Some years ago the refuge blasted a number of potholes into*

the landscape but I think this needs to be done much more extensively. You have quite a number of ditches and water sources available and these should be developed much more extensively. I'd love to see them routed through these grasslands and ponded up or spread out wherever possible.

Response 4. The refuge has chisel plowed and disked fields I–5, I–6, and I–7 with a goal of reducing invasive plant seeds. The plan is to seed these to grain and eventually to native grassland in order to provide nesting and hiding cover for migratory birds. Many wetland-dependent birds use uplands for nesting and foraging.

The blasting in the mid-1980s was not to create new potholes but to reopen existing impoundments that had grown in with cattails. When studying the aerial photos, one can see the refuge floodplain has scattered river channel remnants that still hold water. With an emphasis on restoration, there are no plans for creating more impoundments. The Pair Ponds created in 1988 in the higher grasslands never did hold water well because the soil conditions were not conducive to this use—emphasizing the need to let the soil types be a deciding factor on what is appropriate on that piece of land.

Comment 5. *Then shrubs and trees should be planted galore along these watercourses. I'm real glad to see the shrubs planted along Francois Slough although it would be nice to break up the eventual screen you've planted to provide glimpses of the water and habitat beyond. A good but very small example of how these meandering waterways should look can be seen, just east of the headquarters area. If these shrub and tree borders could be greatly expanded to provide cover and habitat throughout these grasslands, the bird population for one would explode.*

Response 5. The CCP proposes to increase channel and riparian habitat next to the Bitterroot River. In the past 2 years hundreds of native trees and shrubs have been planted, many along natural watercourses including Francois Slough. These plantings are a strategy for increasing gallery forest in places where the soil supports it. Through natural selection (deer, voles, and weather) we may very well end up with breaks in the screen of shrubs you describe. Removing levees along the Bitterroot River should also provide for more conducive regeneration conditions (scour and sedimentation) of willow and cottonwood in various parts of the refuge.

TARGET SPECIES

Comment 1. *On pages 100–101 of the draft plan, the wood duck is listed as a target species for improving habitat needs on the [Lee Metcalf Refuge]. There is no mention under area requirements or nesting [and] breeding improvements, on the need to dispose of the 60+ nesting boxes that were slated for removal in 2009.*

Response 1. The Service has identified the natural habitat needs of a diverse group of target floodplain species, including the wood duck, Lewis's woodpecker, willow flycatcher, Vaux's swift, brown creeper, and hoary bat. This group of species was chosen for its broad life history habitat needs. Providing habitat for this suite of species would provide the natural floodplain habitat diversity for an even broader suite of other floodplain-associated wildlife; however, monitoring would primarily focus on these target species to determine their response to floodplain management actions. If these species habitat needs are being provided and these species are present (and increasing) on the refuge, this would be a good indicator of the success of refuge management actions. Limiting monitoring programs to primarily these species would save time and resources. By choosing wood duck as a target species, the Service is signifying its long-term goal of providing trees of suitable size (rather than artificial structures) that could provide these natural nesting cavities. For wood ducks, that is trees that are typically greater than 24 inches diameter at breast height. Other species will benefit from this type of native forested habitat as well.

Comment 2. *Page 100—Target Species Selection Process Right column,7th sentence—The final list of 16 species— see Table 9 page 101; Table 10 page 108 and Table 11 page 112 for the complete list of the 16 species.*

Response 2. Because these target species are related to different habitat types and goals, the tables are found in those sections that discuss that part of the refuge.

WILDLIFE

Comment 1. *This book goes on to talk about the vast bird populations, including the heron rookery west of the visitor center. It did not exist this year. Herons have left the refuge to nest elsewhere. Many bird populations have moved to private property for nesting and safety. Wildlife numbers are down, including geese which are usually more tolerant of people. This correlates with what photographers are telling us as wildlife sightings drop. The refuge no longer exists as portrayed in this book. The "refuge" is a recreational and dog park.*

Response 1. This is partially true; the heron rookery has fewer occupied nests this year. Nevertheless, the area next to this nesting site is currently not open to the public. It is not uncommon for these birds to select new sites, but they may return in subsequent years. The areas you are referring to are open to the public. When there are more people using these open sites, wildlife may retreat to more protected portions of the refuge; nevertheless, wildlife numbers fluctuate on all public lands. This CCP is proposing to improve the various habitats found on the refuge through managing wetland impoundments and uplands, expanding

the treatment of invasive species, and other actions. The area affected by dogs off leash is a problem and reduces this area's value to wildlife. The refuge is not a dog park, but we agree that there is an issue in this part of the refuge. We will be enforcing the leash regulation in the WVA. If visitors do not comply, dogs will no longer be permitted in this area. Another option for minimizing wildlife disturbance in the WVA is to require all visitors to remain on the trail. The Service will be looking at this option in the future.

BULL TROUT (THREATENED SPECIES) AND OTHER NATIVE SALMONIDS

Comment 1. *Bull trout and their critical habitat are affected by entrainment, fish passage, instream flows, water quality, and non-native species. As noted in the CCP the headwaters of Burnt Fork Creek harbors a substantial population of bull trout and westslope cutthroat trout that are disconnected from the Bitterroot River. The lowermost barriers in North Burnt Fork Creek and other sources of habitat degradation are on the refuge. Similarly, though a smaller stream system and possibly more problematic in regards to an ecosystem approach to restorative actions, Threemile Creek contains native westslope cutthroat trout in the headwaters and poor habitat quality on the refuge.*

Response 1. We agree with these statements, and this background information is helpful in supporting our proposed restoration efforts of these historical fish passage channels.

Comment 2. *North Burnt Fork Creek is a conveyance channel for water from the "Supply Ditch". This situation likely affects bull and cutthroat trout homing. The CCP needs to clearly state that intra-Service consultation will address the Endangered Species Act Section 7(a)1, and that all on-going "take" of bull trout will be addressed.*

Response 2. The refuge forwarded this comment to the Service's Montana Ecological Services Field Office (a branch of the Service responsible for protecting and restoring the bull trout). Intra-Service consultation occurs when Service actions affect (adversely or beneficially) listed species or designated critical habitat. The refuge's intra-Service consultation for this CCP evaluated the refuge actions proposed in this plan to determine if they may affect designated critical habitat for bull trout or other listed species that have the potential to inhabit the refuge (appendix D of the final CCP). The final determination was that the actions described in the CCP may affect, but are not likely to adversely affect, bull trout critical habitat. As noted in appendix D and this final CCP, the refuge will be consulting with the Montana Ecological Services Field Office in the future as restoration projects are being designed and implemented.

Comment 3. *Related to barrier and temperature issues is the issue of inaccessible cold water refugia on the refuge. An example is the headwaters of Barn Slough. Research continues to support the importance of barrier-free waterways and identification and management of potential refugia: "…coldwater salmonids migrate through waters during thermally stressful months of summer and most likely are able to do so by using features in the rivers that provide cold water spatially and temporally. The challenge is to ensure that these features are identified, protected, and restored.*

Response 3. We agree with these comments. Barn Slough is accessible to fish in North Burnt Fork Creek.

Comment 4. *There are several major aquatic habitat issues and concerns that are affected by management on the refuge and they need to be in the selected alternative. Most or all actions to address these issues can be implemented with existing staff, funds (including initiatives within the Service) and partnerships.*

Response 4. We are not exactly certain what actions you are referring to, but our proposals for reconnecting both Three Mile and North Burnt Fork Creek will cost additional funds to implement. We do agree that there are some initial steps that we can take without added staff and funding. We will continue to work with other partners to make these changes that support this long-term goal of reconnecting bull trout and cutthroat trout habitat from the Bitterroot River to the upper reaches of these tributaries.

Comment 5. *The CCP should highlight how the Service will lead the Bitterroot Valley toward ecosystem integrity (Section 1.2(c)1 in FWM 251, Part 052: Ecosystem Approach to Fish and Wildlife Conservation) and bull trout recovery (Endangered Species Act).*

Response 5. The refuge will continue to work with other partners in the valley to sustain and, as appropriate, restore the biological integrity of the refuge and the surrounding valley. The refuge worked with the Montana Ecological Services Field Office (a branch of the Service responsible for protecting and restoring bull trout) and other conservation partners in identifying projects in the CCP that would be beneficial to restoring bull trout habitat. There are several objectives and strategies in the plan that describe what the refuge will do to support this effort.

Comment 6. *The CCP enumerates an impressive list of the refuge's partnerships. However, the CCP needs to emphasize a commitment to actively seek and foster partnerships that promote long-term ecosystem conservation and recovery. An example is that the refuge should assert their position as an active member of the irrigation district and as a water-user to address issues associated with the irrigation, water*

conservation, and aquatic organism passage. Other irrigation groups in the valley have recently made substantial progress toward improving native fish habitat and survival and improving instream flows that benefit numerous species, and doing so in a manner with low monetary costs to the irrigation district.
Response 6. We agree, and the refuge has discussed water management in designated critical habitat for bull trout with the Service's Montana Ecological Services Field Office (a branch of the Service responsible for protecting and restoring bull trout) and other partners in the valley who are working to restore bull trout. The refuge will continue to work with Ecological Services , irrigators, and other partners to encourage long-term solutions to ecosystem recovery.

Comment 7. *It is worth noting that Trout Unlimited, Montana Trout Unlimited and its local Bitterroot Chapter have begun investing significant restoration dollars into the Burnt Fork drainage. To date, we have completed a fish passage barrier study on North Burnt Fork, installed a mile of riparian fencing on the Ellison Cattle Company, protecting the North Burnt Fork from grazing impacts and talked to numerous landowners about future projects. We look forward to working with refuge staff on projects that will once again allow native and wild salmonids access to the Burnt Fork drainage.*
Response 7. We appreciate the efforts of Trout Unlimited and others on restoring this important tributary and designated critical habitat for bull trout. The CCP proposes to improve this important habitat for native salmonids, and we look forward to working together on these types of projects of mutual interest.

Comment 8. *To bolster the CCP, any selected alternative must appropriately address [the] Endangered Species Act and other regulation and policy, in particular those related to native aquatic habitat and species management.*
Response 8. We agree and feel the plan has done this. There are no listed species on the refuge, but there is designated critical habitat for bull trout on the refuge, and there is suitable habitat for birds, such as the yellow-billed cuckoo (a candidate species). These and other listed species have been considered in this CCP and through the completion of an Intra-Service Section 7 Consultation, found in appendix D of the final CCP.

Mercury contamination

Comment 1. *On page 109, we get this same sort of unprofessional statement on which the FWS makes a recommendation: "Researchers from the University of Montana have been investigat[ing] the contamination of mercury on the refuge and elsewhere in Montana. It is theorized that there has been an accumulation of methyl mercury as a result of stagnant water, and mercury concentrations of fish on the refuge has been high (Langner et al. 2011). Theorized, not proven! [If] this is the case, if this concern is even remotely possible, why haven't immediate efforts to deal with it, such as implementing studies to prove or unprove, not theorize, conclusions on which you make management recommendation[s]? You don't make a management decision based on a theory—you do scientific research to provide real answers.*
Response 1. Managers often use the best available information and knowledge combined with their professional expertise to make management decisions. They also use published literature and the best available science to guide management options. Management is also adaptable as new information and research becomes available.

The Service and other researchers have determined that there is a bioaccumulation of mercury in fish and other aquatic organisms; however, there is no definitive answer as to how the Service's management actions are or are not contributing to this. We have added some new strategies under the wetland impoundment goal in the final CCP that describe the steps the Service will take to investigate this issue. The results of this study will be used to make decisions on what changes, if any, could reduce the level of mercury accumulation in the wetland impoundments and associated aquatic species.

Invasive species

Comment 1. *We applaud your objective to control weeds and to reestablish native plants on the upland grasslands which will help to attract grassland bird species.*
Response 1. Thank you for your comment.

Comment 2. a. *Chemical treatment of weeds should not be allowed on the refuge. These chemicals are disruptive to life forms. Use farming, bugs, sheep, and goats instead.*

b. *I applaud your efforts to reduce non-native species. I would urge the use of nonchemical control as much as possible, in order to avoid potential effects to all wildlife.*
Response 2a–b. The Service has an obligation to address the widespread areas of invasive species on the refuge. On this and other refuges, the Service makes every attempt to use an integrated pest management approach to treat invasive species. Mechanical, cultural, or biological controls are the preferred options and can be successful. Refuge staff and volunteers spend considerable time using these nonchemical methods to control certain invasive species. In some cases it is necessary to use chemicals to treat other nonnative plants that do not respond to these methods. The Service has an approved chemical list that has gone through additional analysis beyond standards of the EPA. This chemical list is much smaller than those

that are available and used by the general public. Although these chemicals are not without side effects, most have the least known side effects and are shown to be less harmful to nontarget species.

Comment 3. *I am attaching a new study concerning the epigenetic changes the thyroid hormone and steroid hormone disrupting chemicals cause and how the changes/birth defects are passed on for several generations without another exposure to the new generations. That of course is not how it works in the real world. Each new generation of animal is exposed, so their offspring are even worse—for example the generation of humans having babies now are having babies with epigenetic changes to their brain causing autism at a much higher prevalence than the previous generation. The white-tailed deer generations now are having babies with much higher prevalence of misaligned, malformed, short scrotal sac than the generation when we did the study which is attached on the next email. I think these changes to wild vertebrates, including mammals, birds, amphibians, reptile and fish should be considered in any long term plan and especially in the environmental assessment for all wildlife refuges.*
Response 3. Invasive species hinder the Service's ability to manage the refuge's lands and waters for Federal trust species, including migratory birds and other fish and wildlife. If we had a choice to effectively treat the invasive species without chemicals at all, we would. To this end, the refuge most often chooses to use chemical-free methods to treat invasive species. However, these methods are very labor intensive and not without their own impacts on the environment. In addition, some species do not respond to these techniques, particularly those that spread by rhizomes. Some of the nonchemical methods will actually spread these species. The chemical will kill the root of these plants, preventing their spread. We appreciate your concern and the studies you provided. We would welcome any suggestions to reduce our use of chemicals; however, we cannot allow these species to spread onto new areas of the refuge and to our neighbors, so the use of a limited number of chemicals authorized for use on refuge by the Service (see previous response to comment above) must be used on occasion until more "natural" treatments are developed for some of these more challenging species.

Comment 4. *Goal of weed program, 1) reduce weeds, 2) reduce the need to spray over time, 3) develop a monitoring program that shows this.*
Response 4. We agree and have similar language in the final CCP.

Comment 5. *Exactly what would be involved when you said the plan would involve surrounding landowners? Is the government going to come in with a lot of stiff regulations that will cause hardships and anger with nearby refuge neighbors?*
Response 5. The refuge will continue to develop its partnership with the Ravalli County Weed District to provide education to adjoining landowners on weeds and their detrimental effects on habitat and productive agricultural lands.

Comment 6. *Monitor invasive species—this term is listed at least eleven times in the Draft CCP. With the current number of staff this is probably not feasible.*
Response 6. The Service provides additional assistance for monitoring through the Invasive Species Strike Team that travels throughout Montana to map, treat, and monitor invasive species on refuges. One of the strike team leaders is currently located at the Lee Metcalf Refuge. In addition, the county employees that are funded by the refuge map, monitor, and treat invasives on the refuge, which they have done for the past 2 years. This combined effort has been very instrumental in mapping large areas of the refuge. This effort will continue to be updated and expanded and used for monitoring programs in the future to determine if treatment methods are having the desired effect and to monitor for new invaders. Having this baseline information will make any treatment and monitoring programs much more efficient and effective.

Planning Process

Comment 1. *Ducks Unlimited biological staff involvement was overlooked in preplanning and scoping meetings over past 4 years. That is a travesty and blatant disregard. You missed the boat on your partnership vision as stated in the CCP.*
Response 1. Ducks Unlimited was on our mailing list at the start of this planning process and was given the opportunity to provide their comments during our scoping process conducted in 2009. We did not receive any comments at that time. Ducks Unlimited is a long-time partner of the National Wildlife Refuge System and valued for its knowledge and contributions to our mission; however, we are not permitted to have any private organization serve on our planning team. The Federal Advisory Committee Act prohibits the government from having closed door meetings with private individuals and organizations with the purpose of asking for their recommendations for what direction the government should take. That is why we conduct public scoping, ask for comments at the start of our processes, and sent the draft document out for review.

Comment 2. *The refuge should follow their policy and expedite the conclusion of this planning process. The Service's policy (Section 1.8 (a) in FWM 251, Planning and Management, Part 052: Ecosystem Approach to Fish and Wildlife Conservation) states: "The Service's focus is on action; planning to be completed quickly,*

and action to bring about solutions will follow immediately. The intent of the plans is to concisely identify issues and problems, solutions, and the funds and staff to implement solutions." Key partnerships and projects have suffered during this planning process due to the refuge's understandable reluctance to act on riparian and aquatic restoration projects until the planning process is finalized.

Response 2. The policy you are referencing is from 1996 (prior to the passage of the Improvement Act requiring the development of CCPs) and is a guide for the Ecosystem Approach to Fish and Wildlife Conservation. There is a separate policy for the development of CCPs that does not include such language; nevertheless, every effort has been made to keep this process moving forward, while ensuring that the most substantive issues were addressed. In the 48-year history of this refuge, there has never been a plan with this level of analysis, public involvement, and detail that provided for consistency in management. These types of planning efforts, particularly when other partners and the public are invited to participate, take time. We have not stopped managing the refuge while we have been working on this CCP; however, we do agree that more significant management decisions have been put on hold as we take advantage of this process, including the added expertise, to make better informed decisions through the CCP process. Fortunately we are at the end of this process and look forward to implementing the plans to restore and enhance the refuge's riparian habitats.

Comment 3. *You have contacted only state wide media sites, in violation of the NEPA [National Environmental Policy Act of 1969] requirement that there be broad outreach.*

Response 3. In addition to statewide media contacts, the Service developed a nationwide mailing list of individuals and organizations at the start of this process, developed and mailed two planning updates to this list, held public meetings, and published a notice of intent and notice of availability in the Federal Register. Most of these outreach activities are above and beyond the Council on Environmental Quality (the agency who regulates NEPA) requirements for an environmental assessment.

Comment 4. *An EIS [environmental impact statement] needs to be prepared. An EA is cheap sloppy alternative that is not responsible enough for this out of control spending plan which this agency always picks.*

Response 4. The preferred alternative is not a major Federal action that would significantly affect the quality of the human environment within the meaning of Section 102(2)C of the NEPA. Accordingly, the preparation of an environmental impact statement is not warranted. The issues identified in this document are not significant, nor are the proposed changes to the management of the refuge.

