Draft

Environmental Assessment of the Comprehensive Conservation Plan

Charles M. Russell Wetland Management District and Associated National Wildlife Refuges

Montana

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U.S. Department of the Interior

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Region 6 Mountain-Prairie Region

Division of Refuge Planning

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Contents

Executive Summary

This environmental assessment (EA) evaluates two action alternatives and a no-action alternative. The proposed action is to prepare and implement a Comprehensive Conservation Plan (CCP) for certain units of the Charles M. Russell (CMR) National Wildlife Refuge Complex (NWRC) in the Northern Great Plains (NGP) in central and south-central Montana. These units include the waterfowl production areas (WPAs) in the CMR Wetland Management District (WMD) and associated national wildlife refuges (NWRs), collectively referred to as the District hereinafter. The draft CCP identifies management proposals for sound fish and wildlife management to ensure the biological integrity, diversity and environmental health of the District, provide for cultural resource stewardship, and improve visitor use and access.

The no-action alternative (Alternative A) would continue opportunistic control of invasive plant species and the use of lead ammunition for big game hunting and fishing tackle. Alternatives B and C include proactively controlling and managing invasive plant species to improve water quality in the District's bodies of water and wetlands. Improved roadways and parking areas would improve the visitor experience. Alternative B would allow the use of lead ammunition for big game hunting and fishing tackle. Alternative C would require the use of lead-free ammunition for big game hunting and fishing tackle. All other management activities under Alternative C would duplicate those under Alternative B.

This EA examines the potential environmental impacts of the proposed action and complies with the National Environmental Policy Act (NEPA) in accordance with the Council on Environmental Quality NEPA regulations (40 Code of Federal Regulations, or CFR, 1500-1508), the U.S. Department of the Interior (USDI) NEPA regulations (43 CFR 46; 516 Department Manual, or DM, 8), U.S. Fish and Wildlife Service (USFWS, Service) policies (550 Service manual, or FW, 3), and other relevant regulations and requirements. NEPA requires that the effects of proposed actions on the natural and human environment be examined.

The EA analyzed natural resources, cultural and historic resources, socioeconomics (including environmental justice, public health and safety), visitor use and experience, and management and operations. The USFWS initially considered other resources but dismissed them from further analysis because the proposed action and its alternatives would have negligible impacts on these resources.

Based on the EA analysis, in consultation with federal, state and local agencies and federally recognized Native American tribes, the USFWS has determined that the proposed action and its alternatives would not significantly impact the natural and human environment.

Chapter 1: Introduction

This EA examines the potential environmental impacts of implementing the CCP for the CMR WMD and associated NWRs (District) in compliance with NEPA. The District is in the NGP of central and south-central Montana (Figure 1) and bounded on the north by the Missouri River Breaks and on the south by the Greater Yellowstone Ecosystem. It encompasses four NWRs and is composed of six WPAs in five Montana counties: Petroleum, Musselshell, Golden Valley, Yellowstone and Stillwater. Clark's Fork WPA (Carbon County) is managed by the District but is not inside the District boundary. There are also five conservation easements in the District. The District's units and easements are:

- War Horse WPA and War Horse NWR and its three units
- Lake Mason NWR and its three units
- Hailstone WPA and NWR
- Grass Lake NWR
- Spidel WPA
- Tew WPA
- Clark's Fork WPA
- James L. Hansen WPA
- Farmers Home Administration conservation easements: Hardy Tract, Kurz Tract, Overturf Tract, Weyer Tract, Jansen Tract
- Other leases: flowage easements, state grazing easements

This EA does not evaluate any management actions at CMR NWR or its CCP, which was completed in 2012.

1.1 Background

NWRs are guided by the mission and goals of the National Wildlife Refuge System (NWRS), the purposes of an individual refuge, federal laws and executive orders, Service policy, and international treaties. Relevant guidance includes the NWR Administration Act 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act, 16 U.S.C., 668dd et seq.), the Refuge Recreation Act of 1962, and portions of the Code of Federal Regulations and the Service Manual. See Appendix A for relevant laws and regulations.

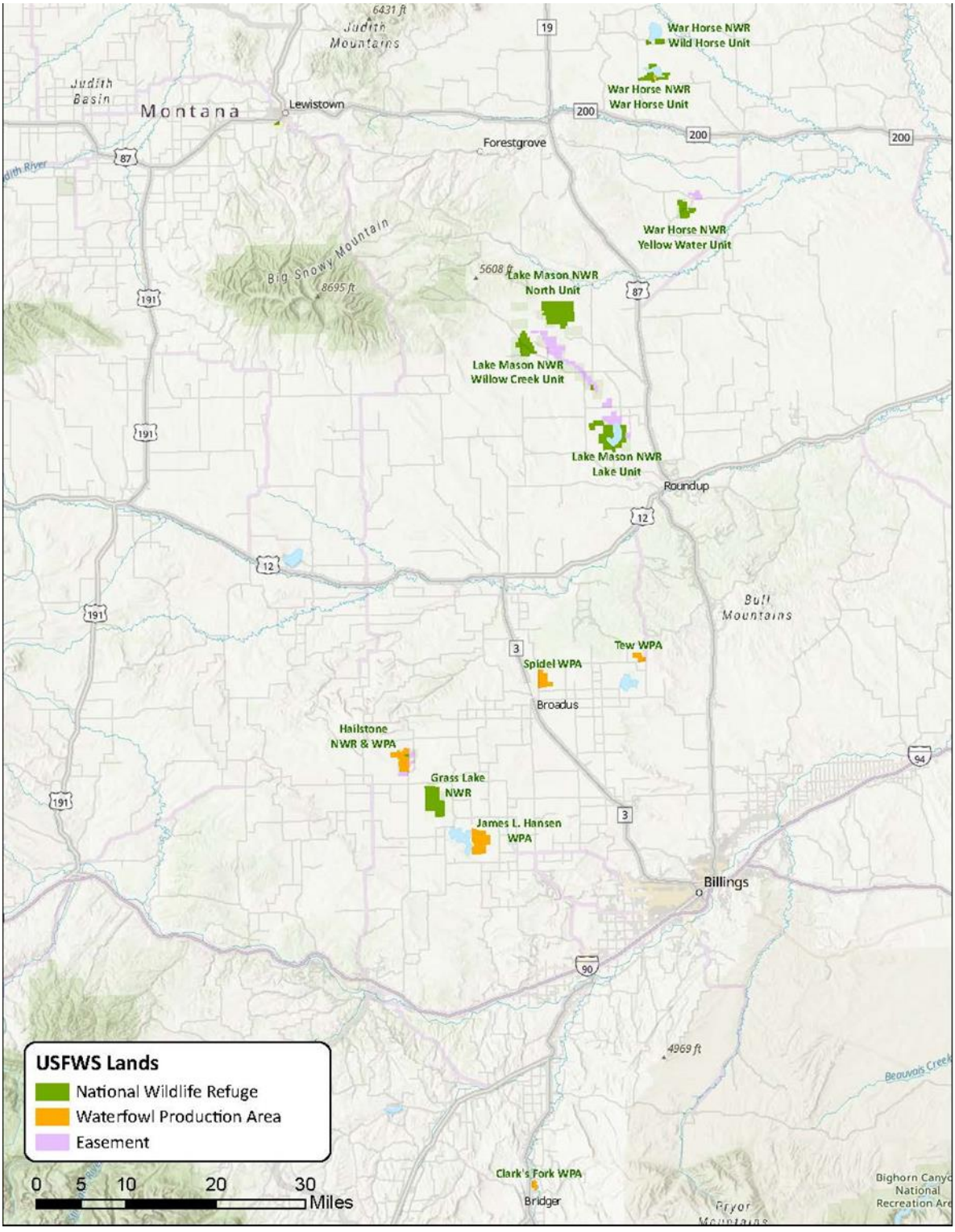
The mission of the NWRS is:

"... 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."

The Improvement Act directs the Secretary of the USDI to ensure that the mission of the Refuge System and purposes of individual refuges are carried out (16 U.S.C. 668dd(4)(a)(3)). It requires each NWR unit to develop a CCP to ensure that it is managed to fulfill its established purpose and meet the mission of the Refuge System (16 U.S.C. 668dd(4)(e)(1)(a)). Each unit must be managed consistently with the CCP until conditions

that affect the refuge or planning unit have changed significantly and a revision is deemed necessary (16 U.S.C. 668dd(e)(1)).

Figure 1. CMR WMD and Associated Refuges and WPAs



1.2 Planning Context

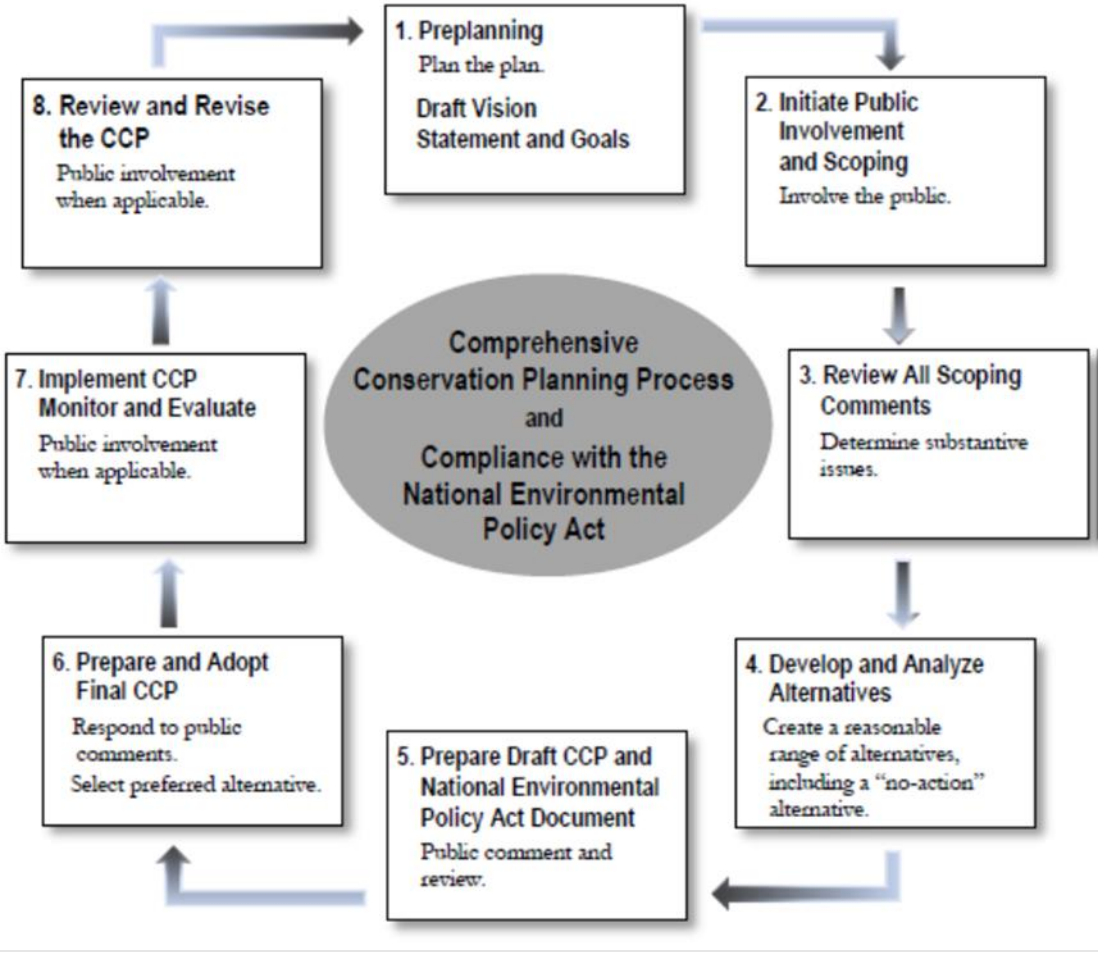
The Service began step one (preplanning) of the CCP planning process (Figure 2) for the District in the fall of 2016 by creating a planning team of Service staff from the CMR NWRC (the Complex) and Service Region 6 Division of Refuge Planning. Staff began thinking about how to address and correct District planning issues. They discussed the values and qualities of the District that must be protected, maintained and improved. Staff developed draft vision and goals statements based on the refuge system's mission and the District units' legislative purposes.

