

3 Alternatives

This chapter describes the management alternatives considered for the Medicine Lake NWR Complex. Alternatives are different approaches to planning unit management that are designed to achieve the refuge purpose(s), vision, and goals, the mission of the National Wildlife Refuge System, and the mission of the Fish and Wildlife Service. Alternatives are developed to address the significant issues, concerns, and problems identified by the Service, the public, and the government partners during public scoping and throughout the development of the draft plan. The alternatives for Medicine Lake NWR and the WMD were separated from the alternatives for Lamesteer NWR.

3.1 ALTERNATIVES DEVELOPMENT

The alternatives—three for Medicine Lake NWR and the WMD, and two for Lamesteer NWR—represent different approaches for permanent protection and restoration of fish, wildlife, plants, habitats, and other resources. The planning team assessed the planning issues identified in chapter 2, the existing biological conditions, and external relationships affecting the refuge complex. This information contributed to the development of alternatives. As a result, each alternative presents different approaches to meet long-term goals. Each alternative was evaluated according to how it will advance the vision and goals of the refuge complex and the Refuge System, and how it will address the planning issues.

All of the alternatives incorporate concepts and approaches intended to achieve the goals outlined in chapter 2, and are discussed in terms of how they would meet each goal. In each alternative, the first two CCP goals—Habitat and Wildlife Management, and Endangered, Threatened, and Rare Species—are discussed together because their issues overlap.

Alternative A, the “no action” alternative, describes ongoing refuge management activities. This alternative might not meet all the CCP goals. It is provided as a basis for comparison with the “action” alternatives.

3.2 ELEMENTS COMMON TO ALL ALTERNATIVES

This section identifies key elements included in the CCP regardless of the alternative selected. Several

elements of refuge management are common to all of the alternatives. All management activities that could impact natural resources, including subsurface mineral reservations, utility lines and easements, soil, water, air, contaminants, and archaeological and historical resources, will be managed to comply with all applicable laws, regulations, and policies. All alternatives would provide equal protection and management of cultural resources. Individual projects may require additional consultation with the State of Montana’s Historic Preservation Office. Additional consultation, surveys, and clearance may be required when project development would be conducted on the refuges or when activities would affect properties eligible for the National Register of Historic Places.

3.3 USES NOT CONSIDERED FURTHER

The planning team considered two other uses for the refuge complex, and determined that they would not be considered further. Discussions of the two uses—snowmobiling and overnight camping—follow in this section.

Snowmobiles

The Improvement Act found that compatible, wildlife-dependent uses are legitimate and appropriate uses of the Refuge System. The Improvement Act defined the priority public uses as hunting, fishing, wildlife observation, photography, environmental education, and interpretation, providing they are compatible with the purposes of the refuge (USFWS 2000d). Refuge managers may consider allowing other uses that are not wildlife-dependent recreational uses, but these would be lowest-priority because they are likely to divert resources from priority general public uses or other responsibilities. The refuge manager determines whether a proposed use is appropriate (USFWS 2006c). Snowmobiling is not a wildlife-dependent public use activity, nor is it an appropriate use for Medicine Lake NWR, and thus will not be considered for this CCP.

Overnight Camping

Similar to snowmobiling, camping may be permitted only when required to assist an approved wildlife-oriented recreational activity, providing it is determined to be appropriate (603 FW1) and compatible with refuge purposes (603 FW 2). The refuge is designated as a “day use area only.” Most

national wildlife refuges are day use only, with few exceptions. The exceptions are those that are so remote that visitors cannot use the refuge without camping overnight. Camping facilities are available near Medicine Lake. The staff makes off-site camping information available upon request.

3.4 ALTERNATIVES FOR MEDICINE LAKE NWR AND THE NORTHEAST MONTANA WMD

Three alternatives were developed for management of the Medicine Lake NWR and the Northeast Montana Wetland Management District.

Alternative A: No Action (Current Management)

Under alternative A, current management programs and efforts would continue throughout the refuge and wetland management district, requiring no significant increases in funding or staff. This alternative serves as the baseline to which other alternatives will be compared.

Habitat and Wildlife Management

Prairie and grassland habitat management would continue at the current level. Improvements of native prairie and “tame” grassland (composed of introduced but noninvasive pasture grasses) would be undertaken when and where they were feasible. Up to 5 percent of dense nesting cover (DNC) would be treated and restored annually. Control of nonnative plants would continue when feasible. Protection of native prairie and tame grasslands through easements and fee-title purchase from willing sellers would continue at the current approximate rate of 1,000 acres annually with an additional 4,000 acres receiving enhanced management through public outreach programs.

Wetlands management would continue to emphasize providing enough water and variety of wetlands conditions to sustain life requirements for migratory birds and to provide for diverse wildlife populations. Medicine Lake would be maintained in a “deepwater” condition (or as consistently deep as possible, rather than adjusting water levels). The refuge staff would conduct routine assessments of threats to wetlands and water tables.

Approximately 100 acres of privately-owned wetlands would be protected annually through easements or fee-title purchase from willing sellers. Another 330 wetland acres on private land would receive enhanced management through public outreach programs.

The refuge staff would continue to manage wildlife and maintain healthy populations of indigenous

fauna to the extent possible within the refuge boundaries. This includes maintaining current waterfowl nesting-success rates and population levels for waterfowl, passerines, shorebirds, colonial waterbirds (or waterbirds that nest in colonies), and sharp-tailed grouse.

