Appendix L

Compatibility Determinations for Wildlife-dependent Recreational Uses, Grazing, Haying, and Farming

Refuge Names

Audubon National Wildlife Refuge
Chase Lake National Wildlife Refuge
Lake Alice National Wildlife Refuge
Lake Ilo National Wildlife Refuge
Lake Nettie National Wildlife Refuge
Lake Zahl National Wildlife Refuge
McLean National Wildlife Refuge
Kellys Slough National Wildlife Refuge
Shell Lake National Wildlife Refuge
Stewart Lake National Wildlife Refuge

Establishing and Acquisition Authorities

- Audubon National Wildlife Refuge (USC 664—Fish and Wildlife Coordination Act)
- Chase Lake National Wildlife Refuge (EO 932)
- Lake Alice National Wildlife Refuge (USC 715d—Migratory Bird Conservation Act)
- Lake Ilo National Wildlife Refuge (EO 8154)
- Lake Nettie National Wildlife Refuge (EO 8155)
- Lake Zahl National Wildlife Refuge (EO 8158)
- McLean National Wildlife Refuge (USC 715d—Migratory Bird Conservation Act)
- Kellys Slough National Wildlife Refuge (EO 8650)
- Shell Lake National Wildlife Refuge (EO 8166)
- Stewart Lake National Wildlife Refuge (EO 8662)

Purposes

"As a refuge and breeding ground for migratory birds and other wildlife." Executive Orders

"For use as an inviolate sanctuary, or for any other management purpose, for migratory birds."
USC 715d—Migratory Bird Conservation Act

"Shall be administered by [Secretary of the Interior] directly or in accordance with cooperative agreements ... and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon."
16 USC 664—Fish and Wildlife Coordination Act

National Wildlife Refuge System Mission

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

Description of Use:

Recreational Hunting

The Service will continue to provide recreational hunting and expand programs at Audubon, Chase Lake, Lake Alice, Lake Nettie, and Lake Zahl national wildlife refuges. These five refuges are open to recreational public hunting in accordance with state seasons and regulations established for each refuge.

Audubon National Wildlife Refuge—The Service will continue to allow recreational hunting of deer, ring-necked pheasant, sharp-tailed grouse, and partridge.

Chase Lake National Wildlife Refuge—The Service will continue to allow recreational hunting of deer.

Lake Alice National Wildlife Refuge—The Service will continue to allow recreational hunting of deer, ring-necked pheasant, sharp-tailed grouse, partridge, and waterfowl.

Lake Nettie National Wildlife Refuge—The Service will continue to allow recreational hunting of deer.

Lake Zahl National Wildlife Refuge—The Service will continue to allow recreational hunting of deer, ring-necked pheasant, sharp-tailed grouse, and partridge.

Availability of Resources

Sufficient resources are available to maintain the existing recreational hunting program. The NDGF helps the refuges with law enforcement coverage.

Anticipated Impacts of Use

During annual reviews of hunting programs, the refuge staffs evaluate what effect the diversion of funding and staff has on their abilities to manage habitat. Because the Service will direct the limited funding and staff

first toward habitat management, there may be a resulting decrease in hunting opportunities or facilities. Restrictions on the timing of seasons and areas open to hunting ensures that hunting activities do not interfere with the purposes of the refuges or attainment of Refuge System objectives.

Temporary disturbance to wildlife will occur near the activity. Hunting will remove animals that are surplus to populations. A temporary decrease in populations of wild animals may help ensure that carrying capacity (especially for big-game species) is not exceeded. There will be no negative effects on threatened and endangered species.

The restriction of vehicle use to designated purposes, times, and established roads, trails, and parking lots will protect habitats from damage and minimizes disturbance to wildlife. Closed areas will provide sanctuary for game and nongame species, minimize conflicts between hunters and other visitors, and provide safety zones around communities and administrative areas.

There will be no negative effects on cultural resources.

