



U.S. Fish & Wildlife Service

Swan Lake *National Wildlife Refuge*

Summary Draft Comprehensive Conservation Plan

June 2010

Comments Sought on Swan Lake NWR's Draft Comprehensive Conservation Plan

The U.S. Fish and Wildlife Service (Service) is proposing changes in management direction for Swan Lake National Wildlife Refuge (NWR). The Service has just completed a Draft Comprehensive Conservation Plan (CCP) that describes the goals, objectives and strategies established to guide the Refuge for the next 15 years.

The Draft CCP is an opportunity for everyone who cares about Swan Lake NWR and its future to review the proposed management direction and comment on it.

The intent of the changes proposed in the Draft CCP is to improve wildlife habitat, ensure that Refuge management is consistent with the

mission of the National Wildlife Refuge System, and ensure that management is consistent with the mission of the Fish and Wildlife Service.

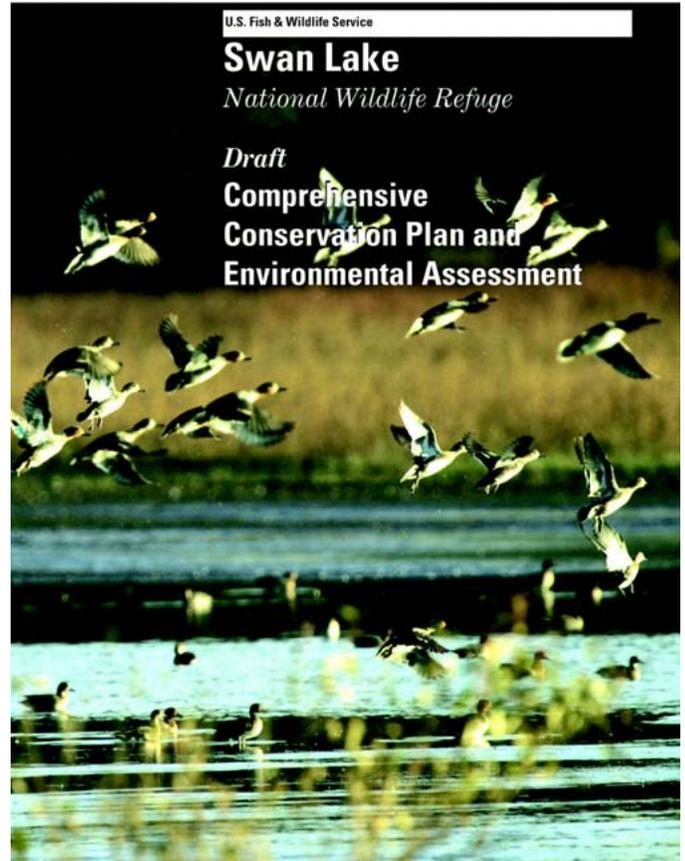
Some elements of the Draft plan are a departure from past management practices, according to Area Refuge Supervisor Matt Sprenger.

“We hope that people will take the time to read the Draft CCP Summary or the Draft CCP itself to understand the changes that are proposed,” Sprenger said. “These changes are being proposed to improve wildlife habitat and visitor services at the Refuge.”

This summary describes the proposed Refuge management, describes the management alternatives considered in planning, and describes how people can submit comments on the Draft CCP. The Draft CCP is available at Refuge Headquarters and in area libraries.

See the CCP

You can view the full CCP on-line at: <http://www.fws.gov/midwest/planning/SwanLake>



Paper copies of the CCP are available at several libraries, including:

- Brookfield Public Library
- Carnegie Library
- Carrollton Library
- Hale Library and Museum
- Livingston Public Library

Copies of the plan are also available at the Refuge. You can request a copy in a variety of ways:

E-mail the Refuge at: SwanLake@fws.gov

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Waterfowl using Swan Lake NWR wetlands in fall migration. Photo credit: FWS

Call the Refuge at: 660/856-3323

Mail a request to:

Swan Lake NWR
Attention: CCP Request
16194 Swan Lake Avenue
Sumner, MO 64681

What the CCP Calls For

The Draft CCP establishes three goals and 22 objectives for meeting those goals. Some of the objectives proposed are departures from current management, specifically proposals to change water management on the Refuge and decrease the use of agriculture as a management tool.

This summary of the Draft CCP gives an overview of significant management changes. Please see the Draft CCP for more information on these changes and for a description of all of the objectives and strategies being proposed.

Objective 1.1: Streams and Water Bodies

This objective calls for varying water levels within the Swan Lake and Silver Lake basins.

Silver Lake serves as a reservoir that supplies water for management of wetland units across the Refuge. The lake also provides fishing opportunities. We're proposing to stop impounding Silver Lake and for much of each year allow the water levels to rise and fall along with incoming stream flow. The

basin would typically be partially or totally flooded in the fall to accommodate migratory birds.

There are a few reasons for pursuing this objective. First, impounding water year-round, as has long occurred in Silver Lake, has contributed to a decrease of aquatic vegetation. Second, Silver Lake is gradually silting in; the average volume has decreased by about 25 percent from 1983 to the present. Sediment carried from the 64,000-acre watershed by Turkey Creek and Elk Creek accumulated in Silver Lake, decreasing the depth and water holding capacity and reducing water clarity. As this trend continues it will decrease the amount of source water available for wetland management across the Refuge.

