

Environmental Assessment
Crescent Lake National Wildlife Refuge
Comprehensive Conservation Plan

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Purpose For Action

The purpose of management of the Crescent Lake National Wildlife Refuge (NWR) is to facilitate the restoration, maintenance, and management of natural diversity including endangered species. Additionally, the accompanying Draft Comprehensive Conservation Plan facilitates continuity of management, and effective decision-making to achieve these ends. The Plan is intended to provide long-range guidance for the management of this Refuge based on careful consideration of the physical and biological characteristics of the land-base. It is designed to facilitate achievement of the Service mission and Refuge goals which center on the protection and enhancement of wildlife and their habitats and the provision of appropriate compatible public recreation.

The Service has responsibility for stewardship over species that occupy Service lands and for the protection of cultural resources on these lands. Crescent Lake NWR, located in west-central Nebraska is a unique and ecologically important component of the National Wildlife Refuge System. The Crescent Lake National Wildlife Refuge was established in 1931 for the following purpose;

“ . . . to provide as a refuge and breeding ground for birds and wild animals, . . . ”

Specifically, this CCP proposes a planned management program to implement actions that meet the operational needs of the Refuge to conduct management to benefit wildlife, particularly the fall and spring needs of migratory waterfowl populations and endangered species.

The Service recognized the need for strategic planning for all the components of its System. In September 1996, Executive Order 12996 was enacted which gave the System guidance on issues of compatibility and public uses of its land. Later on, Congress passed the National Wildlife Refuge System Improvement Act in October 1997 which, for the first time in the System's history, required that Comprehensive Conservation Plans be prepared for all national wildlife refuges within 15 years.

Need For Action

This action addresses both the needs of the Service to meet its trust responsibilities and the needs of the local community and the general public.

To meet its trust responsibilities, the Service needs to provide a diversity of quality habitats for wildlife and protection for the species using these habitats. The Service also needs to ensure that all recreational activities occurring on the Refuge are compatible with the purposes for which the Refuge was established.

The needs of the public, primarily the local area communities, are for a place where traditional recreational activities such as hunting, fishing, and wildlife observation can be enjoyed.

Both the Crescent Lake NWR Draft CCP and the Environmental Assessment are available for public review and comment prior to the issuance of a final CCP.

Issues Identified

The public, landowners, local conservation groups, local government agencies, and elected State and Federal representatives were invited to attend an open house and public meetings to discuss issues concerning the management of the Crescent Lake National Wildlife Refuge. Below is a discussion on those issues.

Wildlife and Habitat

The Refuge staff feels that the Refuge should offer an alternative habitat for those species of wildlife that have a difficult time adapting to commercially used lands. We envision most of the Refuge with grasses left undisturbed from year-to-year, and grazing and prescribed burning used as tools to keep the grassland healthy and to promote warm season grasses. Big bluestem and switchgrass are examples of warm season grasses which are much larger, capable of surviving the winter and, thus, will still be standing in the spring to provide early nesting cover.

The staff sees a need for the Refuge to continue in the contribution of the recovery goals of the endangered blowout penstemon.

The staff also expressed a need to expand monitoring strategy for wildlife species and habitat trends.

Wilderness Management

Reintroduce bison to the 24,502-acre proposed wilderness. The staff believes the bison would be a more natural element utilizing the Wilderness Area leading to a more complete ecosystem.

Public Use

Crescent Lake Refuge has none of the grand landscapes that we are so blessed with here in the west. The Refuge offers small grass-covered hills with some wetlands and areas of raw dunes for variety. Yet comments in the Refuge visitor log and personal contacts indicate that the public loves the Refuge. The main theme that runs through the comments is the solitude here. Yellowstone Park has a lot of wonderful things, but peace and quiet are not among them. Second to solitude, people like the Refuge because of a lack of human intrusion in the landscape. Places where you can see clear to the horizon and not find a single man-made object are very rare today. Keeping the qualities that make this place special and making it available to the public are almost contradictory goals. The best that can be done is to be very judicious in making changes to the public use program.

Camping is one of the most frequently asked for changes in use at the Refuge, but it is the one change with the most potential to degrade the quality of the experience here. The staff feels that camping should not be allowed. "Camping . . . may be permitted only when required to implement or sustain an approved wildlife/wildland oriented recreational activity when no other alternative is practical." (USFWS 1982)

Continue existing hunting opportunities, and add a waterfowl hunt on a portion of the Refuge.