Alternatives

Comment 1. a. *Re-institute the original charter and management plan given the refuge at the time of its founding, focusing of actually doing what Congress mandated back in 1964 and reemphasized over the years. It is my deep conviction that recent management direction at both the local level and from the regional office FWS office in Denver has strayed from the original charter, which incidentally seemed to work well for the decades that followed establishment of the Metcalf Refuge and into which conservation groups supported that concept poured hundreds of thousands of dollars into accomplishing, and which, through the 'mismanagement' alleged in the CCP has enabled the FWS to stray from its original charter. The fact is that what was put in place in the years following 1964 worked for decades, and if done correctly, and with proper funding and alliance with its support groups, including the Friends of Lee Metcalf National Wildlife Refuge, would be working today. Get back to basics, adjust and accommodate changes where they're required, but stick to those original goals and everything else will fall into place.*

b. *Migratory Bird Conservation Commission (page 17). Justification for establishing the Lee Metcalf Refuge was to provide a feeding and resting area for migratory waterfowl in a locality where some sanctuary is needed It appears that the refuge's desire to establish gallery forest by reducing wetlands has lost sight of the requirement set forth by the Migratory Bird Conservation Commission. Also 97.3 of the money used to purchase the refuge land was from the sale of the Migratory Bird Hunting Stamp (Duck Stamp).*

Response 1a–b. It is unclear what you are referring to as the "original charter." The refuge was approved by the Migratory Bird Conservation Commission on December 10, 1963. The first piece of land was purchased on February 4, 1964, which established the refuge. The Migratory Bird Conservation Commission approves lands that have been identified by the Secretary of Interior for the conservation of migratory birds. The legislative purpose for Lee Metcalf National Wildlife Refuge (originally named Ravalli National Wildlife Refuge) is threefold: (1) for use as an inviolate sanctuary, or for any other management purpose, for migratory birds; (2) suitable for incidental fish and wildlife–oriented recreational development, the protection of natural resources; and (3) the conservation of endangered species or threatened species. This original purpose of managing for migratory birds, federally listed species, and incidental wildlife-oriented recreation has never changed. Since the refuge was purchased with migratory bird hunting and conservation stamp funds, many people believe that these funds

should only focus on wetland habitat for the benefit of waterfowl. However, Congress clearly states that these funds are to be used to rent or purchase properties that benefit any migratory bird. The refuge has and will continue to manage wetland impoundment habitats during the life of this CCP along with river migration, riparian habitat enhancement, and upland habitat improvements, including controlling invasive species. All of these actions support the legislative purposes for which this refuge was established.

Comment 2. *We welcome the thrust of new processes at the Metcalf, whichever CCP alternative you select, but it is my recommendation that you return direction back to the basic charge given the FWS years ago. Dig up those original plans and re-institute them as your starting point, with whatever minor adjustments you need to accommodate the changes brought on by time.*
Response 2. In the 48 years since this refuge was established the refuge has come to better understand the effects of management actions on the landscape. In addition, different species have become more imperiled (for example, bull trout) as their habitats are lost. The refuge has come to play an even bigger role in the conservation of a greater variety of species than originally envisioned. This is a result of the constant development of the Bitterroot Valley and the migration routes used by migratory Federal trust species. The refuge's management programs have and will continue to grow and evolve with this new information without losing sight of the purposes for which this refuge was established.

Comment 3. *I feel that the proposed action on alternative B is a good direction for the refuge. My only comment would be to not abandon the focus on maintaining wetland impoundments mention in alternative C. Since it[s] inception the Lee Metcalf has focused on migratory birds and would hate to see that emphasis diminished or abandoned.*
Response 3. Although the plan does call for the restoration of historical habitats currently lying under some impoundments, most of the impoundments will be maintained for the life of this CCP. This will create more habitat diversity in support of a greater number of wildlife species.

Comment 4. *We [Trout Unlimited] would like to go on record as being supportive of Alternative B (proposed action) for the following reasons:*

- *It focuses on expanding native vegetation communities*
- *An emphasis on controlling invasive species would be a priority*
- *The Bitterroot River would be allowed to periodically achieve overbank flows into the floodplain and backwaters facilitating its natural braided migration through the refuge*
- *Water control structures on North Burnt Fork and Three Mile Creek would be removed or modified to provide connectivity for fish*
- *Ponds would be managed to more closely mimic seasonal water conditions*

Response 4. Thank you for your comments.

Comment 5. *We would discourage the refuge from adopting Alternative C as the proposed action.*

Alternative C would focus habitat management on maintaining wetland impoundments while restricting the movements of the Bitterroot River throughout the refuge (i.e. rebuild or reinforce all levees and dams). The river has been impacted its entire length by man-made levees and dams. It does not seem to us prudent for the refuge to add to this ever growing problem.
Response 5. We agree, and this is one of the reasons this alternative was not selected.

General Comments

Comment 1. *The format in which this draft plan is constructed is fantastic and really lays out strategies for implementation. Goals and objectives are the backbone of the plan. My only suggestion is that when developing objectives for specific goals these objectives should contain verbiage that is measurable. The use of time frames, numbers, statistics or something tangible that would be key to the fact that the objective has been met.*
Response 1. Thank you for your comments. We feel that whenever possible, our objectives and associated strategies are measurable based on the information we had to make those decisions. We will have more specific details in the stepdown management plans.

Comment 2. *I have…been distressed by inconsistences in management. One director comes along and wraps the refuge in barbed wire at considerable time, expense, and trouble. Then the next director comes along and removes the barbed wire at considerable time, expense, and trouble.*
Response 2. One of the values and purposes of completing this type of long-range management plan is to provide more consistency in management, including long-term goals, that will still be in place even when new staff arrive.

Comment 3. *The public was given a postmark date of April 30th to comment on the proposals prior to a final decision being made. Note on photo 1 and 2, one turn-out near the visitor center and another on Wildfowl Lane is well under way. As see in photo 3 work is already under way near the Whaley House. Wasn't the public's right to comment supposed to occur prior to work done?*

Response 3. The planning process takes a number of years. During this time, the refuge must still manage resources. The issues related to the safety of Wildfowl Lane have been ongoing, even prior to the start of this planning process. The draft CCP proposed to designate Wildfowl Lane as an auto tour route. That has yet to be done. However, the turnout you refer has been completed to improve the safety of our visitors. This project had been proposed years before the CCP was started, and recently this long standing proposal was funded. The work completed near the Whaley House was on Pond 4. This project was initiated to improve the existing dike and replace the culvert to allow us to better manage water levels, address cattail encroachment, and create a safer driving surface.

Comment 4. *Under 'issues' (see summary xi) things are noted such as invasives species, small visitor contact area, outdated displays, inadequate public access, inadequate staff, algal and river issues. The main reason for the decline of the refuge is never identified.*
Response 4. Greater details on this and other issues can be found in the issues section in chapter 2 and in various sections in chapter 4 of this final CCP. There is no one cause for the management challenges identified in this CCP.

Comment 5. *We [EPA] appreciate the efforts of the U.S. Fish and Wildlife Service in carrying out planning and environmental analysis to improve management of the Lee Metcalf National Wildlife Refuge, and to enhance public awareness and support for wildlife conservation. The EPA does not object to the proposed actions.*
Response 5. Thank you for your comment.

Comment 6. *The old cars on the riverbank are ugly. Can they be removed?*
Response 6. We agree with this statement. Many of these cars are not on the refuge. The cars were originally placed there in the late 1950s by the railroad in order to ensure that the river flowed under the trestle. The river has since and continues to remove these cars and migrate around them. At this time, the refuge does not have any plans to remove the cars that reside on refuge lands.

Comment 7. *page 29—Right column last sentence—Adaptive resources management would inform this revision. What does this mean is the public informed or is this strictly a refuge decision?*
Response 7. In the context of this paragraph the word "inform" could also mean "direct" or "guide." Adaptive resource management is also defined in the glossary. The Service's planning policy guideline on reviewing these documents states, "Review the CCP at least annually to decide if it requires any revisions. Modify the plan and associated management activities whenever this review or other monitoring and evaluation determine that we need changes to achieve planning unit purpose(s), vision, and goals."

The policy does not direct the refuge when to notify the public about these changes within the 15-year life of this plan; however, in the past, if the change is substantial enough, the Service has gone back to the public to inform them of the modification.

Comment 8. *Follow the lead of The Friends of the Lee Metcalf National Wildlife refuge in working with the Bitter Root Land Trust to participate in implementation of protecting habitat (including the watershed) and wildlife corridors on private lands surrounding the refuge.*
Response 8. The plan recommends that these types of partnerships be maintained and expanded in the future. The refuge has a long-standing working relationship with the Bitter Root Land Trust. Recently the refuge met with this organization to identify parcels along North Burnt Fork Creek that, if protected, would establish habitat corridors as well as enhance refuge resources.

Comment 9. *Who will have the responsibility to approve the final CCP?*
Response 9. The assistant regional director for refuges approved the compatibility determinations (appendix C of the final CCP) and the Regional Director approved the final CCP.

Comment 10. *What has been progressed by the U.S. Fish and Wildlife Service is great. They work at what they know and to do to keep The Lee Metcalf National Wildlife Refuge is true and meaningful. They have the knowledge of all of the areas to bring together what they may need and be taken care of. To keep the refuge where wildlife is and NATURE—they give it exactly what it needs.*
Response 10. Thank you for your comments.

Comment 11. *The refuge is well taken care of and the plans to do more and keep it up and beautiful for ALL who see it and are appreciative of what they see and hear.*
Response 11. Thank you for your comments.

Appendix B

Environmental Compliance

Environmental Action Statement

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

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

I have determined that the action of implementing the "Comprehensive Conservation Plan—Lee Metcalf National Wildlife Refuge" is found not to have significant environmental effects, as determined by the attached "finding of no significant impact" and the environmental assessment as found with the draft comprehensive conservation plan.

7/18/12

Stephen D. Guertin — Date
Regional Director, Region 6
U.S. Fish and Wildlife Service
Lakewood, Colorado

7/18/12

W. Dean Rundle — Date
Refuge Supervisor
U.S. Fish and Wildlife Service, Region 6
Lakewood, Colorado

7.18.12

Matt Hogan — Date
Assistant Regional Director, Region 6
National Wildlife Refuge System
U.S. Fish and Wildlife Service
Lakewood, Colorado

7/12/12

Tom Reed — Date
Refuge Manager
Lee Metcalf National Wildlife Refuge
Stevensville, Montana

Finding of No Significant Impact

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

Three management alternatives for the Lee Metcalf National Wildlife Refuge were assessed for their effectiveness in achieving the refuge's purposes and for their impacts on the human environment.

Alternative A

Alternative A, the no-action alternative, would continue current management.

Alternative B

Alternative B focuses on the expansion and restoration of native plant communities on the refuge including grasslands, shrublands, and gallery and riverfront forests. Some areas of wetland impoundments would be restored to native communities including forest and shrubland.

Refuge staff would manage and, where appropriate, restore the natural topography, water movements, and physical integrity of surface water flow patterns across the Bitterroot River floodplain. Unimpeded flow from North Burnt Fork Creek would be reconnected with flow pathways into the Bitterroot River to reduce creek water temperature, improve water and nutrient flow, and create habitat conditions conducive to native cold-water species. Additionally, a channel to the Bitterroot River would be reestablished that mimics the historical flow pattern of Three Mile Creek to create habitat conditions supporting native cold-water species and the restoration of riparian habitat. A significant focus of any restoration proposal would be controlling invasive species and preventing further spread. Grasses and shrubs native to the uplands, including the alluvial fans (that is, areas of sedimentary deposits where fast-flowing streams have flown into flatter plains), would begin to be restored to provide habitat for native wildlife including grassland-dependent migratory birds. Some wetland impoundments and U.S. Fish and Wildlife Service (nonpublic) roads would be removed or reduced in size to allow for river migration and to restore native gallery and riverfront forest for riparian-dependent wildlife. The remaining impoundments would be managed to mimic natural conditions for wetland-dependent migratory birds.

The U.S. Fish and Wildlife Service would expand and improve the refuge's compatible wildlife-dependent public use programs, in particular the wildlife observation, environmental education, and interpretation programs. The visitor contact area would be expanded into a visitor center with new displays and a combination conference room and environmental education classroom. New displays would be professionally planned and produced. The refuge would work with Ravalli County staff to designate the county road in the refuge as an auto tour route, which would include pulloffs and some form of interpretation. A seasonal hiking trail would be added, and current trails would be improved for wildlife observation and photography. Interpretation and environmental education programs would be expanded using added staff and volunteers. All public use programs would provide visitors with a consistent message about the purposes and values of the refuge and the mission of the National Wildlife Refuge System.

The refuge staff would be expanded by 3.5 individuals to include an assistant refuge manager (one full-time equivalent), a full-time and a career-seasonal biological science technician (1.5 full-time equivalents), and a visitor services specialist (one full-time equivalent) who would serve as a visitor center manager and volunteer coordinator.

Increased research and monitoring, staff, funding, infrastructure, and partnerships would be required to accomplish the goals, objectives, and strategies associated with this alternative. Additional staff and funding would be added depending on the regional priorities for those funds allocated to the U.S. Fish and Wildlife Service for management of lands and waters within the Refuge System.

Alternative C

Alternative C contains many of the elements found in alternative B related to expanding visitor service programs and facilities. However, habitat management would be focused on maintaining the wetland impoundments and attempting to restrict the movements of the Bitterroot River throughout the refuge. Habitat efforts would be primarily focused on providing waterfowl and other waterbird habitat.

Selection of Alternative

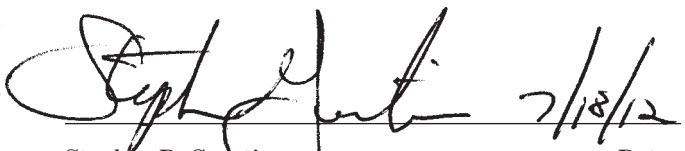
Based on this assessment and comments received, I have selected alternative B as the preferred alternative for implementation. The preferred alternative was selected because it best meets the purposes for which the Lee Metcalf National Wildlife Refuge was established, and it is preferable to the no-action alternative in light of physical, biological, economic, and social factors. The preferred alternative will continue to provide public access for wildlife-dependent recreation at Lee Metcalf National Wildlife Refuge (hunting, fishing, wildlife observation, photography, environmental education, and interpretation).

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

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

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

The State of Montana has been notified and given the opportunity to review the comprehensive conservation plan and associated environmental assessment.



Stephen D. Guertin — Date
Regional Director, Region 6
U.S. Fish and Wildlife Service
Lakewood, Colorado

Appendix C

Compatibility Determinations

C.1 Refuge Information

Refuge name

Lee Metcalf National Wildlife Refuge

Date established

February 4, 1964

Establishing and acquisition authorities

Migratory Bird Conservation Act (16 United States Code [U.S.C.] 661–667e)
Refuge Recreation Act (16 U.S.C. 460k–1)
State of Montana approval under provisions of Public Law 87–383 (75 Stat. 813)

Refuge purposes

"for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. 715d (Migratory Bird Conservation 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, as amended (16 U.S.C. 460k–460k–4)

C.2 National Wildlife Refuge System Mission

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

C.3 Description of Uses

The following uses are evaluated for compatibility within the Lee Metcalf National Wildlife Refuge:

- hunting
- fishing
- wildlife observation and noncommercial photography
- environmental education and interpretation
- commercial filming, audio recording, and still photography
- cooperative farming and prescriptive grazing
- research and monitoring

Hunting

Hunting is one of six wildlife-dependent priority public uses specified in the Improvement Act. Hunting occurs in two forms on the refuge: waterfowl (by shotgun) and white-tailed deer (by bow). In addition to the site-specific regulations mentioned below, State hunting regulations will apply to all Lee Metcalf Refuge lands open to hunting. Hunters may only possess and use U.S. Fish and Wildlife Service (Service)–approved, nontoxic shot shells on the refuge, and vehicle travel and parking is restricted to public roads, pulloffs, and parking areas. The refuge Web site and public use brochures provide guidance on site-specific regulations. The general hunting regulations are available from Montana Fish, Wildlife & Parks (MFWP).

Waterfowl hunting is restricted to the southeast part of the refuge. This 654-acre area of the refuge encompasses five wetlands and is closed to the general public. Waterfowl hunters access this area from one parking area. According to 2005–2009 records, fourteen blinds together accommodate an average of 965 visits per year. Waterfowl hunting is conducted during the State hunting season, which usually occurs from the first week of October through first week of January. Waterfowl hunting is available on a first-come, first-served basis except for opening weekend, during which blinds are allocated by drawing.

Archery hunters access 2,275 acres of refuge lands from five archery hunting access parking areas. According to 2005–2009 records, archery hunting for white-tailed deer draws an average of 1,030 visits annually and an average of 33 deer are harvested each

year. Deer hunting season starts in early September and ends the second week in January. In addition to providing a compatible recreational activity, deer hunting assists the refuge in managing overbrowsing of native habitats.

The comprehensive conservation plan (CCP) for the Lee Metcalf National Wildlife Refuge proposes to continue the hunting uses described above.

Availability of Resources. Hunting will be administered by the refuge staff. Currently, refuge staff does not include a dedicated or collateral duty law enforcement officer or a refuge biologist to monitor deer populations. It is anticipated that the refuge would rely on the zone law enforcement officer or staff from other refuges. Also, the regional inventorying and monitoring biologist will assist with analysis and trend monitoring.

Infrastructure in place on the refuge includes the following:

- hunt information kiosk
- five parking area and check-in stations
- 14 waterfowl blinds (2 are universally accessible)

Anticipated Impacts of Use. The hunting program on Service lands will continue to provide hunters ample quality hunting opportunities without materially detracting from the mission and goals of the National Wildlife Refuge System (Refuge System) or from the establishing purposes of refuge lands. Public use brochures and the refuge Web site will be kept up-to-date and made readily available to hunters. Hunter success and satisfaction will continue to be monitored using the hunter registration kiosk sign-in sheet along with random contacts with hunters in the field and in the refuge office.

The National Wildlife Refuge System Act of 1966 (as amended), other laws, and the Service's policy permit hunting on a national wildlife refuge when it is compatible with the purposes for which the refuge was established and acquired. Habitat that normally supports healthy wildlife populations produces harvestable surpluses that are a renewable resource. As practiced on Lee Metcalf Refuge, hunting does not pose a threat to the wildlife populations and, in some instances, is necessary for sound wildlife management. However, by its very nature, hunting creates a disturbance to wildlife and directly affects the individual animal being hunted. Nonetheless, it is well recognized that this activity has given many people a deeper appreciation of wildlife and a better understanding of the importance of conserving their habitat, which has ultimately contributed to the Refuge System mission. Furthermore, despite the potential impacts of hunting, a goal of Lee Metcalf Refuge is to provide opportunities for quality wildlife-dependent recreation. Hunting will be designed and monitored to offer a safe and quality program and to keep adverse effects within acceptable limits.

Although hunting directly affects the hunted animal and may indirectly disturb other animals, limits on hunting access and harvest will ensure that populations do not fall to unsustainable levels. Closed areas on the refuge provide sanctuary to migratory birds during the hunting season. In some cases, hunting can be used as a management tool to control elevated populations that are negatively affecting wildlife habitat (for example, through overbrowsing).

Additional impacts from hunting include conflicts with individuals participating in wildlife-dependent, priority public uses such as wildlife observation and photography.

Determination. Hunting is a compatible use on Lee Metcalf Refuge.

Stipulations Necessary to Ensure Compatibility

- Visitors participating in hunting will be provided the Service's public use regulations, including site-specific regulations and State hunting regulations.
- Hunters will continue to use approved nontoxic shot for waterfowl hunting.
- Vehicles will be restricted to county and designated public roads and parking areas in the refuge.
- Signage and brochures will be used to provide hunters information on where and how to hunt on the refuge to ensure compliance with public use regulations.

Justification. A secondary goal of the Refuge System is to provide opportunities, when found compatible, for the public to develop an understanding and appreciation for wildlife. Hunting is identified as a priority public use in the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act) and will help meet the above secondary goal with only minimal conflicts. Hunting can instill, in citizens of all ages, a greater appreciation for wildlife and its habitat. This appreciation may extend to the Refuge System, other conservation agencies, and to the individual personal land conservation ethic.

Based on anticipated biological impacts described above and in the environmental assessment (EA) that accompanied the draft CCP for Lee Metcalf Refuge, the Service has determined that hunting within the refuge will not interfere with the Service's habitat goals and objectives or purposes for which the refuge was established. Limiting access and monitoring the use will help limit any adverse effects.