Determination

Recreational hunting is a compatible wildlife-dependent recreational use at Audubon, Chase Lake, Lake Alice, Lake Nettie, and Lake Zahl national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Require the use of nontoxic shot, in accordance with current regulations for hunting migratory birds and upland game.
- Limit use of motorized vehicles to designated parking areas, access trails, and public roads.
- Prohibit all-terrain vehicles.
- Prohibit camping, overnight use, and fires.
- Require that hunting be conducted in accordance with federal and state regulations.
- Promote sound hunting practices for hunter safety and quality experiences.
- Prohibit collecting, injuring, disturbing, destroying, or harming any animal or plant except legally taken game animals.
- Prohibit search for or disturbance or collection of prehistoric or historic artifacts.
- Require that trash, including shell casings, be packed out so the areas remain clean, natural, and enjoyable.

Justification

The Improvement Act identified hunting at national wildlife refuges as a wildlife-dependent recreational use. Hunting is a legitimate wildlife management tool that can be used to manage populations. Hunting harvests a small percentage of the renewable resources, which is in accordance with wildlife objectives and principles. Based on the biological impacts anticipated above and in the EA, it is determined that recreational hunting at Audubon, Chase Lake, Lake Alice, Lake Nettie, and Lake Zahl national wildlife refuges will not detract from the purposes for which these refuges were established or their habitat goals and objectives.

There will be no negative effects on cultural resources or threatened and endangered species.

Mandatory 15-year Reevaluation Date: 2023

Description of Use:
Recreational Fishing

The Service will continue to provide recreational fishing at designated areas at Lake Audubon and Lake Ilo national wildlife refuges. The primary game fish found at both refuges are northern pike, walleye, and perch. Fishing visitation is dependent on success, which weather cycles influence. Generally, fishing is good during wet cycles and poor during extended dry periods due to the marginal nature of the wetlands and lakes involved (shallow depths and harsh winters subject wetlands of marginal depths to frequent winterkill of fish resources).

Audubon National Wildlife Refuge—The Service permits only ice fishing at the refuge, when ice covers the water. Anglers must remove fish houses from the refuge by March 15; however, anglers can continue to use portable fish houses if they are removed daily. The refuge closes to ice fishing March 31. All vehicles, including snowmobiles and all-terrain vehicles, must stay on public roads and use designated ice access points only. There are six designated points where vehicles may access the ice; ice access points are marked with brown signs.

Lake Ilo National Wildlife Refuge—Portions of Lake Ilo are open to fishing and boating in accordance with state and refuge regulations. The Service allows fishing and wildlife-oriented boating from May 1 through September 30. Signs, marker buoys, and the refuge map designate areas open to fishing and boating. Fishing from the shoreline is open year-round in areas open to public fishing on Lake Ilo. Ice fishing is open from October 1 through March 31. Boat motors are restricted to idle speed only. An accessible fishing pier is located in Lake Ilo Park, and a boat ramp and courtesy dock are available on the north shore. The Lake Ilo dam spillway, emergency spillway, and islands are closed to all public use.

Availability of Resources

Both refuges have adequate administrative and managerial staffs to maintain their fishing programs.

The refuges need annual funding for seasonal workforce salaries and for supplies to maintain fishing facilities (including mowing, painting, repair, litter pickup, restroom cleaning, and periodic pumping of vaulted toilets). In addition, funding is needed for a maintenance

worker's salary and equipment to maintain fishing areas and facilities.

Funding is needed for law enforcement staff salaries, fuel costs, repair and maintenance of patrol vehicles, and associated costs to support the law enforcement program. Routine law enforcement patrols occur year-round. Both refuges also receive assistance from local, state district wardens.

To carry out improvements or expand fishing opportunities, refuge staffs will describe the details in step-down management plans and address these activities through future funding requests.

Anticipated Impacts of Use

Fishing and other human activities cause disturbance to wildlife. Restriction of fishing to designated areas will minimize disturbance to migratory birds and other wildlife. In areas of relatively low use by migratory birds, such as large permanent lakes, fishing programs can provide recreation and have relatively little effect on the refuges' other objectives and programs. There will be no negative effects on cultural resources or threatened and endangered species.