Lastly, periodic drawdowns will reduce common carp populations within the basin. Common carp are known to increase turbidity and reduce aquatic vegetation within wetland habitats. Reduced carp populations should improve water clarity and increase aquatic plant growth, which should benefit a variety of migratory birds.

Objective 1.6: Cropland

This objective calls for converting the 1,400 acres of Refuge cropland to native habitats.

Service policy is, again, one of the factors influencing the Draft CCP. Service policy calls for maintaining or

restoring Refuge habitats to historic conditions if doing so does not conflict with Refuge purposes.

Swan Lake NWR was established as a Refuge and breeding ground for migratory birds, for use as sanctuary, and carrying out the national migratory bird management program. None of these purposes conflict with eliminating cropland.

Some people maintain that crops benefit migratory waterfowl by providing a dependable food source. The National Wildlife Refuge System, which once relied heavily on agriculture to feed wildlife, has in the past 20 years turned toward native habitat as the best food source for wildlife. Cropland isn't native, it requires intensive management, and its value to wildlife is limited to a very small portion of the year. Because the Refuge is surrounded by agriculture, we believe that the approximately 1,400 acres now in crops on the Refuge can be better used as natural habitat.

Canada Geese

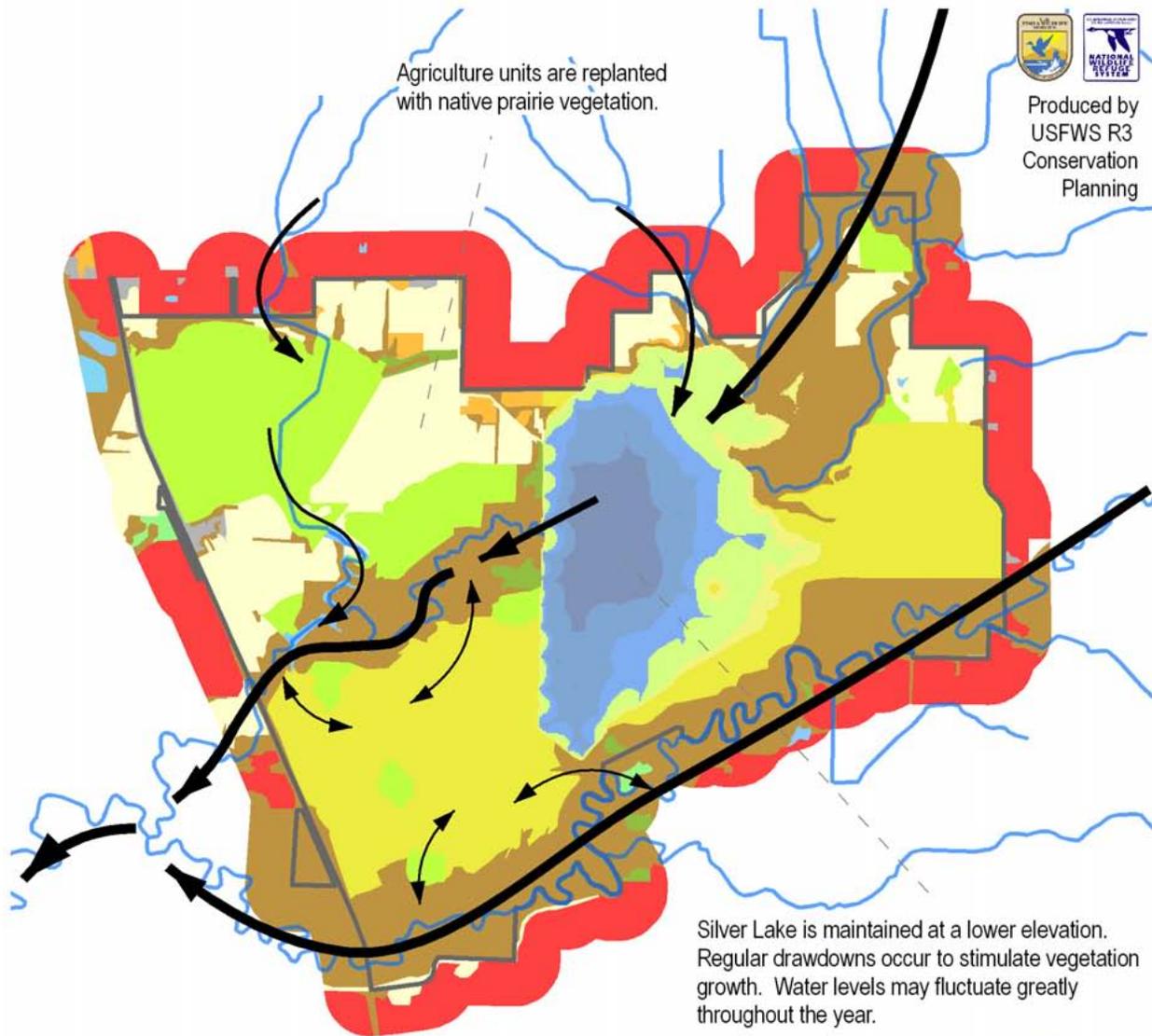
For many years the Refuge's impoundments drew huge flocks of migrating Canada Geese to the area. The geese became part of the town of Sumner's identity and played a role in the local economy.