Baseline data and threat assessments would be gathered on migratory birds, other birds of concern, and other wildlife, including mammals, amphibians, reptiles, and invertebrates.

A northern-pike sport fishery would be maintained at Medicine Lake. Some efforts would be made to restrict the establishment and spread of harmful nonnative species.

Endangered, Threatened, and Rare Species

The refuge complex would continue to contribute to preserving and restoring endangered, threatened, rare, and unique flora and fauna in the refuge complex. A breeding population of piping plover would be supported through site-specific plover habitat management plans, predator management, and cooperation with private landowners. The refuge hunting closure on sandhill cranes and tundra swans would continue to protect the whooping crane from accidental shootings.

Wilderness

Refuge staff would continue to preserve, manage, and protect the 11,360-acre Medicine Lake Wilderness. Management practices would continue to mimic historical natural disturbances, protect native plant communities, use the minimum tool concept, ensure compliance with class I air-quality standards, and protect the vista and aquatic resources of Medicine Lake.

Visitor Services

Current wildlife-dependent recreational opportunities and management of them would continue. Fishing on Medicine Lake and hunting for deer, upland game birds, waterfowl, and terrestrial furbearers would continue. Ice fishing would be continued only near the Highway 16 bridge or adjacent to refuge headquarters using temporary structures and no power equipment (structures must be pushed or dragged onto the lake by hand).

All refuge programs for interpretation, wildlife observation, outreach, and associated facilities would continue to operate on a limited basis (generally, there are no scheduled programs, but if staff resources are available, interpretive tours are provided), with no additional facilities or resources.

Environmental education opportunities would continue for schools and tour groups when feasible (these are conducted on a very limited basis, with no regularly scheduled programs), but the current

environmental education area near the Highway 16 bridge would remain open.

Annual visitor numbers would be expected to remain at approximately 16,000.

Refuge Operations

Staff levels would remain well below the minimum levels defined by region 6 in 2000, and several positions would remain vacant or be eliminated.

Partnerships

Existing partnerships would be maintained.

Cultural Resources

Cultural resources would continue to be minimally protected, as required by law. Cultural resource reviews, including possible inventories, would be done only in response to activities that constitute an undertaking under Section 106 of the National Historic Preservation Act (NHPA), and resources that are eligible to be listed on the National Register of Historic Places would be protected.

Research

Research projects would continue, but would not be considered priorities, based on habitat management objectives.

Alternative B: Increase Native Prairie Conservation and Restoration

Alternative B for Medicine Lake NWR and the Northeast Montana WMD would conserve natural resources by restoring or protecting native mixed-grass prairie and maintaining high-quality nesting habitats within the refuge complex. This alternative would focus funding for visitor services on developing access for visitors of all abilities and improving opportunities for wildlife-dependent uses (hunting, fishing, wildlife observation, photography, environmental education, and interpretation), while also encouraging a greater understanding and appreciation for migratory birds and other native wildlife, the mixed-grass prairie, the wilderness, and the Refuge System.

Habitat and Wildlife Management

Prairie and grassland habitat improvements would be increased moderately beyond current levels with a focus on protecting, enhancing, and restoring native species. The refuge staff would reduce populations of selected species of nonnative invasive plants and address crested wheatgrass, as a management priority (up to 50 percent of the refuge complex would be treated annually).

Wetlands management would emphasize maintaining enough water and creating a variety of wetlands

conditions to sustain a maximum range of migratory birds that use the refuge and wetland management district and provide for diverse wildlife populations, recognizing that many factors influencing bird populations extend beyond refuge boundaries or control.

Wildlife management would focus on habitat improvement for healthy populations. Management would include collecting baseline data and assessing threats on migratory birds, endangered and threatened species, and other birds of concern, as well as other wildlife. Active predator management would be continued as necessary.

The protection of native prairie, tame grasslands, and wetlands would be increased through easements and fee-title purchases. The approved refuge administrative boundary (figure 9 and appendix G) would be expanded through willing sellers or buyers, emphasizing three priority areas (approximately 1,784 acres total). Also, technical assistance and outreach programs would be expanded to enhance the management of privately owned grasslands (about 5,000 acres annually).

The refuge staff would continue baseline assessments of threats to wetlands, water tables, and water quality, and would expand water flow monitoring and identifying water needs at specific locations.

Endangered, Threatened, and Rare Species

The refuge and wetland management district would continue to contribute to preserving and restoring endangered, threatened, rare, and unique flora and fauna on the refuge complex. A breeding population of piping plover would be supported through site-specific plover habitat management plans, predator management, and cooperation with private landowners. The refuge hunting closure on sandhill cranes and tundra swans would continue to protect the whooping crane from accidental shootings, but an evaluation of the effect and need for closure would be made.

Wilderness

Similar to alternative A, refuge staff would continue to preserve, manage, and protect the 11,360-acre Medicine Lake Wilderness. Management practices would continue to mimic historical natural disturbances, protect native plant communities, use the minimum tool concept, ensure compliance with class I air-quality standards, and protect the vista and aquatic resources of Medicine Lake. The Service also would educate the community and visitors about the importance of the wilderness designation and how and why it is managed as it is (for example, allowing only nonmotorized vehicles).