Determination

Recreational fishing is a compatible wildlife-dependent recreational use at Audubon and Lake Ilo national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Require that fishing follow state and federal regulations.
- Confine fishing to designated areas.
- Monitor existing use to ensure that facilities are adequate and disturbance to wildlife continues to be minimal.

Justification

The Improvement Act identified fishing at national wildlife refuges as a wildlife-dependent recreational use. Based on the biological impacts anticipated above and in the EA, it is determined that recreational fishing at Audubon and Lake Ilo national wildlife refuges will not detract from the purposes for which these refuges were established or their habitat goals and objectives.

Mandatory 15-year Reevaluation Date: 2023

Description of Use:
Wildlife Observation and Photography

The Service will continue to provide opportunities that support wildlife-dependent recreation at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges. Auto tour routes, hiking trails, and wildlife observation pullouts facilitate wildlife observation and photography at these refuges. In addition, the CCP includes placement of portable blinds to improve the viewing access at areas with exceptional wildlife-viewing opportunities.

Availability of Resources

The Service will update existing program aspects, such as refuge signs and brochures, with available resources. Implementation of new facilities will be closely tied to funding requests through the Refuge Operation Needs System and Service Asset Maintenance Management System.

Anticipated Impacts of Use

Wildlife observation and photography can cause disturbance to wildlife; however, restricted access to designated areas will minimize the disturbance to migratory birds and other wildlife. In areas of low use by migratory birds, nonconsumptive recreation can have little effect on the refuges' other objectives and programs. There will be no negative effects on cultural resources or threatened and endangered species.

Determination

Wildlife observation and photography are compatible wildlife-dependent recreational uses at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Restrict vehicles to designated roads and trails.
- Monitor use, regulate access, and maintain necessary facilities to prevent habitat degradation and minimize wildlife disturbance.

Justification

Wildlife observation and photography are wildlife-dependent recreational uses listed in the Improvement Act. Through these uses, visitors will gain knowledge and an appreciation of fish and wildlife, which will lead to increased public stewardship of wildlife and their habitats. Increased public stewardship will support and complement the Service's actions in achieving the purposes of the refuges and the mission of the Refuge System.

Based on the biological impacts anticipated above and in the EA, it is determined that wildlife observation and photography at the ten refuges listed above will not detract from the purposes for which these refuges were established or their habitat goals and objectives.

Mandatory 15-year Reevaluation date: 2023

Description of Use:
Environmental Education and Interpretation

The Service will continue to provide opportunities for environmental education and interpretation at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake

Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges. Environmental education consists of activities conducted by refuge staffs, volunteers, and teachers. Interpretation occurs in less formal activities with refuge staffs and volunteers or through exhibits, educational trunks, signs, programs, and brochures. Currently, environmental education and interpretation activities are conducted at refuge offices and off-site locations where activities and programs are presented.

The CCP continues current uses as well as improves environmental education and interpretation for all visitors through the following improvements:

- Conduct visitor services events such as teacher workshops and waterfowl identification on a 3-year rotation among the refuges.
- Develop "friends of the refuge" groups.
- Improve and expand programs for youth and conservation groups on a 3-year rotation among the refuges.
- Conduct limited outreach to wildlife groups, conservation and community groups, and teachers and students.
- Annually conduct media outreach.
- Annually review brochures and publications; complete updates as needed.
- Construct a new administration and learning center for Audubon National Wildlife Refuge.
- Initiate and expand environmental education programs for Kellys Slough and Lake Alice national wildlife refuges.
- Restore public use facilities and construct new kiosks and interpretive panels at Lake Alice National Wildlife Refuge.

Availability of Resources

The Service will update existing program aspects, such as refuge signs and brochures, with available resources. Implementation of new facilities will be closely tied to funding requests through the Refuge Operation Needs System and Service Asset Maintenance Management System.