Fishing should emphasize aesthetics, ethics, and the benefits to the soul as much as the stomach. Reduced bag limits may be a way to keep fishing use at a moderate level.

The main access roads to the Refuge have been a large factor in keeping public use demands at the current level. However, the very poor roads also impact the rural residents of the area and affects the ability of the Refuge to hire and retain staff, and procure normal services such as building contractors and gravel delivery. We see the Refuge participating in finding funding to provide one good road into the Refuge, but if we do, we should also set public use limits during this planning process to assure that even in the distant future there will always be at least one place where you hear coyotes instead of motorbikes and bitterns instead of trucks. And when you look farther and farther off into the distance, you don't see a busy highway, power lines, and fences; but only open space and maybe a herd of bison.

Alternatives Including Preferred Alternative

This Section describes the alternatives analysis for developing the Crescent Lake Refuge Draft CCP. The preferred alternative being proposed is described as a management strategy in the Crescent Lake Refuge Draft CCP. The following alternatives, including the no action alternative are those the Service analyzed during the planning phase. Table 1 on page 84 briefly compares impacts associated with implementing Alternative 1, 2, 3, and 4. The planning team considered the effects of the various alternatives within the boundary of Crescent Lake NWR.

Alternative 1: Continuation of Current Management (No Action)

The No Action alternative would continue current management and would not involve extensive restoration of wetland and grassland habitat, nor improvements to roads, interpretive, and administrative facilities.

This alternative would result in managing grasslands through grazing, using permittee cattle, rest, and limited prescribed fire. The Refuge staff would conduct limited surveys and management for threatened and endangered species, use grazing, fire, beneficial insects, and herbicides to control exotic plants and weeds; maintain the current levels of hunting, fishing, and wildlife observation; stay with the current cooperative agreements and partnerships; and continue the current levels of wildlife and habitat monitoring.

Alternative 2: Historical - Manage Refuge Habitats and Wildlife to Replicate Pre-settlement Conditions

This alternative would provide for the reintroduction of a bison herd that would range freely on Crescent Lake NWR. The bison would be reintroduced to the Refuge through a special use permit by allowing a permittee to seasonally graze on Refuge land, following the guidelines of a grazing step-down plan. The public would have visible access to the bison herd, which would provide historical ecology interpretation. With the reintroduction of the bison herd, the Refuge staff would increase monitoring of fire effects and wildlife trends. Over time, use of permittee cattle on the Refuge would be phased out. The Refuge staff would increase the use of prescribed fire to replicate historic fire frequency. Over a period of time, water control structures would be removed and lakes would return to natural levels. The Refuge staff would monitor and study threatened and endangered species to determine effects of historic management. The control of exotic plants would be done using increased prescribed fire along with beneficial insects and herbicides. The same number of lakes would remain open to fishing. The Refuge staff would continue current cooperative agreements and seek partnerships in bison management. The current hunting programs would be continued.

***Alternative 3: Intensive Wildlife Management -
Actively Manage Habitats and Refuge Programs to
Increase Outputs in Certain Areas***

Under this alternative the Refuge staff would actively manage grasslands using grazing with permittee cattle, rest, and prescribed fire. Water level management would be more intensively implemented.

Existing water control structures would remain as necessary for draw-downs. The Refuge staff would increase monitoring, management, and research on threatened and endangered species. Control of weeds and exotic plants would be accomplished by use of grazing, beneficial insects, herbicides, and increased prescribed fire. Current hunting programs would continue with limits on numbers of hunters instituted if crowding occurs. This alternative calls for the increase in number of Refuge lakes open to sport fishing and an increase in the fishery management of those open lakes. This alternative also calls for an increase in the levels of interpretation and environmental education. Continue current cooperative agreements and partnerships and seek additional ones. The Refuge staff would increase monitoring of wildlife and habitats.

Alternative 4: Modified Historical (Preferred Alternative)

This alternative is the Service's preferred alternative that would enable Crescent Lake Refuge to manage their resources for native birds and wild animals, and to pursue the desire to implement a more natural / historic management regime with bison and prescribed fire as historical habitat management tools.