During the public scoping process (step two), the public was asked to review and offer suggestions on the draft vision and goals statements. During three public, open-house meetings, attendees viewed a PowerPoint presentation about the District and an overview of the CCP and NEPA processes, as well as the purpose and vision for each unit. Attendees were encouraged to ask questions and offer comments. Each attendee received a comment form for submitting their thoughts or questions in writing. Meeting attendees participated in small discussion groups with Service staff.

Attendance during the three public scoping meetings was relatively low: There were six attendees at the Winnett meeting, three at the Roundup meeting and five at the Laurel meeting. Attendees were primarily local citizens, including ranchers. No one made formal oral comments during the meetings. Written comments for the initial scoping effort were due March 31, 2017, and the Service received nine comments (from eight individuals and one organization).

On June 29, 2022, the Service published a Notice of Intent in the Federal Register announcing it would be reinitiating the District's CCP planning process. During the new scoping comment period, the Service received comments from two individuals and three organizations.

Figure 2. Process Steps for Comprehensive Conservation Planning and Associated Environmental Analysis



The CCP planning process ensures that issues with the greatest potential effect on District resources and programs are resolved or prioritized over the life of the CCP. The comments collected from the scoping meetings and correspondence focused on public opportunity, wildlife resources and livestock grazing and were used to develop a final list of issues for developing the proposed action and analyzing the management alternatives. The Service developed alternatives to address the planning issues and problems, which are presented in this EA (Chapter 3).

After the scoping process, a draft CCP was developed that includes a vision and a series of goals. This EA presents a range of alternative objectives and strategies for achieving them and analyzes the impacts of each alternative on the human environment.

1.3 Proposed Action

The Service proposes to develop and implement a CCP to best achieve the District's established purposes; fulfill the mission of the NWRS consistent with sound fish and

wildlife management; and maintain the biological integrity, diversity and environmental health of the NWRS. The draft CCP includes proposals for natural resource management, visitor use and access, and cultural resource stewardship.

1.4 Purpose and Need for Action

The purpose of developing the CCP is to provide long-term guidance for managing the District's programs and activities to ensure the District is meeting its established purposes, as required by the Improvement Act. There is no formal District management plan. The District needs a CCP to guide general operations, natural resource management, visitor use and access, and cultural resource stewardship.

This CCP describes the District's role in supporting the mission of the NWRS as well as conservation efforts for the larger landscape. Fish, wildlife, plants and their habitats receive the highest management priority. Visitor uses (with a priority on wildlife-dependent recreation) are allowed and encouraged if they are compatible with each Service unit's purpose and as mandated by the Improvement Act.

The CCP is intended to:

- Provide the District with a long-term management plan for the conservation of fish, wildlife, plants and their related habitats
- Set a long-term vision for the District, as well as management goals, objectives and strategies to achieve that vision
- Provide opportunities for compatible visitor uses
- Achieve the District's purposes, fulfill the System's mission, and maintain and restore ecological integrity
- Communicate to the public the Service's management priorities for the District

As expressed in the proposed CCP, the vision for the District is:

The Charles M. Russell Wetland Management District, located in the heart of the Northern Great Plains, consists of NWRs, WPAs and conservation easements. These mixed grassland, sagebrush and vital wetland habitats support abundant wildlife populations. In collaboration with partners, these habitats are managed to support the biological diversity and integrity of the District and its surrounding landscapes and provide a variety of recreational opportunities. Visitors enjoy a sense of serenity and wonder in the presence of diverse habitats and wildlife, which connects them with nature.

The draft CCP identifies seven goals for managing the District's natural resources, visitor use and access, and cultural resources:

Natural Resources

1. **Upland Habitat and Associated Wildlif**e: Protect, enhance and manage upland habitat for breeding and migratory birds and other wildlife while maintaining the biological diversity and integrity of native grasslands and sage-steppe prairie.

2. **Wetland Habitat and Associated Wildlife:** Protect, enhance and manage wetland habitat for breeding and migratory birds and other wildlife to maintain the biological diversity and integrity of the District's wetlands.
3. **Research and Inventory:** Improve scientific knowledge of natural resources and ecological processes to inform management within the District through monitoring and applied research.

Visitor Use and Access

4. **Visitor Services:** Provide visitors with wildlife-dependent recreational and educational opportunities that foster an appreciation of the District's wildlife and plant communities.
5. **Partnerships:** Collaborate with partners to protect, enhance and manage for healthy, productive, and diverse habitats and wildlife populations on District and surrounding lands.

Operations

6. **Operations:** Emphasize the protection of District resources using staff, partnerships and volunteer programs.

Cultural Resources

7. **Cultural Resources:** Identify and protect cultural resources to preserve the District's precontact and historic past.

Chapter 2: Involvement, Coordination and Consultation

2.1 Public Involvement

The draft CCP and this draft EA will be available for public review and comment for 30 days from **January 14, 2025** to **February 13th, 2025.** The public will be notified in the Federal Register and the draft documents are posted on the District's website. The draft document will be available at the CMR NWR Complex Headquarters [P.O. Box 110, 333 Airport Rd., Lewistown, MT 59457] via email [cmr@fws.gov] and on the District website [https://www.fws.gov/refuge/charles-m-russell-wetland-management-district].

For access to the document in an alternative format, contact the District. Submit comments in writing via email [cmr@fws.gov] or mail to the District [Cortez, Rohr, District Manager, P.O. Box 110, 333 Airport Rd., Lewistown, MT 59457]. We will incorporate comments, concerns, suggestions and other feedback into the final EA if a substantive response is required.

Before including your address, phone number, email address or other personal identifying information in your comment, be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. Although you can ask us to withhold your personal identifying information, we cannot guarantee that we will be able to.

2.2 Federal Coordination

The Regional Director (Service Region 6) invited the Montana state office of the Bureau of Land Management (BLM) to take part in the planning process. The BLM designated a representative to take part, and staff members have been involved in the planning process.

Intra-Service consultation under Section 7 of the Endangered Species Act was completed on August 8, 2023. See the attached Section 7 Intra-Service Consultation Form (CCP Appendix G).

Consultations with the State Historic Preservation Office (SHPO) under Section 106 of the Natural Historic Preservation Act will be conducted on a project-by-project basis.

2.3 State Coordination

The Regional Director sent a letter to Montana Fish, Wildlife and Parks (MFWP) and the Department of Natural Resources and Conservation, inviting them to take part in the planning process. Both agencies designated a representative, and their staff members have been involved in the planning process.

2.4 County Coordination

The Regional Director sent letters to the Golden Valley, Musselshell, Petroleum, Stillwater and Yellowstone County commissioners. These counties did not designate a representative to take part on the planning team but were provided opportunities to participate and submit comments.

2.5 Tribal Consultation

Early in the planning process (September 30, 2016), the Regional Director sent a letter to Tribes identified as possibly having a cultural and historical connection to areas in the District: the Kul Wicasa Oyate — Lower Brule Sioux; Gros Ventre and Assiniboine of Fort Belknap; Oglala Sioux; Rosebud Sioux; Assiniboine and Sioux of Fort Peck; Santee Sioux; Blackfeet; Cheyenne River Sioux; Standing Rock Sioux; Crow Creek Sioux; Northern Cheyenne; Apsaalooke Crow and the Mandan, Hidatsa and Sahnish Nations.

A representative from the Northern Cheyenne Tribe asked to be included in planning team updates and has been included in the team correspondence regarding CCP development. The other Tribal councils did not submit responses to the Region 6 letter but were provided opportunities to comment.

Chapter 3: Alternatives

3.1 Decision Framework

The planning team will review all public comments on this draft CCP and EA and prepare a final CCP. A summary of all substantive public comments will be given to the regional director, who will consider the environmental effects of all alternatives, including information gathered during public review.

The Regional Director will select a management alternative for the District based on the effects analysis in this draft CCP and EA. If the Regional Director finds that no significant impacts would occur, a "finding of no significant impact" will be included in the final CCP. If the Regional Director finds that a significant effect would occur, an environmental impact statement will be prepared. If approved, the actions in the selected alternative will compose the final CCP.

The planning team will publish the final CCP on the District's website: [https://www.fws.gov/refuge/charles-m-russell-wetland-management-district]. Electronic files for the final CCP will be available for download, or a hard copy will be mailed to those who have requested a paper version. The Service will implement the CCP with help from partner agencies, other organizations and the public.

3.2 Alternatives

Alternatives are different management approaches designed to achieve the purposes, vision and goals of the District; the mission of the NWRS; and the mission of the Service. Alternatives are formulated to address significant issues, concerns and problems identified by the Service, cooperating agencies, interested groups, tribal governments and the public during public scoping. Additional public input will be accepted throughout development of the final CCP.

Alternative A – No-Action Alternative

The No-Action Alternative describes the current ongoing management activities and existing staffing levels. This alternative provides a benchmark the decision-maker can use to compare what would happen to the environment if current management actions were to continue unchanged. Alternative A might not meet all CCP goals, but it provides a basis for comparison with the proposed action.

Current Management Activities for Control of Invasive Plant Species

Livestock grazing occurs on the War Horse and Wild Horse units of War Horse NWR and Lake Unit of Lake Mason NWR. Grazing will be administered in accordance with the Service's Cooperative Agriculture Use Policy (620 FW 2) and a Cooperative Agriculture Agreement (CAA) consisting of a Commercial Special Use Permit (SUP) having special conditions and a detailed Plan of Operations outlining allowable animal unit months (AUMs), on-off dates, unit locations, unit rotations and specific instructions pertinent to grazing.

Select grazing units may receive annual grazing treatments consisting of high-intensity short-duration, extended rest, complete rest and/or a rotational schedule for various lengths of time and may then be rested for multiple years to achieve desired CCP objectives and landscape habitat characteristics.

Other management activities in the District include wildfire suppression and intermittent application of mechanical treatments and chemical and biological controls in response to spontaneous outbreaks of invasive plant species.

Mechanical treatments include the use of handheld tools, chain saws and heavy equipment (e.g., to reduce hazardous fuels and remove invasive species). Chemical controls include herbicides, and biological controls involve the use of organisms or viruses to control pests (e.g., insects, mites, plant diseases).

Current Water Quality Management

Some District waterbodies and wetlands contain dissolved solids, elevated salinity and selenium levels, and other contaminants (such as pesticides). Current water quality management activities involve:

- Working with partners (e.g., state and county governments) to monitor water quality
- Maintaining wetland structures in their current condition
- Maintaining water rights

Refuge Resources — Current Visitor Use and Experience

The District's WPAs offer hunting and trapping opportunities for big game, upland game birds and migratory game birds. The use of lead ammunition is prohibited for hunting of upland game birds and migratory game birds (50 CFR 32.2(k). The Grass Lake NWR and the north portion of the Lake Unit (Lake Mason NWR) are closed to visitor access and use. The Hailstone NWR has never been open to big game hunting.

The District's only fishing opportunities are in the Clark's Fork of the Yellowstone River at Clark's Fork WPA and in the reservoirs associated with the War Horse and Yellow Water units (War Horse NWR), although visitors do not use Service lands to access the reservoirs. Fishing in Clark's Fork WPA is allowed in the river but not in the wetland.

Wildlife observation and photography, as well as environmental education and interpretation, are popular wildlife-dependent recreational activities in the District. Users tend to be bird watchers and nature enthusiasts. The diversity of habitats and wildlife species provides year-round opportunities for wildlife observation, photography, education and interpretation. The District has been open to scientific research by non-Service personnel for decades, even on units that do not allow access to the public.

Visitor use and experience in the District is hampered by access, parking, signage and communications issues. Specifically, entry into many of the NWRs and WPAs is by two-track dirt roads that become muddy and impassable when wet. Most units in the District have no designated parking areas, so visitors park on grasses, which can cause a fire

hazard when vegetation dries during the summer and fall months. Users sometimes fail to stay on open roads, creating new trails or ruts. Small boundary signs are located within the units, but boundary maps and information about allowed uses are lacking.

Management and Operations

The District's staff consists of one station manager.