Anticipated Impacts of Use

Minimal disturbance to wildlife and habitat will result from these uses at the current and CCP levels. Some disturbance to wildlife will occur in areas frequented by visitors. There will be littering and minor damage to vegetation; increased maintenance will be necessary. Location and time limitations placed on environmental education and interpretation activities ensures that these activities have only minor impacts on wildlife and do not detract from the primary purposes of the refuges. There will be no negative effects on cultural resources or threatened and endangered species.

Determination

Environmental education and interpretation are compatible wildlife-dependent recreational uses at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Allow environmental education and interpretation only in designated areas or under the guidance of refuge personnel, volunteers, or trained teachers to ensure minimal disturbance to wildlife, minimal damage to vegetation, and minimal conflicts between groups.
- Annually review environmental education and interpretation programs to ensure related activities are compatible.

Justification

Environmental education and interpretation are wildlife-dependent recreational uses listed in the Improvement Act. Through environmental education and interpretation, visitors will gain knowledge and an appreciation of fish, wildlife, and their habitats, which will lead to increased public awareness and stewardship of natural resources. Increased appreciation for natural resources will support and complement the Service's actions in achieving the purposes of the refuge and the mission of the Refuge System.

Based on the biological impacts anticipated above and in the EA, it is determined that environmental education and interpretation the ten refuges listed above will not detract from the purposes for which these refuges were established or their habitat goals and objectives.

Mandatory 15-year Reevaluation date: 2023

Description of Use: Research

The Service will continue to provide opportunities for research at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

The refuges receive periodic requests to conduct scientific research. Some requests are specific to an individual refuge and others are part of landscape-level projects that require authorization from multiple refuges. In addition, the refuges often collaborate with other agencies and private partners to conduct field research and studies that advance the attainment of the refuges' goals and objectives.

Other than situations that involve emerging threats to human health and safety (which will be addressed in a separate disease contingency plan), priority will

be given to research proposals that support a refuge's purposes, goals, and objectives. This includes, for example, studies that contribute to the enhancement, protection, use, preservation, and management of native wildlife populations and their habitats; studies will include cultural resources. Research applicants will submit proposals that outline the following:

- objectives of the study
- justification for the study
- detailed methodology and schedule
- potential effects on refuge wildlife and habitat, including short- and long-term disturbance, injury, or mortality
- personnel required
- costs to the refuge, if any
- end products such as reports and publications

Refuge staffs, the regional office branch of refuge biology, and others will review research proposals as appropriate. Evaluation criteria include, but are not limited to, the following:

- Research that will contribute to priority management activities has higher priority than other requests.
- The Service may not grant research that will conflict with higher priority research, monitoring, or management.
- The Service will be less likely to approve research projects that can be done off-site.
- The Service will likely not grant research that causes undue disturbance or is intrusive; the Service will weigh the level and type of disturbance when evaluating a request.
- The Service will determine if any effort has been made to minimize disturbance through study design, including considering adjusting location, timing, scope, number of permittees, study methods, and number of study sites.
- The Service may deny a proposal when it is impossible for the refuge staff to monitor researcher activity.
- The Service will consider and agree with the length of the project before approval. Projects will not be open-ended, and the Service will do annual reviews (as a minimum).

As more and more health threats arise (for example, West Nile virus, CWD, and bird flu) research may be essential to prevent, or at least manage, disease outbreaks. Access to researchers and partners may be mandated in order to monitor and assess the prevalence, transmission, control, and specific characteristics of these and other potential threats to human health. In some cases, the refuge staffs may become involved in the research and monitoring. In other cases, other agency personnel may take the lead to develop and follow standard operating procedures, which will reduce the role of a refuge's staff. However, close coordination will assure that any operation minimizes the impact to trust resources and their habitats.

In general, the Dakota Working Group coordinates proposals that involve multiple refuges. The Service reviews and authorizes proposals with one of the following:

- Letter—if studies are simple, shorter than 1 year, and only require access.
- Special use permit—if studies are more complex, will take longer than 1 year, and have the potential to disturb, stress, or remove vegetation or individuals of a wildlife population.