Under this alternative the Refuge staff would, through a special use permit, reintroduce a bison herd on the 24,502-acre proposed Wilderness Area of the Refuge. The bison will be allowed to seasonally graze on Refuge land. The permittee would be required to follow the guidelines of a Bison Management step-down plan. The Refuge would increase prescribed fire in this area and incrementally remove interior fences. A five-year monitoring program would be established in this area to document changes in grasslands and wildlife. After the five-year period, the Refuge staff would determine if bison grazing is truly compatible with a healthy grassland ecosystem. If not, they would return to permittee cattle as the primary grassland management tool.

Under this alternative, the Refuge would retain the lakes presently open to fishing.

This alternative includes the following management strategies that would monitor threatened and endangered species use and conduct applied research to determine methods to increase use:

- The Refuge staff would continue to transplant blowout penstemon in additional sites and protect trees for bald eagle roosts.
- Control weeds and exotic plants using a combination of prescribed fire, beneficial insects, and herbicides.
- Continue current fishing opportunities with an increased emphasis on public environmental education and interpretation.
- Continue current hunting opportunities and add limited waterfowl hunting.
- Current cooperative agreements and partnerships would continue, and the Refuge staff would seek outside funding to implement parts of the Plan.
- The Refuge staff would actively seek a partnering effort in bison management.
- Refuge staff would increase monitoring of grasslands and wildlife with emphasis on evaluation of the use of bison and fire to manage grasslands.

Affected Environment

Crescent Lake Refuge lies on the southwestern edge of the 19,300 square-mile Nebraska Sandhills, the largest sand dune area in the Western Hemisphere and one of the largest grass-stabilized regions in the world. The Sandhills are characterized by rolling, vegetated hills and inter-dunal valleys which are oriented in a northwest to southeast direction. Many shallow lakes and marshes are interspersed in the lower valleys. Native grasses predominate. Wildlife diversity, except large ungulates and their predators, is relatively unchanged since early settlement.

Approximately 177,000 acres of open water lakes, shallow marsh and fens, and nearly 1,130,000 acres of wet meadows remain in the Sandhills. Most wetlands are freshwater; about 10 percent are alkaline. They range in size from 1 to 2,300 acres, but 80 percent are less than 10 acres (LaGrange 1997). Many wetlands have been drained in attempts to increase hay production. Estimates of the amount drained range from 15 percent (McMurtrey and Craig 1969) to 46 percent (USFWS and CWS 1986). Wetland drainage continues to this day (Hrabik 1989).

Under the Fish and Wildlife Service's (1994) "ecosystem approach to resource management," Crescent Lake Refuge is within the Platte-Kansas Rivers Ecosystem.

Climate of the Sandhills is characteristic of the central Great Plains - cold winters, hot summers, and frequent thunderstorms from spring to late summer. Annual precipitation ranges from 17 to 23 inches (Wilhite and Hubbard 1989), and is coupled with high evapo-transpiration rates. The Refuge has operated an official weather station since 1935. Precipitation on the Refuge averages 16.8 inches, and temperatures have ranged from minus 46 to 109 degrees Fahrenheit. Since 1976, relatively high precipitation has resulted in positive net moisture balances (annual precipitation minus open pan evaporation) in most years.

All lands around the Refuge are in private ownership except for a small ranch on the west boundary purchased in 1984 by The Nature Conservancy for preservation of the blowout penstemon (an endangered plant). The only other public land in Garden County is Ash Hollow State Historical Park, 50 miles to the southeast.

Refuge management strives for wetlands that have a good margin of emergent plants to provide a habitat different from the usual situation on private lands where the shorelines are open. The open shorelines on private lands are good for shorebirds (like sandpipers) but marsh birds (like herons and bitterns) have a rough time unless they have much heavier cover.

The Refuge staff also works toward keeping lands and waters in a condition where noxious weeds do not dominate the landscape and carp do not degrade the productivity of Refuge waters. Carp and noxious weeds have become so dominant in most of today's landscape and waters that the public commonly consider this situation to be "normal." The Refuge System strives to keep a few places where we can maintain habitats unpolluted by these imports. Crescent Lake NWR is in a unique position to provide an example of unmodified habitats because it is surrounded by well-managed rangeland. The Refuge also has no major waterways through it which helps deter the spread of carp.