Mandatory 15-year Reevaluation Date: 2027

FISHING

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

allowed within the wildlife viewing area (WVA) (145 acres), specifically along Francois Slough and the Bitterroot River. Fishing is available year-round, though limited in winter and during spring flooding. Fishing will be conducted in accordance with the rules and regulations set by the State of Montana. Additional refuge-specific regulations are printed in the refuge fishing brochure.

The CCP does not call for the implementation of any new fishing programs.

Availability of Resources. The refuge will continue to work with MFWP to conduct fish and creel surveys. The regional inventorying and monitoring biologist will assist with analysis and trend monitoring. The refuge will rely on the law enforcement officer, stationed at the refuge, and law enforcement staff from other refuges to enforce fishing regulations.

Anticipated Impacts of Use. Fishing and other human activities cause disturbance to wildlife and trampling of vegetation along the bank of rivers and streams. There will also be some mortality to those fish caught and then released. Refuge-specific regulations will assist in managing anglers and minimizing disturbance.

Determination. Fishing is a compatible use at designated fishing areas on Lee Metcalf Refuge.

Stipulations Necessary to Ensure Compatibility

- Visitors participating in fishing be provided the Service's public use regulations and State fishing regulations and limits. Rules specific to the refuge are published in the refuge fishing brochure.
- Vehicles will be restricted to county and designated public roads and parking areas.
- No boats may be used or launched at the WVA or anywhere else on the refuge, with the exception of boats launched off- refuge that then travel through the refuge on the Bitterroot River. Public fishing on the Bitterroot River by boat is restricted to below the high watermark, and boats cannot be launched onto the river from refuge lands.
- Boats, fishing equipment, and all other personal property must be removed at the end of each day.

Justification. Fishing is a priority public use identified in the Improvement Act. No long-term or significant adverse impacts of wildlife resources are expected from the primary or supporting uses. Based on the biological effects addressed above and in the EA that accompanied the draft CCP for Lee Metcalf Refuge, the Service has determined that fishing will not interfere with the Service's habitat goals and objectives or purposes for which the refuge was established.

Mandatory 15-year Reevaluation Date: 2027

Wildlife observation and noncommercial photography

Wildlife observation and photography are two of six wildlife-dependent priority public uses identified in the Improvement Act. Wildlife observation and photography on the refuge are conducted at the following public use areas: (1) the WVA; (2) outside the visitor contact area; (3) the Kenai Nature Trail; and (4) Wildfowl Lane, a county road that runs through the refuge.

The WVA, located in the southwest corner of the refuge, has four trail segments that total 2.5 miles. The area is open to off-trail hiking and observation. The 0.55-mile accessible segment of the trail system is 10 feet wide and paved and has three concrete benches. The three other trail segments are soil or gravel and vary in width. The gravel parking area is three-quarters of an acre, large enough to accommodate recreational vehicles. There is also a designated paved parking area for visitors with disabilities. Additional facilities include an information kiosk, portapotties, and a shelter.

At the visitor contact area, visitors are provided a spotting scope to view waterfowl and other waterbirds and raptors on the adjacent ponds. This is one of the most popular wildlife observation and photography sites for visitors, including school groups.

The Kenai Nature Trail is 1.25 miles long. It starts at refuge headquarters and parallels the eastern edge of Ponds 6, 8, and 10. The areas immediately next to the trail are closed, so visitors must remain on the trail. The first quarter mile of this trail is asphalt and meets accessibility guidelines. Five benches and one spotting scope are positioned along this paved section of trail. The remaining trail is soil and gravel and is not considered accessible. An additional four benches, one overlook platform with spotting scope, boardwalk, two wooden bridges, and two permanent photo blinds are located along this part of the Kenai Nature Trail.

Two permanent photo blinds are located along the Kenai Nature Trail. Blind 1 is located one-third of a mile from the visitor contact area on Pond 8; it sits within 55 acres of open water and marsh land and is sheltered to the east by cottonwood and alder trees. Blind 2 is located 1 mile from the visitor contact area on approximately 85 acres of open water on Pond 10.

An "L"-shaped 2.8-mile section of Wildfowl Lane travels through the refuge on a south-central to east-central direction and has informally served as the refuge auto tour route. The southern and easternmost miles of the road are paved or covered with recycled asphalt. The remaining road is gravel. The road is wide—at least 33 feet in width—allowing motorists to pull over safely and observe wildlife.

Wildlife observation and photography will be conducted year-round at the WVA, the visitor contact area, Kenai Nature Trail, and Wildfowl Lane.

The CCP proposes to continue the above wildlife observation and noncommercial photography activities and add the following to improve opportunities for these uses:

- The refuge will work with the county to develop the 2.8 miles of Wildfowl Lane, described above, as an auto tour route, with observation sites and accompanying interpretation.
- Visitors using the Kenai Nature Trail could choose to walk on the upper bench of a small portion of the trail to access a more level walking surface.
- The Kenai Nature Trail will be extended westward using the Pond 8 dike road (near Potato Cellar Pond); it will then loop south, travel past a former residence site, and then connect to Wildfowl Lane. This trail addition measures 1.25 miles in length. The trail will be open seasonally for public use. The closure will provide refuge for migrating and nesting waterfowl and other waterbirds. This spur to the Kenai Nature Trail will provide additional opportunities for wildlife viewing and photography, environmental education, and interpretation.
- Through partnerships, the refuge will conduct an annual wildlife photography workshop highlighting how to photograph wildlife while minimizing disturbance.
- Waterfowl hunting Blind 2 will be upgraded to provide a photo blind for photographers, including those with disabilities. At least two portable photo blinds will be purchased and available for visitor use.
- Snowshoeing and cross-country skiing will be permitted on walking trails when adequate snow is available.

Availability of Resources. Wildlife observation and photography will be administered by refuge staff. The refuge will rely on the zone law enforcement officer and staff from other refuges for law enforcement. Signage and law enforcement will be used to keep visitors from crossing into areas closed to public use.

The porta-potties will be maintained twice a week, and paved trails will be sealed periodically to maintain a smooth surface.

Anticipated Impacts of Use. There will be temporary disturbance to wildlife near the WVA and along trails. This disturbance will be minimized through refuge regulations and education including brochures, signage, and staff- or volunteer-led wildlife walks that highlight the ethics of wildlife observation and photography.

Determination. Wildlife observation and photography are compatible uses on Lee Metcalf National Wildlife Refuge.

Stipulations Necessary to Ensure Compatibility

- Visitors participating in wildlife observation and photography will be strongly encouraged to follow all public use regulations.
- All users of the Kenai Nature Trail will be required to stay on the trail.
- Non-Service vehicles will be restricted to county and public access roads in the refuge.
- Viewing areas will be designed to minimize disturbance impacts on wildlife and all refuge resources while providing good opportunities to view wildlife in their natural environments.
- Visitors using permanent or portable observation and photography blinds will be provided with information on properly using these structures to minimize disturbance to wildlife, habitats, and other refuge visitors.
- Photography outside of public use sites is not allowed.
- Dogs are allowed only on leashes and only on trails in the WVA.
- Bicycles, horses, and off-road vehicles are not allowed on the refuge.

Justification. Wildlife observation and photography is a wildlife-dependent, priority public use. No unacceptable, long-term or significant adverse impacts on wildlife resources are expected from the primary or supporting uses.

Mandatory 15-year Reevaluation Date: 2027

Environmental Education and Interpretation

Environmental education and interpretation are two of six wildlife-dependent priority public uses specified in the Improvement Act.

Most environmental education programs will be conducted at sites near refuge headquarters: (1) the visitor contact area, (2) Okefenokee Room, (3) environmental education shelter, (4) outdoor amphitheater, and (5) Kenai Nature Trail. The WVA will also be used for staff-led programs but even more so by self-directed environmental education partner organizations and school groups. Environmental education can be both formal and informal, and it can range from presentations to special events like festivals or fishing clinics. However, certain programming, usually special events, may involve additional refuge lands outside the headquarters area. The refuge will continue to organize and provide at least 15 on- and off-refuge annual and special events for adults and students.

The refuge has hosted an average of 2,300 students annually. Students come from communities as far as Darby to the south (approximately 40 miles) and Ronan to the north (about 85 miles). Most students are from grades 3–5. Environmental education will be conducted

year-round; however, most students visit the refuge in May, and these visits are typically limited by the individual schools to one visit per year.

Interpretation of the natural and cultural resources of the refuge and the Bitterroot Valley will be provided year-round in the same designated environmental education and wildlife observation and photography areas. Interpretation will be conducted through interpretive panels, revolving displays, videos, online materials, social media, brochures, flyers, handouts, and booklets. New displays will be professionally planned and produced.

Interpretive panels and brochures will be maintained and updated to reflect changes in information or policy and to meet the Service's graphic standards.

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

- The Service will expand the programs and opportunities for environmental education and interpretation, reaching additional students and visitors. These programs will focus on the values and importance of the natural, historical, and cultural resources of the refuge and the Bitterroot Valley, including the refuge's efforts to maintain, enhance, and restore native plant and wildlife communities on the refuge.
- Partnerships will be developed with local universities to provide opportunities for students to conduct research and monitoring projects that are beneficial to the refuge, that help address management needs, and that provide an opportunity for students to work on the refuge and with refuge staff.
- The Service will expand opportunities to collaborate with universities to provide outdoor classrooms for students interested in the refuge, its management programs, its current issues, and the values of the Refuge System.
- A classroom and associated supplies will be added to the expanded visitor center for environmental education programs.
- The Service will continue to maintain and update the current four kiosks, including three with interpretive panels. An additional interpretive panel will be located along the river trail within the WVA explaining the migration of the Bitterroot River.
- Interpretation will be provided along the Kenai Nature Trail, within the WVA, and along the auto tour route.
- On the north end of the refuge, a kiosk will be constructed at a parking lot used by hunters; it will provide regulations as well as information on refuge purposes and resources.

Availability of Resources. The refuge's outdoor recreation planner and volunteers, supplemented by other current Service staff, will continue to develop and lead these programs. Expanding current programs may require additional visitor services staff and volunteers.

Funding for environmental education and interpretation activities, directional signs, and brochures will be mainly supported by annual operation and maintenance money. Funding from other sources such as grants, regional project proposals, challenge cost-share agreements, and other temporary funding sources will also be sought and used as they became available.

Anticipated Impacts of Use. The bulk of environmental education and interpretation will take place in the refuge headquarters area. The use of the refuge for onsite activities by groups of teachers and students for environmental education or interpretation may impose a short-term, low-level impact on the immediate and surrounding area. Impacts may include trampling of vegetation and temporary disturbance to nearby wildlife species during the activities.

Refuge brochures, interpretive panels, and other educational materials will continue to be updated as needed to meet Service requirements. The Service will continue to promote a greater public understanding and appreciation of the refuge resources, programs, and issues through interpretive, outreach, and environmental educational programs. Presentations, both on and off Service lands, will be provided to refuge visitors, school groups, and organizations, allowing the Service to reach a broader audience. Onsite presentations will be managed to minimize disturbance to wildlife, habitat, and cultural resources.

Determination. Environmental education and interpretation are compatible uses on Lee Metcalf Refuge.

Stipulations Necessary to Ensure Compatibility. Onsite activities will be held where minimal impact on wildlife and habitats would occur. The Service will review new environmental education and interpretation activities to ensure that these activities meet program and refuge management objectives and are compatible.

- Visitors participating in environmental education and interpretation programs will be provided Service regulations. Compliance with regulations will be achieved through education, signage, and law enforcement and will minimize negative impacts on refuge habitat and wildlife.
- Environmental education may be limited to reduce disturbance to wildlife, particularly during the nesting seasons. The refuge manager will evaluate and, if appropriate, approve additional environmental education sites on the basis of potential impacts on wildlife. Access should be restricted around active bird nests and during other sensitive life history phases of refuge resources. Staff or volunteer-led programs may occur in areas not open to the public;

however, the location and timing of these activities must be approved by the manager.

- Educational activities will be commonly held in the Okefenokee Room, environmental education shelter, outdoor amphitheater, WVA, and the Kenai Nature Trail. On occasion and by special use permit only, environmental education activities may occur near dikes along Ponds 8 and 10, Grube Barn, and management areas I–4 and I–5. A number of stipulations will cover special events:
  - The Bitterroot and Five Valleys Audubon Societies' bird walk activities will be held on refuge-approved dates and times and located in public use areas.
  - The Great Backyard Bird Count in mid-February—a national "citizen science" event that promotes knowledge of native birds—will take place in areas open to the public. Event activities must be approved by the refuge manager.
  - Ground Hog Day, February 2, will include information and activities that emphasize the natural history of mammals, ecology, habitat, community processes, and the Refuge System; event activities must be approved by the refuge manager, and the location of this event will be restricted to the area around the Grube Barn. Other proposed locations will need to be approved by the refuge manager.
  - Montana Junior Duck Stamp Program activities (mid-April to early May) will take place at the outdoor amphitheater and environmental education shelter. The program will highlight the integration of science with the arts. Event activities must be approved by the refuge manager.
  - The Weed Pull in May or June is a public event targeting the removal of noxious weeds, which is compatible with refuge and management purposes. Staff will work with partners employing environmental education curriculum and outreach to educate visiting public on noxious weed identification and management. Event locations must be approved by the refuge manager.
  - For the Kid's Fishing Clinic, held in both June and September, all fishing and environmental education stations will be positioned for the purpose of safety and minimizing resource disturbance. Activities will primarily be located surrounding the Refuge Headquarters area, but may occur, with issuance of a special use permit, in areas currently closed to public use. Event locations and times must be approved by the refuge manager.
  - The spring and summer Hunter Safety Courses can be held at the Okefenokee Room, Kenai Nature Trail, Grube Barn, and parts of management units I–4 and I–5 with issuance of a special use permit. Activities will be planned to ensure safety and minimize wildlife and visitor disturbance. Event activities and optional locations must be approved by the refuge manager.
  - The Stevensville Audubon Christmas Bird Count is held in December or January every year. Refuge staff escort Audubon volunteers, counting and identifying all birds encountered on the refuge. Most bird identification activities will be conducted from refuge roads and dikes, minimizing wildlife disturbance; event activities and locations must be approved by the refuge manager. Unaccompanied individuals may not enter areas closed to the public without a special use permit.
  - The refuge will continue to provide staff-led programs, in places and at times of day, that are not open to general public access. Typically these special programs will be planned during special celebrations such as National Wildlife Refuge Week or International Migratory Bird Day. Such events will be preplanned by the visitor services staff in the station annual work plan and publicized well in advance. Any special interpretive or wildlife observation programs offered will be open to the general public and will not be conducted for a select group.

Justification. A secondary goal of the Refuge System is to provide opportunities, when found compatible, for the public to develop an understanding and appreciation for wildlife.

Environmental education and interpretation can be used to help citizens of all ages build a land ethic and act responsibly in protecting wildlife and habitats, which in turn can enrich a person's life, provide an incentive for outdoor activity with associated health benefits, and potentially lessen the likelihood of that person violating laws protecting wildlife. Additionally, environmental education and interpretation are important tools for the refuge to provide visitors with an awareness of its purposes, values, and specific issues such as invasive species, habitat management, restoration of natural processes, and migratory bird management. These tools will provide visitors and students with a greater understanding of the mission and importance of the Refuge System to the American people.

Based on anticipated biological impacts described above and in the EA that accompanies the draft CCP for Lee Metcalf National Wildlife Refuge, the Service determines that environmental education and interpretation will not significantly detract from the Service's implementation of wildlife habitat goals and objectives, or with the purposes for which the refuge

was established. Managing areas used for conducting environmental education and interpretation, monitoring those areas, and mitigating impacts will help minimize potential adverse effects.

Mandatory 15-year Reevaluation Date: 2027

COMMERCIAL FILMING, AUDIO RECORDING, AND STILL PHOTOGRAPHY

Commercial filming is the digital or film capture of a visual image. Commercial audio recording is the capture of sound. Commercial still photography is the digital or film capture of a still image. Each of these activities is conducted by a person, business, or other entity for a market audience for use in a documentary, television program, feature film, advertisement, or similar project. It does not include news coverage or visitor use.

Lee Metcalf Refuge provides opportunities for commercial filming and still photography of migratory birds and other wildlife. Requests from commercial persons, businesses, or entities to conduct commercial activities will be evaluated on their merit in educating the public about the resources and purposes of the refuge and the Refuge System. Any issued special use permit for filming or photography will designate the specific areas that may be accessed and the activities that are allowed (refer to "Stipulations Necessary to Ensure Compatibility" below).

In rare cases the Service may permit access to areas closed to the public. The public benefit, as determined by the refuge manager, must outweigh the potential disturbance to wildlife resources.

Availability of Resources. Current staff will evaluate requests for commercial photography, filming, or audio recording. Administrative costs for reviewing applications, the issuance of subsequent special use permits, and staff time to monitor compliance may be offset by a fee.

Anticipated Impacts of Use. Wildlife filmmakers and photographers tend to create the greatest disturbance of all wildlife observers (Dobb 1998, Klein 1993, Morton 1995). While observers frequently stop to view wildlife, photographers are more likely to approach animals (Klein 1993). Even a slow approach by photographers tends to have behavioral consequences on wildlife (Klein 1993). Photographers often remain close to wildlife for extended periods of time in an attempt to habituate the subject to their presence (Dobb 1998). Furthermore, photographers with low-power lenses tend to get much closer to their subjects (Morton 1995). This usually results in increased disturbance to wildlife as well as habitat, including the trampling of plants. Handling of animals and disturbing vegetation (such as cutting plants and removing flowers) or cultural artifacts is strictly prohibited on Service lands.

Issuance of special use permits with strict guidelines and monitoring by refuge staff for compliance may help minimize or avoid these impacts. Permittees who do not follow the stipulations of their special use permits could have their permits revoked, and further applications for filming or photographing on refuge lands will be denied.

Determination. In rare circumstances, commercial filming, audio recording, and still photography will be compatible uses on Lee Metcalf Refuge.

Stipulations Necessary to Ensure Compatibility. Commercial filming or photography must (1) demonstrate a means to increase the public's knowledge, appreciation, and understanding of the purposes of Lee Metcalf National Wildlife Refuge, the National Wildlife Refuge System, or the wildlife resources that are managed on these lands. Failure to fully demonstrate a measurable means to meet this criterion would likely result in a denial of the special use permit request.

Any commercial filming and audio recording will require a special use permit that will (1) identify conditions that protect the refuge's values, purposes, resources, and public health and safety and (2) prevent unnecessary disruption of the public's use and enjoyment of the refuge. Such conditions may be, but are not limited to, specifying road conditions when access would not be allowed, establishing time limitations, identifying routes of access, limiting the number of participants, and specifying the exact location participants are allowed. These conditions will be identified to prevent excessive disturbance to wildlife, damage to habitat or refuge infrastructure, or conflicts with other visitor services or management activities.

The special use permit will stipulate that imagery produced on refuge lands will be made available for use in environmental education and interpretation, outreach, internal documents, or other suitable uses. In addition, any commercial products must include appropriate credits to the Lee Metcalf National Wildlife Refuge, the National Wildlife Refuge System, and the U.S. Fish and Wildlife Service.

Still photography requires a special use permit (with specific conditions as outlined above) if one or more of the following would occur:

- It takes place at locations where or at times when members of the public are not allowed.
- It uses models, sets, or props that are not part of the location's natural or cultural resources or administrative facilities.
- The Service would incur additional administrative costs to monitor the activity.
- The Service would need to provide management and oversight to avoid impairment of the resources and values of the site, limit resource damage, or minimize health and safety risks to the visiting public.

- The photographer intends to intentionally manipulate vegetation to create a shot (for example, cutting vegetation to create a blind).

To minimize the impact on Service lands and resources, refuge staff will ensure that all commercial filmmakers and commercial still photographers comply with policies, rules, and regulations. The staff will monitor and assess the activities of all filmmakers, audio recorders, and still photographers.