Refuge staff will coordinate all operations essential to maintenance of human health and safety through an approved disease contingency plan. These threats are an exception to the normal process of authorization of research at refuges.

Availability of Resources

Direct costs to administer research activities are primarily in the form of staff time and transportation. Current staffs will likely be adequate to manage small and short-term research projects. The Service will only accept proposals if funding and personnel are available to adequately monitor all research activities.

Anticipated Impacts of Use

Minimal impact to wildlife and habitats is expected with research studies, because most researchers need to enter areas that are normally closed to the public and may collect samples or handle wildlife. A special use permit will include conditions to ensure that impact to wildlife and habitats are kept to a minimum. There will be no negative effects on cultural resources or threatened and endangered species.

Determination

Research is a compatible use at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Demonstrate that the research is necessary (critical to survival of a species, enhance restoration activities of native species, help in control of invasive species, or provide valuable information to guide future refuge activities) if proposed research methods will negatively affect refuge resources (habitat or wildlife). The researcher identifies the issues in advance of the effect.
- Do not permit highly intrusive or manipulative research in order to protect native wildlife populations and habitats in which they live.

- Conduct research that does not involve birds outside of the breeding season of bird species in all possible circumstances.
- Suspend or modify conditions or terminate on-refuge research that is permitted and in progress, should unacceptable impacts or issues arise or be noted.

Justification

Research projects will contribute to the enhancement, protection, use, preservation, and management of native wildlife populations and their habitats at the refuges. Because of the potential negative effects that research activities can have on the Service's ability to achieve the refuges' purposes, there will be sufficient restrictions on the researcher to ensure that disturbance is kept to a minimum.

Mandatory 15-year Reevaluation Date: 2023

Description of Use:
Prescribed Grazing

The Service will continue to use prescribed grazing at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Prescribed grazing is the use of livestock, usually cattle, to remove standing vegetation, reduce vegetative litter, suppress woody vegetation or invasive plants, open up vegetation-choked wetlands, and open up areas to sunlight and encourage native grass seeding and growth.

Prescribed grazing is carefully timed and usually of short duration (2–4 weeks) to target certain species for grazing impacts in order to benefit other species for growth after the competing vegetation has been removed. The frequency and duration of prescribed grazing at any refuge will be based on site-specific evaluations of the grassland under management. The prescribed grazing period generally will take place between April and September. Early spring grazing (mid-April through late May) targets cool-season invasive species and encourages warm-season native grasses and forbs. Midseason grazing (June and July), especially on nonnative grasslands, stimulates fall regrowth. Late-season grazing (August and September) removes litter and encourages spring growth of cool-season natives or other cool-season species.

Fence construction and maintenance (often, temporary electric fence) and control and rotation of the livestock are the responsibility of cooperating private party. The regional office determines the market rate grazing fees, but may include standard deductions for fence construction and maintenance, frequent livestock rotations, construction of water gaps, and hauling or providing additional water in dry pastures.

Availability of Resources

Developing grazing plans and special use permits and monitoring compliance and biological effects requires some Service resources. Most grazing management costs—fencing labor, monitoring and moving the livestock, and hauling water—are provided by the cooperator or permittee. Evaluation of the grasslands for grazing prescriptions and grassland response is part of each refuge's grassland management responsibilities.

The Service may use some alternative form of grassland management such as prescribed burning or haying where areas are not treated with prescribed grazing. Management of grasslands through permitted haying has comparable costs to management through a prescribed grazing program. Managed mowing is more expensive since the Service assumes all labor costs. Prescribed fire can be an effective grassland management tool, but there are personnel and weather limitations on a burning program, as well as the fact that some tracts are not suited to use of prescribed fire. In addition, there is an ecological benefit to rotation of grassland management techniques such as grazing, burning, and haying, at different seasons, rather than reliance on one technique.

