

Summary

Final Environmental Impact Statement



Egrets. Copyright by Sandra Lines

Introduction

A Comprehensive Conservation Plan (CCP) is being prepared to guide the administration and management of the Upper Mississippi River National Wildlife and Fish Refuge (Refuge) for the next 15 years. The document integrates the components of a CCP, namely goals, objectives, and strategies; with the requirements of an Environmental Impact Statement (EIS), namely alternatives and consequences.

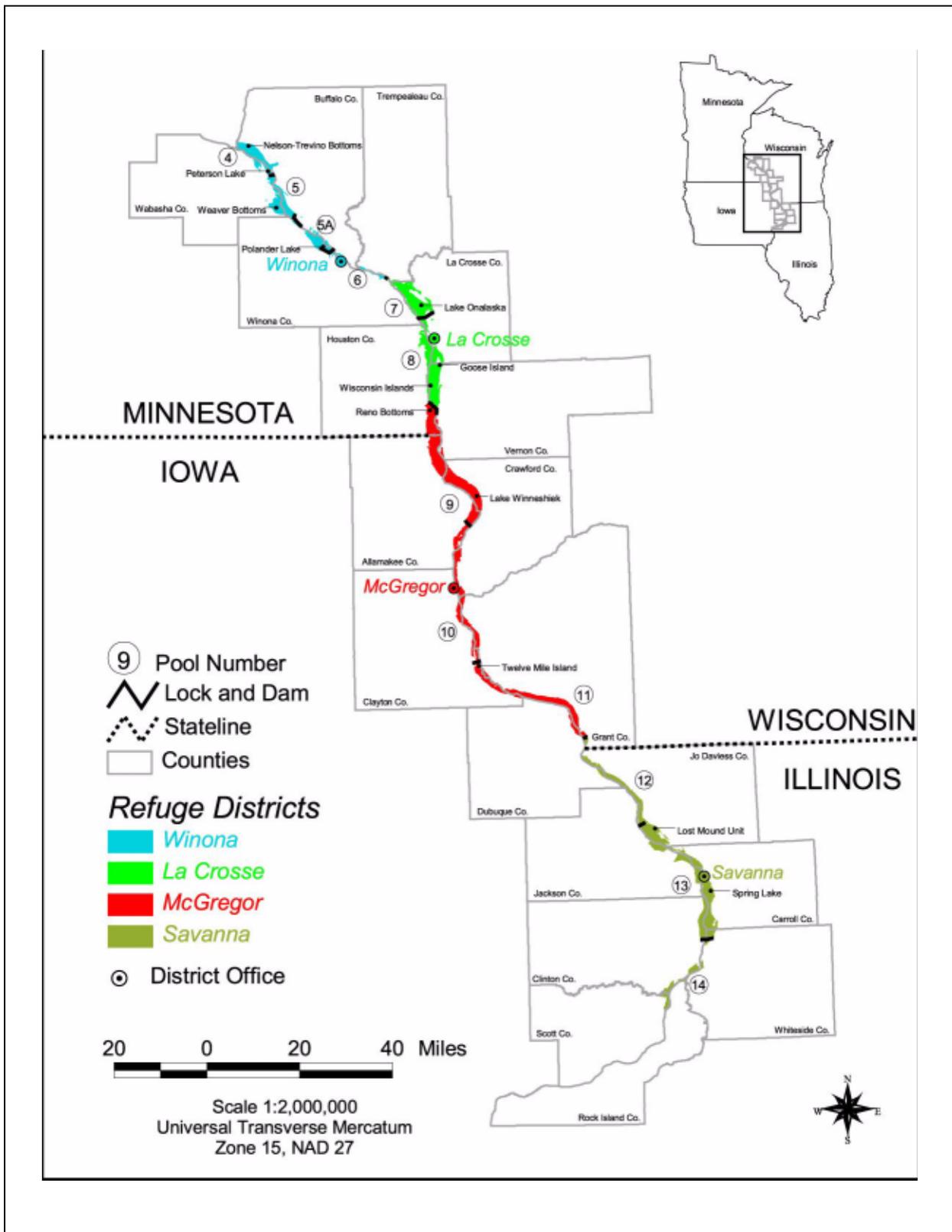
Comprehensive conservation plans are required by the National Wildlife Refuge System Improvement Act of 1997 to ensure that refuges are managed in accordance with their purposes and the mission of the

National Wildlife Refuge System, which is part of the U.S. Fish and Wildlife Service (Service). The Refuge System is the largest collection of lands and waters in the world set aside for the conservation of wildlife, with over 540 units covering more than 95 million acres in the U.S. and its territories.

The Refuge was established by act of Congress in 1924 for the purpose of providing a refuge and breeding ground for migratory birds, fish, other wildlife, and plants. The Refuge encompasses approximately 240,000 acres in four states in a more-or-less continuous stretch of 261 miles of Mississippi River floodplain from near Wabasha, Minnesota to near Rock Island, Illinois (Figure A). The seemingly endless panorama of river, backwaters, marshes, islands, and forest, framed by steep bluffs, makes the Refuge a national scenic treasure.

The Refuge is perhaps the most important corridor of fish and wildlife habitat in the central United States, an importance which has increased over time as habitat losses or degradation have occurred elsewhere. Fish and wildlife is varied and generally abundant with 306 bird, 119 fish, 51 mammal, and 42 mussel species recorded. Up to 40 percent of the continent's waterfowl use the Mississippi Flyway during migration, and up to 50 percent of the world's canvasback ducks and 20 percent of the eastern United States population of Tundra Swans stop on the Refuge during fall migration. There were 167 active Bald Eagle nests in 2005 and up to 2,700 eagles can be on the Refuge during spring migration. Approximately 5,000 heron and egret nests can be found in up to 15 colonies.

Figure A: Location of Upper Mississippi River Refuge



With an estimated 3.7 million annual visitors, the Refuge is the most heavily visited in the Refuge System. It has interface with 4 states, 70 communities, 2 Corps of Engineers districts, 11 locks and dams which help maintain water depths for commercial navigation, and is represented in Congress by 8 senators and 6 representatives.

The Refuge has its headquarters in Winona, Minnesota, and district offices with managers and staff in Winona; La Crosse, Wisconsin; McGregor, Iowa; and Savanna, Illinois. There are currently 37 full-time permanent employees and a base annual budget of \$3.1 million.