Visitor Services

Management would emphasize improving and maintaining high-quality public opportunities for wildlife-dependent recreation for visitors of all abilities.

In general, most visitor facilities and activities would be limited to north of Medicine Lake except for the existing activities, such as ice fishing and environmental education, that occur next to the Highway 16 bridge. Closure of the road east of Gaffney Lake would be considered.

Visitor education would be expanded to ensure visitors are informed about existing rules and regulations. Visitor education also would provide more opportunities for visitors to learn about migratory birds and other wildlife, the mixed-grass prairie, the wilderness, and the Refuge System.

Similar to alternative A, hunting (deer, waterfowl, pheasants and other upland birds, and terrestrial furbearers) would continue.

Newly acquired land would be evaluated and, where feasible, opened to hunting. Additional compatible hunting opportunities would be evaluated. The current closure on tundra swans and sandhill cranes would continue.

The refuge staff would work collaboratively with Montana Fish, Wildlife, and Parks to maintain a sport fishery only on Medicine Lake for persons of all abilities.

It would identify potential new areas to open to the public for wildlife observation and photography.

The refuge staff also would re-establish regularly scheduled environmental education for schools and other groups (an average of between 15 and 20 programs would be offered annually).

A small-scale visitor contact station or other interpretive facilities would be developed (the location and size to be determined). Visitor brochures or signs would be updated as needed. The Service would initiate and foster a volunteer program.

Refuge Operations

Staffing levels would be increased to the levels approved by region 6, or approximately 20 full-time-equivalent staff members, including seasonal staff (table 5). Additional housing and office space would be developed to accommodate staff.

Habitat conservation would be a management priority for staff.

Partnerships

Public outreach would be enhanced by developing a refuge “friends group” and more volunteer opportunities. Existing partnerships would be strengthened, and new partners would be recruited to collaborate on wildlife and habitat conservation projects. Partnerships with private landowners, neighbors, and the surrounding community would be emphasized.

Cultural Resources

Similar to alternative A, cultural resources would continue to comply with all pertinent cultural resources laws, but would receive minimal attention. Cultural resource review, including possible inventories, would be done only in response to activities that constitute an undertaking under Section 106 of the NHPA. Resources that are eligible to be listed on the National Register of Historic Places would be protected.

Research

Applied research would be encouraged and would be supported if feasible. Research and monitoring would focus on measuring the effectiveness of habitat and wildlife management practices. Research on crested wheatgrass and other nonnative infestations would remain a priority.

Alternative C: Maximize Native Prairie Conservation and Restoration

Alternative C would maximize staff resources for conserving natural resources by restoring or protecting native mixed-grass prairie and maintaining high-quality nesting habitats within the refuge complex. Visitor programs would be improved but would focus primarily on encouraging a greater understanding of and appreciation for the mixed-grass prairie ecosystem while maintaining existing access and opportunities for wildlife-dependent uses.

Habitat and Wildlife Management

Prairie and grassland-habitat improvement and restoration activities would be increased significantly beyond current levels, using the latest scientific methods, such as remote sensing and satellite imaging. Reducing the populations of most invasive and nonnative plants would be the primary management priority (more than 50 percent of the refuge complex would be treated or restored annually).

Wetlands management would emphasize maintaining enough water and creating a variety of wetlands conditions to sustain migratory birds and