The major recreation activities in the area include hunting, fishing, and wildlife viewing. The existing recreational activities occurring on the Refuge are not necessarily unique to the area; however, with the private land holdings, public access can be difficult.

The Refuge staff manages approximately 8,250 acres of wetlands; there are no permanent natural streams. Manipulation of water levels is possible only on nine lakes and has been used to control shoreline vegetation and create open shoreline for migratory birds. Pothole blasting occurred in the late 1960s to create additional waterfowl breeding habitat; results were limited and the effort was discontinued after a few years. Natural filling of wetlands and invasion of phragmites, an exotic plant, are emerging problems.

The agreement to purchase, in fee-title, the original 36,920 acres of Crescent Lake Refuge allowed previous owners to continue to graze at no cost for 10 years. The only restriction was that no more than 4,000 cattle could be on the Refuge at any one time. By the end of the 10 years, most of the Refuge was seriously overgrazed. During World War II, the Refuge was leased to surrounding ranches for cattle grazing to help meet wartime needs. Although the stocking rate then was half that on surrounding commercial lands, Refuge grasslands made little recovery. After the War, grazing gradually declined.

Although the Refuge has largely recovered from overgrazing in the past, grazing remains an important tool. Today, native prairie management consists of a combination of rest, grazing, and prescribed burning. Prescribed burning was first used as a management tool in 1984 and has obvious limitations in this sea of grass; about 500 acres are planned for burning annually.

Noxious weeds are a ubiquitous problem, and the Refuge is no exception. Fortunately, surrounding private lands are well-managed, and the problem is limited to Canada thistle. Leafy spurge appears to have been eradicated from the Refuge in 1994, but monitoring for the weed continues.

Approximately 80 acres of trees are on the Refuge, most of which were planted by the CCC in the 1930s. Trees add diversity but, with the exception of cottonwoods and willows, are not a normal part of the Sandhills Prairie. There is no active management and the acreage is steadily declining through natural mortality.

A full description of the Refuge, its resources, and its economic setting are included in the Draft CCP.

Environmental Consequences

This section describes the biological, social, economic, and cultural resources that would most likely be affected by implementing the Crescent Lake NWR CCP.

Alternative 1: Continuation of Current Management (No Action)

Wildlife and Habitat:

This alternative, by maintaining the current grassland management strategies, would have provided an output of wildlife benefits at close to maximum productivity. A slow but steady progress towards optimum habitat was underway.

Wilderness Management:

This alternative maintains the current management strategies: use of cattle as a habitat management tool, and the public is limited to non-motorized access. By Service policy, the proposed area will be treated as if it were a designated wilderness.

Public Use:

This alternative maintains the existing public uses on the Refuge. It, therefore, has the least impact on Refuge users because they know what the existing recreational opportunities are. This alternative provides for approximately 8,000 visits on the Refuge. As none of these public uses are controlled other than by area, it is believed that this level of use satisfies current demand for these activities. This alternative does not allow increased effort on providing environmental education activities, increased interpretation, and would not include a waterfowl hunt.

Cultural and Paleontological Resources:

This alternative maintains the current information base. The Refuge has not had funds to conduct a cultural survey of the Refuge. Cultural and paleontological resources would have no additional protection or interpretation under current management.

Air and Water Quality:

This alternative would have no impact on air quality. Automobile traffic through the Refuge would not be at levels that could result in measurable air pollution. With the protection of native habitats and wetlands, water quality would improve through a decrease of non-point source pollution.

Socio-Economic Conditions:

This alternative maintains the current management regime and, therefore, the current amount of economic use of the Refuge would be maintained.

This alternative does not substantially increase infrastructure investment in the Refuge, nor does it increase the staffing level on the Refuge. The lack of these increases does not take anything away from the local economy. It also does not add any extra opportunities. The multiplier effect of these changes through the economy would, therefore, also not occur.

By maintaining public use at existing levels, the current tourism boost to the local economy from the Refuge remains the same.