Participants in a scoping meeting identify priority issues.
USFWS

Public Involvement and Decision Process

Internal scoping of issues began in March 2002 followed by 10 public scoping meetings held in August and September of that year. Day-long public workshops on issues and potential solutions were held in four locations in January and March 2003, and there were three special public meetings on Waterfowl Hunting Closed Areas the same year. Four Interagency Planning Team meetings involving the Corps of Engineers, and Minnesota, Iowa, Wisconsin, and Illinois departments of natural resources were held in 2001 to 2004; follow-up meetings were

held with the St. Paul and Rock Island Districts, Corps of Engineers, and the Minnesota and Wisconsin departments of natural resources. Briefings with various commissions, associations, and Congressional offices occurred throughout the process, along with periodic news releases to 52 media outlets, and special CCP newsletters mailed to 2,600 citizens.

The Draft EIS/CCP was released May 1, 2005 for a 120-day comment period. During the comment period the Refuge hosted 21 public information meetings and workshops attended by 2,900 people. The workshops resulted in 87 workgroup reports with comments or recommendations on major issues. The Refuge also received 2,516 written comments, including 5 petitions with more than 3,000 signatures.

Due to high public interest, a new preferred alternative (Alternative E) was released as a Supplement to the Draft EIS/CCP on December 5, 2005 for a 60-day comment period that was extended to 90 days. The Refuge held nine public meetings during the comment period attended by 888 people. A total of 714 written comments were received during this comment period.

Meetings or conference calls with the Interagency Planning Team, individual states, Congressional members and staff, and organizations were held throughout both comment periods, and there were numerous news releases issued and media interviews.

Following a 30-day waiting period, a decision is made on which alternative in the Final CCP/EIS will be implemented. The public or agencies may provide additional information or comment during this time, although no public meetings will be held. The decision is documented in a formal Record of Decision, signed by the Regional Director, U.S. Fish and Wildlife Service, Twin Cities, Minnesota. The Record of Decision will be announced in the media and made available on the planning website or by request.

Refuge Vision and Goals

The Refuge Vision provides a simple statement of the desired, overall future condition of the Refuge. Goals provide the themes or framework for measurable objectives and strategies which are the heart of the CCP and the basic structure of the alternatives considered.

Refuge Vision:

The Upper Mississippi River National Wildlife and Fish Refuge is beautiful, healthy, and supports abundant and diverse native fish, wildlife, and plants for the enjoyment and thoughtful use of current and future generations.



Turtles basking in the sun. Copyright Sandra Lines

Refuge Goals:

Landscape

We will strive to maintain and improve the scenic qualities and wild character of the Upper Mississippi River Refuge.

Environmental Health

We will strive to improve the environmental health of the Refuge by working with others.

Wildlife and Habitat

Our habitat management will support diverse and abundant native fish, wildlife, and plants.

Wildlife-Dependent Recreation

We will manage programs and facilities to ensure abundant and sustainable hunting, fishing, wildlife observation, wildlife photography, interpretation, and environmental education opportunities for a broad cross-section of the public.

Other Recreational Use

We will provide opportunities for the public to use and enjoy the Refuge for traditional and appropriate non-wildlife-dependent recreation that is compatible with the purpose for which the Refuge was established and the mission of the Refuge System.

Administration and Operations

We will seek adequate funding, staffing, and facilities, and improve public awareness and support, to carry out the purposes, vision, goals, and objectives of the Refuge.

Planning Issues, Concerns and Opportunities

Scoping and public involvement helped identify numerous issues facing the Refuge and formed the basis for crafting the Final EIS/CCP. These issues are summarized below by related Refuge goal.

Landscape Issues

Refuge Boundary	Maintaining an accurate and clearly marked boundary is a critical basic need of resource protection.
Land Acquisition	Approximately 30,000 acres within the approved Refuge boundary has yet to be acquired. These lands and waters will fill habitat gaps between existing Refuge lands and benefit fish, wildlife, plants, and public use.
Bluffland Protection	The 1987 Master Plan identified 13 bluff areas with notable wildlife values, namely peregrine falcon nesting potential. None have been acquired, either fee or easement, to date.
Natural Areas and Special Designations	Management plans are needed for the four federally-designated Research Natural Areas within the Refuge, and the Refuge should be nominated as a “Wetland of International Importance.”

Environmental Health Issues

Water Quality	Water quality related concerns include sedimentation which is filling backwaters and nutrient loads from land use in the Refuge watershed.
Water Level Management	A substantial loss of islands and marsh habitat has occurred due to stable water management for navigation and erosive actions of wind and waves. Fish and wildlife use and productivity has declined.
Invasive Plants and Animals	Invasive species like reed canary grass, Eurasian milfoil, zebra mussel, and various Asian carp pose a threat to native species and their habitat.

Wildlife and Habitat Issues

Environmental Pool Plans	This 50-year habitat vision for each of the pools on the Refuge seeks to reverse the long-term trend of habitat loss or degradation. Implementing the plans presents a challenge from both a priority-setting and funding perspective.
Guiding Principles for Habitat Projects	Guiding principles for habitat projects on the Refuge are needed to ensure adherence to policy and to help conserve the natural and scenic qualities of the Refuge.
Monitoring Fish, Wildlife, and Plants	Monitoring is a requirement of the Refuge Improvement Act, but meeting this requirement on the Refuge has been hampered by funding and staffing levels.
Threatened and Endangered Species	Increased attention is needed on listed species due to their often precarious population status and the need for special management consideration and protection.

Furbearer Trapping	The Refuge needs to update the 1988 Trapping Plan to reflect recent national policy and regulation changes governing compatibility of uses and economic uses.
Fishery and Mussel Management	The Refuge needs to play a larger role in fishery and mussel management in keeping with its mandated purposes, and because of the high intrinsic, recreational, and commercial value of these resources.
Commercial Fishing, Clamming and Turtle Harvest	Refuge oversight of these uses needs to be brought in line with current policy and regulations through cooperative work with the states.
Turtle Management	New and emerging information on the importance of the Refuge to a variety of turtle species calls for increased monitoring and research on turtle ecology and effects of certain public use.
Forest Management	The 51,000 acres of floodplain forest on the Refuge is even aged, growing old, and in many cases, not regenerating itself. Proactive management is needed to safeguard this important resource.
Grassland Management	The 5,700 acres of grassland on the Refuge, some of which is rare tallgrass prairie, needs to be monitored and actively managed to ensure its continued diversity and health.