For a variety of reasons, Canada Goose migration patterns have shifted and the number of geese stopping at Swan Lake NWR has declined. When the Refuge began this process and we sought public comments on the issues that should be addressed in the CCP, and attracting Canada Geese was one of the issues identified.

The suggestions for boosting goose use of the Refuge ranged from increasing cropland to retaining some geese by clipping their wings.

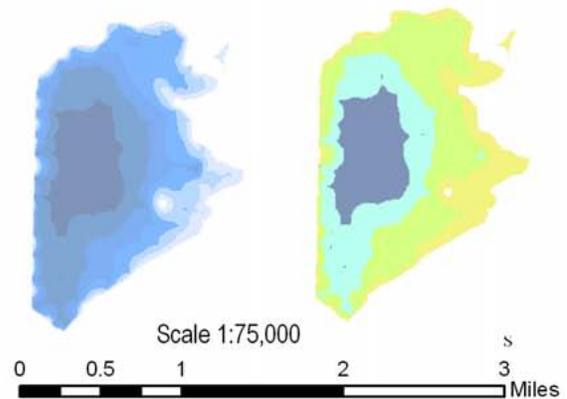
The Draft CCP does not include an objective focused on Canada Geese. As discussed previously, using Refuge land for agriculture is not consistent with the direction set by the Fish and Wildlife

Proposed Habitat Management



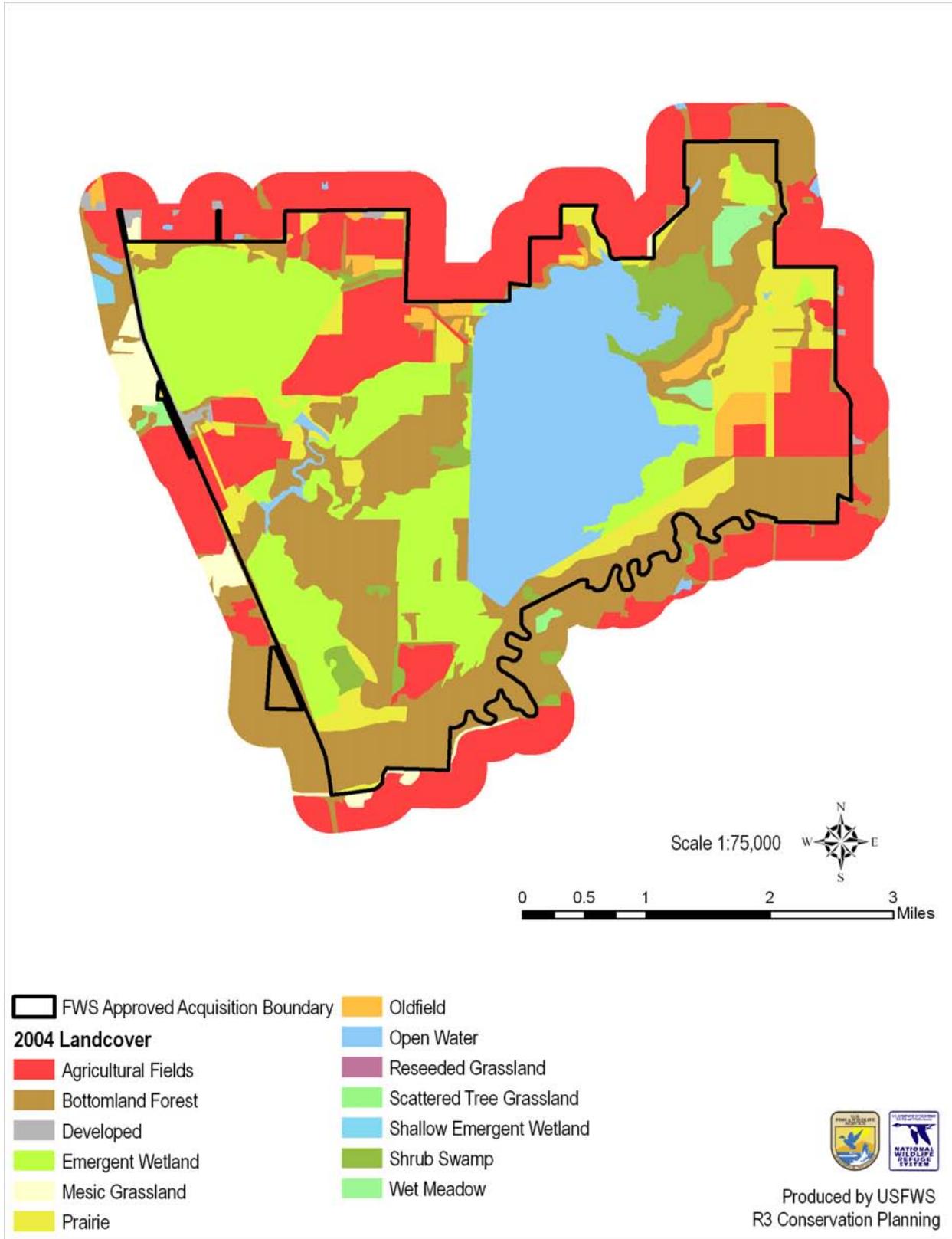
 Normal Streamflow
 Seasonal Flooding & Retreat