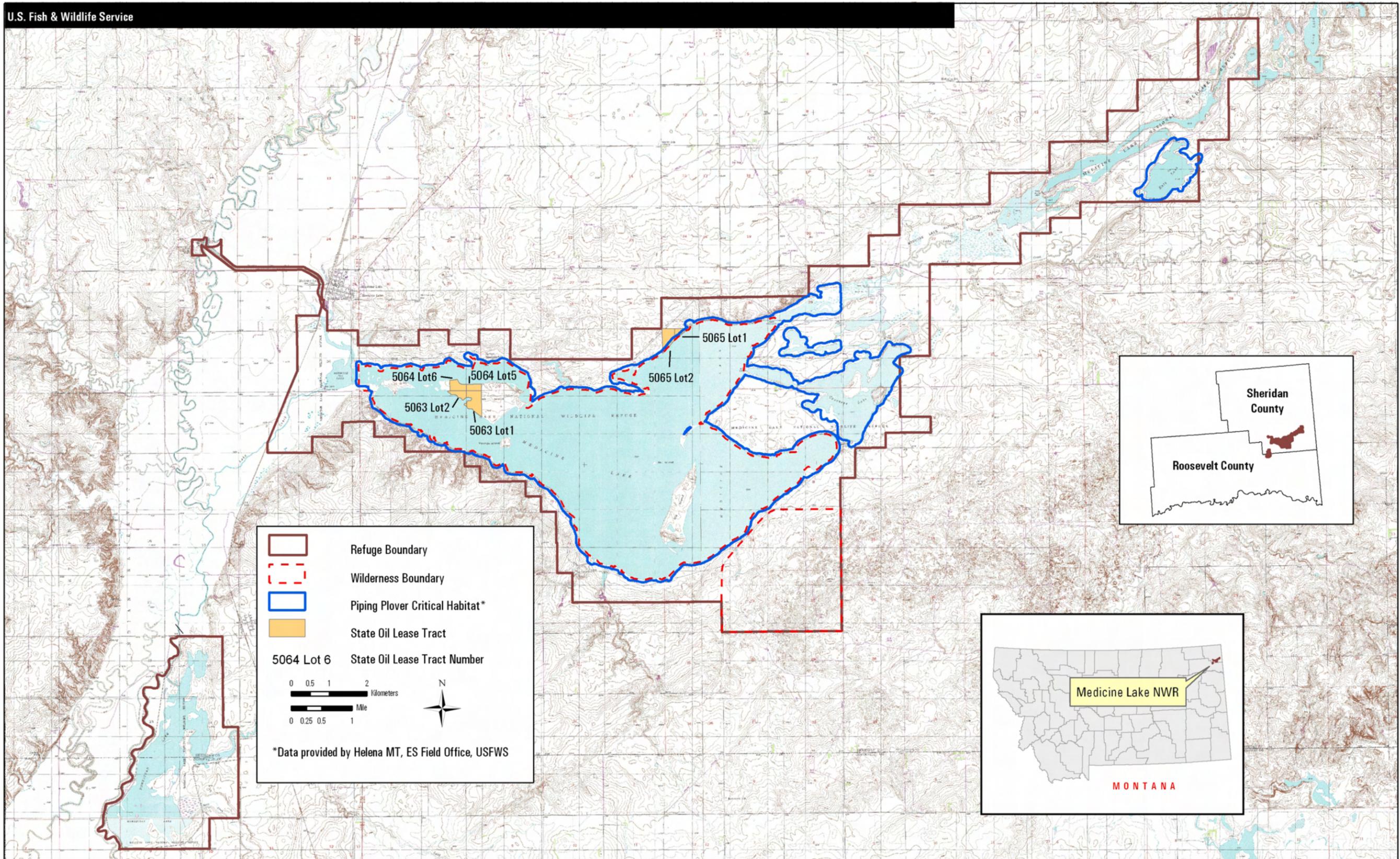


Figure 9. Medicine Lake National Wildlife Refuge land status and proposed acquisition priorities.

provide for diverse wildlife populations. Protected diverse wetlands would be expanded, and technical assistance and public outreach to improve wetlands management on private lands would be increased.

Wildlife management would focus on improving habitats for healthy populations. Waterfowl nesting success rates would be increased through intensive predator management techniques. Baseline assessments would be more comprehensive than in alternative B, and would include all colonial waterbirds and breeding shorebirds.

The protection of native prairie, tame grasslands, and wetlands would be increased beyond the level of alternative B through additional easements and fee-title purchases and more refuge staff. On the refuge, the approved refuge administration boundary would be expanded to allow purchasing up to 8,400 acres primarily in the Big Muddy Creek floodplain corridor between the Medicine Lake and Homestead units. Also, technical assistance and outreach programs would be expanded significantly to enhance management of privately owned grasslands, comprising about 10,000 acres annually.

The refuge staff would continue baseline assessments of threats to wetlands, water tables, and water quality, and expand water flow monitoring and identifying water needs at specific locations.

Endangered, Threatened, and Rare Species

The refuge and wetland management district would continue to contribute to preserving and restoring endangered, threatened, rare, and unique flora and

fauna on the refuge complex. A breeding population of piping plover would be supported through site-specific plover habitat management plans, predator management, and cooperation with private landowners. The refuge hunting closure on sandhill cranes and tundra swans would continue to protect the whooping crane from accidental shootings.

Wilderness

Similar to Alternative A, refuge staff would continue to preserve, manage, and protect the 11,360-acre Medicine Lake Wilderness. Management practices would continue to mimic historical natural disturbances, protect native plant communities, use the minimum tool concept, ensure compliance with class I air-quality standards, and protect the vista and aquatic resources of Medicine Lake. The Service also would educate the community and visitors about the importance of the wilderness designation and how and why it is managed as it is (for example, allowing only nonmotorized vehicles).

Visitor Services

Management would emphasize promoting a greater understanding of the mixed-grass prairie ecosystem while maintaining the existing opportunities for wildlife-dependent recreation.

The refuge staff would increase visitor education to ensure visitors are informed about rules and regulations, visitor services opportunities, management activities, and the refuge complex's natural and cultural resources. The refuge staff specifically would inform visitors about the



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Fire management programs support habitat management plans and their implementation at the refuge.

importance of the native prairie restoration efforts taking place within the refuge and wetland management district.

In general, most visitor facilities and activities would be limited to north of Medicine Lake except for the existing activities, such as ice fishing and environmental education, that occur next to the Highway 16 bridge. Closure of the road east of Gaffney Lake would be considered.

Similar to alternatives A and B, hunting (deer, waterfowl, pheasants and other upland birds, and terrestrial furbearers) would continue.

Newly acquired land would be evaluated and, where feasible, opened to hunting. Additional compatible hunting opportunities would be evaluated.

Similar to alternative B, the refuge would work collaboratively with Montana Fish, Wildlife, and Parks to maintain a sport fishery at Medicine Lake, as long as it was not dependent on refuge resources.

Some opportunities for wildlife observation and photography would be expanded. Environmental education for schools and other groups would be increased over alternative A, but would be less than alternative B (averaging between five and 10 programs annually). The primary focus of all interpretive and environmental education programs would be the refuge complex's native prairie restoration efforts.

Refuge Operations

Staffing levels would be increased above the levels defined by region 6, to about 21 full-time (permanent) staff members, plus additional seasonal staff. Additional restoration staff would be added. New housing and office space would be developed to accommodate staff. Habitat conservation would be a management priority for staff.