The use of prescribed fire may cause concern for local residents due to the consequences of a prescribed burn that escapes containment and becomes a wildfire that burns off the Refuge onto adjacent private land. The Refuge fire program will continue to minimize the risk of escapes by adhering to Service policy which requires that a Prescribed Burn Plan be approved before any prescribed burning takes place. The Burn Plan addresses the potential for escape and specifies the personnel and equipment needed, weather requirements, contingency plans, and many other aspects of the burn to ensure it stays within prescription. Additional personnel and equipment that are necessary to conduct prescribed burns will benefit the community by being available to assist local rural fire departments in the suppression of lightning and human caused wildfires that occur in the local area.

Other public use activities which include wildlife/wildland observation, environmental education/interpretation, hunting and fishing will continue but not be improved or expanded.

Alternative 2: Historical - Manage Refuge Habitats and Wildlife to Replicate Pre-settlement Conditions

Wildlife and Habitat:

This alternative changes the current grassland management of the Refuge from an intensive holistic short duration/high intensity regime using permittee cattle to a more natural regime utilizing bison, a native herbivore. Up to 400 head of bison utilizing approximately 5,760 AUMs, when the Refuge is fully fenced, would replace use by four permittees. To accomplish this, a bison proof electric fence would need to be constructed on the outside boundary of the Refuge, and most interior fences would be removed.

Prescribed fire activities will increase to influence bison use areas by providing more nutritious and palatable regrowth that is very successful in influencing their feeding areas and to invigorate grasslands in areas that receive almost no grazing use.

The impact on prairie grouse, migratory waterfowl, and other migratory birds differs from species-to-species and will depend upon the degree of use by bison. By controlling bison numbers, the Refuge staff will be able to maintain nearly the same level of forage removal as with domestic cattle. Interspecific competition for breeding areas between bison and waterfowl and prairie grouse will probably occur. During their breeding season, birds generally avoid large animal use areas. It is believed that the areas utilized by the bison herd(s) during the summer months will represent only a small portion of the Refuge; thus, the overall bird productivity will be only slightly affected, and the grassland objectives of rest and undisturbed cover will continue to be achieved.

Because of the mosaic of grassland conditions that bison will provide, it is anticipated that migratory bird use may increase. Some species that are adapted to open, closely grazed areas, such as shorebirds, will increase during migration and breeding periods.

Wilderness Management:

With this alternative, the current management strategies will change from the use of cattle to that of bison as a habitat management tool. The public will continue to be limited to non-motorized access. Interior fencing will be reduced. By Service policy, the proposed area will be treated as if it were a designated wilderness.

Public Use:

This alternative would have some affect on existing public use. Currently, the major public use activity is fishing. This alternative would continue the number of lakes people can fish in.

This alternative would not change any existing hunting program. Visitors can hunt and fish in areas in which bison may be present. This may at times create hazards for hunters, anglers, and hikers. The Refuge will be operated like many national parks that have large animals. No guarantees of public safety will be made for people engaged in recreation in areas used by these animals. That is part of the "wilderness experience," and each person considering recreating in areas with these animals needs to consider their own abilities and base their decision to participate on their own risk assessment. Appropriate safety messages, educational efforts, and, perhaps at times, even closing off certain areas of the Refuge should be a part of management of this Refuge if bison are reintroduced.

This alternative adds public use by providing viewing opportunities visible access to the bison herd. This activity is a new opportunity and would provide a new and unique way to enjoy the Refuge.

Cultural and Paleontological Resources:

This alternative would seek to increase historical and prehistoric interpretation on the Refuge. This would most likely be provided by interpretation of overlooks and other historic sites.

This alternative would not provide for a cultural survey on the Refuge, nor help cultural and historic interpretation. The Refuge would increase cultural resource interpretation if the funding is available.

Air and Water Quality:

This alternative would have no impact on air quality. Automobile traffic through the Refuge would not be at levels that could result in measurable air pollution. With the protection of native habitats and wetlands, water quality would improve through a decrease of non-point source pollution.

Socio-Economic Conditions:

This alternative would gradually phase out the economic advantages currently provided to local ranchers by not allowing permittee cattle grazing on the Refuge. Compared to 1997, this would mean the loss of approximately 1,287 AUMs to four local ranch families. The Refuge would lose revenues generated by this activity to repair infrastructure such as wells, fences, and trails.

The reintroduction of bison on the Refuge may create increased tourism as a result of the presence of this species. To the extent this occurred, area businesses would reap the benefits of increased sales of recreational supplies, food, gas, and lodging.