Anticipated Impacts of the Use

Grazing by domestic livestock has the short-term effect of removing some or much of the standing vegetation from a tract of grassland. Properly prescribed, the effect of this vegetation removal increases the vigor of the grassland, stimulates growth of desired species of grass and forbs, and reduces the abundance of targeted species such as cool-season invasive plants, noxious weeds and other invasive plants, woody species, and cattails.

Grazing in the spring may cause the loss of some bird nests due to trampling, and may cause some birds not to nest in grazed areas. Prescribed grazing is usually of short duration with the result of enhanced, more diverse, and vigorous grassland habitats. Grazing livestock may create a minor and temporary disturbance to wildlife, but generally does no harm.

Grazing on public wildlife lands can create an aesthetic issue of concern for some people, including visitors, who do not understand grassland management. There is a slight potential for conflict between the visiting public and the livestock or the permittee, particularly during fall hunting seasons. These situations can be limited by having livestock removed by the anticipated beginning of fall hunting seasons.

To eliminate any appearance of favoritism or impropriety, managers follow "Refuge Manual" procedures for cooperator or permittee selection.

There will be no negative effects on cultural resources or threatened and endangered species.

Determination

The use of prescribed grazing is compatible at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Monitor vegetation and wildlife to assess the effects of the management tool.
- Require general and special conditions for each permit to ensure consistency with management objectives.
- Restrict the use of vehicles and motorized equipment to the minimum necessary to conduct operations to meet management objectives.

Justification

Upland and wetland habitat conditions will deteriorate without the use of a full range of management tools. Migratory bird habitat and ecological diversity will decrease as habitat suitability declined. Invasive plant species will increase and habitat diversity will decrease if grazing practices did not continue at the refuges. To maintain and enhance habitat for migratory birds and other wildlife, habitat manipulation such as grazing needs to occur. Grazing will provide a means to restore degraded grasslands for the benefit of grassland-dependent species.

Mandatory 10-year Reevaluation Date: 2018

Description of Use:
Prescribed Haying of Grasslands

The Service will continue to use prescribed haying of grasslands at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Haying is the cutting and removal, by baling and transport to an off-site location, of grass or other upland vegetation for the production of livestock forage. Haying for this purpose is typically done by a cooperating farmer acting under authority of a cooperative farming agreement or special use permit issued by the project leader or refuge manager. Prescribed haying in North Dakota averaged about 13,500 acres per year from 1996 to 2000.

Haying is an effective management tool as part of an overall grassland management plan to improve and maintain Service-managed grasslands for the benefit of migratory birds and other wildlife. Grasslands require periodic renovation to maintain vigor, diversity, and the structure necessary for migratory bird nesting. Haying can be an alternative to prescribed burning or grazing, which are the two other methods used to manage grassland habitats. If local conditions preclude the use of prescribed fire or livestock numbers are not available, removal of biomass through haying reduces unwanted overstory, including woody plants, and opens up the soil surface to sunlight. Such removal of vegetation allows for more vigorous regrowth of desirable species following the haying, although results are neither as dramatic nor positive as with fire or grazing.

Haying can be part of a strategy to seed native grass on newly acquired lands or on tame grass stands that need restoration. To reduce competition from invasive plants and minimize herbicide applications, the Service may use a cooperating farmer to apply the native grass seed mix and "interseed" with a cover crop. As a requirement of the special use permit, the Service will require the cooperator to cut, bale, and remove the cover crop before it matures and goes to seed. The resultant hay will be used for livestock feed. In addition, haying serves the biological purpose of releasing young native grass and forb seedlings for growth with minimal competition.

A third possible use of haying on Service-managed grasslands involves the initial steps of removing unwanted vegetation prior to seeding the tract to native grasses. Haying of a nonnative cool-season stand of grass is an effective step before spraying the field with herbicide to kill all existing vegetation. Removal of the heavy grass overstory by haying allows herbicide to more effectively reach and treat the remaining target plants. Better removal of unwanted grasses, in turn, will ensure better success of planted grasses and forbs whether they are "interseeded" into the sod or into the soil turned and leveled prior to seeding.