Alternative B – Implementation of the CCP with Allowed Use of Lead Ammunition for Big Game Hunting and Fishing Tackle

Under Alternative B, the Service would implement the CCP, which would require increased resource management activities to control invasive plant species and enhance visitor use and experience.

Invasive Species Management Activities

Alternative B would implement planned and regular invasive species management within the District by expanding the Service's suite of management tools, which would include:

- **Transition to Prescriptive Grazing.** The Service would transition units of the District to prescriptive grazing regimens. Prescriptive grazing is the planned application of livestock grazing at a specific season, duration and intensity to accomplish specific vegetation management objectives. This could include short-duration, high-intensity grazing treatments to control invasive plants (USFWS 2011); habitat management for specific wildlife or focal bird species; or multiple-unit rotational systems to provide long-term rest between grazing treatments.

  These and other prescriptions, such as prescribed fire, may be considered to achieve vegetation structure, composition and habitat objectives, and develop a mosaic of habitat conditions that support a variety of wildlife species. The Service would continue to maintain and install wildlife-friendly fencing to prohibit cattle from trespassing on District lands.
- **Use of Prescribed Fire.** Fire affects wildlife by altering habitat (Wright 1974). Its benefits include creating habitat diversity, recreating lost or degraded habitats for indigenous species, and allowing animal species eliminated because of habitat degradation to be reintroduced (Wright 1974).

  Prescribed fire would be used in addition to the current practice of wildfire suppression. Prescribed fire is a planned wildland fire ignited in accordance with applicable laws, policies and regulations to meet specific objectives. All planned ignitions must have an approved prescribed fire plan. Federal prescribed fire programs are guided by the principles of the 1995 Federal Wildland Fire Management: Policy and Program Review (U.S. Department of Agriculture [USDA], USDI, 1995) and the 2001 update (USDA, USDI, et al., 2001).

  Federal wildland fire policy is guided by the 2009 Guidance for Implementation of Federal Wildland Fire Management Policy (USDA, USDI, et al., 2009). Collectively,

these principles establish that wildland fire programs should be implemented equally, consistently and concurrently, as a means to protect, maintain and enhance resources. Firefighter and public safety are priorities in planning and implementing fire management activities.

Prescribed fire planning and implementation is conducted in accordance with Interagency Standards for Fire and Fire Aviation Operations (USDA/USDI 2024) and the National Wildfire Coordinating Group (NWCG) Standards for Prescribed Fire Planning and Implementation (NWCG 2022).

- **Increased Use of Mechanical Treatment.** The Service would increase the use of mechanical treatments within the District. These treatments may be used in conjunction with chemical control and prescribed fire treatments as part of the overall treatment process to meet project objectives and goals.
- **Increased Use of Chemical Control of Invasive Plants.** District staff would increase the use of herbicides to treat invasive plant species and federally and state-listed noxious plant species, and to restore and maintain native habitats. Chemical control may be used in conjunction with mechanical and prescribed fire treatments as part of the overall treatment process to meet project objectives.
- **Increased Biological Control.** District staff would increase the use of biological controls to control pests (e.g., insects, mites) and plant disease.

Dense nesting cover (DNC) of native grasses provides valuable wildlife habitat. However, most DNC fields in the District were established more than 20 years ago, and many contain nonnative species. These DNC fields likely need rejuvenation using the tools described above (e.g., prescribed fire and mechanical, chemical and biological treatment/control), replanting or conversion to native grass species. The Service would renovate and seed existing fields and grasslands with a diverse mix of native grasses and forbs to improve diversity and vigor.

Water Quality Management

Under Alternative B, the Service would continue existing management activities, including working with partners on water quality monitoring. The Service would also:

- Attempt to improve water quality by flushing or draining wetland systems
- Improve wetland structures:
    - Replace nonfunctioning water gauges
    - Improve the condition of ditches and replace or maintain culverts
    - Evaluate and improve existing structures to achieve wetland habitat goals, including restoring natural hydrology

In addition to maintaining water rights, the Service proposes to exercise water rights to benefit resources in specific District NWRs and WPAs.

Refuge Resources — Visitor Use and Experience

Under Alternative B, the Service will continue current activities related to visitor experience in the District, including opportunities for wildlife observation and

photography. It will also continue providing hunting opportunities for big game, upland game birds and migratory game birds. The Service will continue to allow the use of lead ammunition for big game hunting and fishing tackle. The use of lead ammunition is prohibited for hunting of upland game birds and migratory game birds (50 CFR 32.2(k)).

To enhance visitor use and experience, the Service proposes to open:

- Grass Lake NWR's north portion (north of the railroad right-of-way) to hunting of big game, upland game birds and migratory game birds; wildlife observation and photography; environmental education and interpretation; and research
- Hailstone NWR to big game hunting

Opening new areas to hunting in Alternatives B and C and requiring lead-free ammunition and fishing tackle across the District in Alternative C would not take effect until completion of the federal rulemaking process as part of the NWRS's Hunt/Fish Rule, including the requirement to develop a station-specific Hunt and Fish Step-Down Plan and associated regulatory language. The public will have opportunities to provide additional input during that process.

Alternative B includes new signage and brochures to enhance visitor experience in the District. The Service would install a visitor information sign (with a boundary map) at entrances to each unit to inform visitors of each unit's boundary, travel restrictions and uses allowed by Service policy. Signs would contain specific instructions (for example, prairie dog shooting is prohibited).

Although access would continue to be by foot travel only, the Service proposes the addition of gravel parking areas marked and bordered to contain vehicles. The Service proposes to work with counties to apply gravel to existing two-track dirt roads to provide all-weather access.

The Service proposes to take advantage of anticipated infrastructure improvements that would increase communication (cellphone service) capabilities within the District, enhancing visitor safety.

Management and Operations

The existing staff of one station manager would be maintained under Alternative B.

Mitigation Measures

Any mitigation measures associated with Alternative B are identified in CCP Appendix D.

Alternative C — Implementation of the CCP with Required Use of Lead-free Ammunition and Fishing Tackle

Alternative C has the same basic elements as Alternative B, except that lead-free ammunition and lead-free fishing tackle would be required for all hunting and fishing activities in the District.

As mentioned above, opening new areas to hunting in Alternatives B and C and requiring lead-free ammunition and fishing tackle across the District in Alternative C would not take

effect until completion of the federal rulemaking process as part of the NWRS's Hunt/Fish Rule, including the requirement to develop a station-specific Hunt and Fish Step-Down Plan and associated regulatory language. The public will have opportunities to provide additional input during that process.

The purpose of the hunting and fishing Compatibility Determinations (Appendix I) are only to determine whether these uses are compatible with the mission of the units and what stipulations would make these uses compatible. Compatibility Determinations should not be construed as making new rules, which must happen though the rulemaking process.

Mitigation Measures

Mitigation measures associated with Alternative C are identified in CCP Appendix D.

Chapter 4: Affected Environment and Environmental Consequences

This section is organized by affected resource categories. Each section discusses (1) the existing environmental and socioeconomic baseline in the action area and (2) the effects and impacts of the alternatives on each resource. Effects and impacts from the proposed action or alternatives are adverse or beneficial changes to the human environment that are reasonably predictable (40 CFR 1508.1(g)). The impact analysis directly follows the affected environment description for a resource and is organized by alternative.

4.1 General Description of Affected Environment Applicable to All Affected Resources

The Service assessed the environmental consequences of implementing Alternatives A, B or C on natural resources, cultural and historic resources, socioeconomics and other resources of the District. The alternatives would have negligible impacts on geology and soils, floodplains, vegetation of special management concern (no federally listed or state listed plants are known to occur in the District), soundscape, aesthetics and visual resources, and land use and planning, so these resource areas were not analyzed in this EA.

4.2 Natural Resources

Upland Vegetation and Habitat — Affected Environment

Upland Vegetation

Upland areas of the District comprise vast expanses of mixed-grass prairie, sagebrush-mixed-grass prairie, greasewood-mixed-grass prairie, three fields of disturbed grasslands replanted to DNC, and a unique 225-acre Great Plains ponderosa pine woodland and savanna. Large, intact native plant communities can still be found, making this area important for native wildlife. A native plant community is an area of previously unbroken, unfarmed sod where the natural soil composition remains intact.

The plant species are similar, whether grass, sagebrush or greasewood dominates a site. Common grasses and grass-like species include western wheatgrass, bluebunch wheatgrass, green needlegrass, needle and thread, prairie junegrass, blue grama and threadleaf sedge. Common native forbs are phlox, salsify, fringed sagewort, western yarrow and American vetch. Shrubs are big sagebrush, greasewood, saltbush spp. and rubber rabbitbrush. Other vegetation includes prickly pear cactus and dense clubmoss.

Some District properties contained croplands when they were purchased — these areas are referred to as disturbed grasslands. These fields were converted to DNC with a seed mixture of cool-season wheatgrasses and legumes. The predominant wheatgrass species were intermediate, tall, pubescent and western. The legumes were alfalfa and yellow sweet clover. These species were chosen based on research conducted in the late 1960s and 1970s that showed they are highly attractive and beneficial to nesting waterfowl (Duebbert 1969). This research found that ducks had higher nesting success in DNC than

in surrounding upland habitats (Duebbert 1969; Duebbert and Lokemoen 1976; Kaiser et al. 1979).

Lands adjacent to District properties that were converted from native prairie are generally flatter, with deeper, more productive soil and are now used for grain production. Some croplands are adjacent to or in the vicinity of Lake Mason (Lake Unit), Hailstone WPA and NWR, Grass Lake NWR and all WPAs.

War Horse NWR (War Horse Unit) has 225 acres of native Great Plains ponderosa pine woodland and savanna. This is a unique plant community of plants common to the area. Birds and small mammals consume the seeds of ponderosa pine, and mice, porcupines and other rodents use the bark as nesting material. The trees are important to various bird species for cover, roosting and nesting (Natural Resources Conservation Service [NRCS] 2004).

Invasive Plants in Upland Habitat

The primary invasive species in upland habitats are cheatgrass, crested wheatgrass, leafy spurge, black henbane, Russian olive, Japanese brome and whitetop.

Birds

Some common nongame birds in upland areas are horned lark, vesper sparrow, Brewer's sparrow, Savannah sparrow, grasshopper sparrow, lark bunting and western meadowlark. Sharp-tailed grouse, gray partridge, pheasants, and greater sage-grouse occur on most District properties.

In February 2010, the Service deemed the greater sage-grouse "warranted but precluded" for listing under the Endangered Species Act, which means the listing was warranted but other species have a higher priority. Therefore, the greater sage-grouse is listed as a federal candidate species. The Final Management Plan and Conservation Strategies for Sage-Grouse in Montana (Montana Sage-Grouse Work Group [MSGWG] 2005) has a map showing the distribution of greater sage-grouse and sagebrush ecotypes throughout Montana and a table presenting population distribution and trend data. The map confirms that all District properties are in greater sage-grouse habitat range.

A status review conducted by the Service in 2015 found that the greater sage-grouse remained relatively abundant and well-distributed across the species' 173-million-acre range and did not risk extinction now or in the foreseeable future. The Service determined that protection for the greater sage-grouse under the Endangered Species Act was no longer warranted and withdrew the species from the candidate species list.

All units of War Horse NWR and the west side of the Lake Unit (Lake Mason NWR) are in areas identified as high-priority habitat for greater sage-grouse. Sage-grouse are year-round residents of these properties, which they use for nesting, brood rearing and wintering. Known lek sites are on the Lake Mason NWR (North Unit) and War Horse NWR (Yellow Water Unit). There are also known lek sites within a four-mile radius of the Wild Horse Unit (11 lek sites), War Horse Unit (10), Yellow Water Unit (14), North Unit (one) and Lake Unit (three), indicating the importance of these properties for sage-grouse. Wet areas

along intermittent streams, and seepage sites below artificial reservoirs and around wetlands provide the insects and forbs hens and chicks feed on during the summer.