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

Mandatory 10-year Reevaluation Date: 2022

Cooperative Farming and Prescriptive Grazing

The Service has used cooperative farming and prescriptive livestock grazing in the past as a management tool to manage a variety of upland, riparian, and seasonal wetland habitats. These tools will be used to meet habitat objectives, control vegetative litter, promote native plant production and diversity, control the spread of invasive plant species, and help convert disturbed grasslands back to native plant species. Cooperative farming is usually done on a share basis where the Service and the cooperator each receive a share of the crop. The Service will retain its share as standing cover for wildlife forage or in exchange for additional work from the cooperator such as invasive plant control, grass seeding, or provision of supplies such as herbicides and fence materials for habitat protection and improvement on the management unit. Any income received by the Service will be deposited in the Refuge Revenue Sharing Account. Cooperative farming will primarily be used to treat invasive species by continually farming specific areas until seedbed is reduced. Following this process, these areas will be restored to native species found on that site. The site will continue to be monitored for reinvasion.

Grazing by livestock has been a preferred management tool because the effect on habitat is controllable and measurable. Grazing may occur throughout the year as management needs dictate. For wetland units, the purpose of grazing will be to consume portions of emergent vegetation and to break root rhizomes with hoof action. This will likely result in enhanced aeration of soils, removing portions of monotypic emergent vegetation. For upland units, grazing will be used to mimic the historical grazing patterns, most likely employing short-duration, intense grazing pressure with extended rest periods.

Fencing and controlling livestock is the responsibility of the cooperating rancher. The Service provides instruction and guidance within the special use permit for placement of fences, water tanks, and livestock supplements to ensure that sensitive habitats or refuge assets are protected. A temporary electric fence is used in most grazing applications. Current forage conditions, habitat objectives, and available water determine stocking rates in each grazing unit.

The Service will continue using cooperative farming and prescriptive livestock grazing to meet habitat objectives. Furthermore, the CCP establishes goals and objectives for specific habitat types where these tools may be used. In addition, the Service has identified target wildlife species (for example, grasshopper sparrow and marbled godwit) and their habitat requirements, which has resulted in objectives that guide these programs to achieve the habitat needs of these target species. The refuge will improve the monitoring and research programs for vegetation and wildlife to assess habitat and wildlife population responses to prescriptive livestock grazing.

Availability of Resources. Current refuge staff and funding resources are sufficient for the purposes of monitoring habitats and implementing research needs to understand the impacts of grazing on refuge habitats. One biological technician will be necessary to carry out the on-the-ground monitoring. These programs will continue to be conducted through special use permits or cooperative farming agreements, which minimize the need for staff time and Service assets to complete work. Permittees will be selected on their ability to accomplish refuge habitat goals and minimize expenditures of staff time and resources. Fencing, caring for, and all animal husbandry tasks are the responsibility of the permittee. The permittee is also responsible for keeping all animals within the management unit and preventing them from roaming at large. The Service provides direction on the placement of temporary fences, water tanks, livestock supplements, loading and off-loading panels and chutes to ensure the protection of sensitive habitats and refuge resources.

Anticipated Impacts of Use. The cooperative farming and prescriptive livestock-grazing program is used to meet habitat- and species-specific goals and objectives identified in the CCP. This program is intended to maintain and enhance habitat conditions for the benefit of a wide variety of migratory birds and other wildlife that use the refuge.

Some wildlife disturbance may occur during operation of noisy farming equipment, and some animals may be temporarily displaced. Wildlife will receive the short-term benefit of standing crops or stubble for food and shelter and the long-term benefit of having historical cropland or other poor-quality habitat converted to native grasses and shrubs. Reducing the number of invasive species and the existing seedbed will support future restoration efforts.

Some trampling of areas by livestock occurs around watering areas. It is anticipated that grazing will continue to be used to manage vegetative monocultures on a rotational basis. Grazing, as well as fire, is known to increase the nutrient cycling of nitrogen and phosphorous (Hauer and Spencer 1998, McEachern et al. 2000). Hoof action may break up the soil cap on upland fields, allowing moisture to infiltrate the soil and allowing native plant seeds to become established. However, cattle grazing would also increase the risk of invasive plants becoming established. Grazing in the spring could have adverse effects on grassland-bird nests due to trampling and loss of vegetation. In addition, the presence of livestock may disturb some wildlife species and some public users. The long-term benefits of this habitat management tool should outweigh the short-term negative effects.

Determination. Cooperative farming and prescriptive grazing as habitat management tools are compatible uses on Lee Metcalf National Wildlife Refuge.

Stipulations Necessary to Ensure Compatibility. To ensure consistency with management objectives, the Service will require general and specific conditions for each cooperative farming and grazing permit.

To minimize impacts on nesting birds and other wildlife, the refuge manager will determine and incorporate any necessary timing constraints on the permitted activity into the cooperative farming agreement or special use permit.

The cooperative farming agreement or special use permit will specify the type of crop to be planted. Farming permittees will be required to use Service-approved chemicals that are less detrimental to wildlife and the environment.

Control and confinement of livestock are the responsibility of the permittee, but the Service will continue to determine where fences, water tanks, and livestock supplements (if necessary) are placed within the management unit. Temporary electric fences are used to retain livestock within grazing cells as well as to protect sensitive habitat areas and refuge assets such as water control structures. Cooperators will be required to remove fences at the end of the grazing season.

When grazing fees are assessed, they are based on the current-year U.S. Department of Agriculture Statistics Board publication, "Grazing Fee Rates for Cattle by Selected States and Regions." Standard deductions for labor associated with the grazing permit may be included on the special use permit.

The refuge will monitor vegetation and soils to assess if habitat requirements of target species are being met. A minimum of one temporary biological technician is necessary to monitor and document these activities.

Justification. Habitat management needs to occur to maintain and enhance habitat for migratory birds and other wildlife in this altered landscape. When properly managed and monitored, cooperative farming and prescriptive livestock grazing can rejuvenate native grasses and help control the spread of some invasive plant species and some undesirable monoculture species like cattail. Prescriptive grazing is controlled and the results monitored (for example, vegetation monitoring) so that adjustments in the grazing program are made to meet habitat goals and objectives. The cooperative farming program will be monitored to determine the effectiveness and necessary duration and frequency of farming needed to control and reduce invasive species.

Using local cooperators to perform the work is a cost-effective method to accomplish habitat objectives. The long-term benefits of habitat restoration and management far outweigh any short-term impacts caused by grazing.

Mandatory 10-year Reevaluation Date: 2022

RESEARCH AND MONITORING

Lee Metcalf Refuge receives approximately 8–12 requests each year to conduct scientific research or monitoring on Service lands. Priority is given to studies that contribute to the enhancement, protection, preservation, and management of the refuge's native plant, fish, and wildlife populations and their habitats. Non-Service applicants must submit a proposal that outlines the following:

- objectives of the study
- justification for the study
- detailed methodology and schedule
- potential impacts on wildlife and habitat including disturbance (short- and long-term), injury, or mortality
- description of measures the researcher would take to reduce disturbances or impacts
- staff required and their qualifications and experience
- status of necessary permits such as scientific collection permits and endangered species permits
- costs to the Service including staff time requested, if any
- anticipated progress reports and endproducts such as reports or publications

Refuge staff will review research and monitoring proposals on a case-by-case basis and issue special use permits if approved. Criteria for evaluation include, but are not limited to, the following:

- Research and monitoring that contribute to specific refuge management issues will be given higher priority over other requests.
- Research and monitoring that would cause undue disturbance or would be intrusive would likely not be approved. The degree and type of disturbance will be carefully weighed when evaluating a research request.
- Research projects that can answer the same questions yet be conducted off-refuge are less likely to be approved.
- Evaluations will determine if effort has been made to minimize disturbance through study design, including adjusting location, timing, scope, number of researchers, study methods, and number of study sites.
- If staffing or logistics make it impossible for the refuge to monitor researcher activity, this may be a reason to deny the request.
- The length of the project will be considered and agreed upon before approval. Projects will be reviewed annually.

Availability of Resources. Current resources are minimally adequate to administer research and monitoring efforts. A full-time biological science technician will assist in monitoring research proposals and projects. It is anticipated that approximately $4,000 per year is required to administer and manage current research and monitoring projects. Coordination with a Service inventorying and monitoring biologist will be necessary to administer large or long-term projects, which generally require more in-depth evaluation of applications, management of permits, and oversight of projects. The refuge will work with this biologist to identify research and monitoring needs and work with other Service staff, universities, and scientists to develop studies that will benefit the refuge and address the goals and objectives in the CCP.

Anticipated Impacts of Use. Some degree of disturbance is expected with research activities, because most researchers enter areas and use Service roads that are closed to the public. In addition, some research requires collecting samples or handling wildlife. However, the overall impact on wildlife and habitats is expected to be minimal with research studies when special use permits include conditions to minimize those impacts.

Determination. Research and monitoring are compatible uses on the Lee Metcalf Refuge.

Stipulations Needed to Ensure Compatibility

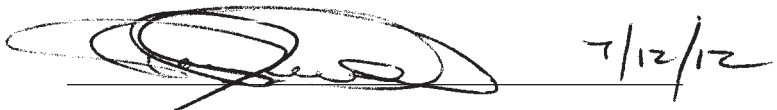
- Extremely sensitive wildlife habitats and species are sufficiently protected from disturbance by limiting research activities in these areas.
- All refuge rules and regulations are followed unless otherwise exempted by refuge management.
- Refuge staff use the criteria for evaluating research and monitoring proposals as outlined above ("Description of Use") when determining whether to approve a proposed project on the refuge. If proposed research methods are evaluated and determined to have potential impacts on refuge wildlife or habitat, it must be demonstrated that the research is necessary for refuge resource conservation management. All projects are reviewed annually.
- Measures to minimize potential impacts will need to be developed and included as part of the project and study design. These measures, with potential modifications or additions, will be listed as conditions on the special use permit.
- The length of the project will be considered and agreed on before approval.
- Projects will be reviewed annually and any modifications made as appropriate.
- Refuge staff will monitor research and monitoring activities to ensure compliance with all conditions of the special use permit. At any time, refuge staff may accompany the researchers to determine potential impacts. Staff may determine that previously approved research and special use permits be terminated due to observed impacts.
- No unauthorized individuals may accompany the researcher without prior consent from the refuge.
- The special use permit is nontransferable from one researcher to any other individual.
- The refuge manager will have the ability to cancel a special use permit if the researcher is out of compliance or to ensure wildlife and habitat protection.

Justification. The program as described is determined to be compatible. Potential impacts of research activities on refuge resources will be minimized through restrictions included as part of the study design, and research activities will be monitored by refuge staff. Results of research projects will contribute to the understanding, enhancement, protection, preservation, and management of the refuge's wildlife populations and their habitats.

Mandatory 10-year Reevaluation Date: 2022

C.4 Signatures

SUBMITTED:



Tom Reed, Refuge Manager — Date
Lee Metcalf National Wildlife Refuge
Stevensville, Montana

REVIEWED:

W. Dean Rundle, Refuge Supervisor — Date
U.S. Fish and Wildlife Service, Region 6
National Wildlife Refuge System
Lakewood, Colorado

APPROVED:

Matt Hogan, Assistant Regional Director — Date
U.S. Fish and Wildlife Service, Region 6
National Wildlife Refuge System
Lakewood, Colorado

Appendix D

Intra-Service Section 7 Biological Evaluation

Originating Person: Tom Reed Date Submitted: July 12, 2012

Telephone Number: 406 / 777 5552

I. **Service Program and Geographic Area or Station Name:** Lee Metcalf National Wildlife Refuge (Ravalli County)

II. **Flexible Funding Program (e.g. Joint Venture, etc.) if applicable:** Not applicable

III. **Location:** Location of the project including county, State and TSR (township, section and range):
See attached map (page 2) in accompanying "Comprehensive Conservation Plan—Lee Metcalf National Wildlife Refuge."

IV. **Species/Critical Habitat:** List federally endangered, threatened, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area.

Species	*Status*	*Relevance*	*Critical habitat*
Bull trout	Threatened	Historically used refuge waters to access spawning area	North Burnt Fork Creek and Bitterroot River
Yellow-billed cuckoo	Candidate	Suitable habitat present; never documented	None
Wolverine	Candidate	No suitable habitat present	None
Whitebark pine	Candidate	No suitable habitat present	None

V. **Project Description:** Describe proposed project or action or, if referencing other documents, prepare an executive summary (attach additional pages as needed):

The proposed action is to implement ongoing actions and to execute several proposed projects over the next 15 years that support the goals, objectives, and strategies of the "Lee Metcalf National Wildlife Refuge Comprehensive Conservation Plan" (CCP) while fulfilling the goals of the National Wildlife Refuge System.

The CCP proposes to conserve natural resources by restoring, protecting, and enhancing native grasslands and riverfront and gallery forest and associated stream habitat; improving the health and productivity of the wetland impoundments; and more effectively controlling invasive species across the refuge. The CCP also proposes to develop and implement restoration actions to improve existing habitat conditions and address threats to native fish where practicable. Management operations of the refuge would likely change as new actions are implemented during the 15-year term of this CCP. A description of ongoing actions and current management operations can be found in chapter 4 of the draft CCP or alternative A of the environmental assessment (EA).

One of the new proposals is to restore in-stream habitat in North Burnt Fork Creek, which is designated as critical bull trout habitat. On September 30, 2010, the U.S. Fish and Wildlife Service (Service) designated 18,795 miles of streams and 488,252 acres of lakes and reservoirs in Idaho, Oregon, Washington, Montana, and Nevada as critical habitat for this wide-ranging native fish. The Bitterroot River and North Burnt Fork Creek are both located within this designated area. Today, the bull trout

is primarily restricted to the upper reaches of North Burnt Fork (Creek) on U.S. Forest Service land because of dammed and diverted waterflows, sedimentation, and increased water temperatures in the creek (Stringer 2009). Over time, this creek has been altered due to irrigation diversions, development, encroachment and realignment of the stream channel, increased sedimentation, and comingling of irrigation water and North Burnt Fork Creek. On the refuge portion of this creek, the Service constructed three structures by 1970 with an objective to create more pond-like habitat for waterfowl and warmwater fish (providing more fishing opportunities in the public use area).

This final CCP is proposing to remove obstructions and reestablish the North Burnt Fork Creek entrance into the Bitterroot River where it is sustainable and conducive for native salmonids. As part of this project, the Service would strategically remove water control structures, if appropriate, and other obstructions in the tributary and floodplain channels to allow fish and other aquatic animals to use this stream corridor. Removal of water control structures along the creek would deepen and narrow the streambed, allowing unimpeded flow to the Bitterroot River. This connection would encourage riparian ecological processes to continue to function. Flooding and drainage capabilities would more closely emulate natural hydrological regimes that sustained native plant communities. However, augmented irrigation water diverted into North Burnt Fork Creek upstream of the refuge greatly affects the hydrology of this creek on the refuge. These actions would restore only a small portion of this historic migration route for bull trout, but the Service would continue to work with other partners to expand these efforts to address river and stream connectivity off the refuge.

The CCP also proposes to evaluate and potentially reestablish a channel to the Bitterroot River that mimics the historical channel pattern of Three Mile Creek. Three Mile Creek is another mountain and terrace–derived tributary to the Bitterroot River. Much like North Burnt Fork Creek, this stream channel has been altered both off and on the refuge by the installation of culverts, bridge crossings, irrigation diversions, and artificial channels. This creek contributes high sediment and nutrient loads to the Bitterroot River compared to other tributaries in the Bitterroot watershed (McDowell and Rokosch 2005) and also receives augmented irrigation water off refuge. In 1984, three sediment catch pools were built on the refuge just south of Pond 11 to prevent sediment from entering and filling this impoundment. The sediment catch pools were filled to capacity in only 1 year. In 1989, as a solution to the sedimentation, the Service built Otter Pond. The refuge portion of Three Mile Creek was channeled into a bypass directly to the river. Water from Otter Pond was then siphoned under Three Mile Creek to feed Ponds 11–13. Currently, the river's mainstem is just west of this confluence, and the sediment from Three Mile Creek has created a willow-filled island within what is now considered part of North Island Slough. Restoring Three Mile Creek to its historical channel will encourage riparian ecological processes to become reestablished. Additionally, overbank flooding capabilities will improve and more closely emulate natural hydrological regimes that sustained native plant communities. The objective of the restoration proposal is to create habitat conditions supporting native cold-water species (cooler water temperature, riffles, deep pools, natural sinuosity) and the restoration of riparian habitat including gallery and riverfront forest. This may require the removal of impoundments, level ditching, spoil, and islands that obstruct the migration of this stream.

Both of these stream restoration projects would require additional engineering and hydrological expertise in order to select a restoration path that is beneficial and sustainable. Once each design is completed, a stepdown intra-Service consultation would be conducted on each proposal.

In addition to these stream restoration projects, the CCP proposes to begin removing other obstructions (levees, dams, ditching) that impede the movement of flood water across this floodplain refuge. This will restore the capability of the Bitterroot River to overflow its banks and back water up into tributaries and into other floodplain channels. Backwater flooding provides foraging habitat for pre-spawning native fish and rearing habitat for larval and juvenile fishes. Annual backwater flooding recharges water regimes in depressions and shallow floodplain wetlands that serve as productive breeding habitat for amphibians, reptiles, waterbirds, and certain mammals. Subsequent drying of floodplains concentrates aquatic prey for fledgling waterbirds. To begin reconnecting this floodplain habitat with the Bitterroot River, the Service proposes to remove levees, roads, and ditches that prohibit overbank and backwater flooding of the Bitterroot River and disrupt natural sheet flow into the central floodplain of the refuge. Many of these structures have already been eroded by the movement of the river. Once these structures

are removed, additional efforts may require assistance from engineers and hydrologists to determine which structures are continuing to impede flooding processes.

VI. **Determination of Effects:**

(A) Description of Effects: Describe the action(s) that may affect the species and critical habitats listed in item IV. Your rationale for the Section 7 determinations made below (B) should be fully described here.

Ongoing actions and current management operations of the refuge are not likely to adversely affect the current baseline conditions for bull trout or diminish the existing functions of the primary constituent elements that support bull trout critical habitat. Bull trout are all but absent from this stretch of the Bitterroot River and the lower reaches of North Burnt Fork Creek. A resident local population of bull trout exists in the headwaters of North Burnt Fork Creek several miles above the refuge. Both the Bitterroot River and North Burnt Fork Creek are designated critical habitat. Because of the unlikelihood of a bull trout being in the area, effects on the species from current refuge operations are indiscernible.

A concern of the Service is the likelihood that the past water management operations of the refuge may have to some degree contributed to the current degraded baseline habitat conditions in the lower reach of North Burnt Fork Creek. Given the long history of impacts on the North Burnt Fork Creek watershed—most of which have occurred (and continue to occur) upstream of the refuge—it is virtually impracticable to determine with precision the level of impact that past or current refuge operations may have or continue to have on bull trout and bull trout habitat in the area. Therefore, under the CCP, the refuge has identified several new proposed actions that, when implemented, would improve baseline habitat conditions for bull trout by addressing the habitat parameters most affected by refuge operations, mainly connectivity to the Bitterroot River and flow through water management.

The proposed actions would result in changes on the refuge that are anticipated to benefit bull trout and other native fish species. Effects on bull trout and its habitat will be assessed in subsequent intra-Service consultations. Each individual proposed action identified in the CCP would include site-specific designs, construction elements, maintenance and operational components, as well as monitoring features to ensure that the intended outcome of improving baseline conditions for bull trout is achieved.