Wildlife-Dependent Recreation Issues

General Hunting	Hunting is an important priority public use on the Refuge and a vital part of the cultural, social, and economic fabric of adjacent communities. The Refuge Hunting Plan needs to be updated to reflect land acquisitions and new policies.
Waterfowl Hunting Closed Areas	Established in 1958, the current closed area system is no longer providing a desirable distribution of feeding and resting areas or an equitable distribution of hunting and wildlife observation opportunities due to habitat decline. With birds predominantly using only a few areas, there is a risk of serious impacts from an environmental accident or crash in aquatic food resources.
Waterfowl Hunting Regulations	Due to continued high hunter numbers on the Refuge, there is a need to review current waterfowl hunting regulations to ensure continued hunt quality and fairness, and to minimize crippling loss.
Firing Line, Pool 7, Lake Onalaska	Crowding, hunter behavior, and crippling loss need to be addressed in this highly popular hunting area to help maintain a quality and equitable hunting experience.
Permanent Blinds and Decoy Sets on Savanna District	The use of permanent blinds for waterfowl hunting has led to increased debris. Blinds, along with leaving decoys in place, also lead to confrontations between hunters, private use of public land, and reduced hunting opportunities for many hunters. There is also an issue of consistency since permanent blinds and leaving decoys out overnight are not allowed on the other three districts of the Refuge.

Potter's Marsh Managed Hunt	This hunt has entailed high administrative and management costs, problems with permanent blinds as noted above, and a drawing process that has evolved into private exclusive use for some parties. Changes are needed to maintain a quality and equitable hunting experience in this popular area.
Blanding Landing Managed Hunt	This hunt, inherited with the transfer to the Refuge of the former Savanna Army Depot, Savanna District, needs to be reviewed for consistency with other Refuge hunts and to address permanent blind issues noted above.
General Fishing	Fishing is an important priority public use on the Refuge with over one million angler visits yearly. Attention to quality habitat and support facilities (boat ramps, other accesses, and fishing docks) is needed to maintain and improve this sport.
Fishing Tournaments	Tournament fishing continues to grow and is posing conflicts with other anglers and small craft users on the Refuge, and can cause habitat damage and fish and wildlife disruption in shallow backwater areas. Oversight is needed to help coordinate timing and spacing of tournaments with the states.
Wildlife Observation and Photography	Public interest in these activities on the Refuge continues to grow, and there is a need for additional facilities that foster these priority public uses while limiting wildlife and habitat disturbance.
Interpretation and Environmental Education	Demand for these priority public uses of the Refuge needs to be addressed through facilities and staffing levels.
Commercial Fish Floats	These private fishing platforms below locks and dams provide an important fishing option for visitors. However, administration of this commercial use has been expensive due to permit compliance issues. Also, new standards need to be developed to ensure adequate and safe operations.
Guiding Services	Guiding businesses are increasing on the Refuge and oversight has been inconsistent. The potential for conflicts with the general public and among competing guides is growing. Some guides are operating without the proper Coast Guard licensing.

Other Recreational Use Issues

Beach Use and Maintenance	Beach-related uses on the Refuge such as camping, social gatherings, recreational boating, picnicking, and swimming account for over one million visits and these uses continue to increase. There are concerns with Refuge regulation violations, human health and safety, officer safety in crowds, disturbance to other visitors, and wildlife and habitat disturbance. New policies and regulations are needed to ensure these popular uses remain compatible with the purposes of the Refuge.
---------------------------	--

Disturbance in Backwater Areas	Technology in the form of jet skis, air boats, bass boats, and shallow water motors have introduced more users, more noise, and more disturbance into backwater areas of the Refuge. Citizens have expressed concern over the declining opportunities to experience the quiet and solitude of these unique Refuge areas, while managers are concerned about the effects of disturbance on sensitive wildlife species.
Slow, No-Wake Zones	On a few areas, boat traffic levels and size of boats is creating a safety hazard due to blind spots in boating routes, or causing erosion to island and shoreline habitat. Creating slow, no-wake zones on these areas needs to be explored.
Dog Use Policy	The current regulation is causing confusion with the public and enforcement challenges for officers. The result is visitors letting dogs run free, posing a threat to other visitors and disturbance to wildlife. A clear policy on the use of dogs and other domestic animals is needed to protect visitors and the resource while taking into account the public's interest in training and exercising their dogs.
General Public Use Regulations	The current public use regulations for the Refuge were updated in 1999. A general update is needed to reflect changing use levels and patterns and to provide clear guidance to visitors and enforcement officers.

Administration and Operations Issues

General	With approximately 240,000 acres over 261 miles and 3.7 million visitors, management and administration of the Refuge is a huge undertaking requiring staffing and funding for programs, facilities, and equipment. Current office and maintenance facilities are inadequate at most locations, both from an employee and public service standpoint. Public information efforts are inadequate to keep the public abreast of opportunities and issues. Public access to the Refuge needs to be increased where feasible to meet demand and distribute visitor opportunities.
---------	--

Summary of Alternatives Considered

Five reasonable alternatives were developed to address the variety of issues and opportunities facing the Refuge now and during the 15-year horizon of the CCP. These alternatives are summarized below in terms of the actions that would be undertaken under each alternative. Alternative E is the Service's preferred alternative.

Alternative A: No Action (Current Direction)

Continue current level of effort on fish and wildlife and habitat management. Public use programs would remain virtually unchanged.



Monarch butterfly amidst duckweed. Copyright by S Lines

Alternative A Summary

Boundary issues would be addressed as time and funding for surveying allow. There would be a continuation of acquisition of lands at a modest rate within the approved boundary, or about 200 acres per year. No special effort would be undertaken to safeguard blufflands and manage Research Natural Areas. Guiding principles for habitat projects would not be established.

Existing programs and effort would address sedimentation and other water quality issues. Pool-scale drawdowns would continue at current, intermittent level. Control of invasive plant species would be modest, and control of invasive animals would be minimal, relying on the work of the states and other agencies. Environmental Pool Plans would be implemented on a strategic and opportunistic basis using the Environmental Management Program. Wildlife inventory and monitoring would remain unchanged with continued

focus on waterfowl, colonial nesting birds, eagles, and aquatic invertebrate/vegetation sampling. Management of threatened and endangered species would focus on protection versus recovery. The furbearer trapping program would continue but be brought into compliance with policies by doing a new plan. There would continue to be limited emphasis on fishery and mussel management and commercial fishing oversight. Cooperation with the states and Corps of Engineers on turtle monitoring and research would continue, and a forest inventory on the Refuge would be completed in cooperation with the Corps of Engineers. Existing grassland habitat on the Refuge would be maintained and enhanced using fire and other tools.

Hunting and fishing opportunities would continue on a large percentage of the Refuge. The system of waterfowl hunting closed areas would remain the same except for minor boundary adjustments. Entry into closed areas for purposes other than hunting, trapping and camping would continue to be allowed, although the voluntary avoidance area on Lake Onalaska would remain in place. No action would be taken on the firing line issue north of the closed area in Lake Onalaska. No major changes would be made to current hunting regulations. Permanent blinds for waterfowl hunting and the Potter's Marsh and Blanding Landing managed hunts in the Savanna District would continue, although administrative changes would be made to promote fairness and efficiency. No action would be taken on regulating fishing tournaments.