Haying is sometimes used prior to treatment of invasive plants: the tract is hayed and after a period, the flush of invasive plants is treated with an herbicide application. Removal of vegetation through haying allows the herbicide to more effectively reach and treat the target plants.

A more limited application of haying on Service-managed lands involves its use to establish firebreaks for prescribed burns. The Service will permit a cooperating farmer to hay firebreak strips in the fall. Those areas will then have little standing dead vegetation in early spring, or will green up earlier in the spring, and allow use as a firebreak.

Availability of Resources

Funding and staff resources are sufficient at each field station to administer prescribed haying. Staff time will be needed to evaluate the use, prepare site-specific special use permits, and ensure compliance with the permit authorization and stipulations necessary to ensure compatibility. To lessen any appearance of favoritism or impropriety, managers follow "Refuge Manual" procedures for establishing rental rates and cooperator selection.

Anticipated Impacts of the Use

Haying will result in short-term disturbances to wildlife and long-term benefits to grasslands and the wildlife species that use these grasslands. Short-term impacts include disturbance and displacement of wildlife typical of any noisy heavy-equipment operation. Cutting and removal of standing grass will result in the short-term loss (late summer to midsummer the following year) of habitat for those species requiring taller grass for feeding and perching. The Service will typically schedule prescribed haying after July 31 to avoid impacts to most nesting birds. Long-term benefits will accrue due to the increased vigor of regrown grasses or the establishment of highly desirable native grass and forb species, which will improve habitat conditions for the same species affected by the short-term removal of cover.

Long-term negative effects may occur to some resident wildlife species such as pheasant, which may lose overwinter habitat in hayed areas. Strict time constraints and limiting grass stands to no more than 50% being hayed at any one time will limit the anticipated effects on these species.

There will be no negative effects on cultural resources or threatened and endangered species.

Determination

The use of prescribed haying is compatible at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Schedule prescribed haying to occur after July 31 in any given year, unless there are documented management reasons for prescribing an earlier hay date.
- Issue the permit subject to the revocation and appeals procedure contained in Title 50, Part 25 of the *Code of Federal Regulations*.
- Allow haying on no more than 50% of a tract in any one year, unless size restrictions or habitat conditions warrant haying more than half of the area.
- Couple prescribed haying with a light disking or dragging operation or an "interseeding" of desirable species of grass or legumes to further increase the vigor of the grass stand.
- Require removal of bales or stacks by September 10.

Justification

Upland habitat conditions will deteriorate without the use of a full range of management tools. Migratory bird habitat and ecological diversity will decrease as habitat suitability declines. Invasive plant species will increase and habitat diversity will decrease if haying practices do not continue at the refuges. To maintain and enhance the habitat for migratory birds and other wildlife, habitat manipulation such as haying needs to occur. Haying will provide a means to restore degraded grasslands for the benefit of grassland-dependent species.

Mandatory 10-year Reevaluation Date: 2018

Description of Use:
Cooperative Farming

The Service will continue to use cooperative farming at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Cooperative farming is the term used for cropping activities done by a third party on lands that the Service owns in fee title or controls through a conservation easement. This activity is usually done on a short-term basis (3–4 years or less) to provide an optimal seedbed for establishment of native grasses and forbs or other desirable planted cover for wildlife. Cooperative farming on certain tracts can provide a fall food source for migratory waterfowl or a winter food source for resident wildlife. A farmer acts under authority of a cooperative farming agreement or special use permit issued by the project leader or refuge manager. Terms of the agreement ensure that the farmer follows all current Service and refuge restrictions. North Dakota refuges and waterfowl production areas permitted an average of 6,400 acres of cooperative farming during 1996–2000.

Cooperative farming activities are generally limited to areas of former cropland or poor quality stands of tame or cool-season invasive grasses. Service policies do not allow tilling or cropping of highly erodible soils without an approved NRCS conservation plan.

Generally, farmed areas (before reseeding to more desirable plant species) will not cover more than 50% of the tract. Areas at the refuges that are planted for food plots will be limited to the size needed to provide sufficient food for the targeted wildlife species.