Mammals

Incidental observations confirm the following upland species' presence in the District and on associated NWRs and WPAs: Richardson ground squirrel, thirteen-lined ground squirrel, northern pocket gopher, deer mouse, beaver, muskrat, white-tailed jackrabbit, cottontail rabbit, raccoon, long-tailed weasel, mink, badger, striped skunk, coyote and red fox (see the entire species list here). Pronghorn and mule deer are the most common big-game species on all units except Clark's Fork WPA. White-tailed deer are common on Clark's Fork WPA and have been sighted on Lake Mason NWR's North Unit.

About 700 head of elk wintered in the North Unit during the winter of 2010-2011, when deep snows forced them from their traditional winter range in the Little Snowy Mountains, which are about 10 miles west of the North Unit. Muskrat, mink, raccoon and beaver are the most common mammals using wetland habitats, and white-tailed deer, beaver, raccoon, porcupine, mink and red fox can be observed in riparian areas.

Colonies of black-tailed prairie dog (a Montana species of concern) are found on flat, open grasslands that have a shrub component and low, sparse vegetation. The most frequently occupied habitat in Montana is dominated by western wheatgrass, blue grama and big sagebrush (Montana Prairie Dog Working Group [MPDWG] 2002). The black-tailed prairie dog is found on War Horse NWR (Yellow Water Unit), Lake Mason NWR (North and Lake Units), Hailstone NWR and Grass Lake NWR. The colonies are small in acreage and distant from other colonies. They also provide habitat for other wildlife species such as mountain plovers and burrowing owls. The black-footed ferret has not been documented in any of these colonies.

Reptiles and Amphibians

Incidental observations and systematic surveys conducted in 1998 and 1999 (Hendricks 1999) have documented eastern racer, western rattlesnake, gopher snake, plains garter snake and greater short-horned lizard. The greater short-horned lizard has been found at Hailstone WPA and studied by the biology department at Montana State University-Billings. Milk snake, western hognose snake, greater short-horned lizard and common sagebrush lizard are included on the species of concern list of Montana reptiles.

Invertebrates

The Service has not inventoried or quantified upland invertebrates (insects), but prairie and tame grasslands produce large numbers of grasshoppers, leafhoppers, butterflies, beetles, spiders and ants.

Species of Special Status or Concern

The monarch butterfly (*Danaus plexippus*), which may be present in the upland habitat, is a candidate species under the Endangered Species Act. Monarch butterfly habitat includes open places, native prairie, foothills, open valley bottoms, open weedy fields, roadsides, pastures, marshes and suburban areas. For breeding, and during the egg

through larval stages, the monarch butterfly relies on milkweed (genus *Asclepias*). It is a summer resident of the District and has been documented by the Montana Natural Heritage Program (MTNHP) within the last five years. See attached Section 7 Intra-Service Consultation Form (See CCP Appendix F) for more information.

Some species that use District lands have been designated species of concern by the MFWP, the Montana Natural Heritage Program, the BLM or the U.S. Forest Service (USFS). The Service considers some of these of conservation concern. District management has identified the following species and guilds a priority for upland management: greater sage-grouse, black-tailed prairie dog, pronghorn, waterfowl, shorebirds, wading birds and neotropical migrant birds. A list of species that reside or may travel through the District can be found here.

Environmental Consequences: Upland Habitat and Vegetation

Alternative A

The Service currently manages habitat vegetation on the District by annual grazing for prescribed time periods on the limited acreage controlled by the Service, or conducts no grazing at all, as well as applying chemical and biological controls.

Grazing

Most grazing SUPs have been issued for logistical reasons such as fence boundaries. For example, one 1,000-acre pasture being grazed on War Horse NWR (War Horse and Wild Horse Units) and Lake Mason NWR (Lake Unit) contains only 20 acres that are Service lands; the Service has no controlling interest in the pasture and charges for the small amount of grass that is grazed. Ranchers with annual special use permits for grazing would not be affected by Alternative A.

Prescribed pauses from grazing improve habitat conditions and residual cover for ground-nesting birds in areas of the District that have grazing CAAs. These pauses allow vegetation to recover, which benefits migratory birds and other wildlife that use the habitat for cover, breeding, nesting and forage.

In some cases, cattle enter District lands where fencing is absent or in poor condition. This would not change under Alternative A, so problems caused by trespass livestock would continue; there are some adverse effects from trespass livestock. The Service would continue to work with ranchers to better monitor the location of their cattle and contain them on private lands.

Prescribed Fire

In absence of planned management, including prescribed fire, invasive plants continue competing with native plants for resources (sunlight, soil nutrients, water) and degrading habitat quality in the long term. District staff have not used prescribed fire and mechanical, biological and chemical controls for habitat improvement in recent years. Current practice is to suppress wildfires.

Other Methods Used to Control Invasive Plants

The Service would continue to monitor for the presence of invasive plants, responding to outbreaks to keep invasive species from establishing and spreading, but without the planned use of management tools, the District's native plant communities and habitats could suffer long-term adverse effects.

Under Alternative A, management will continue to monitor DNC fields but will make no efforts to rejuvenate or convert them to native grasses.

Alternatives B and C

Under Alternatives B and C, the Service would use various tools to manage habitats, including rejuvenating DNC:

- Transition to prescriptive grazing
- Use prescribed fire
- Increase mechanical treatment
- Chemically control invasive plants
- Increase biological control

Transition to Prescriptive Grazing

Under Alternatives B and C, the Service would transition to prescriptive grazing to improve habitat conditions for specific wildlife or focal bird species, migratory songbirds and other grassland-obligate species. Prescriptive grazing regimens could include short-duration, high-intensity grazing treatments to control invasive plants; habitat management for specific wildlife or focal bird species; or rotating grazing areas to provide long-term pauses between grazing treatments.

The benefits of grazing on plant diversity depend on grazing intensity, the evolutionary history of the site and climatic regimes. Hoof impact by grazing animals can break up capped soils, improve the water cycle, stimulate vegetative grass reproduction and help old plant material to decompose by breaking up plant litter. Hoof action can also distribute and trample seeds into soils, increasing chances of germination (Laylock 1967). Nutrients are returned to the soil in the form of urine and feces. Cattle may return 80% – 85% of the nitrogen ingested with plant tissue (Laylock 1967). Prescriptive grazing would benefit various wildlife species that use the District by improving habitat conditions.

The Service may continue issuing special use permits annually for grazing, but permits would be awarded based on habitat needs. With a prescriptive grazing system, annual permits may not always be available, and the number of acres and grazing locations would depend on habitat management goals. Alternatives B and C would temporarily reduce AUMs, affecting permittees who are not granted a grazing permit or are granted fewer AUMs.

Ranchers who are not issued a grazing permit may have to offset the reduced AUMs by grazing cattle on lands managed by the State, the BLM or a private landowner. This may reduce the number of cattle a rancher could graze annually. In 2024, the Service charged

$26.50/AUM for a mature cow. The State's 2024 rate was $16.53/AUM. The federal grazing fee for 2024 was $1.35/AUM for public lands administered by the BLM and the USFS.

The Service would continue to maintain and install fencing to keep cattle from entering District lands. Trespass livestock cause some adverse effects, and additional fencing would mitigate those effects. The Service would continue working with ranchers to monitor their cattle and contain them on private lands. Preventing trespass livestock from grazing on Service lands not intended for grazing brings long-term beneficial effects.

Use of Prescribed Fire

The Service would use prescribed fire to restore the role of fire in vegetation communities that are adapted to and benefit from fire. Fire encourages new growth of native vegetation and helps maintain plant and animal species whose habitats depend on periodic fire (e.g., silver sagebrush). Fire increases species richness and diversity in the herbaceous layer (USFS 2005), and native grasses and forbs have greater seed production, germination and establishment because burning allows plant nutrients to return to the soil (NWCG 2010). Periodic burning reduces hazardous fuel buildup, opens space for new plant growth and provides better cover and food for wildlife (USFWS 2012a, b).

Fire-adapted vegetation communities (such as mixed-grass prairie) are more fire tolerant; that is, they are sustainable and resilient to the effects of wildfire. Disturbed areas return to their ecosystem function quickly (Millar et al. 2007). For fire-intolerant sagebrush species in the District, like Wyoming big sagebrush, management would carefully consider sage-grouse habitat requirements to prevent adverse impacts on that species.

Prescribed fire used elsewhere in the District would improve habitats and remove invasive plants. Nonnative plants can diminish habitat value and add to fuel loads. Prescribed fire would be used to remove invasive plants, suppress nonnative plant species and prevent woody species from invading native grasslands. Using prescribed fire to remove nonnative invasive plants checks the spread of nonnative plants into native plant communities, protects shrubs and other desirable vegetation, and reduces fuel loads, lessening the potential for large or unusually intense wildfires.

Improving habitat quality would benefit resident wildlife and migrating birds. Conversely, fire could clear the way for fire-tolerant species such as cheatgrass and spotted knapweed to invade. Although some exotic plants proliferate after fire, most studies report only small increases in exotic plants (USFS 2005). Some invasives may be mechanically treated before a fire (e.g., cutting or mowing to prevent seed production) to reduce post-burn establishment. Pre- or post-fire chemical treatments may also suppress invasive species. Invasive species that flourish after fire adversely affect native herbaceous communities (USFS 2005).

Using prescribed fire would benefit the ponderosa pine woodland and savanna on the War Horse WPA in the short and long term by improving habitat for wildlife that depend on forests for nesting, feeding, foraging and roosting. Some adverse effects would be temporary, lasting only as long as it takes to complete the action. Impacts would include

temporary disturbance or displacement of large and small mammals and ground-nesting birds — as would occur during a wildfire.

Wildlife would suffer negligible adverse effects during the burns. Wildlife might temporarily disperse but would return after the burn. Prescribed burn ignition patterns provide wildlife escape routes as the burn progresses (Pennsylvania Game Commission 2016) and can be timed to avoid mating and nesting seasons (Gleason and Gillette 2009). Birds and some mammals usually leave the area ahead of the fire (USFWS 2012a, b). Few animals are unable to escape prescribed fire; small mammals and herptiles (reptiles and amphibians) typically find shelter in an underground burrow (Gleason and Gillette 2009). Fish in the District would suffer no adverse effects.

Increased Mechanical Treatment

Increased mechanical treatments under Alternatives B and C would include removing plants by hand by pulling, cutting or using machinery. Removing exotic species prevents nonnative plants from overtaking native plant communities and diminishing habitat quality in upland and wetland areas. Removing such plants also lowers the potential for large or unusually intense fires. Exotic plant seeds and plant parts may inadvertently be spread to uninfected areas during mechanical treatments. Wildlife would suffer negligible adverse effects, temporarily dispersing but returning once activities cease.

Ponderosa pine responds well to mechanical thinning, which is done to develop larger crowns as stands become older, yielding heavier seed crops for wildlife (NRCS 2004). Opening the canopy benefits wildlife: Associated plants produce more forage for deer and elk (NRCS 2004).

Increased Use of Chemical Control

The Service would continue using herbicides to eradicate invasive plants, benefitting native plant species by reducing competition for resources (soil nutrients, sunlight, moisture) and promoting diverse native grassland and wetland plant communities. Few weeds can compete with healthy native grasses for nutrients and water in the soil. Native vegetation would benefit if the Service applied herbicide treatments on District lands when needed.

We have completed intra-Service consultation on the impacts of these management tools on species that have special status under the Endangered Species Act (see CCP Appendix G). The monarch butterfly is the only species that may be impacted by management actions in the upland habitats. We received concurrence on the determination that our actions "May Affect but [are] Not Likely to Adversely Affect" the monarch butterfly.

The Service would not apply pesticides/herbicides, conduct prescribed fires or remove vegetation where there are monarchs in any life stage. The Service would apply treatment buffers as appropriate. The Service would consider monarch habitats before applying spot pesticide/herbicide treatment. The proposed action would be confined to 10 project units and will have no significant impact on monarch butterflies.

Increased Use of Biological Controls

Alternatives B and C would consider all control options, such as releasing spurge beetles to treat leafy spurge. This would prevent exotic (non-native) species from overtaking native plant communities and diminishing habitat quality in upland and wetland areas.