Partnerships (same as alternative B)

Public outreach would be enhanced by developing a refuge "friends group" and more volunteer opportunities. Existing partnerships would be strengthened, and new partners would be recruited to collaborate on wildlife and habitat conservation projects. Partnerships with private landowners, neighbors, and the surrounding community would be emphasized (see additional information under Visitor Services).

Cultural Resources

Similar to alternatives A and B, all cultural resources would be protected according to the NHPA and other laws. In addition, a sensitivity model indicating areas with a high potential for cultural resources would be established, and those areas would be surveyed.

Research (same as alternative B)

Applied research would become a priority and supported as feasible. Research and monitoring would focus on measuring the effectiveness of habitat and wildlife management practices. Research on crested wheatgrass and other infestations would remain a priority.

3.5 ALTERNATIVES FOR LAMESTEER NWR

Two alternatives were developed for Lamesteer NWR.

Alternative A: No Action (Current Management)

Under this alternative, Lamesteer NWR would continue to be an easement refuge superimposed on privately owned lands and used primarily as a resting place for wildlife while on migration. The dam and spillway would continue to be maintained by the Service, including all maintenance costs. The landowner would continue to control access to the site, including all hunting access or other visitor services.

Alternative B: Divestiture

Alternative B would take Lamesteer NWR out of the Refuge System and relinquish the easement to the current landowners. Under this alternative, the dam structure would be given up to the landowners or destroyed. The Service's easement requirements would no longer exist. The Service would divest its interest in the refuge. This would be carried out within the life of the plan. Once the CCP is approved, the managing station would work with the Division of Realty and the Land Protection Planning Branch within the Division of Planning to prepare a program proposal to divest the refuge. Appendix E identifies the criteria used in making the refuge analysis.

3.6 COMPARISON OF ALTERNATIVES

All of the alternatives outline courses for the future that are consistent with the purposes of the refuges, the Northeast Montana Wetland Management District, and with the mission and goals of the National Wildlife Refuge System. All alternatives would pursue the goals outlined in this CCP. Where alternatives are different is in the type and level of land management and protection they would offer to achieve long-term wildlife and habitat goals.

Table 5 compares the staffing requirements under each alternative for the Medicine Lake NWR complex.

Table 6 identifies and compares the management actions under each alternative for Medicine Lake NWR and the Northeast Montana WMD that would respond to the issues raised by Service manager, the public, and government partners.

Table 7 identifies and compares the management actions for two alternatives for Lamesteer NWR.

The management actions are summarized in the three alternatives for Medicine Lake NWR and the wetland management district (A, B, C) and the

two alternatives for Lanesteer NWR (A, B). Each alternative column provides a summary of actions; alternatives may be compared by reading across the page for each set of provisions and action. “Same as Alternative (A/B)” indicates management actions for that item are the same as the indicated alternative.

For Medicine Lake NWR and the WMD, alternative B and C are the action alternatives to be compared with the no-action alternative A. In most cases, management activities outlined in alternatives B and C increase from those in alternative A. Alternative B and C actions might be the same, similar, or quite different from alternative A and from each other.

Table 5. Comparison of Staffing Levels among Alternatives for Medicine Lake NWR and WMD

<i>Alternative A</i>	<i>Alternative B</i>	<i>Alternative C</i>
<i>No Action</i>	<i>Moderate</i>	<i>Enhanced</i>
Project Leader (485) (GS-13)	Project Leader (485) (GS-13)	Project Leader (485) (GS-13)
Deputy Project Leader (485) (GS-12)	Supervisory Resource Operations Specialist (485) (GS-12)	Supervisory Resource Operations Specialist (485) (GS-12)
Refuge Operations Specialist-(485) (GS-7/9) VACANT	Refuge Operations Specialist-(485) (GS-7/9) for WMD	Refuge Operations Specialist-(485) (GS-7/9) for WMD
NONE	Refuge Operations Specialist-(485) (GS-5/7/9) for Refuge	Refuge Operations Specialist-(485) (GS-5/7/9) for Refuge
Wildlife Biologist(486) (GS-11)	Wildlife Biologist (486) (GS-11)	Wildlife Biologist (486) (GS-12)
NONE	NONE	Wildlife Biologist (486) (GS-9/11)
NONE	NONE	Range Ecologist (455)(GS-11)
Biological Technician (404) (GS-5/7) VACANT	Biological Technician (404) (GS-5/7) WMD	Biological Technician (404) (GS-5/7) WMD
NONE	Biological Technician (404)(GS-5/7) Refuge	Biological Technician (404) (GS-5/7) Refuge
NONE	Resource Specialist (GS-9) Geographical Information Systems (GIS)	Resource Specialist (GS-9) Geographical Information Systems (GIS)
Administrative Officer (341) (GS-7/9)	Administrative Officer (341) (GS-9)	Administrative Officer (341) (GS-7/9)
NONE	Office Secretary (GS-5)	Office Secretary (GS-5)
VACANT	Park Ranger (025)(GS-9) Law Enforcement	Park Ranger (025)(GS-7/9) Law Enforcement
NONE	NONE	Park Ranger (025) (GS-7/9) Law Enforcement
NONE	Outdoor Recreation Planner (411)(GS-7/9)	Outdoor Recreation Planner (411)(GS-7/9)
Prescribed Fire Specialist (401) (GS-7/9)	Prescribed Fire Specialist (401)(GS-9)	Prescribed Fire Specialist (401)GS-7/9
VACANT	Fire Program Technician (455) (GS-5/7)	Fire Technician (455) (GS-5/6)
NONE	NONE	Fire Management Officer (401)(GS-9/11)
Maintenance Mechanic (4749) (WG-10)	Maintenance Mechanic (4749)(WG-10)	Maintenance Mechanic (4749)(WG-10)
Maintenance Worker (4749) (WG-8)	Maintenance Worker (4749) (WG-8)	Maintenance Worker (4749) (WG-8)
NONE	NONE	Seasonal Maintenance Worker (WG-8)