- | | |
|---|--|
|  Potential Streamflow |  Oldfield |
|  FWS Approved Acquisition Boundary |  Open Water |
| Potential Landcover | |
|  Agricultural Fields |  Reseeded Grassland |
|  Bottomland Forest |  Scattered Tree Grassland |
|  Developed |  Shallow Emergent Wetland |
|  Emergent Wetland |  Shrub Swamp |
|  Native Upland Prairie |  Wet Meadow |



Landcover based on NRCS SSURGO soils data and associated potential natural vegetation.

Current Habitat Management





White-tailed deer, Swan Lake NWR. Photo credit: FWS

Service and the Refuge System. Retaining birds by clipping their wings is not a technique that the Service supports.

Even though there are fewer of them on Swan Lake NWR, Canada Geese are abundant throughout their range. This success allows Refuge management to focus on other species that are declining in number or that lack sufficient habitat.

Objective 2.3: Eastern Massasauga Rattlesnake

The eastern massasauga rattlesnake is in decline range-wide and is a candidate for listing under the Endangered Species Act. Swan Lake NWR has one of three remaining populations in Missouri, and surveys suggest that its long-term viability is in question.

The Draft CCP calls for the Refuge to work with the state of Missouri and the Service's Ecological Services program to determine the best role for Swan Lake NWR in eastern massasauga rattlesnake management. The plan calls for managing grasslands

in a way that supports the snake and increasing the amount of contiguous habitat on the Refuge for eastern massasauga rattlesnakes.

Visitor Services

In terms of how people use the Refuge, the Draft CCP calls for enhancing the priority public uses of the Refuge.

We are proposing to initiate the process required to expand Refuge hunting opportunities to include duck hunting and small game hunting. Many hunters, especially those with lands near the Refuge, are concerned that allowing duck hunting on the Refuge may cause ducks to leave the area for places with fewer disturbances. Opening any type of new hunting opportunity on a national wildlife refuge requires a separate, formal process that includes public involvement and environmental analysis. The Draft CCP calls for beginning this process, which would include developing a more detailed proposal.

Within 10 years of approval of the CCP the Refuge proposes to have staffed interpretive facilities during normal working hours on a year-round basis, and seasonally have staff available weekends and holidays. Within 5 years of Plan approval, the Refuge proposes to develop an environmental education site that includes an outdoor classroom. Over the 15-year life of the Plan, the Refuge proposes to develop the Friends group and provide volunteer opportunities totaling at least 1,000 hours annually.

With the change in management of Silver Lake, opportunities to fish on the Refuge will fluctuate. The Draft CCP calls for continuing to provide access for the fishing opportunities that exist, but these opportunities are likely to be sporadic.

Why a CCP?

Planning for national wildlife refuges has always occurred, but the planning process and products were not consistent throughout the Refuge System. This changed in 1997, when the National Wildlife Refuge System Improvement Act established the planning process refuges would use and specified the elements required in a CCP. The Improvement Act and Service policy now require the Refuge System to manage national wildlife refuges based on a CCP.

Since the Improvement Act was enacted, the U.S. Fish and Wildlife Service has been working to complete a CCP for every refuge in the Refuge System. The plans outline how a refuge will fulfill its legal purpose and contribute to the Refuge System's wildlife, habitat and public use goals. Comprehensive conservation plans articulate management goals for a 15-year period and specify the objectives and strategies needed to accomplish these goals. Comprehensive Conservation Plans give a refuge's neighbors, the local community, Friends groups, outdoor recreation enthusiasts

and others a clear picture of how a refuge will be managed and the reasoning behind that management direction.

Many factors, such as funding and natural events like flooding or drought, will influence the Service's ability to fully implement the Swan Lake NWR CCP. Comprehensive conservation plans outline management direction, but they do not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisition.

Vital Statistics

Located in Chariton County near the town of Sumner, Swan Lake NWR bounds more than 11,000 acres of bottomland forest, grasslands, and wetlands within the Grand River floodplain of north central Missouri. Franklin D. Roosevelt established the Refuge in 1937 through Executive Order.

In 1938, toward the end of the long drought of the Dust Bowl era, Company 1727 of the Civilian Conservation Corps (CCC) began work on levees to impound the waters flowing into the Refuge from Elk Creek, Turkey Creek, and Tough Branch. The CCC completed

its work in 1942 and left behind several thousand acres of freshwater marsh and open water within Silver Lake and Swan Lake, the Refuge namesake. This change to the landscape caught the attention of migrating waterbirds, especially Canada Geese, which shifted their wintering grounds north to the Refuge with a steady annual increase that peaked at more than 180,000 birds in 1977. Fewer geese winter on the Refuge today, but its mixture of habitats are home to a diverse wildlife community that attracts hunters, anglers, and wildlife watchers.

The Refuge is divided into five major habitat types: 3,100 acres of bottomland hardwoods; 3,050 acres of wetlands and moist soil units; 1,365 acres of croplands; 2,100 acres of open water; and 1,250 acres of grasslands.