Rejuvenation of DNC

The Service would continue to monitor DNC fields for plant vigor (ability to grow, survive drought, reproduce and compete for resources) and litter accumulation to determine when rejuvenation is needed for health and resilience of the field. The vigor and productivity of a DNC seeding is about 15 years (Higgins and Barker 1982, Lokemoen 1984). Restoring fields to native grasses depends on funding, climate conditions and the success of establishing native grasses. Improving DNC fields through reseeding and prescribed fire benefits wildlife.

Air Quality: Affected Environment

Under Title I of the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS) (USEPA 40 CFR 50) to protect public health. NAAQS were developed for six criteria pollutants: particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. Particulate matter has two associated NAAQS — one for fine particulate matter less than two and a half micrometers in diameter (PM2.5) and one for coarse particulate matter less than 10 micrometers in diameter (PM10).

Threshold limits established under the NAAQS to protect human health are known as primary standards. These are intended to protect the most sensitive members of the human population, including people with respiratory or other chronic health conditions, children and the elderly. Secondary standards established under the NAAQS protect public welfare and the environment.

Attainment status for each criteria pollutant was verified for each county with Service properties. The criteria pollutants include carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead and sulfur dioxide. Current air quality in all counties in the District meets air quality standards (i.e., is in attainment) for all criteria pollutants, except for the Laurel areas in Yellowstone County (USEPA 2023), which exceeded limits for sulfur dioxide.

Air Quality: Environmental Consequences

Alternative A

Under Alternative A, the Service would maintain air quality in the District by cooperating with partner agencies to suppress all wildfires. Wildfires that could occur under Alternative A would produce minor, temporary and local adverse effects on air quality. The Service would apply the mitigation measures in CCP Appendix D before and during each prescribed burn to promote safe conditions for drivers and the public.

Alternatives B and C

Several proposed management activities (use of chainsaws, rejuvenating DNC by reseeding, driving trucks and using other diesel and gas-powered equipment) would produce air emissions. However, prescribed fire is the activity most likely to affect air quality.

Individual burns in the ponderosa pine woodland vary in size depending on habitat management and fuel reduction objectives and control parameters. Although prescribed fire affects air quality by releasing particulates and pollutant gases, this is a sporadic and temporary source of air pollution (lasting several hours to one day). Air impacts are short-lived; a burn plan indicates variables such as wind and dispersion requirements (direction and speed) for igniting a fire.

Wind typically dissipates smoke rapidly. Consequently, prescribed fire as a management activity in the District would not contribute to county air quality standards exceeding acceptable limits. In the case of Yellowstone County, a prescribed burn in the District would not worsen levels of sulfur dioxide in the Laurel area.

Smoke from prescribed fire would not cause long-term adverse public health effects, but sensitive individuals who visit a Service unit during a prescribed burn could suffer temporary minor effects. Nearby private landowners could also be temporarily affected by smoke. Safety could be an issue if smoke settled inside or outside a unit, reducing visibility on roads. Under Alternative B or C, the Service would implement the mitigation measures identified in CCP Appendix D before and during each prescribed burn to minimize air quality impacts.

Wetlands and Riparian Vegetation, Habitat and Water Resources: Affected Environment

Wetlands and Riparian Vegetation

The District includes two reservoirs on War Horse NWR (War Horse and Yellow Water Units); a semipermanent lake (Lake Mason) on Lake Mason NWR; a reservoir on Hailstone WPA; a segment of the Clark's Fork of the Yellowstone River on Clark's Fork WPA; permanent and intermittent creeks and streams; and natural semipermanent wetlands on Clark's Fork WPA, Grass Lake NWR, Hailstone WPA and NWR, James L. Hansen WPA, Spidel WPA, Tew WPA, War Horse NWR and Lake Mason NWR.

The Service acquired properties with natural wetlands because these are key habitats for wetland-dependent wildlife species. Four of the larger, natural, semipermanent wetlands (Lake Mason, Hailstone Basin, Halfbreed Lake, War Horse) were modified with the addition of dikes and emergency spillways to increase depth and storage capacity. The Service holds water rights in several of the NWRs and WPAs but does not exercise all those rights to modify water flow and availability.

Natural and managed wetlands in the District range from freshwater to moderately saline. Water for District wetlands originates from annual precipitation and surface runoff events. The amount of water available to a wetland also depends on the size of its watershed.

Significant runoff can occur when precipitation falls on frozen or saturated soil during an extremely heavy rainstorm. These major runoff events are the most important water sources for District wetlands.

Water levels typically fluctuate throughout the year based on summer precipitation patterns and evaporation. Levels tend to be the highest in the spring and decline through the summer, occasionally to the point where the basin becomes dry. In consecutive good water years, wetlands may be full all year, as was the case in 2011 – 2012. The opposite occurs during poor water years when the basins are dry the entire year.

These cycles are typical for wetlands and are necessary to maintain their health and productivity. Water fluctuations on Lake Mason NWR were monitored from 1983 to 1997. For 34% of those 14 years, water was present in the lake. About 40% of that time, the lake had water during the spring, but it was dry by midsummer. The lake was dry the entire year about 13% of the time. These fluctuations likely applied to other semipermanent wetlands in the District during those years.

Wetland habitats contain emergent and submergent plants. Emergent plants are those rooted in the substrate, having foliage that grows partially or entirely above the water's surface. The District's emergent plants include hardstem bulrush, alkali bulrush and common cattail. Species that occur along the shores of lakes and marshes include foxtail barley, goosefoot and saltgrass.

Submergent plants have roots in the substrate that do not emerge above the surface of the water (although some have floating leaves). These include northern watermilfoil, widgeon grass and sago pondweed. Many wetland plants have broad salt tolerance and can grow in freshwater and saline wetlands; however, species richness for emergent and submergent vegetation decreases as salinity increases (Johnson 1990).

A riparian area is the interface between land and a river or stream. Riparian areas are important nesting and breeding habitat for migratory songbirds and foraging and brood-rearing habitat for greater sage-grouse. According to Montana's Comprehensive Fish and Wildlife Conservation Strategy (MFWP 2005), riparian areas support the greatest concentration of plants and animals, yet they constitute only four percent of Montana's land cover.

Clark's Fork WPA is the only unit in the District that contains broadleaf riparian habitat (where one and a half miles of the Clark's Fork of the Yellowstone River forms its east boundary). Riparian habitat consisting of grasses and sedges also appears along Cedar Creek on Grass Lake NWR and Jones Creek on the North Unit of Lake Mason NWR.

Invasive Plants in Wetland and Riparian Habitats

Wetland and riparian areas are affected by invasive (native and nonnative) plants such as cattail, Russian olive and willow.

Water Birds

Waterfowl migration begins shortly after ice-out in the spring and usually runs from mid-March through April and again from mid-September through October or until freeze-up. The number of birds using District wetlands is directly related to the quantity of water present. When semipermanent wetlands are in good condition (at least 50% of the basin is wet), bird observations over a 20-year period show that up to 25,000 ducks, 1,000 Canada geese, 50 snow geese, 200 tundra swans and 15,000 American coots use them during spring and fall migrations.

Marsh and waterbird spring migration begins a few weeks after the waterfowl migration. Most species continue north to their nesting areas, although several species remain to nest in the District, including black-necked stilt, American avocet, ring-billed and California gulls, marbled godwit and Wilson's phalarope. The number and diversity of birds using the District is greater during the fall migration than the spring migration. Peak migration use of each of the larger wetlands by marsh and waterbirds has also been documented for eared grebes (5,000), Wilson's phalarope (5,000), Franklin's gull (3,000) and California gull (750).

More shorebirds use the District during the fall migration than in spring. Nesting shorebirds include marbled godwit, willet, upland sandpiper, long-billed curlew and common snipe. Peak migration use was documented for various shorebird species, including long-billed dowitcher (1,000), short-billed dowitcher (250), American avocet (100), semipalmated sandpiper (165), least sandpiper (400), western sandpiper (400) and Baird's sandpiper (200).

These numbers (and those for marsh and waterbirds) are based on nearly 20 years of bird observation data collected from the mid-1980s through 2004 by a refuge volunteer from the Yellowstone Chapter of the Audubon Society, along with field notes by Service staff.

Fish

In most cases, wetlands in the District cannot support fisheries because they are within closed basins, are too intermittent or are too far away from perennial lakes, rivers or streams. The exceptions are Yellow Water and War Horse reservoirs. Additionally, Clark's Fork WPA is in the transition zone between cold and warm water fisheries; species in both fishery types, including rainbow and brown trout, burbot, channel catfish, common carp, several species of suckers and a variety of minnows, are present in low numbers (MFWP 2016).

Reptiles and Amphibians

Nineteen amphibian species have been observed or are likely to be present in wetland habitats based on data from the MTNHP. The surveys conducted in 1989 and 1998 (Hendricks 1999) also documented tiger salamander, western chorus frog, northern leopard frog, plains spadefoot toad, Woodhouse's toad and painted turtle.

Invertebrates

Wetlands normally have high invertebrate populations, and nesting waterfowl, waterfowl broods, marsh birds, waterbirds and shorebirds are highly dependent on these protein food sources for vigorous growth. Common aquatic macroinvertebrates in the District include midges, backswimmers, water boatman, snails, damselflies, dragonflies and scuds. The same insect species may live in fresh and saline wetlands, but diversity decreases with increased salinity (Johnson 1990).

Species of Special Status or Concern

The piping plover (Charadrius melodus), which is designated "Threatened" under the Endangered Species Act, appears sporadically in the District. Its habitat is unvegetated sand or pebble beach on shorelines or islands in freshwater and saline wetlands with sparse, scattered clumps of vegetation. Open shorelines and sandbars of rivers and large reservoirs provide prime breeding habitat. It was seen in the District five to 10 years ago, according to the MTNHP. See Section 7 Intra-Service Consultation Form (CCP Appendix G) for more information.

Some species that use District lands are designated as species of concern by MFWP, the Montana Natural Heritage Program, the BLM or the USFS. Some are of conservation concern by the Service. Species and guilds that are a priority for District wetland management are: waterfowl, shorebirds, wading birds and neotropical migrant birds.

Wetlands and Riparian Habitat and Water Resources: Environmental Consequences

Alternative A

Continued water quality monitoring would inform Service staff of current conditions but would not include actions to improve problems caused by high salinity and selenium levels. Without active water level management in the District's wetlands, contaminants and poor water quality would persist, adversely affecting water quality, wetland habitat and wildlife in the long term. The Service would continue to maintain water rights.

Alternatives B and C

The Service would replace nonfunctioning water gauges to monitor water more effectively and efficiently by measuring flows and improving the ability to exercise its water rights. Improving ditches and replacing or maintaining culverts would make water delivery more efficient because more water would be carried to a wetland rather than absorbed into the ground.

Manipulating or removing water control structures would allow for natural flushing of wetlands. Allowing a wetland to flow through during high-water events alleviates the effects of evapoconcentration by promoting the flushing of some contaminants (like salt) and reducing the bioavailability of other contaminants (like selenium) through processes like volatilization or immobilization within the sediments. This would benefit wetland wildlife and habitat. The duration and magnitude of these benefits to water quality would depend on various factors like the rate of salt and selenium loading between flushing events and local conditions that affect the bioavailability and fate of certain contaminants like selenium.

Brush removal is the most frequently mentioned benefit of wetland burning (Robertson 1997). Prescribed fire with a primary purpose of eradicating undesirable vegetation (Robertson 1997) such as cattails is appropriate for wetlands and riparian areas. The Service would continue to work with partners on monitoring water quality in the District.

We have completed intra-Service consultation on the impacts of these management tools on species with special status under the Endangered Species Act (see CCP Appendix G). The piping plover is the only species that may be impacted by management actions in the wetland habitats. Migratory or other non-breeding individuals including the piping plover may be temporarily disturbed, but because adjacent habitat is available, any disturbance should be insignificant. However, the species is unlikely to be present during management activities.

Climate Change — Affected Environment

Climate change may be relevant to an effects analysis in two ways: (1) an action's contribution to climate change through greenhouse gas emissions and (2) the implications of climate change effects on an action and its environmental effects.