There would be no increase in facilities or programming for wildlife observation, photography, interpretation and environmental education, with a focus on maintaining the status quo. There would be a modest increase in Refuge access through improvement of existing boat ramps, pull offs, and overlooks. Commercial fish floats or piers would be governed by current permit procedures and stipulations. Guiding on the refuge would continue with little oversight. Beach-related public use (camping, swimming, picnicking, social gatherings) would continue with little change and beach planning and maintenance would continue at low levels. One electric motor area would remain (Mertes Slough, Pool 6), and no new slow, no-wake zones established. Current regulations on the use of dogs would remain in place. There would be no substantive changes made to current public use regulations.

There would be no new offices or shops constructed for Headquarters or the Districts, with the exception of a new shop for the Winona and Savanna districts since they are already scheduled. Staffing levels for the Refuge would remain the same as current, as would public outreach and awareness efforts.

Alternative B: Wildlife Focus

Increase level of effort on fish and wildlife and habitat management. Some public use opportunities and programs would remain the same, others reduced in favor of wildlife and habitat protection.

Alternative B Summary

Boundary issues would be aggressively addressed and the entire Refuge boundary would be surveyed. The rate of land acquisition within the approved boundary would increase to complete 58 percent of the total, an average of 1,000 acres per year. All bluffland areas identified in the 1987 Master Plan would be protected by fee-title acquisition or easement, and there would be an increase in oversight and administration of Research Natural Areas.

Guiding principles for habitat projects would be established.



Egrets wading. Copyright by Sandra Lines

There would be an increase in efforts to achieve continuous improvement in the quality of water flowing through the Refuge, including decreasing sedimentation. Pool-scale drawdowns would be accomplished by working with the Corps of Engineers and the states. Control of invasive plant species would increase, and there would be increased emphasis on the control of invasive animals. Environmental Pool Plans would be implemented on a strategic and opportunistic basis using the Environmental Management Program or other programs and funding sources. Wildlife inventory and monitoring would increase and include more species groups beyond the current focus of waterfowl, colonial nesting birds, eagles, and aquatic invertebrates/vegetation. Management of threatened and endangered species would focus on helping recovery, not just protection. The furbearer trapping program would continue but be brought into compliance with policies by doing a new plan. The Refuge would become much more active in fishery and mussel management, and provide commercial fishing oversight. The knowledge of turtle ecology would be increased through research, and there would be continued cooperation with the states and Corps of Engineers on turtle conservation efforts. A forest inventory on the Refuge would be completed in cooperation with the Corps of Engineers, leading to completion of a forest management plan and more active forest management. The existing 5,700 acres of grassland habitat on the Refuge would be maintained and enhanced using fire and other tools.

Hunting and fishing opportunities would continue on a large percentage of the Refuge. The system of waterfowl hunting closed areas would increase substantially with 14 new areas. Entry into closed areas would be prohibited during the respective state duck season, although the voluntary avoidance area on Lake Onalaska would remain in place. The firing line issue north of the closed area in Lake Onalaska would be addressed by expanding the closed area northward. Current Refuge-wide hunting regulations would be changed to include a 25 shotshell limit during waterfowl season and to address open water hunting in portions of Pools 9 and 11. Permanent blinds for waterfowl hunting would be eliminated Refuge-wide, including those used in the Potter's Marsh and Blanding Landing managed hunts in the Savanna District. The Potter's Marsh managed hunt would continue with administrative changes to promote fairness and efficiency. The Blanding Landing managed hunt would be eliminated, but the area would remain open to hunting. General fishing would continue to be promoted, although the Refuge would begin oversight of fishing tournaments in cooperation with the states and other agencies.

There would be no increase in facilities or programming for wildlife observation, photography, interpretation and environmental education. There would be a modest increase in Refuge access through improvement of existing boat ramps, pull offs, and overlooks, and a boat launch fee would be

initiated at Refuge-operated boat ramps. Commercial fish floats or piers below locks and dams 6, 7, 8, and 9 would be eliminated to reduce administrative and oversight costs. Commercial guiding on the Refuge would be prohibited. Areas open to beach-related public use (camping, swimming, picnicking, social gatherings) would be reduced under a “closed-until-open” policy, and beach planning and maintenance would not be allowed on Refuge lands. A total of 10 electric motor areas and 9 new slow, no-wake zones would be established. Current regulations on use of dogs would be changed to require that dogs and other domestic animals be leashed at all times except when used for hunting. General public use regulations would be reviewed annually and changed as needed. Existing offices would be maintained, but new maintenance facilities or shops would be constructed at the Winona, McGregor, and Savanna districts, and eventually, at the Lost Mound Unit. Public information and awareness efforts would be decreased 50 percent to focus on wildlife-related work. Staffing levels for the Refuge would increase by 17.5 full-time equivalents with the priority being biologists, a forester, other specialists, and maintenance persons.

Alternative C: Public Use Focus

Increase level of effort on public use opportunities and programs. Continue current level of effort on many fish and wildlife and habitat management activities, and decrease effort on others in favor of public use.

Alternative C Summary

Boundary issues would be addressed and the entire Refuge boundary would be surveyed. The rate of land acquisition within the approved boundary would increase to complete 58 percent of the total, an average of 1,000 acres per year, with priority given to tracts that also further public use access and opportunities. All bluffland areas identified in the 1987 Master Plan would be protected through fee-title acquisition or easement, and low-key oversight and administration of Research Natural Areas would continue. Guiding principles for habitat projects would be established, but they would not restrict any public use opportunities.

There would be increased effort to achieve continuous improvement in the quality of water flowing through the Refuge, including decreasing sedimentation. Pool-scale drawdowns would continue at current, intermittent level. Control of invasive plant species would be modest, and control of invasive animals would be minimal, relying on the work of the states and other agencies. Environmental Pool Plans would be implemented on a strategic and opportunistic basis using the Environmental Management Program or other programs and funding sources. Wildlife inventory and monitoring would decrease by reducing the number of species groups surveyed. Management of threatened and endangered species would focus on protection versus recovery. The furbearer trapping program would continue but be brought into compliance with policies by doing a new plan. There would continue to be limited emphasis on fishery and mussel management and commercial fishing oversight. Cooperation with the states and Corps of Engineers on turtle monitoring and research would continue, and a forest inventory on the Refuge completed in cooperation with the Corps of Engineers. The existing 5,700 acres of grassland habitat on the Refuge would be maintained and enhanced using fire and other tools.