Refuge Vision and Goals

Refuge Vision

The Refuge vision is a concise, descriptive statement of what the planning unit should be, or what we hope to do, based primarily upon the mission of the Refuge System and

specific Refuge purposes, and other mandates. We established the following vision statement for Swan Lake NWR:

Diverse and abundant wildlife flourishes within a mosaic of grass, trees, and wetlands recalling an earlier era when the Grand River meandered across its broad, open floodplain. Visitors enjoy recreation dependent on wildlife and show their appreciation by supporting conservation and Swan Lake NWR.

Refuge Management Goals

■ Habitat

Wetlands, grasslands, and bottomland forests providing habitat for migratory birds, threatened and endangered species, and other wildlife within the Grand River floodplain.

■ Wildlife

Diverse wildlife teeming within native habitats of the Grand River floodplain.

■ People

Visitors enjoy wildlife-dependent recreation and understand the natural and cultural resources of the Refuge and its role in their conservation.

Who We Are and What We Do

The Refuge is administered by the U.S. Fish and Wildlife Service, the primary federal agency responsible for conserving, protecting, and enhancing the nation's fish and wildlife populations and their habitats. The Service oversees the enforcement of federal wildlife laws, management and protection of migratory bird populations, restoration of nationally significant fisheries, administration of the Endangered Species Act, and the restoration of wildlife habitat such as wetlands. The Service also manages the National Wildlife Refuge System, which was founded in 1903



Swan Lake National Wildlife Refuge. Photo credit: FWS



Mallard Duck, Swan Lake NWR. Photo credit: FWS

when President Theodore Roosevelt designated Pelican Island in Florida as a sanctuary for Brown Pelicans.

Today, the Refuge System is a network of 550 national wildlife refuges and other Refuge System units covering more than 150 million acres of public lands and waters. Most of these lands are in Alaska, with approximately 16 million acres located in the lower 48 states and several island territories. Overall, the Refuge System provides habitat for more than 5,000 species of birds, mammals, fish, and insects.

Refuges also provide unique opportunities for people. When activities are compatible with wildlife and habitat conservation, refuges are places where people can enjoy wildlife-dependent recreation such as hunting, fishing, wildlife observation, photography, environmental education, and environmental interpretation.

The Planning Process

The comprehensive conservation planning process began with the CCP planning team holding a “kick-off” meeting in October 2006. Members of the planning team, which includes Refuge staff and Service planners, identified a list of issues and concerns associated with management of Swan Lake NWR. These preliminary issues and concerns were based on staff knowledge of the area and discussions with citizens in the community.

The CCP planning team then invited Refuge neighbors, organizations, local government agencies, and local staff of

national and state government agencies, schools, and interested citizens to share their thoughts in an open house meeting on January 11, 2007, at the Refuge Visitor Center. More than 75 people attended the open house. We received 70 responses with dozens of individual comments by the close of the scoping period on February 22, 2007. Following the public comment period, an additional meeting

was held in the Fish and Wildlife Service Regional Office to review the public comments and identify concerns from subject specialists.

A Biological Review of Swan Lake NWR, which is an evaluation of the relevance and direction of the biological program by a variety of people with ecology and wildlife science backgrounds, was also conducted in 2007.

Refuge Issues

Issues play an important role in planning. Issues focus the planning effort on the most important topics and provide a base for considering alternative approaches to management while evaluating the consequences of managing under these alternative approaches. The issues, concerns, and opportunities expressed during the first phase of planning have been organized under the following headings:

Wildlife

1. There are diverse and sometimes conflicting expectations regarding the presence, variety, and abundance of Refuge wildlife. How should this apparent conflict be addressed?
2. Should hunting opportunities be expanded on the Refuge?
3. The decline in Canada Goose use of the Refuge in recent decades has decreased the quality of goose hunting, drawn fewer hunters and wildlife watchers, and changed

the cultural identity of local communities – can this trend be reversed?

Habitat

4. Should the Refuge increase the amount of wet prairie habitat?
5. Should the Refuge consider, where possible, restoring the natural hydrology across the Refuge to allow for periodic flooding and increased sheet flow?
6. What role should cropland play in Refuge management?
7. What can be done to improve shorebird habitat?
8. What can be done to improve bottomland hardwood habitat on the Refuge?
9. What can be done to address the management of parcels and easements assigned to the Refuge but well beyond the contiguous Refuge Boundary?
10. What can be done to reduce the impact of severe flooding on the Refuge and adjoining lands?
11. What can be done to reverse the trend in sedimentation accumulation that is filling in Silver Lake?

People

12. What can be done to improve public access throughout the Refuge?
13. What can be done to improve wildlife observation?
14. What can be done to improve hunting opportunity and variety on the Refuge?
15. How will the Refuge address an increased demand for wildlife-dependent recreation opportunities and facilities beyond what is presently available?
16. What can be done to improve environmental education?

Alternatives Considered

Three alternatives were evaluated in the Environmental Assessment conducted as part of the planning process. These alternatives include the preferred alternative, which forms the basis for the objectives and strategies and is detailed in Chapter 4 of the Draft CCP.