The stream restoration proposals would reestablish a portion of the spawning migration route within the designated critical bull trout habitat. This will be a small step to returning this threatened species to its historic passageway. An example of a proposed action to improve baseline conditions for bull trout is the removal of obstructions that inhibit river migration and overbank flooding. This project would help create and sustain communities and basic ecological functions (scouring, deposition, movement of water, native fish, and animals between the river and the floodplain) that support life cycle events and the needs of native plant, native fish, and animal communities.

There are many off-refuge obstacles to returning bull trout to its historical spawning area. The refuge is currently exploring opportunities to partner with other watershed stakeholders with an interest in improving and enhancing watershed health in the Bitterroot River system. The CCP proposes to continue to work with other partners including the State of Montana, the U.S. Forest Service, and other valley-wide conservation partners to continue and expand this process of repatriation.

A number of projects proposed under various objectives and strategies, including those listed above, would need site-specific designs before they are implemented. Complete determination of effects from such projects on bull trout and bull trout critical habitat is not feasible prior to more detailed design. Table 1 lists all goals, objectives, and strategies of the CCP that may affect bull trout; the short-term and long-term effects, when known; and whether additional stepdown consultation will be needed. Once the CCP is approved and implemented, stepdown plans will be completed for various programs. The purpose of the stepdown management plans is to provide details to Service staff for carrying out specific actions and strategies authorized by the CCP. Stepdown management plans to be developed under the CCP that may affect bull trout include water management and habitat management plans, and these will be developed under informal consultation with Ecological Services, with formal consultation to follow, if so indicated.

(B) Determination: Determine the anticipated effects of the proposed project on species and critical habitats listed in item IV. Check all applicable boxes and list the species (or attach a list) associated with each determination.

	Determination
No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. **No concurrence from ESFO required.** (yellow-billed cuckoo, whitebark pine, wolverine)	X
May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals of listed species and/or designated critical habitat. **Concurrence from ESFO required.** (bull trout, designated critical habitat)	X

The Service has determined the proposed CCP *may affect, but is not likely to adversely affect* the threatened bull trout or its designated critical habitat.

May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species and/or designated critical habitat. **Formal consultation with ESFO required.**

May affect but Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project may affect, but is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Concurrence from ESFO optional.**

Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Conferencing with ESFO required.**

Signature  Date 7/12/12

Tom Reed, Manager
Lee Metcalf National Wildlife Refuge
Stevensville, Montana

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

A. Concurrence _X_ Nonconcurrence _____

Explanation for nonconcurrence:

B. Formal consultation required _____

List species or critical habitat unit

C. Conference required _____

List species or critical habitat unit

Ecological Services
U.S. Fish and Wildlife Service
Helena, Montana

Signature R. Mark Wilson Date 7-17-12

R. Mark Wilson, Ecological Services Supervisor
Ecological Services
Helena, Montana

Table 1. Goals, objectives, and strategies of the Lee Metcalf CCP that may affect bull trout or bull trout critical habitat.

Goals, objectives, and strategies	*Effect (short/long)*[1]	*Consultation*[2]
Goal for Bitterroot River Floodplain and Associated Wildlife (excerpt): Manage and, where appropriate, restore the natural topography, water movements, and physical integrity of surface water flow patterns across the Bitterroot River floodplain to provide healthy riparian habitats…	Restore	Complete
Floodplain Objective 1: Where channel migration of the Bitterroot River is occurring, do not inhibit the river from establishing natural flow patterns during high flow events, where appropriate, to enhance existing riparian woodlands and provide suitable restoration sites for both gallery and riverfront forest vegetation that could provide breeding, nesting, feeding, or migration habitat for target species (over the next 15 years).	Restore	Complete
Strategy: Contracting as necessary, work with engineers and hydrologists (with expertise in fluvial geomorphology) to determine and design overflow channels in the north part of the refuge (Ponds 11, 12, and 13) and remove infrastructure to allow for river movements into these channels. The design for this restoration may indicate the need for changes to Otter Pond. Revegetate exposed soils with gallery and riverfront forest species.	Unknown/ Restore	Stepdown
Strategy: Work with partners to investigate options for slowing the erosion of the WVA. All options will be evaluated based on cost, effectiveness,and impacts on the environment, including the river system.	Unknown	Stepdown
Strategy: Continue to allow seasonal flows (including backwater flooding into Francois Slough) of the Bitterroot River into and through North Island and Francois Sloughs.	Restore	Complete
Strategy: Allow and promote natural regeneration of native gallery and riverfront forests and plant native trees, shrubs, and grasses, where appropriate.	Restore	Complete
Floodplain Objective 2 (excerpt): Reconnect floodplain habitats with the Bitterroot River to allow natural overbank and backwater flooding into and out of the floodplain during high flow events to support and expand the health, diversity, and extent of the riparian woodlands… (over the next 15 years).	Restore	Complete
Strategy: Construct wide spillways in or remove artificial levees, roads, and ditches that prohibit overbank and backwater flooding of the Bitterroot River and disrupt natural sheet flow into the central floodplain of the refuge.	Restore	Complete
Strategy: Work with engineers and hydrologists, contracting as necessary, to determine and design the best methods available to remove structures, level ditching, and islands next to the river that are impeding natural overbank and backwater flooding on the refuge, including Ponds 11–13.	Unknown/ Restore	Stepdown
Strategy: Improve high water flow west of Ponds 6–10 into and through historical slough and swale channels by removing obstructions, levees, and dams in and across these drainages.	Restore	Complete
North Burnt Fork Creek Objective: Within the refuge, reconnect unimpeded flow from North Burnt Fork Creek with flow pathways into the Bitterroot River to reduce creek water temperatures, improve water and nutrient flow, create habitat conditions conducive to native cold-water species and restore riparian woodland habitat that will support target species (within 8 years).	Unknown/ Restore	Stepdown
Strategy: Based on historical channel information (photos, topographical features), establish the Burnt Fork Creek entrance into the Bitterroot River where it is sustainable and conducive for native salmonids.	Unknown/ Restore	Stepdown
Strategy: Work with an engineer and hydrologist to determine the best route for North Burnt Fork Creek to return to the river, considering the requirements of bull trout. Strategically remove water control structures and other obstructions in the tributary and floodplain channels to allow fish and other aquatic animals to use this riparian corridor.	Unknown/ Restore	Stepdown

Table 1. Goals, objectives, and strategies of the Lee Metcalf CCP that may affect bull trout or bull trout critical habitat.

Goals, objectives, and strategies	*Effect (short/long)*[1]	*Consultation*[2]
Strategy: Through partnerships, encourage restoration and stream connectivity off the refuge to reestablish natural fish passage and flow pathways in the creek to its upper reaches. (Consultation on any future off-refuge actions will be conducted by those agencies developing these restoration proposals)	Restore	Complete
Strategy: Restore newly exposed banks to riparian habitat.	Restore	Complete
Three Mile Creek Objective: Reestablish a channel to the Bitterroot River that mimics the historical flow pattern of Three Mile Creek to create habitat conditions supporting native cold-water species (cooler water temperature, riffles, deep pools) and the restoration of riparian habitat.	Unknown/ Restore	Stepdown
Strategy: Develop contracts as necessary with engineers and hydrologists to determine and design the best methods available to remove structures, level ditching, and islands. Through partnerships, attempt to restore river and stream connectivity off refuge to reestablish natural fish passages and flow pathways in the creek.	Unknown/ Restore	Stepdown
Strategy: Plant and encourage native vegetation (for example, cottonwood or willow) on restored sites to prevent invasive species encroachment as Ponds 11–13 (see Floodplain Objective 2) dry up and overbank and backwater flow patterns reestablish.	Restore	Complete
Riverfront Forest Habitat Objective: Restore regenerating and sustaining mechanisms for riverfront forest communities alongside the Bitterroot River	Restore	Complete
Strategy: Remove levees, berms, and roads to allow for natural overbank and backwater flooding (see Floodplain Objective 2). These occasional flood events would scour surfaces, deposit sands, and create regeneration sites to restore and sustain riverfront forest vegetation, including cottonwood, along the margins of the Bitterroot River.	Restore	Complete
Strategy: Monitor and treat invasive species and promote and restore vegetation native to riverfront forest to provide quality habitat for target species.	Restore	Complete
Gallery Forest Habitat Objective (excerpt): Restore regenerating and sustaining mechanisms for gallery forest communities on higher floodplain elevations (natural levees and benches) in areas with sandy-loam soils, on natural levees, and on other floodplain ridges that have 2- to 5-year flood occurrence intervals…	Restore	Complete
Strategy: Reduce the size of Ponds 8 and 10 to allow for expansion of gallery forest on the west side of these impoundments, thereby reducing the amount of water diverted to these ponds.	Restore	Complete
Strategy: Plant cottonwood and ponderosa pine to expand gallery forest areas, focusing on areas with appropriate soils.	Restore	Complete
Goal for Wetland Impoundment Habitat and Associated Wildlife: Where appropriate, manage wetland impoundments to create a diversity of habitats for target waterfowl, shorebirds, and other associated native wetland-dependent species.	Restore	Complete
Wetland Impoundment Habitat Objective 1: Over the next 15 years, manage water levels on 628 acres to emulate natural and seasonal water regimes including natural increases in waterflow in the spring followed by rotational drying in the summer and fall. [Note: Consultation on this objective and pertinent strategies will be covered under the development of the Water Management Plan.]	Unknown/ Restore	Stepdown
Strategy: Maintain or replace the water management structures in Ponds 1–6, Ponds 8 and 10, and Otter Pond. The remaining wetland impoundment structures will be maintained as needed.	Maintain	Complete
Strategy: Water level management of all ponds will be changed to a more seasonal water regime that emulates natural increases in distribution and depth in spring, followed by occasional drying in summer and fall to encourage the restoration of wetland and shrub habitat. [Note: Consultation on this objective and pertinent strategies will be covered under the development of the water management plan.]	Unknown/ Restore	Stepdown

Table 1. Goals, objectives, and strategies of the Lee Metcalf CCP that may affect bull trout or bull trout critical habitat.

Goals, objectives, and strategies	*Effect (short/long)*[1]	*Consultation*[2]
Strategy: Emulate long-term patterns of drier conditions in floodplain wetlands in most years including periodic complete drying in some years and occasional prolonged flooding in a few years.	Unknown/ Restore	Stepdown
Strategy: Determine the feasibility and methods for restoring the historical flow of the side channel of the Bitterroot River and Three Mile Creek through Ponds 11 through 13 to restore riparian habitat (see Floodplain Goal) and reestablish unimpeded flow to the river.	Unknown/ Restore	Stepdown
Wetland Impoundment Habitat Objective 2 (excerpt): Where appropriate, reduce the area of more permanently flooded wetland impoundments and persistent emergent vegetation to restore native plant communities, such as gallery forest… [Note: Consultation on this objective and pertinent strategies will be covered under the development of the Water Management Plan.]	Unknown/ Restore	Stepdown
Strategy: Remove levees, ditches, and water control structures from abandoned wetland impoundments to facilitate the restoration and expansion of the gallery forest (Ponds 7, 7a, 7b, and 9) and native grassland (Pair Ponds and Potato Cellar Pond) habitat.	Restore	Complete
Strategy: Reduce Pond 8 and Pond 10 in size to allow for the restoration of gallery forest habitat on the west side of these impoundments.	Restore	Complete

[1] *Effects of the action are indicated, distinguishing between short- and long-term impacts.*
[2] *"Stepdown" indicates actions requiring additional intra-Service consultation once site-specific designs are completed.*

Appendix E

Key Legislation and Policy

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

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

Guiding principles

There are four guiding principles for management and general public use of the Refuge System established by Executive Order No. 12996 (1996):

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

E.2 Legal and Policy Guidance

Management actions on national wildlife refuges and wetland management districts are circumscribed by many mandates including laws and Executive orders. Regulations that affect refuge and district management the most are listed below.

American Indian Religious Freedom Act (1978)—Directed 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)—Prohibited discrimination in public accommodations and services.

Antiquities Act (1906)—Authorized 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)—Directed the preservation of historic and archaeological data in Federal construction projects.

Archaeological Resources Protection Act (1979), as amended—Protected 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)—Required federally owned, leased, or funded buildings and facilities to be accessible to persons with disabilities.

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

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

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

Emergency Wetlands Resources Act (1986)—Promoted wetland conservation for the public benefit to help fulfill international obligations in various migratory bird treaties and conventions. Authorized the purchase of wetlands with Land and Water Conservation Fund monies.

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

Environmental Education Act of 1990—Established the Office of Environmental Education within the Environmental Protection Agency to develop and administer a Federal environmental education program. Responsibilities of the office include developing and supporting programs to improve understanding of the natural and developed environment and the relationships between humans and their environment, supporting the dissemination of educational materials, developing and supporting training programs and environmental education seminars, managing a Federal grant program, and administering an environmental internship and fellowship program. Required the office to develop and support environmental programs in consultation with other Federal natural resource management agencies including the Service.

Executive Order No. 11644, Use of Off-road Vehicles on Public Lands (1972)—Provided policy and procedures for regulating off-road vehicles.

Executive Order No. 11988, Floodplain Management (1977)—Required 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. Prevented Federal agencies from contributing to the "adverse impacts associated with occupancy and modification of floodplains" and the "direct or indirect support of floodplain development." In the course of fulfilling their respective authorities, Federal agencies "shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

Executive Order No. 11990, Protection of Wetlands (1977)—Directs Federal agencies to (1) minimize destruction, loss, or degradation of wetlands and (2) preserve and enhance the natural and beneficial values of wetlands when a practical alternative exists.

Executive Order No. 12996, Management and General Public Use of the National Wildlife Refuge System (1996)—Defined the mission, purpose, and priority public uses of the Refuge System; presented four principles to guide management of the Refuge System.

Executive Order No. 13007, Indian Sacred Sites (1996)—Directed Federal land management agencies to accommodate access to and ceremonial uses of Indian sacred sites by Indian religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and where appropriate, maintain the confidentiality of sacred sites.

Executive Order No. 13443, Facilitation of Hunting Heritage and Wildlife Conservation (2007)—Directed Federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

Federal Noxious Weed Act (1990)—Required 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)—Required the preservation of evidence of the Government's organization, functions, policies, decisions, operations, and activities, as well as basic historical and other information.

Federal Water Pollution Control Act of 1972—Required any applicant for a Federal license or permit to conduct any activity that may result in a discharge into navigable waters to obtain a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over navigable waters at the point where the discharge originates or will originate, that the discharge will comply with applicable effluent limitations and water quality standards. Required that a certification obtained for construction of any facility must also pertain to subsequent operation of the facility.

Fish and Wildlife Act (1956)—Directed the Secretary of the Interior to develop the policies and procedures necessary for carrying out fish and wildlife laws and to research and report on fish and wildlife matters. Established the U.S. Fish and Wildlife Service within the Department of the Interior, as well as the positions of Assistant Secretary for Fish and Wildlife and Director of the Service.

Fish and Wildlife Coordination Act (1958)—Allowed the U.S. Fish and Wildlife Service to enter into agreements with private landowners for wildlife management purposes. Also required consultation with the U.S. Fish and Wildlife Service and State fish and wildlife agencies where the waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted , or otherwise controlled or modified by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of preventing loss of and damage to wildlife resources.

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

Historic Sites, Buildings and Antiquities Act (1935), known as the Historic Sites Act, as amended (1965)—Declared a national policy to preserve historic sites and objects of national significance, including those located at refuges and districts. Provided procedures for designation, acquisition, administration, and protection of such sites and for designation of national historic and natural landmarks.

Junior Duck Stamp Conservation and Design Act (1994)—Directed the Secretary of the Interior to create a junior duck stamp and to license and market the stamp and the stamp design. The proceeds from these efforts are used to support conservation education awards and scholarships. In 2000, Congress preauthorized the Junior Duck Stamp Conservation and Design Program Act for another five years, and expanded the conservation education program throughout the United States. and its territories. Since that time, all 50 states, the District of Columbia, American Samoa, and the U.S. Virgin Islands have joined the program.

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

Migratory Bird Conservation Act (1929)—Established 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)—Authorized the opening of part of a refuge to waterfowl hunting and requires each waterfowl hunter 16 years of age or older to possess a valid Federal hunting stamp. Receipts from the sale of the stamp are deposited in a special Treasury account known as the Migratory Bird Conservation Fund and are not subject to appropriations.

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

National Environmental Policy Act (1969)—Required 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. Required Federal agencies to integrate this act with other planning requirements and prepare appropriate documents to facilitate better environmental decisionmaking (40 CFR 1500).

National Historic Preservation Act (1966), as amended—Established policy that the Federal Government is to

provide leadership in the preservation of the Nation's prehistoric and historical resources.

National Wildlife Refuge System Administration Act (1966)—Defined the National Wildlife Refuge System and authorized 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—Set the mission and administrative policy for all refuges in the National Wildlife Refuge System. Mandated comprehensive conservation planning for all units of the Refuge System (amendment to the National Wildlife Refuge System Administration Act).

National Wildlife Refuge System Volunteer and Community Partnership Enhancement Act of 1998—Encouraged the use of volunteers to help the Service in the management of refuges within the Refuge System. Facilitated 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 those resources. Encouraged donations and other contributions by persons and organizations to the Refuge System.

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

North American Wetlands Conservation Act (1989)—Provided for the conservation of North American wetland ecosystems, waterfowl and other migratory birds, fish, and wildlife that depend on such habitats.

Pittman–Robertson Act (1937)—Taxed the purchase of ammunition and firearms and earmarks the proceeds to be distributed to the States for wildlife restoration. Known as the Federal Aid in Wildlife Restoration Act or P–R Act.

Refuge Recreation Act (1962)—Allowed 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.

Refuge Revenue Sharing Act, Section 401 (1935)—Provided for payments to counties in lieu of taxes using revenues derived from the sale of products from refuges.

Refuge Trespass Act of June 28, 1906—Provided the first Federal protection for wildlife at national wildlife refuges. Made it unlawful to hunt, trap, capture, willfully disturb, or kill any bird or wild animal, or take or destroy the eggs of any such birds, on any lands of the United States set apart or reserved as refuges or breeding grounds for such birds or animals by any law, proclamation, or Executive order, except under rules and regulations of the Secretary. Protected Government property on such lands.

Rehabilitation Act (1973)—Required 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.

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

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

Volunteer and Community Partnership Enhancement Act (1998)—Encouraged the use of volunteers to help in the management of refuges within the Refuge System. Facilitated 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 encouraged donations and other contributions.

Wilderness Act of 1964—Directed the Secretary of the Interior, within 10 years, to review every roadless area of 5,000 or more acres and every roadless island (regardless of size) within the Refuge System and National Park Service for inclusion in the National Wilderness Preservation System.

Appendix F

List of Preparers, Consultation, and Coordination

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

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Appendix G

Species Lists

This appendix contains the common and scientific names of animals and plants that have been recorded on Lee Metcalf National Wildlife Refuge or the surrounding Bitterroot Valley. The animal and plant lists are from refuge wildlife surveys, annual narratives (USFWS 1988–93), and the 2009 Lee Metcalf Refuge Bioblitz. Species of concern were determined from global, Federal, and State of Montana listings (Montana Natural Heritage Program 2012). In the tables below, the asterisk (*) denotes a Montana Species of Concern, and the dagger (†) denotes a species that is on the Montana Noxious Weed List (September 2011) and high priority for treatment.