The use of prescribed fire may cause concern for local residents due to the consequences of a prescribed burn that escapes containment and becomes a wildfire that burns off-Refuge onto adjacent private land. The Refuge fire program will continue to minimize the risk of escapes by adhering to Service policy which requires that a Prescribed Burn Plan be approved before any prescribed burning takes place. The Burn Plan addresses the potential for escape and specifies the personnel and equipment needed, weather requirements, contingency plans, and many other aspects of the burn to ensure it stays within prescription. Additional personnel and equipment that are necessary to conduct prescribed burns will benefit the community by being available to assist local rural fire departments in the suppression of lightning and human caused wildfires that occur in the local area.

Alternative 3: Intensive Wildlife Management - Actively Manage Habitats and Refuge Programs to Increase Outputs in Certain Areas

Wildlife and Habitat:

This alternative would generally maintain the current grassland management program on the Refuge. The percentage of rest and undisturbed cover would change significantly from the current level with the increase of cattle AUMs.

This alternative will increase the use of prescribed fire on the Refuge for grassland invigoration.

The Refuge staff will increase its efforts to reestablish federally-listed plants on the Refuge. Increased monitoring and coordinated research efforts to increase the knowledge base on how management practices affect blowout penstemon will be conducted.

Wilderness Management:

This alternative maintains the current management strategies: use of cattle as a habitat management tool and the public is limited to non-motorized access. Proposed wilderness status will be treated as a wilderness designation.

Public Use:

The lakes currently open to fishing would be enhanced through renovations to increase productivity. These renovations would include sport fish restocking where no conflict exists with migratory birds. The net result on public fishing opportunity is expected to be similar to the current situation.

The Refuge hunting programs would remain the same. A new limited waterfowl hunt would be added. Increased opportunities for interpretation of Refuge resources will be provided.

Cultural and Paleontological Resources:

This alternative would increase interpretation of cultural and historic resources on the Refuge. It will do so by conducting a Refuge-wide survey of prehistoric and historical resources.

Air and Water Quality:

This alternative would have no impact on air quality. Automobile traffic through the Refuge would not be at levels that could result in measurable air pollution. With the protection of native habitats and wetlands, water quality would improve through a decrease of non-point source pollution.

Socio-Economic Conditions:

This alternative would increase the current permittee grazing on the Refuge by approximately 500 AUMs.

The use of prescribed fire may cause concern for local residents due to the consequences of a prescribed burn that escapes containment and becomes a wildfire that burns off the Refuge onto adjacent private land. The Refuge fire program will continue to minimize the risk of escapes by adhering to Service policy which requires that a Prescribed Burn Plan be approved before any prescribed burning takes place. The Burn Plan addresses the potential for escape and specifies the personnel and equipment needed, weather requirements, contingency plans, and many other aspects of the burn to ensure it stays within prescription. Additional personnel and equipment that are necessary to conduct prescribed burns will benefit the community by being available to assist local rural fire departments in the suppression of lightning and human caused wildfires that occur in the local area.

Alternative 4: Modified Historical (Preferred Alternative)

Wildlife and Habitat:

This alternative will reintroduce bison to the area of the Refuge currently under consideration for designation as Wilderness Area. The Refuge will gradually phase-in bison to the proposed Wilderness Area. As bison are phased in, permittee cattle will be phased out. The area of reintroduction of bison into the Refuge will be fenced with bison proof fence at the boundaries, and most of the interior fence will be removed. Prescribed fire will increase on the Refuge as a means to influence bison areas of use and invigorate grassland that receives very little use.

Nonnative grasses, such as smooth brome and Kentucky bluegrass, will probably increase as grazing treatments using bison will be less precise than current management using cattle. The increase of these grasses will reduce the vigor of native warm season grasses preferred as nesting cover by waterfowl, grouse, and some other species of grassland birds.

It is anticipated that bison activity will create a mosaic of grassland conditions, with some areas being heavily grazed, others moderately grazed, and others unused. This mosaic should actually increase the overall diversity of the bird population on the proposed Wilderness Area of the Refuge by allowing greater grassland songbird use and increasing migratory use by all species of birds.

This alternative also increases the level of effort spent on reestablishing blowout penstemon on the Refuge. These efforts will enhance federally-listed species' protection on the Refuge.