Climate change adaptation is the emerging discipline that focuses on helping people and natural systems prepare for and cope with the effects of climate change. Adaptation refers to measures designed to reduce the vulnerability of systems to the effects of climate change (Glick et al. 2011). Adaptation efforts include: (1) building resistance — an ecosystem, species or population's ability to withstand change without significant ecological loss; (2) building resilience — a system's ability to recover from a disturbance or change without significant loss and return to a given ecological state; and (3) facilitating ecological transitions.

Promoting and supporting resilience is the most recommended approach, but success relies on reducing existing stressors that climate change would magnify; protecting refugia and habitat connectivity; and proactive management and restoration (Glick et al. 2011).

The Intergovernmental Panel on Climate Change considers global climate warming (IPCC 2007) to be unequivocal. Over the last 100 years, the average global temperature has risen 1.3 degrees Fahrenheit (°F). In the Northern Hemisphere, the temperature has likely risen higher over the last 50 years than in any other 50-year period in the last 500 years.

The climate in central and eastern Montana is "semi-arid continental," characterized by warm summers and moderately cold winters. Summers feature daytime high temperatures average 80°F with infrequent hot periods that top 100°F. The average winter low temperature is near 0°F; occasional colder periods dip below -20°F.

Observations since the middle of the past century confirm that Montana's climate has shown consistent change over time. Average temperatures in winter and spring rose by almost 3.14°F between 1950 and 2020 (Brust 2022; Whitlock et al. 2017). Increased temperatures have been associated with decreased mountain glacier and snow cover, earlier spring melt, higher runoff, and warmer lakes and rivers. Precipitation changes in

Montana have varied across the state. The Northern Rockies' average winter snow decreased by 0.69 inches from 1950 to 2015; spring precipitation in the southeastern plains increased by 1.86 inches over the same period (Brust 2022; Whitlock et al. 2017).

Changes projected for Montana's climate by mid-century indicate that trends observed in the historical record will continue or accelerate. Temperature projections show an upward trend, with increases of 2.93°F to 4.82°F in the average annual temperature expected by mid-century. Over the same time frame, the number of freeze-free days will increase by 17.59 to 27.56 and the number of days exceeding 90°F are expected to increase by 9.93 to 23.32 per year (Brust 2022; Whitlock et al. 2017). This means an earlier start to the growing season and longer growing seasons.

Although precipitation is expected to increase slightly in winter, spring and fall by mid-century, summer precipitation is expected to decrease slightly over the same period (Brust 2022; Whitlock et al. 2017). Intensified drought conditions from warmer temperatures are expected to increase, as well as increased snow to rain conditions changing the availability of water and residency time (MIoE 2017; Frankson et al. 2022). We continue to monitor the district's fish, wildlife, plants, lands and waters to detect early signals of ecological transformation from these changing conditions.

Climate Change — Environmental Consequences

Alternative A

The Service does not conduct activities in the District to offset effects caused by warming temperatures. No actions under Alternative A would contribute to climate change through greenhouse gas emissions.

Alternative B

Alternatives B and C would support climate change adaptation by increasingly monitoring the condition of the District's resources and acting (via prescribed fire) to protect resources, including habitat, from changing climatic conditions (less precipitation and higher temperatures). Planning for and adapting to changing climatic conditions, monitoring resources, and building ecosystem resistance and resilience would benefit habitat, wildlife and other resources in the long term. The use of prescribed fire under Alternatives B and C would not contribute to climate change through greenhouse gas emissions.

4.3 Cultural and Historic Resources

Cultural resources include archeological resources, cultural landscapes, traditional resources, precontact and historic structures, and museum collections. This section summarizes the Cultural Resources Report (USFWS 2017a) for the District, which is available at the CMR NWRC headquarters in Lewiston, Montana.

Cultural and Historic Resources — Affected Environment

The District has hosted few cultural resource investigations and few sites have been discovered. This doesn't mean the District has no cultural resource sites on these units. Digital files and records were searched to determine the numbers and types of previous

cultural resource investigations and documented sites within the District. The results are in the CCP.

Cultural and Historic Resources — Environmental Consequences

Treatment of cultural resource sites is informed by environmental factors, the degree of previous ground disturbance and proposed ground-disturbing activities. The Service would review all projects involving ground disturbance and prescribed fire to determine the potential effects on cultural resources. The Service would then consult with the Montana SHPO, Tribes and other interested stakeholders.

Projects with no potential to affect historic properties could proceed; projects with the potential to affect historic properties could require additional review, fieldwork or consultation with the Montana SHPO, Tribes and other stakeholders. Service staff would notify public and local government officials.

The Service protects all known gravesites; in cases (such as active erosion) where known gravesites cannot be protected in place, the Service follows the Native American Graves Protection and Repatriation Act of 1990 and other federal and State laws. Collecting plants or other materials for Tribal ceremonial purposes would require a compatibility determination and a special use permit before being authorized.

Alternative A

The Service would continue to consider the presence of known cultural resources in the District and the potential effects of fire suppression and other management activities on those resources (per Section 106 of the National Historic Preservation Act). This could include avoidance and other protections. Surveys and inventories would increase the Service's knowledge of cultural resources. This would benefit known and yet-to-be-discovered cultural resources by ensuring they receive the same protections as known resources.

Unauthorized off-road travel and trespass livestock may damage or destroy cultural resources.

See CCP Appendix D for a list of mitigation measures to protect cultural resources during wildfire suppression and other Service activities.

Alternatives B and C

Activities proposed under Alternatives B and C could affect cultural resources by direct disturbance during management actions such as habitat restoration or prescribed burning. The presence of cultural resources, including historic properties, would not prevent a federal undertaking, but any undertaking would be subject to Section 106 of the National Historic Preservation Act and other laws protecting cultural resources. In accordance with Section 106, potential effects of federal undertakings on cultural resources would be identified and considered, and options to minimize negative effects would be discussed before project implementation.

Grazing

Trespassing cattle could trample and damage or destroy artifacts that are close to the surface. Transitioning to prescriptive grazing would protect cultural resources in areas where grazing is curtailed. Conversely, prescriptive grazing for habitat management could negatively affect cultural resources in areas where grazing is allowed. All District units have a history of livestock grazing.

Prescribed Fire

Prescribed fire offers greater control over the benefits of fire vs. wildfire (Winthrop 2015). The use of prescribed fire to reduce high fuel loads must be weighed against the potential loss of a cultural resource to wildfire. Prescribed fire is less likely to damage cultural resources than wildfire because of the lower intensities of prescribed fire and the high level of planning conducted before each burn.

Prescribed burn plans allow for advanced clearance and avoidance and protective measures (see CCP Appendix D) on known cultural resource sites. The Service would exclude known cultural resources from prescribed burn units or implement local site-specific avoidance and/or protective measures if prescribed fire use would benefit the District.

The effects of fire on cultural resources depend on temperature and duration of heat exposure. Higher temperatures or longer heat exposure increase the potential for damage (Winthrop 2015). Also, effects are context-dependent and vary from place to place. These include physical factors (type of fuel, fuel load and distribution, moisture content of fuels, soil type and soil moisture, weather, terrain, site type, cultural materials). Management must also consider the significance of the cultural materials (Winthrop 2015).

Mitigation measures (see CCP Appendix D) designed to protect known and unknown archeological resources during prescribed burns would reduce the risk of adverse effects. Creating buffers around archeological sites and reducing hazardous fuels in the vicinity would add protection.

Mechanical Treatments

Mechanical treatments could damage intact cultural deposits exposed during ground disturbance by vehicles or trampling by humans. Mitigation measures (see CCP Appendix D) include avoiding areas that may contain intact archeological resources.

Chemical Control

The use of herbicides would not affect cultural resources; the Service would avoid direct application to known resources.

Visitor Use and Access

District units are walk-in only, which eliminates the potential for vehicles damaging cultural resources. Vandalism or theft are the primary concern for resources exposed in visitor use areas on NWRs and WPAs. However, unauthorized off-road travel could damage or destroy cultural resources. The Service proposes to install visitor information

signs at all NWRs and WPA entrances to alert visitors to the policy of no off-road travel. Prohibiting off-road driving would help to protect cultural resources.

Installing and repairing fences, installing visitor information signs, and graveling roads and parking areas would not adversely affect documented cultural resources, which are located elsewhere in the District.

4.4 Socioeconomics

Local and Regional Economies: Affected Environment

The District occupies land in five Montana counties: Petroleum, Musselshell, Golden Valley, Yellowstone and Stillwater. Although the Service manages it as part of the District, Clark's Fork WPA (Carbon County) is not inside the District boundary. In 2020, the population of these five counties ranged from 464 (Petroleum County) to 160,000 (Yellowstone County).

The largest industries (by the number of people employed) are health care/social assistance, retail trade, accommodation/food services, mining/oil and gas extraction, agriculture and educational services. Health care and retail trade are the largest industries in the more populated counties of Yellowstone, Stillwater and Musselshell. Agriculture is the largest industry in Golden Valley and Petroleum County.

Outdoor recreation is valuable to Montana residents for its economic and quality-of-life benefits (Montana State Parks [MSP] 2014). Expenditures related to outdoor recreation in the state exceeded $5.8 billion in 2011 and contributed about $403 million in state and local tax revenue. Walking for pleasure, hiking, jogging and bicycling were among the most regularly cited outdoor activities by Montana residents (MSP 2014), but hunting, fishing and wildlife viewing are also important uses throughout Montana and on District lands.

According to the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, approximately 570,000 participants engaged in wildlife-associated recreation activities in Montana during 2011 (USDI-U.S. Department of Commerce [USDC] 2011). Of the total number of participants, 47% fished, 26% hunted and 71% engaged in wildlife viewing. Montana residents and visitors, combined, spent about $1.4 billion on wildlife-associated recreation activities in 2011. Of this, trip-related expenditures accounted for $666 million; equipment expenditures accounted for $569 million; and the remaining $173 million went to licenses, contributions, land ownership and other items.

The 2017 report "Banking on Nature: The Economic Contributions of National Wildlife Refuge Recreational Visitation to Local Communities" (Caudill and Carver 2019) identified average daily expenditures for visits to NWRs nationwide. These included food, drinks, lodging, transportation, equipment and other expenses. In 2017, 3.3 million recreational visits to NWRs in the Mountain Prairie Region generated almost $348 million to regional economies. This led to the employment of more than 4,400 people and about $115 million in employment income.

In 2023, the District had 434 visitors. Hunting and fishing opportunities benefited the local economy through the sales of food, gas, supplies and lodging.

Local and Regional Economies: Environmental Consequences

Alternative A

Under Alternative A, the socioeconomic benefits of the District in the five counties would not change.

Alternative B

For Alternative B, implementing the proposed CCP management activities would rejuvenate the District's grasslands and wetlands, enhancing visitor use and experience. A broader user group may choose to visit the District for hunting, wildlife observation and other activities. Additional visitors would increase the money spent in the local economy on food, supplies and fuel.

Alternative C

Although Alternative C would have the same benefits to the natural environment as Alternative B, requiring visitors to use lead-free ammunition and/or fishing tackle could decrease the number of visitors to the District versus Alternative B, bringing less benefit to the local economy.

Environmental Justice: Affected Environment

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to incorporate environmental justice into their missions. Agencies must identify and address disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.

Based on the 2020 U.S. Census, the population in all counties in the District identified mostly as white (90.2%), followed by Hispanic (2.8%), two or more races (2.5%), Black and African American (2.4%), Native American (1.5%) and Asian (0.6%). Median household income ranged from $78,380 in Stillwater County to $45,427 in Golden Valley County. An average of 13% live below the poverty line (as defined by the Census Bureau).

Environmental Justice: Environmental Consequences

Alternatives A and B

The percentage of minorities in south-central Montana is lower than that of the state of Montana (and much lower than the United States as a whole). Median household incomes and poverty rates vary in this area. Most people living below the poverty line are in Golden Valley County (22.7%). No management actions under Alternatives A and B would disproportionately cause high and adverse environment and health effects on minority or low-income populations. The hunting and fishing opportunities on District properties could help low-income individuals meet subsistence needs.

Alternative C

Under Alternative C, lead-free ammunition and fishing tackle would be required to hunt and fish in the District. This could affect low-income hunters and anglers. Although some

lead-free ammunition is equivalent in price to lead ammunition, certain types of lead-free ammunition cost more than certain types of lead ammunition. There are lead-free alternatives to leaded tackle; however, lead tackle still costs less than lead-free alternatives, which could be an obstacle for low-income anglers.