The other two alternatives considered included continuing to manage the Refuge the way it has been in the past (called a “no action” alternative) and managing the Refuge with a focus on visitor services.

Alternative 1: No Action Alternative

Under this alternative, there would be no major change in Refuge goals, objectives, and strategies. Some strategies would be revised to incorporate improved techniques that have been learned from current management practices.

The current goals and objectives call for maintenance and modest enhancement of wetland habitat, fish and wildlife populations, public use, resource conservation, facilities, work force, and

administration. This alternative does not fully address long-term needs and issues.

Current management and public use practices would continue under this alternative. Refuge management programs would continue to be developed and implemented with limited baseline biological information and limited monitoring. Wildlife surveys would still be completed for the presence and absence of species and to alert Refuge staff to large-scale changes in population trends. Cooperation with partners for monitoring waterfowl, eagle, fish, and deer herd health surveys would continue. The Refuge would continue to provide habitat for and monitor the progress on the eastern massasauga rattlesnake. It would also maintain the current habitat mix for the benefit of other migratory birds, shorebirds, marshbirds, and landbirds. Staff would continue existing surveys to monitor long-term population trends and health of resident species.

Hunting, fishing, and environmental education programs would continue to be the priority focus of public use on Swan Lake NWR with no expansion of current opportunities. Current restrictions or prohibitions would remain. Environmental education and wildlife observation and photography would be accommodated at present levels with a

few interpretive sites added. Staffing would remain at its current level with no new positions added.

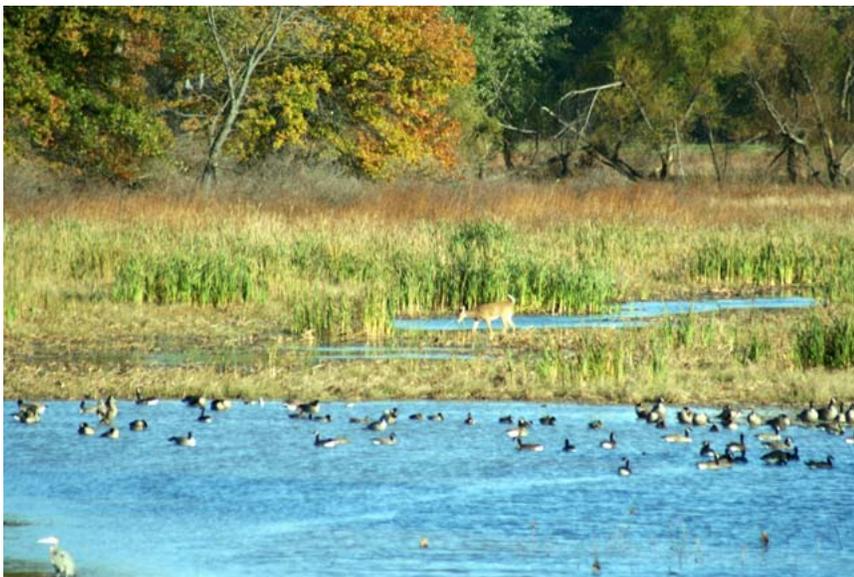
Alternative 2: Visitor Services Focus Alternative

Under this alternative, Refuge streams that are now impounded would be restored as free flowing streams. Existing levees and dikes would be removed, breached, or otherwise modified to allow water movement across the Refuge. The amount of stream flow and open water within the Refuge would be closely linked to runoff within the watershed, meaning streams and wetlands would undergo seasonal and annual periods with little or no water. The habitats within the Silver Lake basin would convert from open water to varying amounts of emergent wetland, wet meadow, and bottomland forest. None of the estimated 1,200 acres of emergent wetland would be managed using moist soil management practices. All cropland would be converted to prairie, wet meadow, or other native habitats. Wildlife monitoring would focus on threatened and endangered species, waterfowl, shorebirds, and the eastern massasauga rattlesnake.

Goose hunting and deer hunting would continue under this alternative, but the Refuge would also formally propose the addition of duck and small game hunting and emphasize opportunities for youth and people with disabilities. Stream fishing opportunities would continue, but fishing opportunities within Silver Lake would not be available because it would no longer be managed as a year-round reservoir. Seasonal access to some portions of the Refuge would be extended, increasing opportunities for wildlife observation and photography. There would be an increased emphasis on welcoming and orienting visitors and on interpretation. There would be continued emphasis on developing the Refuge Friends group.

Alternative 3: Preferred Alternative

Under Alternative 3, Silver Lake would no longer serve as a year-round reservoir to provide source water for



A diversity of wildlife at Swan Lake NWR. Photo credit: FWS



Bottomland hardwood habitat, Swan Lake NWR. Photo credit: FWS

wetland management across the Refuge. Most of the year Refuge streams would rise and fall along with stream flow, creating seasonal and annual variations in water levels within the Silver Lake and Swan Lake basins. One departure would be that the basins would typically be flooded in the fall to accommodate migratory birds. The habitats within the Silver Lake and Swan Lake basins would convert from open water to varying amounts of wet meadow and emergent wetland dominated by bulrush and cattails. Other emergent wetlands would be managed using moist soil management practices. All cropland would be converted to prairie, wet meadow, or other native habitats. Wildlife monitoring would be closely linked to management information needs.