Class amphibia

Common name	*Scientific name*
Frogs	
American bullfrog	*Rana catesbeiana*
Columbia spotted frog	*Rana luteiventris*
Toads and Salamanders	
Boreal toad*	*Bufo boreas**
Long-toed salamander	*Ambystoma macrodactylum*

Class reptilia

Common name	*Scientific name*
Snakes	
Common garter snake	*Thamnophis sirtalis*
Terrestrial garter snake	*Thamnophis elegans*
Rubber boa	*Charina bottae*
Eastern racer	*Coluber constrictor*
Western rattlesnake	*Crotalus viridis*
Gopher snake	*Pituophis catenifer*
Turtles	
Painted turtle	*Chrysemys picta*

Class aves

Common name	*Scientific name*
Swans, Geese, and Ducks	
Snow goose	*Chen caerulescens*
Ross's goose	*Chen rossii*
Greater white-fronted goose	*Anser albifrons*
Canada goose	*Branta canadensis*
Trumpeter swan*	*Cygnus buccinator**
Tundra swan	*Cygnus columbianus*
Wood duck	*Aix sponsa*
Gadwall	*Anas strepara*
American wigeon	*Anas americana*

Common name	*Scientific name*
Eurasian wigeon	*Anas penelope*
Mallard	*Anas platyrhynchos*
Blue-winged teal	*Anas discors*
Cinnamon teal	*Anas cyanoptera*
Northern shoveler	*Anas clypeata*
Northern pintail	*Anas acuta*
Green-winged teal	*Anas crecca*
Canvasback	*Aythya valisineria*
Redhead	*Aythya Americana*
Ring-necked duck	*Aythya collaris*
Lesser scaup	*Aythya affinis*
Greater scaup	*Aythya marila*
Bufflehead	*Bucephala albeola*
Common goldeneye	*Bucephala clangula*
Barrow's goldeneye	*Bucephala islandica*
Hooded merganser	*Lophodytes cucullatus*
Common merganser	*Mergus merganser*
Red-breasted merganser	*Mergus serrator*
Ruddy duck	*Oxyura jamaicensis*
White-winged scoter	*Melanitta fusca*
Long-tailed duck	*Clangula hyemalis*
Surf scoter	*Melanitta perspicillata*
Black scoter	*Melanitta nigra*
Upland Gamebirds	
Ring-necked pheasant	*Phasianus colchicus*
Gray partridge	*Perdix perdix*
Ruffed grouse	*Bonasa umbellus*
Wild turkey	*Meleagris gallopavo*
California quail	*Callipepla californica*
Loons	
Common loon*	*Gavia immer**
Grebes	
Pied-billed grebe	*Podylimbus podiceps*
Horned grebe*	*Podiceps auritus**
Red-necked grebe	*Podiceps grisegena*
Eared grebe	*Podiceps nigricollis*
Western grebe	*Aechmophorus occidentalis*
Clark's grebe*	*Aechmophorus clarkii**
Pelicans	
American white pelican*	*Pelecanus erythrocephalus**
Cormorants	
Double-crested cormorant	*Phalacrocorax auritus*
Herons	
American bittern*	*Botaurus lentiginosus**
Great blue heron*	*Ardea herodias**

Common name	*Scientific name*
Great egret	*Ardea alba*
Snowy egret	*Egretta caerulea*
Black-crowned night-heron*	*Nycticorax nycticorax**
Cattle egret	*Bubulcus ibis*
Ibis	
White-faced ibis*	*Plegadis chihi**
Vultures	
Turkey vulture	*Cathartes aura*
Hawks and Eagles	
Osprey	*Pandion haliaetus*
Bald eagle*	*Haliaeetus leucocephalus**
Northern harrier	*Circus cyaneus*
Sharp-shinned hawk	*Accipiter striatus*
Cooper's hawk	*Accipiter cooperii*
Northern goshawk*	*Accipiter gentilis**
Swainson's hawk	*Buteo swainsoni*
Red-tailed hawk	*Buteo jamaicensis*
Ferruginous hawk*	*Buteo regalis**
Rough-legged hawk	*Buteo lagopus*
Golden eagle*	*Aquila chrysaetos**
White-tailed kite	*Elanus leucurus*
Falcons	
American kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
Peregrine falcon*	*Falco peregrinus**
Prairie falcon	*Falco mexicanus*
Gyrfalcon	*Falco rusticolus*
Rails	
Virginia rail	*Rallus limicola*
Sora	*Porzana carolina*
American coot	*Fulica americana*
Cranes	
Sandhill crane	*Grus canadensis*
Plovers	
Killdeer	*Charadrius vociferous*
Semipalmated plover	*Charadrius semipalmatus*
American golden plover	*Pluvialis dominica*
Black-bellied plover	*Pluvialis squatarola*
Avocets	
American avocet	*Recurvirostra americana*
Black-necked stilt*	*Himantopus mexicanus**
Sandpipers	
Greater yellowlegs	*Tringa melanoleuca*
Lesser yellowlegs	*Tringa flavipes*
Solitary sandpiper	*Tringa solitaria*

Common name	*Scientific name*
Willet	*Catoptrophorus semipalmatus*
Spotted sandpiper	*Actitis macularia*
Whimbrel	*Numenius phaeopus*
Long-billed curlew*	*Numenius americanus**
Marbled godwit	*Limosa fedoa*
Long-billed dowitcher	*Limnodromus scolopaceus*
Short-billed dowitcher	*Limnodromus griseus*
Wilson's snipe	*Gallinago delicata*
Ruddy turnstone	*Arenaria interpres*
Wilson's phalarope	*Phalaropus tricolor*
Red-necked phalarope	*Phalaropus lobatus*
Sandpipers	
Stilt sandpiper	*Calidis himantopus*
Sanderling	*Calidris alba*
Semipalmated sandpiper	*Calidris pusilla*
Western sandpiper	*Calidris mauri*
Least sandpiper	*Calidris minutilla*
White-rumped sandpiper	*Calidris fuscicollis*
Pectoral sandpiper	*Calidris melanotos*
Dunlin	*Calidris alpina*
Baird's sandpiper	*Calidris bairdii*
Gulls and Terns	
Ring-billed gull	*Larus delawarensis*
Franklin's gull*	*Larus pipixcan**
California gull	*Larus californicus*
Bonaparte's gull	*Larus philadelphia*
Forster's tern*	*Sterna forsteri**
Black tern*	*Sterna niger**
Caspian tern*	*Sterna caspia**
Common tern*	*Sterna hirundo**
Herring gull	*Larus argentatus*
Least tern*	*Sternula antillarum**
Pigeons and Doves	
Mourning dove	*Zenaida macroura*
Rock dove	*Columbia livia*
Eurasian collared-dove	*Streptopelia decaocto*
Cuckoos	
Black-billed cuckoo*	*Coccyzus erythropthalmus**
Yellow-billed cuckoo*	*Coccyzus americanus**
Owls	
Great horned owl	*Bubo virginianus*
Burrowing owl*	*Athene cunicularia**
Long-eared owl	*Asio otus*
Short-eared owl	*Asio flammeus*
Northern saw-whet owl	*Aegolius acadicus*

Common name	*Scientific name*
Northern pygmy-owl	*Glaucidium gnoma*
Western screech-owl	*Megascops kennicottii*
Great gray owl*	*Strix nebulosa**
Flammulated owl*	*Otus flammeolus**
Snowy owl	*Bubo scandiacus*
Nighthawks	
Common nighthawk	*Chordeiles minor*
Swifts	
White-throated swift	*Aeronautes saxatalis*
Vaux's swift	*Chaetura vauxi*
Black swift*	*Cypseloides niger**
Hummingbirds	
Rufous hummingbird	*Selasphorus rufus*
Calliope hummingbird	*Stellula calliope*
Black-chinned hummingbird	*Archilochus alexandri*
Kingfishers	
Belted kingfisher	*Ceryle alcyon*
Woodpeckers	
Lewis's woodpecker*	*Melanerpes lewis**
Downy woodpecker	*Picoides pubescens*
Hairy woodpecker	*Picoides villosus*
Pileated woodpecker*	*Dryocopus pileatus**
Northern flicker	*Colaptes auratus*
Red-naped sapsucker	*Sphyrapicus nuchalis*
Flycatchers	
Western kingbird	*Tyrannus verticalis*
Eastern kingbird	*Tyrannus forficatus*
Say's phoebe	*Saynoris saya*
Willow flycatcher	*Empidonax traillii*
Dusky flycatcher	*Empidonax oberholseri*
Hammond's flycatcher	*Empidonax hammondii*
Cordilleran flycatcher	*Empidonax occidentalis*
Least flycatcher	*Empidonax minimus*
Olive-sided flycatcher	*Contopus cooperi*
Western wood-pewee	*Contopus sordidulus*
Shrikes	
Loggerhead shrike*	*Lanius ludovicianus**
Northern shrike	*Lanius excubitor*
Vireos	
Warbling vireo	*Vireo gilvus*
Cassin's vireo	*Vireo cassinii*
Plumbeous vireo	*Vireo plumbeus*
Red-eyed vireo	*Vireo olivaceus*
Jays, Crows, and Magpies	
Steller's jay	*Cyanocitta stelleri*

Common name	*Scientific name*
Clark's nutcracker*	*Nucifraga columbiana**
Black-billed magpie	*Pica hudsonia*
American crow	*Corvus brachyrhynchos*
Pinyon jay*	*Gymnorhinus cyanocephalus**
Common raven	*Corvus corax*
Larks	
Horned lark	*Eremophila alpestris*
Swallows	
Tree swallow	*Tachycineta bicolor*
Violet-green swallow	*Tachycineta thalassina*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Bank swallow	*Riparia riparia*
Cliff swallow	*Petrochelidon pyrrhonota*
Barn swallow	*Hirundo rustica*
Chickadees	
Black-capped chickadee	*Parus atricapillus*
Mountain chickadee	*Parus gambeli*
Nuthatches	
Red-breasted nuthatch	*Sitta canadensis*
White-breasted nuthatch	*Sitta carolinensis*
Pygmy nuthatch	*Sitta pygmaea*
Creepers	
Brown creeper*	*Certhia americana**
Wrens	
House wren	*Troglodytes aedon*
Winter wren	*Troglodytes troglodytes*
Marsh wren	*Cistothorus palustris*
Dipper	
American dipper	*Cinclus mexicanus*
Kinglets	
Golden-crowned kinglet	*Regulus satrapa*
Ruby-crowned kinglet	*Regulus calendula*
Thrushes	
American robin	*Turdus migratorius*
Townsend's solitaire	*Myadestes townsendi*
Swainson's thrush	*Catharus ustulatus*
Hermit thrush	*Catharus guttatus*
Veery*	*Catharus fuscescens**
Mountain bluebird	*Sialia currucoides*
Western bluebird	*Sialia mexicana*
Varied thrush*	*Ixoreus naevius**
Thrashers, Mockingbirds, and Catbirds	
Gray catbird	*Dumetella carolinensis*
Sage thrasher*	*Oreoscoptes montanus**
Starlings	
European starling	*Sturnus vulgaris*

Common name	*Scientific name*
Pipits	
American pipit	*Anthus rubescens*
Waxwings	
Bohemian waxwing	*Bombycilla garrulous*
Cedar waxwing	*Bombycilla cedrorum*
Warblers	
Nashville warbler	*Vermivora ruficapilla*
Orange-crowned warbler	*Vermivora celata*
Yellow warbler	*Dendroica petechia*
Yellow-rumped warbler	*Dendroica coronata*
Townsend's warbler	*Dendroica townsendi*
Northern waterthrush	*Seiurus noveboracensis*
Common yellowthroat	*Geothlipis trichas*
MacGillivray's warbler	*Oporornis tolmiei*
Wilson's warbler	*Wilsonia pusilla*
Black-and-white warbler	*Mniotilta varia*
American redstart	*Setophaga ruticilla*
Yellow-breasted chat	*Icteria virens*
Blackpoll warbler	*Dendroica striata*
Sparrows	
American tree sparrow	*Spizella arborea*
Clay-colored sparrow	*Spizella pallida*
Chipping sparrow	*Spizella passerina*
White-crowned sparrow	*Zonotrichia laucophrys*
Spotted towhee	*Pipilo maculatus*
Harris' sparrow	*Zonotrichia querula*
Song sparrow	*Melospiza melodia*
Lincoln sparrow	*Melospiza lincolnii*
Vesper sparrow	*Pooecetes gramineus*
Fox sparrow	*Passerella iliaca*
Savannah sparrow	*Passerculus sandwichensis*
Le Conte's sparrow*	*Ammodramus leconteii**
Swamp sparrow	*Melospiza georgiana*
Dark-eyed junco	*Junco hyemalis*
House sparrow	*Passer domesticus*
Snow bunting	*Plectrophenax nivalis*
Tanagers, Cardinals, and Buntings	
Western tanager	*Piranga ludoviciana*
Black-headed grosbeak	*Pheucticus melanocephalus*
Lazuli bunting	*Passerina amoena*
Blackbirds	
Bobolink*	*Dolichonyx oryzivorus**
Western meadowlark	*Sturnella neglecta*
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*
Red-winged blackbird	*Agelaius phoeniceus*
Brewer's blackbird	*Euphagus cyanocephalus*

Common name	*Scientific name*
Brown-headed cowbird	*Molothrus ater*
Bullock's oriole	*Icterus bullockii*
Common grackle	*Quiscalus quiscula*
Rusty blackbird	*Euphagus carolinus*
Finches	
House finch	*Carpodacus mexicanus*
Pine grosbeak	*Pinicola enucleator*
Evening grosbeak*	*Coccothraustes vespertinus**
Common redpoll	*Carduelis flammea*
Pine siskin	*Carduelis pinus*
American goldfinch	*Carduelis tristis*
Red crossbill	*Loxia curvirostra*

CLASS MAMMALIA

Common name	*Scientific name*
Shrews	
Vagrant shrew	*Sorex vagrans*
Common (masked) shrew	*Sorex cinereus*
Yellow-pine chipmunk	*Tamias amoenus*
Bats	
California myotis	*Myotis californicus*
Western small-footed myotis	*Myotis ciliolabrum*
Western long-eared myotis	*Myotis evotis*
Little brown bat	*Myotis lucifugus*
Fringed myotis*	*Myotis thysanodes**
Long-legged myotis	*Myotis volans*
Yuma myotis	*Myotis ymanensis*
Townsends big-eared bat*	*Corynorhinus townsendii**
Hoary bat*	*Lasiurus cinereus**
Big brown bat	*Eptesicus fuscus*
Silver-haired bat	*Lasionycteris noctivagans*
Beavers	
American beaver	*Castor canadensis*
Porcupines	
Common porcupine	*Erethizon dorsatum*
Pocket Gophers	
Northern pocket gopher	*Thomomys talpoides*
Mice, Voles, and Rats	
Deer mouse	*Peromyscus maniculatus*
Meadow vole	*Microtus pennsylvanicus*
Bushy-tailed woodrat	*Neotoma cinerea*
Common muskrat	*Ondatra zibethicus*
Squirrels	
Red squirrel	*Tamiasciurus hudsonicus*
Columbian ground squirrel	*Spermophilus columbianus*

Common name	*Scientific name*
Northern flying squirrel	*Glaucomys sabrinus*
Eastern fox squirrel	*Sciurus niger*
Yellow-bellied marmot	*Marmota flaviventris*
Wolves, Coyotes, and Foxes	
Red fox	*Vulpes vulpes*
Coyote	*Canis latrans*
Gray wolf*	*Canis lupus**
Cats	
Bobcat	*Lynx rufus*
Mountain lion	*Puma concolor*
Skunks	
Striped skunk	*Mephitis mephitis*
Weasels	
Short-tailed weasel	*Mustela erminea*
Northern river otter	*Lontra canadensis*
American badger	*Taxidea taxus*
Mink	*Mustela vison*
Raccoons	
Raccoon	*Procyon lotor*
Bears	
Black bear	*Ursus americanus*
Deer, Moose, and Elk	
White-tailed deer	*Odocoileus virginianus*
Moose	*Alces alces*
Mule deer	*Odocoileus hemionus*
Elk	*Cervus elaphus*

Class Osteichthyes

Common name	*Scientific name*
Fish	
Largemouth bass	*Micropterus salmoides*
Pumpkinseed	*Lepomis gibbosus*
Yellow perch	*Perca flavescens*
Largescale sucker	*Catostomus macrocheilus*
Longnose sucker	*Catostomus catostomus*
Northern pikeminnow	*Ptychocheilus oregonensis*
Redside shiner	*Richardsonius balteatus*
Mountain whitefish	*Prosopium williamsoni*
Rainbow trout	*Oncorhynchus mykiss*
Brown trout	*Salmo trutta*
Brook trout	*Salvelinus fontinalis*
Bull trout*	*Salvelinus confluentus**

Class Pinopsida

Common name	*Scientific name*
Pinaceae (Pine)	
Rocky Mountain juniper	*Juniperus scopulorum*
Lodgepole pine	*Pinus contorta*
Ponderosa pine	*Pinus ponderosa* v. *ponderosa*
Douglas fir	*Pseudotsuga menziesii* v. *glauca*

Class Magnoliopsida

Common name	*Scientific name*
Aceraceae (Maple)	
Rocky mountain maple	*Acer glabrum*
Amaranthaceae Amaranth (Pigweed)	
Tumbleweed	*Amaranthus albus*
Prostrate pigweed	*Amaranthus graecizans*
Powell's amaranth	*Amaranthus powellii*
Redroot amaranth	*Amaranthus retroflexus*
Asclepiadaceae (Milkweed)	
Showy milkweed	*Asclepias speciosa*
Apocynaceae (Dogbane)	
Spreading dogbane	*Apocynum androsaemifolium*
Clasping leaved dogbane	*Apocynum sibiricum*
Balsaminaceae (Touch-Me-Not)	
Spurless jewelweed	*Impatiens ecalcarata*
Berberidaceae (Barberry)	
Oregon grape	*Berberis repens*
Betulaceae (Birch)	
Thin-leaved alder	*Alnus incana*
River birch	*Betula occidentalis*
Boraginaceae (Borage)	
Slender cryptantha	*Cryptantha affinis*
Houndstongue†	*Cynoglossum officinale*†
Blueweed†	*Echium vulgare*†
Western stickseed	*Lappula redowskii*
Corn gromwell	*Lithospermum arvense*
Wayside gromwell	*Lithospermum ruderale*
Field forget-me-not	*Myosotis arvensis*
Small flowered forget-me-not	*Myosotis laxa*
Blue forget-me-not	*Myosotis micrantha*
Common forget-me-not	*Myosotis scorpioides*
Early forget-me-not	*Myosotis verna*
Italian bugloss†	*Anchusa azurea mill*†
Scouler's popcorn-flower	*Plagiobothrys scouleri*
Cactaceae (Cactus)	
Brittle cholla	*Opuntia fragilis*

Common name	*Scientific name*
Callitriche (Water-Starwort)	
Northern water-starwort	*Callitriche hermaphroditica*
Water-starwort	*Callitriche heterophylla*
Pond water-starwort	*Campanula rotundifolia*
Campanulaceae (Harebell)	
Scotch harebell	*Campanula rotundifolia*
Caprifoliaceae (Honeysuckle)	
Blue elderberry	*Sambucus caerulea*
Common snowberry	*Symphoricarpos albus*
High-bush cranberry	*Viburnum opulus*
Caryophyllaceae (Pink)	
Blunt leaved sandwort	*Arenaria lateriflora*
Thyme-leaved sandwort	*Arenaria serpyllifolia*
Field chickweed	*Cerastium arvense*
Nodding chickweed	*Cerastium nutans*
Jagged chickweed	*Holosteum umbellatum*
White champion	*Lychnis alba*
Menzies' silene	*Silene menziesii*
Red sandspurry	*Spergularia rubra*
Long leaved starwort	*Stellaria longifolia*
Ceratophyllaceae (Hornwort)	
Common hornwort	*Ceratophyllum demersum*
Chenopodiaceae (Goosefoot)	
Fat hen	*Atriplex patula* v. *hastata*
Lambs quarter	*Chenopodium album*
Jerusalem oak	*Chenopodium botrys*
Maple leaved goosefoot	*Chenopodium nybridum*
Kochia/red belvedere†	*Kochia scoparia*†
Poverty weed	*Monolepis nuttalliana*
Russian thistle†	*Salsola kali*†
Compositae (Asteraceae) (Sunflower)	
Yarrow	*Achillea millefolium*
False dandelion	*Agoseris glauca*
Pearly everlasting	*Anaphalis margaritacea*
Nuttals pussy-toes	*Antennaria parviflora*
Rosy pussy-toes	*Antennaria microphylla*
Umber pussy-toes	*Antennaria umbrinella*
Common burdock	*Arctium minus*
Meadow arnica	*Arnica chamissonis*
Western absinthium †	*Artemisia absinthium*†
Biennial sagewort	*Artemisia biennis*
Northern sagewort	*Artemisia campestris* v. *scouleriana*
Tarragon	*Artemisia dracunculus*
Fringed sagewort	*Artemisia frigida*
Western mugwort	*Artemisia ludoviciana* v. *latiloba*