Hunting and fishing opportunities would continue on a large percentage of the Refuge. The system of waterfowl hunting closed areas would remain the same except for minor boundary adjustments. Entry into closed areas for purposes other than hunting, trapping and camping would continue to be allowed, and the voluntary avoidance area on Lake Onalaska would remain in place. The firing line issue north of the closed area in Lake Onalaska would be addressed by moving the north boundary southward. Current Refuge-wide waterfowl hunting regulations would be changed to include a hunting party spacing requirement of 100 yards. No action would be taken in regards to open water hunting in Pools 9 and 11. Permanent blinds for waterfowl hunting would be eliminated Refuge-wide, including those used in the Potter’s Marsh and Blanding Landing managed hunts in the Savanna District. The Potter’s Marsh managed hunt would continue, but administrative changes would be

made to promote fairness and efficiency. The Blanding Landing managed hunt would be eliminated, but the area would remain open to hunting. General fishing would continue to be promoted, although the Refuge would begin oversight of fishing tournaments in cooperation with the states and other agencies.

There would be a major increase in facilities or programming for wildlife observation, photography, interpretation and environmental education. There would be some increase in Refuge access through new facilities and improvement of existing boat ramps, pull offs, and overlooks. A boat launch fee would be initiated at Refuge-operated boat ramps. Commercial fish floats or piers below locks and dams 6, 7, 8, and 9 would be retained if standards met, and a new fish float proposed in the Savanna District. Commercial guiding on the Refuge would be allowed, but with consistent policy and permit procedures. Areas open to beach-related public use (camping, swimming, picnicking, social gatherings) would remain virtually unchanged, although regulations would be changed to safeguard users, a policy on beach maintenance would be implemented, and an annual Refuge Recreation Use Permit and fee would be initiated to improve recreation management. A total of 15 electric motor areas and 8 new slow, no-wake zones would be established. Current regulations on use of dogs would be changed to allow dogs to be exercised and trained under certain conditions. General public use regulations would be reviewed annually and changed as needed.



Fishing on the Refuge. Cindy Samples, USFWS

New offices and maintenance facilities would be constructed at the Winona, La Crosse, McGregor, and Savanna Districts (shop only at Savanna), and eventually the office and shop facilities at Lost Mound Unit would be remodeled or replaced. A major new visitor center would be constructed in either Winona or La Crosse. Public information and awareness efforts would be increased 50 percent. Staffing levels for the Refuge would increase by 17.5 full-time equivalents with the priority being public use related positions.

Alternative D: Wildlife and Integrated Public Use Focus

Increase level of effort on fish and wildlife and habitat management. Take a more proactive approach to public use management to ensure a diversity of opportunities for a broad spectrum of users, both for wildlife-dependent uses and traditional and appropriate non-wildlife-dependent uses.

Alternative D Summary

Boundary issues would be aggressively addressed and the entire Refuge boundary would be surveyed. The rate of land acquisition would increase within the approved boundary to complete 58 percent of the total, an average of 1,000 acres per year. There would be more effort to protect through easements or fee-title acquisition all bluffland areas identified in the 1987 Master Plan, and an increase in oversight and administration of Research Natural Areas. The Refuge would be nominated as a “Wetland of International Importance” (Ramsar). Guiding principles for habitat projects would be established and stress an integrated approach.

There would be an increase in effort to achieve continuous improvement in the quality of water flowing through the Refuge, including decreasing sedimentation. Pool-scale drawdowns would be accomplished by working with the Corps of Engineers and the states. The control of invasive plant species would increase, and there would be increased emphasis on the control of invasive animals.

Environmental Pool Plans would be implemented on a strategic and opportunistic basis using the Environmental Management Program or other programs and funding sources. Wildlife inventory and monitoring would increase and include more species groups beyond the current focus of waterfowl, colonial nesting birds, eagles, and aquatic invertebrates/vegetation. The management of threatened and endangered species would focus on helping recovery, not just protection. The furbearer trapping program would continue but be brought into compliance with policies by doing a new plan. The Refuge would become much more active in fishery and mussel management, and provide commercial fishing oversight. Knowledge of turtle ecology through research would increase, as would turtle conservation efforts in cooperation with the states and Corps of Engineers. A forest inventory on the Refuge would be completed in cooperation with the Corps of Engineers, and a forest management plan prepared, leading to more active forest management. The 5,700 acres of grassland habitat on the Refuge would be maintained and enhanced using fire and other tools.



Duck hunting on the Upper Mississippi River Refuge.
USFWS

There would be a continuation of hunting and fishing opportunities on a large percentage of the Refuge. The system of waterfowl hunting closed areas would change with some eliminated, some reduced in size, and several new areas added for a total of 21 closed areas. Motorized watercraft and entry into closed areas for fishing, along with hunting, trapping, and camping would be prohibited during the respective state duck season, although the voluntary avoidance area on Lake Onalaska would remain in place. The firing line issue north of the closed area in Lake Onalaska would be addressed by initiating the Gibbs Lake Managed Hunting Program involving a limit to the number of hunters through drawing, assigning

hunters to areas, and charging a fee. The current Refuge-wide hunting regulations would be changed to include a 25 shotshell limit during the waterfowl season and a 100-yard waterfowl hunting party spacing requirement, and a provision to address open water hunting in portions of Pools 9 and 11. Permanent blinds for waterfowl hunting would be eliminated Refuge-wide, including those used in the Potter's Marsh and Blanding Landing managed hunts in the Savanna District. The Potter's Marsh managed hunt would continue with administrative changes to promote fairness and efficiency. The Blanding Landing managed hunt would be eliminated, but the area would remain open to hunting. General fishing would continue to be promoted, although the Refuge would begin issuing permits for fishing tournaments in cooperation with the states and other agencies.

There would be an increase in facilities and programming for wildlife observation, photography, interpretation and environmental education. There would be a modest increase in Refuge access through new facilities and improvement of existing boat ramps, pull offs, and overlooks. A boat launch fee would be initiated on Refuge-operated boat ramps. New standards for the commercial fish floats or piers below locks and dams 6, 7, 8, and 9 would be developed and implemented, with a phase out of floats which do not meet the standards. A consistent process for issuing permits for commercial guiding on the Refuge would be implemented. Areas open to beach-related public use (camping, swimming, picnicking, social gatherings) would be reduced to some degree under an "open-unless-closed" policy, new regulations would be implemented, and a beach maintenance policy established. Initiating a Refuge Recreation Use Permit and fee would be explored to defray costs of managing beach-related uses. A total of 16 electric motor areas and 9 new slow, no-wake zones would be established. Current regulations on the use of dogs would be changed to allow dogs to be exercised and trained under certain conditions. General public use regulations would be reviewed annually and changed as needed.