Table 6. Comparison of Alternatives for Medicine Lake NWR and Northeast Montana WMD

<i>Category</i>	<i>ALTERNATIVE A</i> <i>No Action (Maintain Current Management)</i>	<i>ALTERNATIVE B</i> <i>Increase Native Prairie Conservation and Restoration</i>	<i>ALTERNATIVE C</i> <i>Maximize Native Prairie Conservation and Restoration</i>
<i>Water Resources</i>	<p>Emphasize providing enough water and variety of wetland conditions to meet the needs of migratory birds, and provide for diversity of wildlife.</p> <p>Maintain Medicine Lake in deepwater condition.</p> <p>Routinely assess conditions.</p>	Same as alternative A	Same as alternative A
<i>Habitat--Native Prairie</i>	<p>Protect and improve existing native prairie where feasible. Maintain about 50% of native prairie on refuge complex lands in the desired plant community.</p> <p>Limit control of nonnatives where possible. Focus on reducing their spread across boundary areas.</p> <p>Use some treatments (prescribed fire, rest) on up to 25% of the refuge and WMD annually. No grazing.</p> <p>Reduce nonnative species only with staff availability, not routinely</p>	<p>Moderately increase restoration and enhancement efforts. Develop a habitat management plan (HMP) to determine the best prescriptions. Maintain about 75% of native prairie in the desired plant community.</p> <p>Continue control of all nonnative species, and emphasize crested wheatgrass as the highest priority.</p> <p>Increase treatments (prescribed fire, prescribed grazing, mowing, chemical controls) on up to 50% of refuge and WMD.</p> <p>Reduce Canada thistle by 40%, leafy spurge by 70%, crested wheatgrass by 15%, smooth brome grass by 30%, and Russian olive by 70% on refuge prairie.</p>	<p>Greatly increase restoration and enhancement efforts. Develop a habitat management plan (HMP) to determine the best prescriptions. Maintain 80% or more of the native prairie in the desired plant community.</p> <p>Control all invasive species and nonnative plants as a management priority.</p> <p>Increase treatments (fire, grazing, mowing, cutting, chemical controls) annually on >50% of the refuge and WMD.</p> <p>Reduce Canada thistle by >50%, leafy spurge by >80%, crested wheatgrass by >30%, smooth brome grass by >40%, and Russian olive by >80%.</p>

<i>Category</i>	<i>ALTERNATIVE A</i> <i>No Action (Maintain Current Management)</i>	<i>ALTERNATIVE B</i> <i>Increase Native Prairie Conservation and Restoration</i>	<i>ALTERNATIVE C</i> <i>Maximize Native Prairie Conservation and Restoration</i>
<i>Habitat--Native Prairie, cont.</i>	Protect at least 1,000 additional acres of native prairie on private lands through perpetual easements or fee-title purchases from willing sellers. Conserve the integrity of about 3,000 acres through technical assistance, education, and habitat improvement projects.	Over the life of the plan, protect at least 3,500 additional acres of native prairie on private lands through perpetual easements or fee-title purchases from willing sellers on the WMD. Through partnerships, provide technical assistance, education, and habitat improvement projects on an additional 5,000 acres.	Over the life of the plan, protect at least 10,000 additional acres of native prairie on private lands on the WMD through perpetual easements or fee-title purchases from willing sellers. Through partnerships, provide technical assistance, education, and habitat improvement projects, and conserve the integrity on an additional 10,000 acres throughout the complex.
<i>Habitat--Planted Grasslands</i>	Protect or restore up to 5% of dense nesting cover (DNC). Maintain high-quality plantings of DNC consisting of tall (>1 ft.), tame (noninvasive, introduced) wheat grasses with 20 to 40% legumes on at least 50% of previously cultivated areas. Convert about 100 acres annually to native prairie plant species when feasible. Assist in conserving the integrity of 1,000+ acres of tame grasslands on private lands in the refuge complex through outreach, technical assistance, education, and habitat improvement.	Emphasize DNC plantings less. Convert about 2,000 acres of land on the refuge complex that had produced crops to native prairie plant species, including warm and cool-season grasses and forbs, giving priority to areas that have become decadent and overrun by undesirable nonnative cool-season grasses. Annually conserve the integrity of 2,500+ acres of tame grasslands on private lands in the complex through outreach, technical assistance, education, and habitat improvement.	Emphasize DNC plantings less. Take actions similar to alternative B, but convert about 3,000 acres of tame grass plantings to native prairie. Annually conserve the integrity of up to 10,000 acres of tame grasslands on private lands through outreach, technical assistance, education, and habitat improvement.
<i>Wetlands</i>	<i>Managed wetlands:</i> Manage water levels to provide a variety of wetland conditions.	<i>Managed wetlands:</i> Manage water levels to provide a variety of wetland conditions.	<i>Managed wetlands:</i> Manage water levels to provide a variety of wetland conditions.