Public Health and Safety: Affected Environment

The analysis of public health and safety includes exposure to natural hazards (e.g., health risks associated with air quality emissions) and contaminants in the environment (e.g., lead ammunition and fishing tackle). Air quality in the District is in attainment for all criteria pollutants, except for the Laurel areas in Yellowstone County (USEPA 2023), which had an exceedance for sulfur dioxide.

Use of chemical and biological controls on invasive plant species in the District may have introduced contaminants to the environment. However, applications have been opportunistic and localized and conducted only in response to complaints about specific outbreaks of invasive plant species.

Over the years, hunting and fishing activities have caused lead shot, lead fragments from bullets and lost lead fishing tackle to accumulate on District lands. The amount of lead these activities have added to the District's environment has not been quantified, but according to District staff, the likelihood is low that the lead is bioavailable:

- Hunting and fishing in the District occur over a large area and multiple access sites, which reduces lead accumulation and build-up by spreading it over a large area.
- The only addition of lead in the District is from lead tackle used by anglers and single projectile ammunition or buckshot used by furbearer and elk/deer/pronghorn hunters.
- Hunters may select methods (like archery) that do not introduce lead into the environment or use lead-free ammunition.
- Hunters using shotguns for upland and migratory game birds must use steel or other non-toxic shot. Tackle typically enters the environment by accident when anglers snag their lines.

There have been no reports of wildlife impacted by lead poisoning within the District.

Public Health and Safety: Environmental Consequences

Alternatives A and B

The proposed CCP's public health and safety impacts would include smoke emissions from wildfire and prescribed fire, use of chemical and biological controls for managing invasive plant species, and use of lead and lead-free ammunition and fishing tackle.

Wildfire and Prescribed Fire

The air quality impact analysis in Section 4.2 addresses human exposure to smoke from wildfires and prescribed fire. The public would not suffer long-term health effects, but sensitive individuals (visitors or nearby landowners) during a prescribed burn could suffer

temporary minor effects. Safety could be an issue if smoke settled in an area inside or outside a unit and reduced visibility on roads.

Use of Chemical and Biological Controls

Use of chemicals (herbicides) and biological controls to manage invasive plants will continue in accordance with an integrated pest management strategy and annual pesticide use proposals for the CMR NWR Complex. These treatments would not significantly impact public health.

Impacts Associated with the Use of Lead Ammunition and Fishing Tackle

Under Alternatives A and B, lead ammunition for big game hunting and fishing tackle would continue to be allowed within the District. The use of lead ammunition is prohibited for hunting of upland game birds and migratory game birds (50 CFR 32.2(k)). However, within fee title lands, shotgun hunters may only possess and use nontoxic shot.

Lead has no known biological function in living things. Lead poisoning affects the blood, nervous and immune systems of wildlife (Eisler 1988). According to Fallon et al. (2017) clinical signs may include "... ataxia, impaired mobility, lowered sensory abilities, vomiting, anemia, lethargy, gastrointestinal stasis, weakness and mortality."

Exposure to high amounts of lead in a short amount of time severely impairs these systems, causing rapid death (Gill and Langelier 1994; Kelly et al. 1998; Schulz et al. 2006). Exposure to smaller amounts of lead over longer time periods can cause anemia, lethargy, neurological disorders, an impaired ability to fight off disease and other negative effects (Jacobsen et al. 1977; Wobester 1997; Pattee and Pain 2003; Franson and Pain 2011; Pain et al. 2019).

Affected wildlife may be more susceptible to predation. In other words, even sublethal lead poisoning that does not directly kill wildlife can do substantial damage, including on reproduction (Scheuhammer 1987; Kendall et al. 1996; Provencher et al. 2016; Pain et al. 2019, SETAC 2021). The bioavailability of spent lead ammunition (shot and fishing tackle) negatively impacts wildlife, human health and the environment, especially for birds — specifically waterfowl and raptors — and potentially mammals.

Although hunting and fishing are not inherently damaging, the use of lead ammunition and fishing tackle are. Connections have been clearly drawn between hunting with lead ammunition and effects to scavenger species and humans (Golden et al. 2016; Hunt et al. 2009; Agency for Toxic Substances and Disease Registry 2020). Upland game birds and waterfowl are exposed when they ingest lead through soil, sediment or food (Rattner et al. 2008). This sometimes occurs when they ingest spent shot or ammunition fragments along with the grit or pebbles they need to fill their gizzards, a specialized organ involved in breaking down food (Anderson 1975; Clark and Scheuhammer 2003; Kreager et al. 2008; Franson et al. 2009).

Avian and mammalian predators and scavengers can get lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition

(Platt 1976; Redig et al. 1980; Pattee et al. 1981; Craig et al. 1990; Church et al. 2006; Hunt et al. 2006; Cade 2007; Pauli and Buskirk 2007; Stroud and Hunt 2009; Finkelstein et al. 2012; Rideout et al. 2012; Warner et. al 2014; Herring et al. 2016).

Lead poisoning reduces raptors' strength and coordination, leading to muscle and weight loss, reducing motor skill function and making them lethargic. This makes them more susceptible to disease, vehicle strikes or power line accidents, potentially increasing mortality rates by leaving them unable to hunt (Kramer and Redig 1997; O'Halloran et al. 1998; Kelly and Kelly 2005; Golden et al. 2016). Raptor nestlings are less likely to survive and grow when parents bring food embedded with lead fragments (Hoffman 1985a, 1985b; Pattee 1984).

Recent modeling indicates that lead poisoning suppresses eagle population growth (Slabe et al. 2022). The extent of elevated lead levels in raptors admitted for rehabilitation is documented in a study of bald eagles and golden eagles in the Raptor Rehabilitation Program at the College of Veterinary Medicine at Washington State University. From 1991 to 2008, 48% of bald eagles and 62% of golden eagles tested had blood lead levels considered toxic by current standards. Of those with toxic lead levels, 91% of bald eagles and 58% of golden eagles were admitted to the rehabilitation facility after the end of the general deer and elk hunting seasons in December (Stauber 2010).

In waters where the lead shot prohibition for migratory waterfowl hunting has protected species from lead, lead fishing tackle still exposes susceptible birds, primarily loons and swans, to lead poisoning (Pokras and Chafel 1992; Rattner et al. 2008; Strom et al. 2009). Diving birds can ingest small lead fragments released into the water and discarded lead sinkers that rest on river and lake bottoms alongside pebbles. Studies have found that ingested lead fishing tackle is a leading cause of death in adult common loons (Pokras and Chafel 1992; Scheuhammer and Norris 1995; Franson et al. 2003; Pokras et al. 2009; Grade et al. 2017; Grade et al. 2019).

Strom (et al.) assessed lead exposure in Wisconsin birds and found that about 25% of trumpeter swan deaths from 1991 through 2007 were caused by ingested lead (Strom et al. 2009). Flint and Schamber (2010) estimated that lead shot pellets in wetland sediment would be available to waterfowl for 25 years or more. This means the risk of exposure to lead shot pellets from past hunting for most waterfowl species should nearly be eliminated as the ban took effect in 1991. However, swans have long necks and can forage at greater depths within sediment, so they have a higher risk of lead exposure (Haig et al. 2014). Loons are infrequent in the District. Trumpeter and tundra swans have been observed at several units and use these areas seasonally.

Many hunters do not realize that the carcass or gut pile they leave in the field usually contains lead ammunition fragments, and this is the most likely source of lead exposure by avian and mammalian predators (Craighead and Bedrosian 2008; Kelly et al. 2011; Rogers et al. 2012; Bedrosian et al. 2012; Johnson et al. 2013; Legagneux et al. 2014; Warner, et al., 2014).

Since 1991, when lead shot was banned for hunting waterfowl and coots in North America, these birds' exposure to spent lead shot in wetlands has declined (Samuel et al. 1992; Anderson et al. 2000; Samuel and Bowers 2000; Lewis et al. 2021). However, lead shot and ammunition are still used to hunt upland game birds, so lead exposure has not declined for them (Kendall et al. 1996; Fisher et al. 2006; Larsen et al. 2007; Rattner et al. 2008; Franson 2009; Haig et al. 2014) or for avian scavengers (Church et al. 2006; Hunt et al. 2006; Pauli and Buskirk 2007; Herring et al. 2016). Also, diving waterbirds are still exposed to lead fishing tackle that remains in streambed sediments (Pokras and Chafel 1992; Scheuhammer and Norris 1995; Franson et al. 2003; Pokras et al. 2009; Grade et al. 2017; Grade et al. 2019). See CCP Appendix C for more information on the effects of lead on wildlife.

The amount of lead that these activities have added to the District's environment has not been quantified, but according to District staff, the likelihood is low that the lead is bioavailable:

- Hunting and fishing in the District occur over a large area and multiple access sites, which reduces lead accumulation and build-up by spreading it over a large area.
- The only addition of lead in the District is from lead tackle used by anglers and single projectile ammunition or buckshot used by furbearer and elk/deer/pronghorn hunters.
- Hunters may select methods (like archery) that do not introduce lead into the environment or use lead-free ammunition.
- Hunters using shotguns for upland and migratory game birds must use steel or other non-toxic shot. Tackle typically enters the environment by accident when anglers snag their lines.

Alternative C

The public health and safety impacts associated with Alternative C for smoke emissions from wildfire and prescribed fire and the use of chemical and biological treatments to control invasive plant species would be the same as for Alternatives A and B. However, Alternative C would require the use of lead-free ammunition and fishing tackle for all hunting and fishing within the District. The use of lead-free ammunition and fishing tackle would benefit the natural environment and human health.

Some states have restricted the use of lead or offer incentives to use lead-free ammunition or fishing tackle (USFWS 1999; Center for Biological Diversity 2007; Arizona Game and Fish Department 2018; Washington Department of Fish and Wildlife 2022).

Areas where lead-free ammunition and tackle are used have seen declines in adversely affected wildlife (Anderson et al. 2000; Samuel and Bowers 2000; Sieg et al. 2009, Kelly et al. 2011; Lewis et al. 2021). Alternatives to lead ammunition include steel, copper, bismuth, tungsten and tungsten alloy. Some of these offer better ballistics than lead and have become cheaper. Copper is a good substitute for lead fishing tackle for the District's limited fishing opportunities.

District lands that are open (or proposed to be opened) to hunting and fishing by the Service are near BLM, USFS, State and private lands that are also open to hunting and fishing. Some of these lands allow the use of lead ammunition and fishing tackle. District lands, by comparison, constitute an exceptionally small percentage of available acres and hunting and fishing opportunities. Requiring lead-free ammunition and fishing tackle would have a minimal effect on hunting and fishing opportunities in the region surrounding the District.

4.5 Refuge Resources

Visitor Use and Experience — Affected Environment

There were 434 visits to the District in 2023 (based on 2023 USFWS Refuge Annual Performance Plan data). Of those, four were to hunt big game, 30 to hunt upland game, 150 to hunt waterfowl, 100 to observe wildlife, 40 for photography, 100 to hike foot trails and 10 to fish.

Hunting

Hunting is one of the six priority recreational uses identified in the Improvement Act. It has occurred within the District for decades. During this time, the Service has noted no significant adverse effects of the hunting program on the administration of the District and has determined this use compatible with the purposes of the District and the Refuge System's mission statement (Dodd 1996; U.S. FWS 2008a; U.S. FWS 2016; U.S. FWS 2020).

Hunting opportunities for big game, upland game birds and migratory game birds are available on specific District refuges and WPAs including Clark's Fork WPA, James L. Hansen WPA, Spidel WPA and Tew WPA. Grass Lake NWR and the northern portion of the Lake Unit of Lake Mason NWR are closed to public access, and Hailstone NWR has never been open for big game hunting but is open to upland bird and migratory bird hunting.

All other wildlife species in the District are protected, including prairie dogs, coyotes, jackrabbits, cottontail rabbits, badgers and bobcats. Steel or other non-toxic shot must be used to harvest waterfowl and upland game birds. Trapping is permitted on the WPAs. Vehicle travel and parking for hunting is restricted to roads, pullouts and parking areas.