Goose hunting and deer hunting would continue under this alternative, but the Refuge would also formally propose the addition of duck and small game hunting and emphasize opportunities for youth and people with disabilities. Stream fishing opportunities would continue, but fishing opportunities within Silver Lake would be dependent on seasonal and annual water levels. Seasonal access to some portions of the Refuge would be extended, increasing

opportunities for wildlife observation and photography. There would be an increased emphasis on welcoming and orienting visitors and on interpretation above that included in Alternative 2. There would be continued emphasis on developing the Refuge Friends group and on providing an increase in the amount of volunteer opportunities.

Elements Common to All Alternatives

Although the alternatives differ in many ways, there are similarities among them as well. Each of the three alternatives described above would have the following features in common:

Habitat

Within 5 years of Plan approval, quantify water needs and available water sources necessary to meet Refuge management objectives and over the life of the Plan maintain or improve water quality.

Wildlife

Within 10 years of Plan approval, provide habitat suitable to support a viable population of the eastern massasauga rattlesnake.

People

Within 5 years of Plan approval, develop an environmental education site that includes an outdoor classroom.

Over the life of the Plan, provide compatible opportunities for gathering mushrooms, berries, and antlers for personal use.

Over the life of the Plan, avoid and protect, or mitigate against disturbance of all known cultural, historic, or archeological sites.

Listed Species and Other Species of Interest

Chapter 3 of this EA describes the current status of fish and wildlife in and near the Refuge. The discussion highlights species of interest described in Chapter 3. In all alternatives, the current acreage of wet prairie, which benefits eastern massasauga rattlesnakes, is maintained except Alternative 3 where the acreage increases.

Section 7 of the Endangered Species Act outlines a mechanism for ensuring that actions taken by federal agencies do not jeopardize the existence of any listed species. We conducted a "Section 7" review concurrent with the review of the Draft CCP.

Archaeological and Cultural Resource Values

As part of its larger conservation mandate and ethic, the Service (through the Refuge Manager) applies several historic preservation laws and regulations to ensure historic properties are identified and are protected to the extent possible within its established purposes and NWRS mission.

Tell Us What You Think

Swan Lake NWR and the U.S. Fish & Wildlife Service want the Refuge's comprehensive conservation plan to be a visionary and practical document that



Swan Lake NWR Visitor Center. Photo credit: FWS

improves habitat for wildlife and connection to the environment for its visitors.

Your thoughts are an essential part of accomplishing this. Have we missed an issue? Have we overlooked an opportunity? Let us know during the 30-day public review period. In order for your comments to be considered during preparation of the Final CCP, we need to receive your comment by July 5, 2010.

You have a variety of opportunities to communicate your thoughts on the Draft CCP. First, you are welcome to write us a letter. Address written comments to:

Swan Lake NWR
Attention: CCP Request
16194 Swan Lake Avenue
Sumner, MO 64681

Comments are also welcome via e-mail: r3planning@fws.gov (please specify “Swan Lake NWR CCP Comment” in the subject line).

Open House to be Held During Comment Period

The Refuge will host an open house during the Draft CCP comment period. Refuge Staff and Regional planning staff will be available during the open house to visit with you about the Draft CCP and future management direction for the Refuge.

The date, time and location of the open house will be announced in local media and information will also be on the Refuge’s planning website:
<http://www.fws.gov/midwest/planning/SwanLake>