New offices and maintenance shops would be constructed at the Winona, La Crosse, and McGregor Districts, and at the Lost Mound Unit. The office would be expanded at the Savanna District and a new shop constructed. Public information and awareness efforts would be increased 50 percent. Staffing levels for the Refuge would increase by 19.5 full-time equivalents with a balance among biological, maintenance, visitor services, technical, and administrative staff.

Alternative E: Modified Wildlife and Integrated Public Use Focus (Preferred Alternative)

Increase level of effort on fish and wildlife and habitat management. Take a proactive but balanced approach to public use management to ensure a diversity of opportunities for a broad spectrum of users, both for wildlife-dependent uses and traditional and appropriate non-wildlife-dependent uses.

Alternative E Summary

Boundary issues would be aggressively addressed and areas with greatest encroachment problems would be surveyed in cooperation with the Corps of Engineers. The rate of land acquisition would increase within the approved boundary to complete 58 percent of the total, an average of 1,000 acres per year. There would be more effort to protect through easements or fee-title acquisition all bluffland areas identified in the 1987 Master Plan, and an increase in oversight and administration of Research Natural Areas. The Refuge would be nominated as a Wetland of International Importance (Ramsar). Guiding principles for habitat projects would be established and would stress an integrated approach.

There would be an increase in effort to achieve continuous improvement in the quality of water flowing through the Refuge, including decreasing sedimentation. Pool-scale drawdowns would be accomplished by working with the Corps of Engineers and the states. The control of invasive plant species would increase, and there would be increased emphasis on the control of invasive animals. Environmental Pool Plans would be implemented on a strategic and opportunistic basis using the Environmental Management Program or other programs and funding sources. Wildlife inventory and monitoring would increase and include more species groups beyond the current focus of waterfowl, colonial nesting birds, eagles,



Mallard pair. Stan Bousson

sensitive marsh birds, frogs and toads, and aquatic invertebrates/vegetation. The management of threatened and endangered species, including state-listed species, would focus on helping population recovery, not just protection. The furbearer trapping program would continue but be brought into compliance with policies by writing a new plan. The Refuge would become much more active in fishery and mussel management, and provide more input to the states on commercial fishing. Knowledge of turtle ecology through research would increase, as would turtle conservation efforts in cooperation with the states and Corps of Engineers. A forest inventory on the Refuge would be completed in cooperation with the Corps of Engineers, and a forest management plan prepared, leading to more active forest management. The 5,700 acres of grassland habitat on the Refuge would be maintained and enhanced using fire and other tools, and the Refuge would look at increasing grassland areas where appropriate due to its importance to grassland birds and other species.

There would be a continuation of hunting and fishing opportunities on a large percentage of the Refuge. The system of waterfowl hunting closed areas would change with some eliminated, some reduced in size, and several new areas added for a total of 20 closed areas and three sanctuaries. The public would be asked to practice Voluntary Avoidance in all closed areas from October 15 to the end

of the respective state duck hunting season, and no motorized watercraft would be permitted in eight small closed areas during the same time period. The firing line issue north of the closed area in Lake Onalaska (Gibbs Lake area) would be addressed by completing a management plan in collaboration with waterfowl hunters and the State of Wisconsin. There would be no new shotshell possession limit or spacing requirement between parties for waterfowl hunters, and the 200-yard hunting party spacing for the Illinois side of the Refuge in Pools 12-14 would remain in place. There would be a provision for no open water waterfowl hunting in a portion of Pool 11, Grant County, Wisconsin, approximate river miles 586-592. In the Savanna District (Pools 12-14), permanent blinds for waterfowl hunting would be eliminated, including the Potter's Marsh and Blanding Landing areas, and leaving decoy sets out overnight will not be allowed. The Potter's Marsh managed hunt would continue with administrative changes to promote fairness and efficiency. The Blanding Landing managed hunt would be eliminated, but the area would remain open to hunting. General fishing would continue to be promoted, and the Refuge would provide some oversight on fishing tournaments in collaboration with the states and other agencies.

There would be an increase in facilities and programming for wildlife observation, photography, interpretation and environmental education. There would be a modest increase in Refuge access through new facilities and improvement of existing boat ramps, pull offs, and overlooks. There would be no launch fee on Refuge-operated boat ramps. New standards for the commercial fish floats or piers below locks and dams 6, 7, 8, and 9 would be developed and implemented, and any floats phased out for noncompliance may be replaced based on a review of new proposals. A consistent process for issuing permits for commercial guiding on the Refuge would be implemented in cooperation with the states. Areas open to beach-related public use (camping, swimming, picnicking, social gatherings) would remain the same, although some new or modified regulations would be adopted. A beach management and maintenance policy would be established and the Refuge would work with the Corps of Engineers, states and the public to complete beach management plans for each river pool. The Refuge would explore a user fee to help defray costs of managing beach-related uses, although none is planned at this time. Any new fee proposals would be developed in coordination with other agencies and the public. A total of five Electric Motor Areas (1,852 acres) and eight Slow, No Wake Areas (9,720 acres) would be established, along with 14 new slow, no-wake zones. Current regulations on the use of dogs would be changed to allow dogs to be exercised under certain conditions. General public use regulations would be reviewed annually and changed as needed, and the Refuge would complete a step-down Law Enforcement Plan in coordination with the states and Corps of Engineers.

New offices and maintenance shops would be constructed at the Winona, La Crosse, and McGregor districts, and at the Lost Mound Unit. The office would be expanded at the Savanna District and a new shop constructed. Public information and awareness efforts would be increased 50 percent. Staffing levels for the Refuge would increase by 23.5 full-time equivalents over a 15-year period with a balance among biological, maintenance, visitor services, law enforcement, technical, and administrative staff.

Summary of Environmental Consequences

Consequences Common to All Alternatives

Under all alternatives, there would be no disproportionate adverse effect on minority or low-income populations. Cultural and historical resource preservation would be addressed in accordance with current laws, regulations, and policies. Prescribed fire would be used under all alternatives to maintain health and vigor of grassland habitat. Any negative effects would be short-term in nature and mitigated by long-term habitat improvements and higher grassland species populations. Landowners adjacent to the Refuge would not see a significant effect on the use or value of their property since none of the alternatives radically change land management direction. The economic

activity of marinas, other water-related businesses, and commercial navigation would not be affected by any of the alternatives, although marinas and private campgrounds could see some inconvenience during periodic pool drawdowns proposed in all alternatives. Commercial tree harvest on the Refuge is expected to be modest, selective, and restrictive across all alternatives once a Forest Management Plan is completed. This harvest will have a minor and local positive economic impact, and a long-term forest health and wildlife impact. All alternatives continue furbearer trapping without change until a new Trapping Plan is completed. A separate environmental assessment will be done for this plan.