Wilderness Management:

This alternative would change the current management strategies from the use of cattle to that of bison as a habitat management tool. The public would continue to be limited to non-motorized access. By Service policy, the proposed area will be treated as if it were a designated wilderness.

Public Use:

Fishing would continue at the current locations under the existing regulations but future stocking of fish at Smith and Crane Lakes will be reevaluated.

This alternative does not change any existing hunting programs. A new limited waterfowl hunt would be added. The public will continue to hunt in the Wilderness Area where bison may be present. Bison may at times create hazards for hunters and hikers. The Refuge will be operated like many national parks that have large animals. No guarantees of public safety will be made for people engaged in recreation in the Wilderness Area also used by bison. That is part of the "wilderness experience," and each person considering recreating in areas with these animals needs to consider their own abilities and base their decision to participate on their own risk assessment. Appropriate safety messages and educational efforts should be a part of management of this Refuge if bison are reintroduced into the proposed Wilderness Area of the Refuge.

This alternative adds public use opportunity by providing viewing opportunities to the bison herd. This activity is a new opportunity and would provide a new and unique way to enjoy the Refuge.

Cultural and Paleontological Resources:

This alternative will increase the level of interpretation of prehistoric and historic resources on the Refuge. If funding becomes available, the Service would conduct a Refuge-wide survey of prehistoric and historical resources.

Air and Water Quality:

This alternative would have no impact on air quality. Automobile traffic through the Refuge would not be at levels that could result in measurable air pollution. With the protection of native habitats and wetlands, water quality would improve through a decrease of non-point source pollution.

Socio-Economic Conditions:

This alternative would gradually phase-out the economic advantages currently provided by allowing permittee cattle grazing on the proposed Wilderness Area of the Refuge. The forage would be reserved for ranchers with bison. The Refuge would lose revenues generated by this activity to repair infrastructure such as wells, fences, and trails.

This alternative would increase Refuge expenditures on infrastructure. Implementation of the preferred alternative would add to the local economy as needed supplies are purchased and contractors hired to complete proposed projects.

This alternative does not reduce the current work effort required by existing Refuge activities and adds a significant number of new work activities. To address that need, the Refuge Complex will have to add personnel. Salaries of additional staff will add to the overall local economy.

The introduction of bison on the proposed Wilderness Area of the Refuge may expand tourism as a result of the presence of this species. To the extent this occurred, area businesses would reap the benefits of increased sales of recreational supplies, food, gas, and lodging.

The use of prescribed fire may cause concern for local residents due to the consequences of a prescribed burn that escapes containment and becomes a wildfire that burns off the Refuge onto adjacent private land. The Refuge fire program will continue to minimize the risk of escapes by adhering to Service policy which requires that a Prescribed Burn Plan be approved before any prescribed burning takes place. The Burn Plan addresses the potential for escape and specifies the personnel and equipment needed, weather requirements, contingency plans, and many other aspects of the burn to ensure it stays within prescription. Additional personnel and equipment that are necessary to conduct prescribed burns will benefit the community by being available to assist local rural fire departments in the suppression of lightning and human caused wildfires that occur in the local area.