Common name	*Scientific name*
Prairie sage	*Artemisia ludoviciana* v. *ludoviciana*
Smooth aster	*Aster laevis*
Few-flowered aster	*Aster modestus*
White prairie aster	*Aster pansus*
Beggar-ticks	*Bidens cernua*
Musk thistle†	*Carduus nutans*†
Spotted knapweed†	*Centaurea maculosa*†
Oxeye daisy†	*Chrysanthemum leucanthemum*†
Hairy golden aster	*Chrysopsis villosa*
Rabbit-brush	*Chrysothamnus nauseosus*
Canada thistle†	*Cirsium arvense*†
Wavy leaved thistle	*Cirsium undulatum*
Bull thistle†	*Cirsium vulgare*†
Horseweed	*Conyza canadensis*
Cutleaf daisy	*Erigeron compositus*
Spreading fleabane	*Erigeron divergens*
Shaggy fleabane	*Erigeron pumilus*
Showy fleabane	*Erigeron speciosis*
Daisy fleabane	*Erigeron strigosus* v. *strigosus*
Field filago	*Filago arvensis*
Blanket flower	*Gaillardia aristata*
Lowland cudweed	*Gnaphalium palustre*
Gumweed	*Grindelia squarrosa*
Sunflower	*Helianthus annuus*
Nuttals sunflower	*Helianthus nuttallii*
Narrow-leaved hawkweed	*Hieracium umbellatum*
Poverty weed	*Iva xanthifolia*
Prickly lettuce	*Lactuca serriola*
Pineapple weed	*Matricaria matricarioides*
Nodding microseris	*Microseris nutans*
False-agroseris	*Microseris troximoides*
Woolly groundsel	*Senecio canus*
Groundsel	*Senecio indecorus*
Tall butterweed	*Senecio serra*
Canada goldenrod	*Solidago canadensis*
Late goldenrod	*Solidago gigantea*
Missouri goldenrod	*Solidago missouriensis*
Western goldenrod	*Solidago occidentalis*
Common sowthistle	*Sonchus oleraceus*
Marsh sowthistle	*Sonchus uliginosus*
Common tansy†	*Tanacetum vulgare*†
Smooth dandelion	*Taraxacum laevigatum*
Common dandelion	*Taraxacum officinale*
Goatsbeard/western salsify†	*Tragopogon dubius*†
Cocklebur	*Xanthium strumarium*

Common name	Scientific name
Convolvulaceae (Morning-Glory)	
Field bindweed†	*Convolvulus arvensis*
Cornaceae (Dogwood)	
Red-osier dogwood	*Cornus stolonifera*
Crassulaceae (Stonecrop)	
Lanceleaf stonecrop	*Sedum lanceolatum*
Cruciferae (Mustard)	
Pale alyssum	*Alyssum alyssoides*
Desert alyssum	*Alyssum desertorum*
Holboell's rockcress	*Arabis holboellii*
Nuttall's rockcress	*Arabis nuttallii*
Wintercress	*Barbarea orthoceras*
Hoary alyssum†	*Berteroa incana*†
Field mustard	*Brassica campestris*
Black mustard	*Brassica nigra*
Hairy false flax	*Camelina microcarpa*
Shepherd's purse	*Capsella bursa-pastoris*
Little western bittercress	*Cardamine oligosperma*
Pennsylvania bittercress	*Cardamine pensylvanica*
Tansy mustard	*Descurainia sophia*
Woods draba	*Draba nemorosa*
Whitlow-grass	*Draba verna*
Wormseed mustard	*Erysimum cheiranthoides*
Dame's rocket	*Hesperis matronalis*
Field pepper grass	*Lepidium campestre*
Common pepper grass	*Lepidium densiflorum*
Clasping pepper grass	*Lepidium perfoliatum*
Western yellowcress	*Rorippa curvisiliqua*
Marsh yellowcress	*Rorippa islandica*
Watercress	*Rorippa nasturtiumaquaticum* v. *glabrata*
Jim hill mustard	*Sisymbrium altissimum*
Tumble mustard	*Sisymbrium loeselii*
Fanweed	*Thlaspi arvense*
Dipsacaceae (Teasel)	
Teasel†	*Dipsacus sylvestris*†
Euphorbiaceae (Spurge)	
Leafy spurge†	*Euphorbia esula*†
Corrugate-seeded spurge	*Euphorbia glyptosperma*
Thyme-leaf spurge	*Euphorbia serpyllifolia*
Ericaceae (Heath)	
White pyrola	*Pyrola elliptica*
Pinedrops	*Pterospora andromeda*
Geraniaceae (Geranium)	
Cranes bill	*Erodium cicutarium*
Bicknell's geranium	*Geranium bicknelli*

Common name	*Scientific name*
Small field geranium	*Geranium pusillum*
Sticky geranium	*Geranium viscosissimum*
Grossulariacea (Gooseberry)	
Common current	*Ribes sativum*
Missouri gooseberry	*Ribes setosum*
Haloragaceae (Water-Milfoil)	
Northern water milfoil	*Myriophyllum sibricum*
Hippuridaceae (Mares-Tail)	
Mares-tail	*Hippuris vulgaris*
Hydrophyllaceae (Waterleaf)	
Sand phacelia	*Phacelia linearis*
Hypericaceae (St. Johnswort)	
Western St. Johnswort	*Hypericum formosum* v. *scouleri*
Canada St. Johnswort	*Hypericum majus*
Goatweed/St. Johnswort†	*Hypericum perforatum*†
Labiatae (Mint)	
Hemp nettle	*Galeopsis tetrahit*
Water horehound	*Lycopus americanus*
Rough bugleweed	*Lycopus asper*
Northern bugleweed	*Lycopus uniflorus*
Field mint	*Mentha arvensis*
Wild bergamot	*Monarda fistulosa*
Catnip	*Nepeta cataria*
Purple dragonhead	*Physostegia parviflora*
Self-heal	*Prunella vulgaris*
Marsh skullcap	*Scutellaria galericulata*
Hedge nettle	*Stachys palustris* v. *pilosa*
Leguminosae (Pea)	
Canada milkvetch	*Astragalus canadensis* v. *mortonii*
Weedy milkvetch	*Astragalus miser*
Wild licorice	*Glycyrrhiza lepidota*
Velvet lupine	*Lupinus leucophyllus*
Washington lupine	*Lupinus polyphyllus*
Blue-bonnet	*Lupinus sericeus*
Black medic	*Medicago lupulina*
Alfalfa	*Medicago sativa*
White sweet-clover	*Melilotus alba*
Yellow sweet-clover	*Melilotus officinalis*
Alsike clover	*Trifolium hybridum*
Wooly clover	*Trifolium microcephalum*
Red clover	*Trifolium pratense*
White clover	*Trifolium repens*
White-tip clover	*Trifolium variegatum*
American vetch	*Vicia americana*
Common vetch	*Vicia sativa*
Slender vetch	*Vicia tetrasperma*

Common name	*Scientific name*
Hairy vetch	*Vicia villosa*
Lentibulariaceae (Bladderwort)	
Little bladderwort	*Utricularia minor*
Common bladderwort	*Utricularia vulgaris*
Loranthaceae (Mistletoe)	
Dwarf mistletoe	*Arceuthobium* sp.
Malvaceae (Mallow)	
Common mallow	*Malva neglecta*
Cheese weed	*Malva parviflora*
Moraceae (Mulberry)	
Hops	*Humulus lupulus*
Nymphaeaceae (Water Lily)	
Indian pond lily	*Nuphar polysepalum*
Onagraceae (Evening Primrose)	
Enchanter's nightshade	*Circaea alpina*
Fireweed	*Epilobium angustifolium*
Swamp willow-herb	*Epilobium palustre*
Annual willow-herb	*Epilobium paniculatum*
Shrubby willow-herb	*Epilobium suffruticosum*
Watson's willow-herb	*Epilobium watsonii*
Yellow evening primrose	*Oenothera strigosa*
Oxalidaceae (Wood-Sorrel)	
Yellow wood-sorrel	*Oxalis corniculata*
Plantaginaceae (Plantain)	
Ribgrass	*Plantago lanceolata*
Common plantain	*Plantago major* v. *major*
Indian wheat	*Plantago patagonica*
Polemoniaceae (Phlox)	
Narrow-leaved collomia	*Collomia linearis*
Scarlet gillia	*Gilia aggregata*
Pink microsteris	*Microsteris gracilis*
Annual polemonium	*Polemonium micranthum*
Jacob's ladder	*Polemonium pulcherrimum* v. *calycinum*
Polygonaceae (Buckwheat)	
Umbrella plant	*Erigonum umbellatum* v. *subalpinum*
Knotweed	*Polygonum achoreum*
Water smartweed	*Polygonum amphibium*
Dooryard knotweed	*Polygonum aviculare*
Water smartweed	*Polygonum coccineum*
Ivy bindweed	*Polygonum convolvulus*
Douglas' knotweed	*Polygonum douglasii* v. *douglasii*
Marshpepper	*Polygonum hydropiper*
Smartweed	*Polygonum hydropiperoides*
Willow weed	*Polygonum lapathifolium*
Spotted ladysthumb	*Polygonum persicaria*
Dotted smartweed	*Polygonum punctatum*

Common name	*Scientific name*
Red sorrel	*Rumex acetosella*
Curly dock	*Rumex crispus*
Seaside dock	*Rumex maritimus*
Western dock	*Rumex occidentalis*
Willow dock	*Rumex salicifolius*
Portulacaceae (Purslane)	
Narrow-leaved miners lettuce	*Montia linearis*
Miner's lettuce	*Montia perfoliata*
Purslane	*Portulaca oleracea*
Bitterroot	*Lewisia rediviva*
Primulaceae (Primrose)	
Fairy candelabra	*Androsace occidentalis*
Woodland shooting star	*Dodecatheon pulchellum*
Fringed loosestrife	*Lysimachia ciliata*
Tufted loosestrife	*Lysimachia thrysiflora*
Ranunculaceae (Buttercup)	
Western clematis	*Clematis ligusticifolia*
Sedge mousetail	*Myosurus aristatus*
Kidney-leaved buttercup	*Ranunculus abortivus*
Tall buttercup†	*Ranunculus acris*†
Water buttercup	*Ranunculus aquatilis* v. *capillaceus*
Shore buttercup	*Ranunculus cymbalaria*
Yellow water buttercup	*Ranunculus flabellaris*
Creeping buttercup	*Ranunculus flammula*
Sagebrush buttercup	*Ranunculus glaberrimus* v. *glaberrimus*
Gmelins buttercup	*Ranunculus gmelinii* v. *limosus*
Long-beaked water-buttercup	*Ranunculus longirostris*
Macouns buttercup	*Ranunculus macounii*
Bristly buttercup	*Ranunculus pensylvanicus*
Creeping buttercup	*Ranunculus repens*
Celery-leaved buttercup	*Ranunculus sceleratus*
Stiff-leaf water buttercup	*Ranunculus subriqidus*
Little buttercup	*Ranunculus uncinatus* v. *uncinatus*
Tall meadowrue	*Thalictrum dasycarpum*
Western meadowrue	*Thalictrum occidentale*
Few-flowered meadowrue	*Thalictrum sparsiflorum*
Rosaceae (Rose)	
Serviceberry	*Amelanchier alnifolia*
River hawthorn	*Crataegus douglasii*
Woods strawberry	*Fragaria vesca*
Blueleaf strawberry	*Fragaria virginiana*
Large-leaved avens	*Geum macrophyllum*
Water avens	*Geum rivale*
Prairie smoke	*Geum triflorum*
Silverweed	*Potentilla anserina*

Common name	*Scientific name*
Silvery cinquefoil	*Potentilla argentia*
Biennial cinquefoil	*Potentilla biennis*
Sticky cinquefoil	*Potentilla glandulosa*
Elmer's cinquefoil	*Potentilla gracilis* v. *elmeri*
Marsh cinquefoil	*Potentilla palustris*
Sulfur cinquefoil†	*Potentilla recta*†
Bitter cherry	*Prunus emarginata*
Chokecherry	*Prunus virginiana* v. *melanocarpa*
Woods rose	*Rosa woodsii*
Red raspberry	*Rubus idaeus*
Rubiaceae (Madder)	
Cleavers	*Galium aparine*
Thinleaf bedstraw	*Galium bifolium*
Northern bedstraw	*Galium boreale*
Small cleavers	*Galium trifidum*
Salicaceae (Willow)	
Lombardy poplar	*Populus nigra* v. *italica*
Quaking aspen	*Populus tremuloides*
Black cottonwood	*Populus trichocarpa*
Peach-leaf willow	*Salix amygdaloides*
Bebb willow	*Salix bebbiana*
Sandbar willow	*Salix exigua*
Geyer willow	*Salix geyeriana*
Whiplash willow	*Salix lasiandra*
Mackenzie willow	*Salix rigida*
Saxifragaceae (Saxifrage)	
Smooth fringecup	*Lithophragma glabra*
Small-flowered fringecup	*Lithophragma parviflora*
Scrophulariaceae (Figwort)	
Blue-eyed mary	*Collinsia parviflora*
Common hedge-hyssop	*Gratiola neglacta*
Dalmation toadflax†	*Linaria dalmatica*†
Yellow toadflax†	*Linaria vulgaris*†
Monkey flower	*Mimulus guttatus* v. *guttas*
Musk plant	*Mimulus moschatus*
Little penstemon	*Penstemon procerus*
Common mullein	*Verbascum thapsus*
American speedwell	*Veronica americana*
Water speedwell	*Veronica anagallis-aquatica*
Chain speedwell	*Veronica catenata*
Purslane speedwell	*Veronica peregrina*
Thyme-leaved speedwell	*Veronica serpyllifolia* v. *serpyllifolia*
Vernal speedwell	*Veronica verna*
Solanaceae (Nightshade)	
Henbane†	*Hyoscyamus niger*†

Common name	*Scientific name*
Bittersweet nightshade	*Solanum dulcamara*
Cut-leaved nightshade	*Solanum triflorum*
Umbelliferae (Parsley)	
Water hemlock	*Cicuta douglasii*
Cow-parsnip	*Heracleum lanatum*
Mountain sweet-cicely	*Osmorhiza chilensis*
Wild parsnip	*Pastinaca sativa*
Black snakeroot	*Sanicula marilandica*
Water parsnip	*Sium suave*
Urticaceae (Nettle)	
Stinging nettle	*Urtica dioica* spp. *Gracilis*
Verbenaceae (Vervain)	
Blue vervain	*Verbena hastata*
Violaceae (Violet)	
Early blue violet	*Viola adunca* v. *bellidifolia*
Marsh violet	*Viola palustris*
Bog violet	*Viola nephrophylla*

Class Liliopsida

Common name	*Scientific name*
Alismataceae (Water-Plantain)	
America water-plantain	*Alisma plantago-aquatica* v. *americanum*
Narrowleaf water-plantain	*Alisma gramineum* v. *angustissimum*
Arumleaf arrowhead	*Sagittaria cuneata*
Cyperaceae (Sedge)	
Awned sedge	*Carex atherodes*
Water sedge	*Carex aquatilis*
Clustered sedge	*Carex arcta*
Slenderbeaked sedge	*Carex anthrostachya*
Golden sedge	*Carex aurea*
Bebb's sedge	*Carex bebii*
Lesser panicled sedge	*Carex diandra*
Douglas' sedge	*Carex douglassii*
Wooly sedge	*Carex languinosa*
Slender sedge	*Carex lasiocarpa*
Kellog's sedge	*Carex lenticularis*
Nebraska sedge	*Carex nebrascensis*
Retrose sedge	*Carex retrosa*
Sawbeaked sedge	*Carex stipata*
Beaked sedge	*Carex utriculata* (c. *Rostrata)*
Inflated sedge	*Carex vesicaria*
Fox sedge	*Carex vulpinoidea*
Awned flatsedge	*Cyperus aristatus*
Shining flatsedge*	*Cyperus rivularis**
Needle spike-rush	*Eleocharis acicularis*

Common name	*Scientific name*
Delicate spike-rush	*Eleocharis bella*
Common spike-rush	*Eleocharis palustris*
Hardstem bulrush	*Scirpus acutus*
Small-fruited bulrush	*Scirpus microcarpus*
Softstem bulrush	*Scirpus validus*
Poaceae (Gramineae) (Grass)	
Goat grass	*Aegilops cylindrica*
Bearded wheatgrass	*Agropyron canium* v. *andinum*
Crested wheatgrass	*Agropyron cristatum*
Thin spiked wheatgrass	*Agropyron dasystachyum*
Intermediate wheatgrass	*Agropyron intermedium*
Quack grass	*Agropyron repens*
Western wheatgrass	*Agropyron smithii*
Bluebunch wheatgrass	*Agropyron spicatum*
Redtop	*Agropyron alba* v. *alba*
Tickle-grass	*Agropyron scabra*
Shortawn foxtail	*Alopecurus aequalis*
Meadow foxtail	*Alopecurus partensis*
Common oats	*Avena sativa*
Slough grass	*Beckmania syzigachne*
Smooth brome-grass	*Bromus inermis* spp. *inermus*
Soft brome-grass	*Bromus mossi*
Cheatgrass†	*Bromus tectorum*†
Bluejoint reedgrass	*Calamagrostis canadensis* v. *canadensis*
Slim reedgrass	*Calamagrostis neglecta*
Brook grass	*Catabrosa aquatica*
Woodreed	*Cina latifolia*
Orchard grass	*Dactylis glomerata*
Canada wildrye	*Elymus canadensis*
Great basin wildrye	*Elymus cinereus*
Stinkgrass	*Eragrostis cilienensis*
Tall fescue	*Festuca arundinacea*
Six weeks fescue	*Festuca octoflora*
Northern mannagrass	*Glyceria borealis*
Tall mannagrass	*Glyceria elata*
American mannagrass	*Glyceria grandis*
Fowl mannagrass	*Glyceria striata*
Foxtail barley	*Hordeum jubatum*
Junegrass	*Koeleria cristata*
Perennial ryegrass	*Lolium perenne*
Indian ricegrass	*Oryzopsis hymenoides*
Common witchgrass	*Panicum capillare*
Reed canarygrass	*Phalaris arundinacea*
Common timothy	*Phleum pratense*
Annual bluegrass	*Poa annua*