Consequences, Alternative A: No Action (Current Direction)

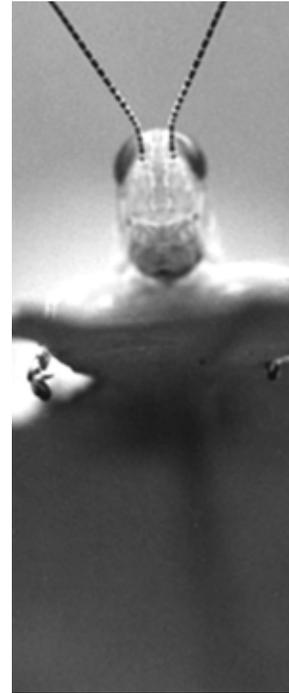
This alternative will cause little change in water quality, sedimentation rates, geomorphology of the floodplain, or river hydrology since current modest programs will continue. There will likely be a continued long-term decline in the scenic and wild qualities of the Refuge due to little land acquisition within the approved boundary and loss of lands to development.

Biologically, Alternative A would have a neutral impact on threatened and endangered species, reptiles and amphibians, mammals, wetlands, and upland habitat. Sport fish populations would likely increase due to specific habitat projects and pool drawdowns. Waterfowl, other migratory birds, other fish, and mussels would likely continue their long-term trend downward in terms of species diversity, use of the Refuge, or overall population. The floodplain forest would continue to decline in diversity and structure. Invasive species will likely continue to expand under this alternative, negatively impacting both species and habitat. Disturbance to wildlife and habitat disruption or loss is likely to increase under this alternative since no new restrictions will be placed on public uses of the Refuge.

Socioeconomic impacts under Alternative A will be mixed. All current uses will continue with an estimated \$89.9 million in economic output. Hunting, fishing, commercial fish floats, interpretation, environmental education, wildlife observation, and photography will continue, although opportunities for certain user groups will continue to be limited. Keeping current policies or regulations will be favored by many long-term visitors, while others may be disappointed that issues are not being addressed, with a resulting decline in the quality of the experience. Recreational boating, camping, and other beach-related uses will not be affected since no major time and space restrictions or regulations will be implemented. This is likely to be viewed positively by this user group and visits should continue to increase. Likewise, fishing tournaments and commercial guiding will not be subject to new Refuge oversight and sponsors/operators will benefit. However, the general public is likely to face continued frustration with disturbance from these activities. Staffing levels and facilities will continue to be inadequate and negatively impact wildlife and habitat monitoring, habitat improvements, interagency coordination, and personal contact, programs, and facilities for the public.

Consequences, Alternative B: Wildlife Focus

This alternative should result in improvements in water quality, sedimentation rates, floodplain geomorphology, and river hydrology due to increased effort on private lands in watersheds and an emphasis on habitat projects and pool drawdowns. There will likely be a long-term improvement in



Copyright by Sandra Lines

the scenic and wild qualities of the Refuge due to increased emphasis on finishing land acquisition within the approved boundary of the Refuge, management plans for Research Natural Areas, and increased effort on floodplain forest management.



Sandhill Cranes and chicks. Copyright by Sandra Lines

Biologically, Alternative B would have a positive impact on threatened and endangered species, reptiles and amphibians, mammals, wetlands, and upland habitat. Sport fish populations would likely increase due to specific habitat projects and pool drawdowns. Waterfowl, other migratory birds, other fish, and mussels would improve in terms of use of the Refuge or overall population. The floodplain forest should improve in terms of sustainability, diversity of species, and structure. Invasive plant species would likely stabilize or decline under more aggressive management. Invasive animals may increase, decrease, or stabilize depending on the outcome of interagency initiatives, biological or technological solutions, and funding.

Disturbance to wildlife and habitat disruption or loss is likely to decrease markedly under this alternative due to a more restrictive approach to managing public uses on the Refuge.

Socioeconomic impacts under Alternative B will be the greatest of all alternatives considered. Although most current uses will continue, many will be subject to new regulations and restrictions, resulting in an estimated loss of \$7.5 million, or 8 percent, in economic output due to decreased visitation. However, opportunities for hunting, fishing, wildlife observation, and photography will remain abundant, while interpretation and environmental education programs will likely decline. Time, space or other restrictions in some areas and for some uses will be viewed negatively by many long-term users, while others will welcome the diversity of opportunity provided. Commercial fish floats and guides will be severely impacted since these uses would be phased out. Camping and other beach-related recreational opportunities would decline as many areas would be closed to these uses to protect wildlife and habitat. Fishing tournaments would be subject to Refuge permitting requirements which could reduce the number of tournaments, improve the quality of tournaments, and reduce impacts to others using the Refuge for recreation. Staffing levels and facilities would be better suited to meet the demands for wildlife and habitat monitoring, habitat improvements, and interagency coordination, and eventually, improve personal contact and programs for the public.

Consequences, Alternative C: Public Use Focus

This alternative should result in improvements in water quality, sedimentation rates, floodplain geomorphology, and river hydrology due to increased effort on private lands in watersheds. There will likely be a long-term improvement in the scenic and wild qualities of the Refuge due to increased emphasis on finishing land acquisition within the approved boundary of the Refuge and management plans for Research Natural Areas. However, this effect will be negated by no increased emphasis in forest management or pool drawdowns, and an overall emphasis on recreation benefits of projects versus fish and wildlife benefits.

Biologically, impacts of this alternative are similar to Alternative A. However, disturbance to wildlife and habitat disruption or loss is likely to increase above levels in Alternative A due to a more liberal approach to regulations and policy.

Socioeconomic impacts under Alternative C will be mixed. All current uses will continue, and likely increase, resulting in an estimated gain of \$5.6 million, or 6 percent, in economic output. Opportunities for hunting and fishing will remain virtually unchanged, while opportunities for commercial fish floats, interpretation, environmental education, wildlife observation, and photography will increase through new facilities and programs. Changes in current policies or regulations (for example electric motor areas and elimination of permanent hunting blinds) will be opposed by many long-term area users, while others will welcome the increase in diversity of opportunity. Camping and other beach-related uses will not be measurably affected, although boaters will be restricted in electric motor areas. Commercial guides will be impacted since Refuge permits will be required which could limit the number of qualified guides. This may be viewed positively by the general public who views guides as competition for public hunting and fishing. Fishing tournaments would be subject to Refuge permitting requirements which could reduce the number of tournaments, improve the quality of tournaments, and reduce impacts to others using the Refuge for recreation. Staffing levels and facilities would be better suited to meet the demands for public information and programs, but at some expense to wildlife and habitat monitoring, habitat improvements, and interagency coordination.