Availability of Resources

Staff time is available for development and administration of cooperative farming agreements. Most of the needed fieldwork to prepare and plan for this use will be done as part of routine grassland management duties. The decision to use a cooperating farmer will be part of the overall strategy for managing lands within a refuge. The additional time needed to coordinate issuance of the special use permit or cooperative farming agreement and oversight of the permit or agreement is relatively minor and within the refuges' resources. In addition, the use of a cooperating farmer will free up Service employees who would otherwise have to conduct the farming operation.

In most cases, farmers conduct cooperative farming operations on Service lands on a share basis rather than for a fee. The Service typically receives its share as (1) harvested grain used for other management purposes such as standing grain left for wildlife food, (2) additional work such as control of invasive plants, cultivation, or additional seedbed preparation, or (3) supplies such as herbicide or grass seed to be used on the same tract of land. The Service deposits any fees or cash income related to the farming into the Refuge Revenue Sharing Account. The Service receives fair-market value consideration from cooperating farmers, but the generation of income is a secondary consideration when developing the terms and conditions of a special use permit or cooperative farming agreement. To lessen any appearance of favoritism or impropriety, managers follow "Refuge Manual" procedures for establishing rental rates and cooperator selection.

Anticipated Impacts of the Use

Cooperative farming to prepare suitable seedbeds for planting better cover and habitat will result in short-term disturbances and long-term benefits to both resident and migratory wildlife using the refuges. Short-term effects include disturbance and displacement of wildlife typical of any noisy heavy-equipment operation, and the loss of poor quality cover while the tract is farmed. Wildlife may use farmed areas as additional food sources during the farming period.

There will be long-term benefits due to the establishment of diverse or more desirable habitat for nesting, escape cover, perching, or noncrop feeding activities. The resulting habitat will generally improve conditions for most of the species negatively affected by the short period of farming activity.

There will be no negative effects on cultural resources or threatened and endangered species.

Determination

The use of cooperative farming is compatible at Audubon, Chase Lake, Lake Alice, Lake Ilo, Lake Nettie, Lake Zahl, McLean, Kellys Slough, Shell Lake, and Stewart Lake national wildlife refuges.

Stipulations Necessary to Ensure Compatibility

- Monitor vegetation and wildlife to assess the effects of the management tool.
- Require general and special conditions for each permit to ensure consistency with management objectives.
- Restrict the use of vehicles and motorized equipment to the minimum necessary to conduct operations to meet management objectives.
- Restrict farming permittees to use of approved chemicals that are less detrimental to wildlife and the environment.

Justification

Habitat conditions will deteriorate without the use of a full range of management tools. Migratory bird habitat and ecological diversity would decrease as habitat suitability declined. Invasive plant species would increase and habitat diversity would decrease if farming practices did not continue at the refuges. To maintain and enhance habitat for migratory birds and other wildlife, habitat manipulation such as farming needs to occur.

Mandatory 10-year Reevaluation Date: 2018

Signatures

9/30/08

Kim Hanson Date
Project Leader
Arrowwood National Wildlife Refuge Complex
(Chase Lake National Wildlife Refuge)

9/30/08

Lloyd Jones Date
Project Leader
Audubon National Wildlife Refuge Complex
(Audubon, Lake Ilo, Lake Nettie, McLean, and
Stewart Lake national wildlife refuges)

9/30/08

Roger Hollevoet Date
Project Leader
Devils Lake Wetland Management District Complex
(Kellys Slough and Lake Alice national wildlife refuges)

9/30/08

David Gillund Date
Project Leader
Lostwood Wetland Management District Complex
(Lake Zahl and Shell Lake national wildlife refuges)

Reviewed

9-30-08

Paul Cornes Date
Refuge Supervisor
Region 6, National Wildlife Refuge System

Approved

9/30/08

Richard A. Coleman, PhD Date
Assistant Regional Director
Region 6, National Wildlife Refuge System