Common name	*Scientific name*
Viviparous bluegrass	*Poa bulbosa*
Canada bluegrass	*Poa compressa*
Fowl bluegrass	*Poa palustris*
Kentucky bluegrass	*Poa pratensis*
Sandbergs bluegrass	*Poa sandbergii*
Green bristlegrass	*Setaria viridis*
Sand dropseed	*Sporobolis cryptandrus*
Squirreltail	*Sitanion hystrix*
Needle and thread	*Stipa comata*
Green needlegrass	*Stipa viridula*
Hydrocharitaceae (Frog's Bit)	
Canada waterweed	*Elodea canadensis*
Nuttalls waterweed	*Elodea nuttallii*
Iridaceae (Iris)	
Yellow flag iris†	*Iris pseudacorus*†
Blue-eyed grass	*Sisyrinchium angustifolium*
Juncaceae (Rush)	
Wire grass	*Juncus balticus*
Toad rush	*Juncus bufonius*
Soft rush	*Juncus effusus*
Dagger-leaf rush	*Juncus ensifolius*
Tuberous rush	*Juncus nodosus*
Slender rush	*Juncus tenuis* v. *tenuis*
Torrey's rush	*Juncus torrei*
Smooth rush	*Luzula hitchcockii*
Lemnaceae (Duckweed)	
Water lentil	*Lemna minor*
Star duckweed	*Lemna trisulca*
Great duckweed	*Spirodela polyrhiza*
Watermeal	*Wolffia punctata*
Lilaceae (Lily)	
Nodding onion	*Allium cernuum*
Asparagus	*Asparagus officinalis*
Wild hyacinth	*Brodiaea douglasii*
Starry false solomon's seal	*Smilacina stellata*
Common death camas	*Zigadenus venenosus*
Najadaceae (Water-Nymph)	
Guadalupe water-nymph*	*Najas guadalupensis**
Potamogetonaceae (Pondweed)	
Reddish pondweed	*Potamogeton alpinus*
Large-leaved pondweed	*Potamogeton amplifolius*
Berchtold's pondweed	*Potamogeton berchtoldii*
Ribbon-leaved pondweed	*Potamogeton epihydrus*
Slender-leaved pondweed	*Potamogeton filiformis*
Illinois pondweed	*Potamogeton illinoensis*

Common name	*Scientific name*
Floating-leaved pondweed	*Potamogeton natans*
Fennel-leaved pondweed	*Potamogeton pectinatus*
Small pondweed	*Potamogeton pusillus*
Richardsons pondweed	*Potamogeton richardsonii*
Eel-grass pondweed	*Potamogeton zosteriformis*
Sparganiaceae (Bur-Reed)	
Narrow-leaved bur-reed	*Sparganium angustifolium*
Simple stem bur-reed	*Sparganium emersum* v. *multipedunculatum*
Typhaceae (Cat-Tail)	
Common cattail	*Typha latifolia*
Zannichelliaceae (Horned Pondweed)	
Horned pondweed	*Zannichellia palustris*

Class filicopsida

Common name	*Scientific name*
Polypodiaceae (Common Fern)	
Brittle bladder-fern	*Cystopteris fragilis*
Marsileaceae (Pepperwort)	
Pepperwort	*Marsilea vestita*

Class equisetopsida

Common name	*Scientific name*
Equisetaceae (Horsetail)	
Common horsetail	*Equisetum arvense*
Water horsetail	*Equisetum fluviatile*
Scouring rush	*Equisetum hyemale*
Smooth scouring rush	*Equisetum laevigatum*
Marsh horsetail	*Equisetum palustre*
Shady horsetail	*Equisetum pratense*

Class lycopodiopsida

Common name	*Scientific name*
Selaginellaceae (Clubmoss)	
Compact clubmoss	*Selaginella densa* v. *densa*

Class marchantiospida

Common name	*Scientific name*
Marchantiaceae	
—	*Marcantia polymorphia*
Ricciaceae	
—	*Riccio carpus natans*

Class chlorophyceae

Common name	*Scientific name*
Characeae (Green Algae)	
—	*Nostoc* ssp.
—	*Hydrodictnon reticulatum*
—	*Riccia fluitins*
—	*Nitella* spp.
—	*Chara* spp.
—	*Tolypella* spp.

Class insecta

Common name	*Scientific name*
Butterflies	
Two-tailed swallowtail	*Papilio multicaudata*
Western tiger swallowtail	*Papilio rutulus*
Pale swallowtail	*Papilio eurymedon*
Western white	*Pontia occidentalis*
Cabbage white	*Pieris rapae*
Beckers white	*Pontia beckerii*
Checkered white	*Pontia protodice*
Clouded sulphur	*Colias philodice*
Sara orangetip	*Anthocharis sara*
Orange sulfur	*Colias eurytheme*
Ediths copper	*Lycaena editha*
Purplish copper	*Lycaena helloides*
Bronze copper	*Lycaena hyllus*
Western pine elfin	*Callophrys eryphon*
Gray hairstreak	*Strymon melinus*
Melissa blue	*Lycaeides melissa*
Spring azure	*Celastrina ladon*
Arrowhead blue	*Glaucopsyche piasus*
Great spangled fritillary	*Speyeria cybele*
Silver-bordered fritillary	*Boloria selene*
Mormon fritillary	*Spreyeria mormonia*
Mylitta crescent	*Phyciodes mylitta*
Northern crescent	*Phyciodes cocyta*
Field crescent	*Phyciodes pratensis*
Ediths checkerspot	*Euphydryas editha*
Satyr anglewing	*Polygonia satyrus*
Oreas anglewing	*Polyfonia oreas*
Zephyr anglewing	*Polyfonia zephyrus*
Mourning cloak	*Nymphalis antiopa*
Milbert's tortoiseshell	*Nymphalis milberti*
California tortoiseshell	*Nymphalis californica*
Red admiral	*Vanessa atalanta*
West coast lady	*Vanessa annabella*

Common name	*Scientific name*
Painted lady	*Vanessa cardui*
Lorquins admiral	*Limenitis lorquini*
Viceroy	*Limenitis archippus*
Common wood nymph	*Cercyonis pegala*
Small wood nymph	*Cercyonis oetus*
Common alpine	*Eregia eipsoodea*
Common ringlet	*Coenonympha ampelos*
Pecks skipper	*Polites peckius*
Sandhill skipper	*Polites sabuleti*
Long dash	*Polites mystic*
Common branded skipper	*Hesperua comma*
Woodland skipper	*Ochlodes sylvanoides*
Arctic skipper	*Carterocephalus palaemon*
Garita skipperling	*Oarisma garita*
Roadside skipper	*Amblyscirtes vialis*
Common sootywing	*Pholisora catullus*
Common checkered skipper	*Pyrgus communis*
Dragonflies and Damselflies	
Spotted spreadwing	*Lestes congener*
Emerald spreadwing	*Lestes dryas*
Lyre-tipped spreadwing	*Lestes unguiculatus*
Northern spreadwing	*Lestes disjunctus*
Northern bluet	*Enallagma annexum*
Boreal bluet*	*Enallagma boreale**
Marsh bluet	*Enallagma ebrium*
Pacific forktail	*Ischnura cervula*
Western forktail	*Ischnura perparva*
Western red damsel	*Amphiagrion abbreviatum*
Canada darner	*Aeshna canadensis*
Lance-tipped darner	*Aeshna constricta*
Paddle-tailed darner	*Aeshna palmata*
Shadow darner	*Aeshna umbrosa*
Common green darner	*Anax junius*
Variable darner	*Aeschna interrupta*
California darner	*Rhionaeschna californica*
Pale snaketail	*Ophiogomphus severus*
Sinuous snaketail	*Ophiogomphus occidentis*
Common whitetail	*Plathemis lydia*
Four-spotted skimmer	*Libellula quadrimaculata*
Eight-spotted skimmer	*Libellula forensis*
Twelve-spotted skimmer	*Libellula pulchella*
Dot-tailed whiteface	*Leucorrhinia intacta*
Hudsonian whiteface	*Leucorrhinia hudsonica*
Variegated meadowhawk	*Sympetrum corruptum*
White-faced meadowhawk	*Sympetrum obtrusum*
Cherry-faced meadowhawk	*Sympetrum internum*

Common name	*Scientific name*
Saffron-winged meadowhawk	*Sympetrum costiferum*
Band-winged meadowhawk	*Sympetrum semicinctum*
Striped meadowhawk	*Sympetrum pallipes*
Black meadowhawk	*Sympetrum vicinum*
Moths	
Isabella tiger moth	*Pyrrharctia isabella*
Carpenterworm moth	*Cossoidea* spp.
Big poplar sphinx	*Pachysphinx occidentalis*
Large yellow underwing	*Noctua pronuba*
One-eyed sphinx	*Smerinthus cerisyi*
Polyphemus moth	*Antheraea polyphemus*
Catocaline moth	*Catocala* spp.
Beetles	
Blister beetle	*Epicauta* spp.
Tiger beetle	*Cincidela oregona*
Leaf beetle	*Chrysomelidae latreille*
Rifle beetle	*Optioservus quadrimaculatus*
Beetle	*Troposternus latoralis*
Tumbling flower beetle	*Mordellidae latreille*
Carrion beetle	*Silphidae latreille*
Ground beetle	*Pterostichus* spp.
Leaf beetle	*Systena* spp.
Predaceous diving beetle	*Platambus* spp.
Weevil	*Larinus* spp.
Weevil	*Rhinocyllus conicus*
Flies	
Caddisfly	*Parapsyche almota*
Caddisfly	*Limnephelus* spp.
Caddisfly	*Hydropsyche californica*
Mayfly	*Baetis tricaudatus*
Mayfly	*Drunella coloradensis*
Mayfly	*Ephemerella excrucians*
Mayfly	*Siphlonurus occidentalis*
Mayfly	*Callibaetis pictus*
Mayfly	*Rhitrhogena robusta*
Mayfly	*Ameletus similior*
Mayfly	*Sweltsa* spp.
Mayfly	*Serratella tibialis*
Mayfly	*Drunella doddsi*
Stonefly	*Claassenia sabulosa*
Stonefly	*Hesperoperla pacifica*
Stonefly	*Kogotus modestus*
Stonefly	*Isoperla* spp.
Stonefly	*Pteronarcella*
Deerfly	*Chrysops* spp.

Class Gastropoda

Common name	*Scientific name*
Snails and Slugs	
Forest disc	*Discus whitneyi*
Marsh pondsnail	*Stagnicola elodes*
Mountain marshsnail	*Stagnicola montanensis*
Coeur d'Alene Oregonian	*Cryptomastix mullani*
Brown hive	*Euconolus fulvus*
Garlic glass snail	*Oxychilus alliarus*
Two-ridge rams-horn snail	*Helisoma anceps*
Big-eared radix	*Radix auricularia*
Mimic lymnaea snail	*Pseudosuccinea columella*
Glossy pillar	*Cochilicopa lubrica*
Grey fieldslug	*Derocerus reticulatum*
Idaho forestsnail	*Allogona ptychophora*
Lovely vallonia	*Vallonia pulchella*
Meadow slug	*Derocerus laeve*
Quick gloss	*Zonitoides arboreus*
Dusky arion	*Arion subfuscus*

Class Arachnida

Common name	*Scientific name*
Spiders	
Western black widow	*Latrodectus hesperus*

Class Malacostraca

Common name	*Scientific name*
Scuds	
Scud	*Hyalella azteca*

* Species of concern
† Montana Noxious Weed List and high priority for treatment.

Appendix H

Fire Management Program

The U.S. Fish and Wildlife Service (Service) has administrative responsibility for fire management at the Lee Metcalf National Wildlife Refuge, which covers 2,800 acres. This appendix describes the fire management program that will be implemented on the refuge.

H.1 The Role of Fire

Vegetation in the Rocky Mountains evolved under periodic disturbance and defoliation from fire, drought, floods, large herbivores, insect outbreaks, and disease. These periodic disturbances kept the ecosystem diverse and healthy and maintained significant biodiversity for thousands of years.

Historically, wildland fire played an important role in many ecosystems by stimulating regeneration, cycling nutrients, providing a diversity of habitats for plants and wildlife, and decreasing the impacts of insects and diseases. When fire or grazing is excluded from a landscape, increased fuel loading occurs due to the buildup of thatch and dead or downed trees. Increased fuel loading intensifies a fire's resistance to control, increases the potential for large-scale severe wildfires, and threatens firefighter and public safety as well as Federal and private facilities. The return of fire in most ecosystems is essential for healthy vegetation for wildlife habitats in grasslands, wetlands, and forests.

When used properly, fire can accomplish the following:

- Reduce hazardous fuel buildup in both wildland–urban interface areas and non-wildland–urban interface areas.
- Improve wildlife habitats by reducing the density of vegetation, changing the plant species composition, or both.
- Sustain or increase biological diversity.
- Improve woodland and shrubland by reducing plant density.
- Reduce susceptibility of plants to insect and disease outbreaks.
- Increase the quantity of water available for municipalities and activities that depend on wildland water supplies.

H.2 Wildland Fire Management Policy and Guidance

Based on Federal interagency policy (Fire Executive Council 2009), wildland fire is defined as any non-structure fire that occurs in the wildland including wildfire and prescribed fire. Response to wildland fire is based on consideration of a full range of fire management actions—allowing the fire to benefit the resource where possible or taking suppression action when those benefits are not attainable or important resources or adjacent lands are likely threatened.

The 1995 Federal Wildland Fire Management Policy was updated in 2001. This revised policy directs Federal agencies to achieve a balance between suppressing fires to protect life, property, and resources and prescribing fires to regulate fuels and maintain healthy ecosystems. The following are the foundational principles for Federal Wildland Fire Management Policy and have been excerpted from "Review and Update of the 1995 Federal Wildland Fire Management Policy" (National Wildfire Coordinating Group 2001):

1. Firefighter and public safety is the first priority in every fire management activity.
2. The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process. Federal agency land and resource management plans set the objectives for the use and desired future condition of the various public lands.
3. Fire Management Plans (FMP), programs, and activities support land and resource management plans and their implementation.
4. Sound risk management is a foundation for all fire management activities. Risks and uncertainties relating to fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity. Net gains to the public benefit will be an important component of decisions.
5. Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives. Federal agency administrators are adjusting

and reorganizing programs to reduce costs and increase efficiencies. As part of this process, investments in fire management activities must be evaluated against other agency programs in order to effectively accomplish the overall mission, set short- and long-term priorities, and clarify management accountability.

6. Fire Management Plans and activities are based upon the best available science. Knowledge and experience are developed among all federal wildland fire management agencies. An active fire research program combined with interagency collaboration provides the means to make these tools available to all fire managers.
7. Fire Management Plans and activities incorporate public health and environmental quality considerations.
8. Federal, State, tribal, local, interagency, and international coordination and cooperation are essential. Increasing costs and smaller work forces require that public agencies pool their human resources to successfully deal with the ever-increasing and more complex fire management tasks. Full collaboration among federal wildland fire management agencies and between the federal wildland fire management agencies and international, State, tribal, and local governments and private entities result in a mobile fire management work force available for the full range of public needs.
9. Standardization of policies and procedures among federal wildland fire management agencies is an ongoing objective. Consistency of plans and operations provides the fundamental platform upon which federal wildland fire management agencies can cooperate, integrate fire activities across agency boundaries, and provide leadership for cooperation with State, tribal, and local fire management organizations.

The fire management considerations, guidance, and direction should be addressed in the land use resource plans (for example, the comprehensive conservation plan [CCP]). A fire management plan describes the fire management program and is a stepdown plan based on the land management plan or the habitat management plan.

H.3 Management Direction

Lee Metcalf National Wildlife Refuge will suppress human-caused fires and wildfires that threaten life and property. Appropriate suppression actions—whether aggressive, high intensity, or low intensity—will be based on preplanned analysis, executed to minimize costs and resource losses, and consistent with land management objectives.

Prescribed fire, as well as manual and mechanical fuel treatments, will be used in an ecosystem context to protect both Federal and private property and for habitat management purposes. Fuel reduction activities will be applied in collaboration with Federal, State, private, and nongovernmental partners. For wildland–urban interface treatments, focal areas will be those with community wildfire protection plans and designated communities at risk. The only community at risk near the refuge, as identified in the Federal Register, is the community of Stevensville, Montana. The State of Montana has developed a community wildfire protection plan for all communities in Ravalli County.

All aspects of the fire management program will be conducted in a manner consistent with applicable laws, Department of Interior and Service policies, and guidance established at national, regional, and local levels. Lee Metcalf National Wildlife Refuge will maintain a fire management plan to accomplish the fire management goals described below. Wildland fire, prescribed fire, and manual and mechanical fuel treatments will be applied under selected weather and environmental conditions, monitored using scientific techniques, and refined using adaptive management.

FIRE MANAGEMENT GOALS

Fire management goals are set at national, regional, and local levels.

National Fire Management Goals

The goals and strategies of the U.S. Fish and Wildlife Service National Wildlife Refuge System Wildland Fire Management Program Strategic Plan are consistent with the following guidance:

- policies of the Department of the Interior and the Service
- direction from the National Fire Plan
- the President's Healthy Forest Initiative
- 10-Year Comprehensive Strategy and Implementation Plan
- guidelines of the National Wildfire Coordinating Group
- initiatives of the Wildland Fire Leadership Council
- "Interagency Standards for Fire and Aviation Operations"

Regional Fire Management Goals

Priorities stated in "The Region 6 Refuges Regional Priorities FY07–11" are consistent with the vision statement for Region 6: "to maintain and improve the biological integrity of the region, ensure the ecological condition of the region's public and private lands are better understood, and endorse sustainable use

of habitats that support native wildlife and people's livelihoods."

Refuge Fire Management Goals and Objectives

Fire management goals and objectives are used in the planning process to help management determine which responses and activities are necessary to achieve National Fire Plan and land management goals and objectives.

The fire management goals and objectives for Lee Metcalf National Wildlife Refuge are as follows:

1. Provide for firefighter and public safety.
2. Suppress human-caused fires and wildfires that threaten life and property.
3. Reduce wildland fire risk to the community of Stevensville and other public structures and private lands through hazardous fuels reduction treatments.
4. Use wildland fire, manual treatment methods, and mechanical treatment methods to achieve habitat goals and objectives identified in this CCP using scientific techniques and adaptive resource management to monitor results.
5. Protect important migratory bird habitats and natural resource values.
6. All wildfires will receive a management response based on firefighter and public safety considerations, resource and cultural values at risk, and circumstances unique to the incident while providing for cost-effective management.
7. Prevent human-caused wildfires through public contact and education, monitoring, and hazard fuels mitigation.
8. Safely suppress all wildfires occurring within the refuge. Maintain an initial attack success rate of 95 percent or higher on wildfires occurring on Service lands.
9. Utilize Burned Area Emergency Response (BAER) or Burned Area Rehabilitation (BAR) funding as needed following wildfires.
10. Implement and monitor a rotational prescribed burn program over the life of the plan that supports the fire dependent communities within the refuge.

The refuge staff recognizes that fire can play an important role in habitat management. With an approved fire management plan, the refuge staff may use wildland fire or prescribed fire in accordance with Federal, State, and local ordinances and laws to achieve hazardous fuels reduction and resource management objectives. Strategies and tactics that consider public and firefighter safety, as well as resource values at risk, will be used. Wildfire suppression, prescribed fire methods, manual and mechanical means, timing, and monitoring will be described in detail within the stepdown fire management plans for the refuge.

On approval of this CCP, the 2010 fire management plan will be reviewed and updated as needed to meet the goals and objectives set forth by the CCP.

H.4 Fire Management Organization, Contacts, and Cooperation

Region 6 of the Service would establish a fire management organization to provide qualified technical oversight of fire management for the refuge. Fire management staffing levels would be determined by established modeling systems and based on the fire management workload of a group of refuges and possibly that of interagency partners. Workload is based on historical wildfire suppression activities as well as historical and planned fuel treatments. Fire management activities would be conducted in a coordinated and collaborative manner through the "Montana State Annual Operating Plan" and other agreements with Federal and non-Federal partners.

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