<i>Category</i>	<i>ALTERNATIVE A</i> <i>No Action (Maintain Current Management)</i>	<i>ALTERNATIVE B</i> <i>Increase Native Prairie Conservation and Restoration</i>	<i>ALTERNATIVE C</i> <i>Maximize Native Prairie Conservation and Restoration</i>
<i>Wetlands, cont.</i>	<i>Nonmanaged wetlands:</i> Protect 100 acres of privately owned wetlands annually through easements or fee-title purchases from willing sellers in the WMD and approved acquisition boundary. Enhance 330 acres by public outreach.	<i>Nonmanaged wetlands:</i> annually conserve 500 acres of wetlands on private land through technical assistance, outreach and habitat-improvement projects. Within 5 years, begin comprehensive monitoring of wetlands within the complex to assess threats and impacts to water quality and quantity.	<i>Nonmanaged wetlands:</i> Emphasize and expand conservation on private lands within the complex, and provide technical assistance and outreach to improve wetlands management on private lands. Same as alternative B
<i>Wildlife Management</i>	Emphasize maintenance of healthy populations of indigenous fauna. Maintain current Mayfield waterfowl nesting rates of 25% in uplands, 50% on islands, and 70% in predator exclusion areas. Gather baseline data on other migratory birds and birds of concern, as well as other wildlife. Control predators as necessary. Continue to pick up dead birds during botulism outbreaks.	Focus on improving habitat conditions for native wildlife and not species-specific management. Work with others to identify key species that occupy native prairie, and monitor other populations of mammals, amphibians, reptiles, and invertebrates to evaluate the success of habitat management activities. Same as alternative A Pick up dead birds only if determined necessary.	Increase waterfowl nesting success rates through intensive predator management techniques. Conduct more comprehensive baseline surveys than alternative B, and include all colonial waterbirds and breeding shorebirds. Same as alternative A Same as alternative A
<i>Threatened and Endangered Species</i>	Continue to preserve and restore threatened and endangered flora and fauna within the refuge complex, including piping plovers.	Same as alternative A	Same as alternative A

<i>Category</i>	<i>ALTERNATIVE A</i> <i>No Action (Maintain Current Management)</i>	<i>ALTERNATIVE B</i> <i>Increase Native Prairie Conservation and Restoration</i>	<i>ALTERNATIVE C</i> <i>Maximize Native Prairie Conservation and Restoration</i>
<i>Threatened and Endangered Species, cont.</i>	Continue the hunting closure on sandhill cranes and tundra swans on the refuge to protect whooping cranes.	Same as alternative A	Same as alternative A
<i>Land Acquisition</i>	Continue to protect native prairie and other grasslands within the approved acquisition boundary and WMD (maximum 1,500 acres annually) through easements and fee-title purchases from willing sellers. Introduce other enhancements through public outreach.	Same as alternative A, plus expand the administrative boundary by about 1,784 acres, and emphasize acquiring priority acres with high-quality grasslands or unbroken prairie (figure 9, table 14).	Same as alternative A, but increase protection of native prairie, tame grasslands, and wetlands. Expand administrative boundary by about 8,400 acres. Connect the Homestead area with the main part of refuge in the Muddy Creek floodplain corridor.
<i>Wilderness</i>	Continue to protect 11,360-acre Medicine Lake Wilderness. Comply with Class 1 air-quality standards, and protect vistas.	<p>Same as alternative A</p> <p>Use management practices that mimic historic natural disturbances, protect native plant and aquatic communities, and observe minimum tool practices.</p> <p>Evaluate all artificial islands for migratory bird production potential. Remove artificial islands not essential for habitat or harmful to migratory birds.</p> <p>Educate the public and community about differences and reasons for management practices within the designated wilderness, including nonmotorized uses.</p>	<p>Same as alternative A</p> <p>Same as alternative B</p> <p>Same as alternative B</p> <p>Same as alternative B</p>

<i>Category</i>	<i>ALTERNATIVE A</i> <i>No Action (Maintain Current Management)</i>	<i>ALTERNATIVE B</i> <i>Increase Native Prairie Conservation and Restoration</i>	<i>ALTERNATIVE C</i> <i>Maximize Native Prairie Conservation and Restoration</i>
<i>Visitor Services--Hunting</i>	Hunting opportunities for deer, upland game birds, waterfowl, and terrestrial furbearers would continue with the same access and opportunities.	Any newly acquired land would be evaluated and, where feasible, opened to hunting. Additional compatible hunting opportunities would be evaluated.	Similar to alternative B
<i>Visitor Services--Fishing</i>	<p>Maintain a northern-pike sport fishery. Restrict to some extent the establishment and spread of harmful nonnative fish species.</p> <p>Allow ice fishing during winter months next to the Highway 16 bridge area or refuge headquarters area. Do not allow power equipment or permanent structures; temporary structures must be hand pushed or pulled onto ice.</p>	<p>Provide a maximum of 10 months per year of public sport fishing on Medicine Lake when resources needed for the program do not adversely affect the refuge's ability to implement habitat and wildlife management.</p> <p>Same as alternative A. Provide anglers safe and reasonable access for visitors of all abilities, minimal conflicts with others, and satisfying experiences.</p>	<p>Generally same as alternative B</p> <p>Same as alternatives A and B</p>
<i>Visitor Services--Wildlife Observation, Photography, and Wildlife-dependent Recreation</i>	Maintain current levels of services--such as the auto tour route (also called wildlife drive), observation tower, pelican observation area, visitor exhibits at the headquarters building, and few improvements for access.	<p>Same as alternative A, but consider other opportunities, such as walking and cross-country skiing on auto tour route in areas north of Medicine Lake.</p> <p>Enhance and increase opportunities for access by all people.</p> <p>Emphasize quality over quantity, and link programs to habitat management.</p>	<p>Same as alternative A</p> <p>Provide more opportunities than alternative A, but fewer than alternative B.</p> <p>Emphasize promoting greater understanding of the short-grass prairie ecosystem.</p>