Cindy Samples, USFWS

Consequences, Alternative D: Wildlife and Integrated Public Use Focus

Physical environment impacts of Alternative D would be similar to Alternative B. However, there would be more improvement in conserving the scenic and wild values of the Refuge through the implementation of guiding principles for habitat projects which include a principle for considering aesthetics in project design.

This alternative would have similar positive impacts to fish, wildlife, and habitat as in Alternative B. Disturbance to wildlife and habitat disruption or loss is also likely to decrease under this alternative due to a more balanced approach to fish and wildlife conservation and public use.

Socioeconomic impacts under Alternative D will also be mixed. All current uses will continue, and likely show modest increases, resulting in an estimated gain of \$3.5 million, or 4 percent, in economic output. Opportunities for hunting and fishing will remain abundant, but methods or seasonal restrictions in some areas will change long-standing expectations and practices. Opportunities for commercial fish floats will remain the same depending on operator compliance with new guidelines, while interpretation, environmental education, wildlife observation, and photography will increase through new facilities and programs. Change in current policies or regulations (for example electric motor areas and elimination of permanent hunting blinds) will be opposed by many long-term area users, while others will welcome the increase in diversity of opportunity. Camping and other beach-related uses will continue, but restricted on certain areas important for wildlife. Impacts to recreational boating, commercial guiding, and fishing tournaments will be similar to impacts in Alternative C. Staffing levels and facilities would be better suited to meet the needs of an overall program balanced between fish and wildlife monitoring, habitat management, and public use.

Consequences, Alternative E: Modified Wildlife and Integrated Public Use Focus (Preferred Alternative)

Physical environment impacts of Alternative E would be similar to Alternatives B and D.



Cindy Samples, USFWS

The overall effects of Alternative E on threatened and endangered species, waterfowl production and use-days, other migratory birds, sport fish, other fish, mussels, reptiles and amphibians, invertebrates, mammals, aquatic vegetation, floodplain forest, and terrestrial habitat/grasslands is positive and virtually the same as Alternative D. Waterfowl may experience some increase in disturbance in Waterfowl Hunting Closed Areas due to a change to voluntary avoidance and/or no motors entry restrictions versus closed to fishing as proposed in Alternative D. However, establishing a threshold of disturbance in Alternative E and taking more restrictive action as needed should minimize any increase in disturbance long-term. The Alternative E objective dealing with threatened and endangered species expands monitoring and management consideration to state-listed species which could have a positive impact on the conservation of additional rare or declining fish and wildlife species compared to Alternative D. Grasslands could increase under Alternative E, which would increase the benefits compared to Alternatives B and D.

Socioeconomic impacts under Alternative E would also be mixed. All current uses will continue, and likely show modest increases, resulting in an estimated gain of \$3.5 million, or 4 percent, in economic output. The overall effects of Alternative E on hunting, fishing, fishing tournaments, commercial fishing, fishing floats, interpretation and environmental education, wildlife observation and photography, recreational boating, camping and other beach-related uses; commercial guiding and tours; refuge access; control of dogs; property taxes; and refuge administration and operations should be similar to Alternative D or slightly more positive in impact for some of the parameters. However, changes in current policies or regulations (for example changes to Waterfowl Hunting Closed Areas, Electric Motor Areas, Slow, No Wake Areas, and elimination of permanent blinds) will be opposed by many long-term area users, while many others will welcome the increase in diversity of options and opportunities.

In Alternative E, changes in Waterfowl Hunting Closed Area entry regulations and a marked reduction in Electric Motor Areas will eliminate most impacts to commercial fishing compared to Alternative D. Commercial fish float operations may still be impacted by new guidelines, but the planned replacement of any floats lost should negate any economic or public recreation impacts. Alternative E proposes four additional law enforcement officers in the staffing proposal compared to Alternative D, and this staff increase would have a corresponding minor positive impact on economic output due to salary and operations expenditures. Alternative E identifies a need for annual maintenance of existing and proposed habitat projects, and if funded, these expenditures would have a minor positive economic impact.

Cumulative Impacts

Cumulative impacts to the physical and biological environment should be positive in the action Alternatives B, C, D, and E compared to Alternative A, no action. The action alternatives increase land acquisition and improve water quality which can help to improve hypoxia in the Gulf of Mexico. Sediment reduction and habitat restoration projects will help reverse a trend to a more-or-less static geomorphology, with a resulting increase in habitat diversity and thus species diversity. Actions to maintain the integrity of the Refuge boundary and conserve the scenic beauty of the area may influence land use decisions adjacent to the Refuge. Biologically, Alternatives B, D, and E will positively affect a host of fish and wildlife species due to increased habitat restoration, increase in habitat quality, and more effective management through increased monitoring and research. This should help to stabilize or increase overall populations, especially those species which depend on the Refuge for part or all of their annual life cycle.



Cindy Samples, USFWS

A variety of objectives in Alternatives B through E will have varying degrees of impact on recreational use of the Refuge. The alternatives and objectives will have cumulative impacts given that demand for nearly all recreation is expected to grow while the amount of Refuge space and natural resources is relatively finite. Alternatives D and E attempt to strike that reasonable balance between uncontrolled public use and reasonable restrictions that also safeguard fish and wildlife resources. If successful, the integrated approach in these alternatives may prove more sustainable and have positive, long-term social and economic impacts on the Refuge and beyond.

Irretrievable and Irreversible Commitment of Resources

All alternatives identify various levels of investment in habitat, land acquisition, facilities, and staffing. About 78 percent of this investment, which is estimated at \$227.8 million in Alternative E over the 15-year life of the CCP, is targeted to habitat restoration and land acquisition, which are generally considered irretrievable and irreversible costs. Funding for public use facilities, offices and visitor contact areas, and general operations and maintenance (including staff) accounts for about 20 percent of the total investment and is generally considered reversible to varying degrees.

Short-term Uses and Long-term Productivity

Habitat protection and restoration actions across all alternatives entail short-term negative impacts to ensure long-term productivity of the Refuge. Impacts are generally site-specific and relatively short duration, and offset by increases in productivity of fish and wildlife on a larger scale, both on and off the Refuge. Changes in public use management across Alternative B through E will cause short-term disruption in current means, locations, and timing of various recreational uses. However, in the long-term, especially in the balanced approach in Alternatives D and E, these changes may help sustain the greatest diversity of opportunity for the greatest number of people.

Unavoidable Adverse Impacts

Unavoidable impacts vary between alternatives, but include short-term disturbance during habitat and facility construction, changes in habitat types from management practices, and loss of local tax revenue from land acquisition. All alternatives will also have adverse impacts to a certain segment of the public opposed to changes in public use regulations and areas. All of the action alternatives include strategies that seek to minimize or mitigate adverse environmental and socioeconomic impacts, and this is especially true in Alternative E which was developed after substantial public input.