Table 1: Comparison of Alternatives

	Alternative 1 (No Action Alternative)	Alternative 2	Alternative 3 (Preferred Alternative)
<u>Streams and Water Bodies</u>	Continue to impound Refuge streams and use Silver Lake as a reservoir to provide water for wetland management across the Refuge.	Restore Refuge streams to free flowing streams with seasonally fluctuating water levels.	Mimic components of historic hydrologic function along reaches of Refuge streams. Allow for seasonal and annual variations in water levels within Swan Lake and Silver Lake basins to increase the amount and variety of native vegetation
<u>Emergent Wetland and Moist Soil Management</u>	Maintain at least 500 acres and up to 1,000 acres of emergent wetland with a mixture of bulrush and cattails, and additionally manage about 800 acres using moist soil management techniques ensuring at least 10 percent is available as mud flat habitat for migrating shorebirds.	Maintain approximately 1,200 acres as emergent wetland habitat primarily within the Swan Lake basin.	Maintain at least 1,200 acres and up to 1,800 acres of emergent wetland habitat. Use moist soil techniques to manage emergent wetlands at locations and an amount to be determined after the completion of an ongoing hydrogeomorphic evaluation. Ensure that up to 25 percent of the acreage is available as mud flat or shallow water unvegetated habitat in the spring and up to 10 percent is available in the fall for migrating shorebirds.
<u>Shrub Swamp</u>	Maintain 300 to 500 acres of shrub swamp dominated by buttonbush and willow.	Maintain up to 70 acres of shrub swamp dominated by buttonbush and willow.	Same as Alternative 1.
<u>Wet Meadow</u>	Maintain wet meadow habitat at present levels (110 acres).	Convert approximately 4,000 acres of existing cropland, open water, emergent wetland and other habitats to wet meadow and	Convert approximately 530 acres of existing cropland, food plots, areas of dense young forest, and areas dominated by reed canary grass to wet meadow.
<u>Native Prairie</u>	Maintain existing grasslands at present levels (1,000 acres) and species mix.	Convert approximately 950 acres of existing cropland to native prairie, and maintain a diverse floral community within converted and existing grasslands.	Convert approximately 835 acres of existing cropland or food plots to native prairie, and maintain a diverse floral community within converted and existing grasslands.
<u>Cropland</u>	Maintain existing amount (1,365 acres) of cropland annually leaving at least 30 percent and up to 100 percent of planted crops as food and cover for wildlife.	Convert all existing cropland (1,365 acres) to native habitats.	Convert all existing cropland (1,365 acres) to native habitats.
<u>Bottomland Forest</u>	Maintain existing bottomland forest (3,100 acres) and ensure that 20 percent of stands are comprised of selected oak species.	Increase the amount of bottomland forest from 3,100 acres to 3,800 acres	Same as Alternative 1.
<u>Watershed Conservation</u>	Quantify water needs and available water sources necessary to meet Refuge management objectives and improve water quality within Refuge source waters.	Same as Alternative 1.	Same as Alternative 1.
<u>Outlying Fee Title Properties and Easements</u>	Maintain existing methods for managing or monitoring outlying fee title properties and easements.	Develop a strategy for ensuring the condition and management of outlying fee title properties and easements.	Develop a strategy for ensuring the condition and management of outlying fee title properties and easements.
<u>Threatened and Endangered Species</u>	Continue monitoring Bald Eagle numbers via Missouri Department of Conservation surveys.	Implement a program to monitor all federally listed threatened and endangered species on the Refuge and assist with monitoring of state-listed threatened and endangered species.	Implement a monitoring program to track abundance, population trends, and/or habitat associations of selected species.

Table 1: Comparison of Alternatives

	Alternative 1 (No Action Alternative)	Alternative 2	Alternative 3 (Preferred Alternative)
<u>Migratory and Resident Birds</u>	Monitor waterfowl numbers bi-weekly during duck hunting season via Missouri Department of Conservation bi-weekly waterfowl counts.	Conduct weekly counts of waterfowl and shorebirds during migration.	Monitor migratory bird species with emphasis on waterfowl and shorebirds.
<u>Eastern Massasauga Rattlesnake</u>	Provide habitat suitable to support a viable population of the Eastern Massasauga Rattlesnake	Same as alternative 1	Same as alternative 1
<u>Welcoming and Orienting Visitors</u>	Provide an unstaffed point of contact 7 days a week year-round.	Provide a staffed point of contact most business days during normal working hours year-round.	Provide a staffed point of contact during normal working hours year-round on business days and seasonally on holidays and weekends.
<u>Hunting</u>	Continue to offer goose hunting and managed deer hunts (including opportunities for disabled hunters).	Same as Alternative 1, but also within 2 years of CCP approval, propose changes to Refuge regulations (as part of a formal opening package) that includes introducing duck hunting and small game hunting, and emphasize opportunities for youth and disabled hunters.	Same as Alternative 2.
<u>Fishing</u>	Continue to provide existing facilities for shore and boat fishing.	Stream fishing only in accordance with state and Refuge regulations. Silver Lake basin is restored as a stream channel.	Fishing opportunities within Silver Lake basin are dependent on seasonal and annual water levels.
<u>Wildlife Observation and Photography</u>	Continue to provide existing opportunities for wildlife observation and photography by allowing access to the entire Refuge from mid March through mid October.	Same as Alternative 1, but also allow visitors limited access to selected portions of the Refuge from mid October through the end of February.	Same as Alternative 2.
<u>Interpretation</u>	Provide unstaffed interpretive facilities 7 days a week year-round.	Provide staffed interpretation facilities most business days during normal working hours year-round.	Provide staffed interpretive facilities during normal working hours year-round on business days, and seasonally on holidays and weekends.
<u>Environmental Education</u>	Develop an environmental education site that includes an outdoor classroom.	Same as Alternative 1.	Same as Alternative 1.
<u>Other Compatible Recreation and Uses</u>	Provide compatible opportunities for gathering mushrooms, berries, and antlers for personal use.	Same as Alternative 1.	Same as Alternative 1.
<u>Friends and Volunteers</u>	Continue to provide current level of volunteer opportunities (approximately 625 hours annually).	Continue to develop the Refuge Friends group and maintain existing level of volunteer opportunities (625 hours annually).	Continue to develop the Refuge Friends group and provide volunteer opportunities that total at least 1,000 hours annually.
<u>Outreach</u>	Continue to speak to local groups upon request (up to 2-3 times per year), provide information and interviews for local and outdoors media and distribute news releases 2-3 times annually.	Continue to speak to local groups upon request (up to 4-6 times per year), provide information and interviews for local and outdoors media and distribute news releases 4-6 times annually.	Increase local community support and appreciation for fish and wildlife conservation and endorse the Refuge's role in conservation.
<u>Archeological, Cultural, and Historic Protection</u>	Avoid and protect or mitigate against disturbance of all known cultural, historic, or archeological sites.	Same as Alternative 1.	Same as Alternative 1.