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<i>Visitor Services-- Interpretation and Environmental Education</i>	<p>Continue tours and environmental education programs when feasible and on a sporadic basis.</p> <p>Maintain existing environmental education area next to Highway 16 bridge.</p>	<p>Within 3 years of writing an HMP and Visitor Services Plan, re-establish a minimum of at least 5 annual interpretive and/or environmental education programs.</p> <p>Focus funding for programs on education and appreciation of the refuge's natural and cultural resources; primary interpretive themes to be centered on the native prairie restoration efforts, the importance of the mixed-grass prairie ecosystem, and other refuge operations.</p> <p>By year 15, conduct an annual average of between 15 and 20 environmental education or interpretive programs. Maintain environmental education area next Highway 16 bridge.</p>	<p>Provide more opportunities than alternative A but fewer than alternative B.</p> <p>Similar to alternative B but fewer programs and resources allocated.</p> <p>By year 15, conduct an annual average of between 5 and 10 environmental education programs. Maintain existing environmental education area.</p>
<i>Refuge Operations</i>	<p>Maintain staffing levels below the minimum set by region 6 in 2000 (currently 11 full-time-equivalent positions [FTEs], with several vacant FTEs and some seasonal staff).</p>	<p>Increase staffing levels to levels defined by region 6 (approximately 16 FTEs, plus seasonal staff as needed to equal about 20 FTEs).</p> <p>Make habitat conservation a management priority for filling staff positions. Provide housing as needed.</p> <p>Develop a small-scale visitor contact station and other interpretive facilities.</p>	<p>Increase staffing levels (about 21 FTEs, plus additional seasonal staff as needed beyond 20 FTEs).</p> <p>Add habitat restoration staff. Develop new housing and office space to accommodate staff. Conserving habitat would be the management priority.</p>

<i>Category</i>	<i>ALTERNATIVE A</i> <i>No Action (Maintain Current Management)</i>	<i>ALTERNATIVE B</i> <i>Increase Native Prairie Conservation and Restoration</i>	<i>ALTERNATIVE C</i> <i>Maximize Native Prairie Conservation and Restoration</i>
<i>Cultural Resources</i>	Conduct cultural resource reviews, including possible inventories in response to activities that constitute an undertaking under the NHPA. Comply with all cultural resource laws, and protect resources that are eligible to be on the National Register of Historic Places.	Same as alternative A	Same as alternative A, plus establish sensitivity model (to determine areas that likely have obscured or buried cultural resources) and survey those areas.
<i>Partnerships and Public Outreach</i>	Continue outreach at current levels. Maintain existing partnerships with state, local, and other organizations.	Enhance public outreach by creating a refuge “friends” group. Increase volunteer opportunities. Increase community involvement. Strengthen existing partnerships, focusing on private landowners, neighbors, and the surrounding community. Recruit new partners for wildlife and habitat conservation projects. Annually reach at least 200 individuals through formal and informal events and activities. Focus outreach to increase awareness, appreciation, and understanding of natural resource conservation and management practices. Promote the significance of the remaining native prairie grasslands and wetlands among area landowners and the local and regional community.	Similar to alternative B Same as alternative B Same as alternative B Same as alternative B Same as alternative B

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<i>Research</i>	Continue research projects, though they would not necessarily be based on refuge priorities.	Conduct applied research projects on the basis of priority need, and support them as feasible. Focus on measuring the effectiveness of habitat and management practices. Conduct research on crested wheatgrass and other infestations as a higher priority.	Same as alternative B Same as alternative B

Table 7. Comparison of Alternatives for Lamesteer NWR

<i>Issue</i>	<i>Alternative A (No Action)</i>	<i>Alternative B (Relinquish Easement to Current Landowners)</i>
Habitat and Wildlife	Maintain passive management with no management of upland habitat by the Service (the refuge offers minimal habitat value and is primarily a resting place for some birds).	The landowner has sole responsibility for managing habitat and wildlife.
Visitor Services	Hunting allowed with the permission of the private landowner.	Same as alternative A
Cultural Resources	Provide minimum protection as required by existing laws.	The landowner has sole responsibility to protect cultural resources.
Operations and Maintenance	Rehabilitate the dam structure.	No dam rehabilitation by Service; transfer responsibility for operating and maintaining the dam to the landowner.
Partnerships	None	Up to landowner
Easement Rights	Maintain the right to impound water.	Relinquish all easement rights, including the right to impound water.