Fishing

The only fishing opportunities in the District are in the Clark's Fork of the Yellowstone River in Clark's Fork WPA (but not in the wetland), and in the reservoirs associated with War Horse NWR (War Horse and Yellow Water Units). However, the public generally does not use Service lands to access these reservoirs.

Other Recreational Activities

Camping is allowed on the North Unit of Lake Mason NWR, although this use may be rescinded due to incompatibility with the Refuge's purposes and disruption to wildlife and other visitors. Hiking is allowed throughout the District except in units and areas that are closed to visitor access (e.g., Grass Lake NWR and the northern portion of Lake Mason NWR, Lake Unit).

Wildlife Observation and Photography; Environmental Education and Interpretation

Wildlife observation and photography as well as environmental education and interpretation are popular activities throughout the District. Most users are bird watchers and nature enthusiasts. The diversity of habitats and species provides year-round opportunities for wildlife observation, photography, education and interpretation.

Research

The District has been open to scientific research by non-Service personnel for decades, even on units closed to public access. This research has improved the Service's knowledge of the District's natural resources and its methods to manage, monitor and protect biological resources and public uses. Acceptable research methods include, but are not limited to, bird banding, mist netting, point count surveys, radio telemetry tracking, cameras, recorders and public surveys.

Visitor Use and Experience — Environmental Consequences

Alternative A

Maintaining current access limitations for hunting big game, upland game birds and migratory game birds; wildlife observation and photography; and environmental education and interpretation would not change the number of visitors to the District. The continued closure of Grass Lake NWR and the northern portion of the Lake Unit of Lake Mason NWR (this portion of the refuge is closed year-round, serving as refugia for wildlife) would not change public access opportunities in the District. Hailstone NWR would continue to bar big game hunting. Fishing opportunities on War Horse NWR and Clark's Fork WPA would not be affected. Camping at the North Unit of Lake Mason NWR would not continue.

Since access into the District would continue to be via foot travel only, as no road improvements are proposed under Alternative A, visitor access to many areas would remain limited, particularly when rainstorms bring poor walking conditions. Visitor experiences would not improve. The Service would continue to maintain current signs, which provide inadequate user information. Although the grassy parking areas benefit visitors, they present a fire hazard when vehicles park on dry grasses and other vegetation.

Alternatives B and C

Hunting (but not fishing) opportunities would expand under Alternatives B and C. This will add approximately 1,783 acres for hunting big game, upland birds and migratory birds. In addition, this acreage would remain open for wildlife observation and photography. Fishing opportunities on War Horse NWR and Clark's Fork WPA would not be affected. Additional visitor access would likely boost the volume of visitors.

Additional access for big game hunting on Hailstone NWR would yield long-term benefits to members of the public who are hunting in the area. It would bring consistency to hunting regulations on Service lands in the area, eliminating confusion over where big game hunting is allowed and reducing the risk of violating refuge hunting regulations.

Under Alternatives B and C, camping would not be allowed at the North Unit of Lake Mason NWR. This would cause negligible adverse effects on visitor use and experience as camping opportunities are available nearby on BLM and State of Montana lands.

The road improvements proposed under Alternative B could draw more visitors to the District. Graveling the two-track dirt roads would provide all-weather access to the units, resolving some of the problems visitors cause by driving on the dirt roads — including soil erosion and compaction and, after precipitation, mud holes and gullies. The road improvements would bring long-term benefits to visitors by making the units more accessible for longer periods of the year.

Visitors would also benefit from the construction of gravel parking areas, which would be marked and bordered to contain vehicles and protect adjacent land. Containing the parking areas would benefit habitat and wildlife by reducing the risk of wildfire from vehicles parking on dry vegetation.

Under Alternative B, the Service would post new signs and produce new brochures explaining the change in access for the hunting and fishing program. The Service will install a visitor information sign (with a boundary map) at each entrance that explains travel restrictions and uses allowed by Service policy and regulations. Habitat could benefit from signs informing visitors that off-road travel is not allowed. Signs would contain specific instructions (e.g., prairie dog shooting is prohibited).

Management and Operations — Affected Environment

Staff

Service operations consist of the staff, facilities, equipment and supplies needed to administer resource management and public use programs throughout the District, which crosses five counties and covers more than 9,175 square miles. The Service is responsible for protecting more than 30,000 acres of land and water.

CMR NWRC staff are responsible for managing the District. The level of staffing dictates the type and amount of work that can be accomplished. The District staff consists of one permanent, full-time employee. The NWR Complex's 12 permanent, full-time employees provide limited support to the District. NWR Montana Law Enforcement Patrol Zone staff is responsible for District law enforcement; patrols are conducted as needed.

Facilities

Facilities support habitat and wildlife management programs and wildlife-dependent public use activities. District facilities and real property assets (e.g., signs, fencing, infrastructure) are well supported. The condition of real property assets affects the staff's ability to manage natural resources and visitor access and use. Some interior and exterior fencing and boundary signs should be replaced to help visitors understand unit boundaries, allowed uses and regulations. No District lands have facilities such as comfort stations, boardwalks or kiosks.

From a safety perspective, the remote parts of the District lack radio and cellphone service. The District's radios and repeaters provide coverage for few locations. Cellphone

coverage throughout the District is limited, except near population centers such as Lewistown, Roundup, Billings and Laurel. Limited cell reception could pose a problem for visitors or staff in the event of an emergency (such as a medical issue or accident). Although there have been no major incidents caused by lack of communication, someone could be stranded, injured or in need of aid with no way to call for help.

Partnerships and Research
The Service has ongoing partnerships and research efforts in the District:

- MFWP enforces game laws, conducts wildlife research and manages hunting seasons.
- The Audubon Society helps monitor units and remove invasive plants. Members have also conducted bird counts. A volunteer from the Yellowstone Chapter spent nearly 20 years (mid-1980s through 2004) collecting data from bird observations.
- The Service hires local weed districts; has cooperative relationships with local, State and federal fire agencies; and issues special use permits to academics and researchers for monitoring and educational work.

Management and Operations — Environmental Consequences

Alternative A
Current staffing levels (one station manager) would continue to restrict the District's management capability. Insufficient monitoring and inability to implement management actions means staff cannot maintain good conditions and improve degraded conditions.

Alternative B
Maintaining current staffing (one station manager) would provide slightly more management capability than has been historically provided but would mean insufficient monitoring and an inability to improve degraded conditions. Increased staffing levels and funding, as well as collaborating with partners, would improve management capability, allowing for more than a custodial management strategy. All aspects of District management could be improved, including wildlife and habitat management, visitor use and resource protection. Reducing the fragmentation of District lands through land swaps and consolidation would benefit resource management.

Alternative C
Alternative C would have the same staffing level as Alternative B. Reducing the fragmentation of District lands through land swaps and consolidation would benefit resource management. The new requirement of non-toxic ammunition and fishing tackle would bring management benefits. Eliminating the need to educate hunters and anglers about lead (and other mitigation measures) would allow funds and personnel to be reallocated for other management activities. Installing signage will ensure hunters and fishers understand the requirements of hunting or fishing on District lands.

4.6 Cumulative Impacts

The intent of the CCP is to manage the District's natural resources to best achieve the District's established purposes; fulfill the NWRS's mission; consistently apply sound fish

and wildlife management; and ensure that the biological integrity, diversity and environmental health of the NWRS is maintained. Implementing the CCP would bring cumulative benefits to the District's environment through the control of invasive plant species, improved water quality, and enhanced visitor use and experience.

These benefits to the natural environment would lead to improved socioeconomic health in the region as more visitors to the District would mean more supplies and meals purchased in local communities. There would be minimal accumulation of lead in the environment under Alternatives A and B, and Alternative C would eliminate lead ammunition and fishing tackle. Alternative C would have beneficial cumulative environmental impacts.

4.7 Summary of Analysis

Alternative A – No-Action Alternative

The No-Action Alternative describes the District's current ongoing management activities. Alternative A might not meet all the CCP goals, but it provides a basis for comparison with the proposed action. Under Alternative A, annual CAAs for livestock grazing will continue and the Service will continue to suppress wildfires and intermittently apply mechanical, chemical and biological treatments in response to spontaneous outbreaks of invasive plant species. In the absence of regular treatment, problems caused by invasive plants would persist, reducing habitat quality.

Water quality management would consist of monitoring water quality and maintaining wetland structures in their current condition. This will not resolve the issues of dissolved solids, salinity and selenium in the District's waterbodies and wetlands. Current public access closures (closed to all hunting) would remain in effect on Grass Lake NWR and Hailstone NWR (also closed to big game hunting). No camping will be allowed at the North Unit of Lake Mason NWR. Visitor experience in the District will still be hampered by access, parking, signage and communications issues.

Alternative B – Implementation of the CCP With Allowed Use of Lead Ammunition for Big Game Hunting and Fishing Tackle

Alternative B would implement planned, structured management of the natural environment by expanding the use of management tools to restore native grasses that provide valuable wildlife habitat. These tools include transition to prescriptive grazing, use of prescribed fire, and increased use of mechanical treatment and chemical and biological controls to treat invasive plant species crop plants and federally and State-listed noxious plant species.

The Service would renovate and seed fields and grasslands with a mix of native grasses and forbs to improve diversity and vigor. It would also expand water quality management to reduce salinity and selenium in District waterbodies and wetlands. The increased management activities would have negligible environment impact.

Opening Grass Lake NWR to visitor uses and Hailstone NWR to big game hunting would improve visitor use and experience in the District. Although the Service would continue to

allow the use of lead ammunition for big game hunting and lead fishing tackle, the amount of lead that these activities have added to the District's environment has not been quantified, but according to District staff, the likelihood is low that these activities have had any notable addition to the bioavailability of lead in the area.

Hunting and fishing is done over a large area and multiple access sites, reducing lead accumulation and buildup by spreading it over a larger area. The current use of lead tackle by anglers and single projectile ammunition or buckshot by furbearer and elk/deer/pronghorn hunters is the only addition of lead currently occurring within the District. Hunters may select hunting methods (like archery) that do not introduce lead into the environment or use lead-free ammunition, reducing lead that enters the environment.

Hunters using shotguns for upland game birds and migratory game birds are required to use steel or other non-toxic shot. Tackle typically enters the environment by accident when anglers snag their lines. There have been no reports of wildlife impacted by lead poisoning within the District.

Improving roadways and parking areas would protect habitat and wildlife as well as visitor use and experience. Camping would be eliminated on the North Unit of the Lake Mason NWR, which would benefit the environment.

Alternative C – Implementing the CCP With Required Use of Lead-Free Ammunition and Fishing Tackle

Alternative C has the same basic elements as Alternative B except that lead-free ammunition and fishing tackle would be required for all hunting and fishing in the District. This would yield many of the same environmental impacts as Alternative B. Requiring the use of lead-free ammunition and fishing tackle would benefit the natural environment and human health.

This requirement would not significantly impact hunting and fishing opportunities as District lands are near BLM, USFS, State and private lands that are also open to hunting and fishing; some of these lands allow the use of lead ammunition and fishing tackle. District lands constitute an exceptionally small percentage of available hunting and fishing opportunities. Requiring lead-free ammunition and fishing tackle would have a minimal effect on hunting and fishing opportunities in the region surrounding the District.

Comparison of Alternatives

Alternative A would negatively affect wildlife and habitat in the District with sporadic control of invasive plant species and the continued use of lead ammunition for big game hunting and fishing tackle. Water quality would continue to exhibit high dissolved solids, salinity and selenium. A degraded natural environment would draw fewer visitors to the District.

Alternatives B and C would benefit wildlife and habitat with proactive control of invasive plant species and management activities to improve water quality in District waterbodies and wetlands. Combined with improvements to roadways and parking areas, these would attract more visitors to hunt, fish, observe and photograph wildlife, and engage in

environmental education activities. Alternative C would be more protective of the environment than Alternative B as the District would require the use of lead-free ammunition and fishing tackle.

Chapter 5: List of Preparers and Sources

5.1 List of Preparers

This document is the result of extensive collaborative efforts by members of the planning team:

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