Table 1. Impacts Associated with Implementing Alternatives 1 - 4

Issues	Alternative 1 (No Action)	Alternative 2 (Historical)	Alternative 3 (Intensive Wildlife Management)	Alternative 4 (Modified Historical - Preferred Alternative)
Wildlife and Habitat	<ul style="list-style-type: none"> ■ maintain current grassland management strategies utilizing cattle ■ provide for existing wildlife 	<ul style="list-style-type: none"> ■ utilize bison on Refuge for more natural regime ■ expand prescribed fire ■ increase native warm season grasses ■ anticipated increase of migratory birds 	<ul style="list-style-type: none"> ■ maintain current grassland management strategies utilizing cattle ■ expand prescribed fire ■ increase endangered blowout penstemon reestablishment 	<ul style="list-style-type: none"> ■ utilize bison on Wilderness Area for more natural regime ■ expand prescribed fire ■ increase native warm season grasses ■ anticipated increase of migratory birds
Wilderness Management	<ul style="list-style-type: none"> ■ 24,502-acre proposed designation ■ public non-motorized access ■ maintain cattle grazing as a management tool 	<ul style="list-style-type: none"> ■ 24,502-acre proposed designation ■ public non-motorized access ■ bison grazing as a management tool 	<ul style="list-style-type: none"> ■ 24,502-acre proposed designation ■ public non-motorized access ■ maintain cattle grazing as a management tool 	<ul style="list-style-type: none"> ■ 24,502-acre proposed designation ■ public non-motorized access ■ bison grazing as a management tool
Public Use	<ul style="list-style-type: none"> ■ provide for existing public use ■ no addition educational activities / interpretation 	<ul style="list-style-type: none"> ■ provide for existing public use ■ additional education / safety efforts with interaction with bison ■ provide for unique visible interaction with bison 	<ul style="list-style-type: none"> ■ provide for existing hunting use and add limited waterfowl hunt 	<ul style="list-style-type: none"> ■ provide for existing hunting use and add limited waterfowl hunt ■ additional education / safety efforts with interaction with bison in Wilderness Area
Cultural Resources	<ul style="list-style-type: none"> ■ maintain current protection ■ no additional surveys 	<ul style="list-style-type: none"> ■ seek to increase historical interpretation 	<ul style="list-style-type: none"> ■ seek to increase historical interpretation ■ seek to increase additional surveys 	<ul style="list-style-type: none"> ■ seek to increase historical interpretation ■ seek to increase additional surveys
Air and Water Quality	<ul style="list-style-type: none"> ■ no impact 	<ul style="list-style-type: none"> ■ no impact 	<ul style="list-style-type: none"> ■ no impact 	<ul style="list-style-type: none"> ■ no impact
Socio - Economic Conditions	<ul style="list-style-type: none"> ■ no impact 	<ul style="list-style-type: none"> ■ decrease local cattle grazing opportunities due to conversion from cattle to bison ■ increase tourism would benefit local commerce 	<ul style="list-style-type: none"> ■ no impact 	<ul style="list-style-type: none"> ■ decrease local cattle grazing opportunities due to conversion from cattle to bison ■ increase tourism would benefit local commerce

Cumulative Impacts

Cumulative impacts include impacts on the environment which result from incremental effects of the proposed action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Implementing Alternative 4 (Preferred Alternative) would reduce the potential for cumulative impacts because of the strategic approach to managing Refuge programs including wildlife-dependent public uses and the consideration of resource conflicts and opportunities within a broad management framework. This would be a change from the status quo issue/problem oriented approach inherent in the No Action Alternative 1.

Where site development activities are to be proposed during the next 5 to 10 years, each activity would be given appropriate NEPA consideration. At that time, any required mitigation activities would be designed into the specific project to protect fish and wildlife and their habitats and to reduce the level of impacts to the environment.

Mitigation measures are necessary when effects determined through the NEPA process are anticipated to significantly impact wildlife, habitats, or the human environment. The management activities proposed in Alternative 4 are not intended to produce environmental impacts at significant levels to warrant mitigation measures. However, the activities listed below will help reduce the risks that any negative effect will occur:

- The Refuge would closely regulate proposed activities to lessen any potential impacts to plant and wildlife species particularly during sensitive periods such as breeding and nesting seasons.
- Public use would be restricted by season or specific areas would be closed to minimize disturbance.
- The Refuge would prohibit any activities in areas where endangered species would be negatively effected.
- Long-term monitoring will help in determining actual effects and how the Service should respond.

Consultation and Coordination

The project leader for the Crescent Lake/North Platte National Wildlife Refuge Complex and the manager of the Crescent Lake Refuge were assigned primary responsibility for planning in May 1998. In an ongoing effort to involve the local community and officials in the CCP process, an open house/scoping session was held in Oshkosh on July 16, 1998, to inform the public of the planning process and to seek ideas on Refuge programs and issues. About 150 invitations were mailed to local and national stakeholders (educators, permittees, neighbors, other agencies, and non-profit organizations). The general public was also invited through widely published / broadcast news releases. Information could also be obtained by contacting the project leader and comments could be submitted in writing.

Refuge staff also met personally with the Alliance Office of the Nebraska Game and Parks Commission (NGPC), Wildcat Audubon Society, the North Platte Valley Sportsmans Association, the Alliance Rotary Club, and the Scottsbluff Lions Club to discuss the CCP process.

