4.0. Management Direction
Goals, Objectives, and Strategies

The following goals, objectives, and strategies are the Service's response to the issues and concerns expressed by the planning team and the public; unless otherwise noted in the text, they are expected to be implemented throughout the 15-year term of this CCP. Because the CCP is a working document, modifications to the following objectives and strategies are anticipated.

Photo 4-1 Refuge Roadrunner. USFWS

Goals and objectives are the unifying elements of successful refuge management. They identify and focus management priorities, provide a context for resolving issues, guide specific projects, provide rationale for decisions, and offer a defensible link among management actions, refuge purpose(s), Service policy, and the National Wildlife Refuge System mission. Goals define general targets in support of the vision, followed by objectives that direct effort into incremental and measurable steps toward achieving those goals. Finally, strategies identify specific tools or actions to accomplish objectives. The goals are organized into four broad categories: habitat, wildlife, visitor services, and facilities.

Planning Horizon: 15 Years

Short-Term Objectives: 1 to 7 years

Long-Term Objectives: by end of 15-year period

4.1. Habitat Goal

Conserve and preserve southern short grass prairie habitats and associated wetlands and woodlands for migrating waterfowl, other migrating birds, native species, threatened and endangered species, and other species of concern. Promote ecological integrity and natural diversity within the refuge and the associated High Plains Conservation Area.

Objective 1: Within 3 years of the approval of this Plan, develop and improve 4,000 acres of native grassland habitat.

Rationale
Through restoration activities, the most disturbed grassland areas would slowly evolve into a more diverse mixture of native grasses and forbs with greater wildlife benefits in terms of food and cover. Additionally, the reestablishment of native grassland communities will protect water quality and soils from the effects of erosion. The yucca plants within the shrubby grasslands are a valuable habitat component used by many species of grassland birds. Dense or moderately dense areas of yucca need to be identified. These areas need to be evaluated periodically to determine if they need to be thinned or eliminated for the benefit of specific grassland bird species. The effects of prescribed fire need to be evaluated within the upland grasslands to determine how this tool affects growth and regeneration of yucca plants and various forbs/shrub components that are valuable to several bird species of management concern. Light grazing or no burns should be evaluated as potential management actions for specific areas identified within these components. The woodlands on the Refuge provide nesting and feeding habitat for migratory birds. The Refuge would like to protect woodlands that consist of cottonwoods, soapberry, and Osage orange stands.

Strategy 1: Develop a Habitat Management Plan with emphasis on habitat requirements for grassland obligate birds and other wildlife.

Strategy 2: Clean seed bed and replant up to 1,000 acres of the weed infested dry lake bed with native grass and shrubs providing improved habitat for all species of migratory birds and resident wildlife.

Strategy 3: Adjust grazing units and location of water sources for the efficient movement of cattle through targeted grassland areas to increase plant vigor and structural variation and promote plant succession in grassland communities.

Strategy 4: Provide water sources by extending current water line from Unit 10 into Units 11 and 12 and installing eight water tanks, and drill water wells and install windmills with tanks in grassland areas 5 and 12. The additional water will provide more areas to be

grazed thus rejuvenating the native short grass prairie and improving habitat for numerous species of grassland wildlife.

Strategy 5: Construct approximately 10 miles of livestock cross fences to separate 12 grazing units to prevent cattle trespass into areas in rest. Construct approximately 25 miles of livestock fence around the dry lake bed and along the tour route to allow grazing on 1,300 acres of the old Buffalo Lake bed and approximately 500 acres of native short grass prairie that currently cannot be grazed due to old fencing. Installation of water line systems including eight water tanks would also be required. Grazing of the dry lake bed would reduce the invasion of undesirable weeds, rejuvenate grass species, and increase grassland wildlife species, while reducing the potential for wildfires.

Strategy 6: Maintain large and scattered blocks of yucca in various densities throughout grassland areas of the refuge for the benefit of grassland and shrubland bird species and other species of concern that intensively utilize these plants, particularly in the spring when in bloom. Control invading shrubs in specific grasslands, when necessary, to meet habitat objectives for other wildlife species identified.

Strategy 7: Establish vegetation monitoring transects, particularly in grazing units and burn areas to determine plant vigor and changes in species diversity resulting from management activities.

Strategy 8: Establish vegetation monitoring transects in grassland management units to determine plant vigor and changes in species diversity resulting from management activities.

Strategy 9: Investigate additional opportunities for research and monitoring to determine the methodologies that are best suited to restore and enhance short-grass prairie habitat on the refuge.

Objective 2: Within 2 years of the plan's approval, restore and enhance 2,000 acres of native grassland by incorporating a 7-year prescribed fire rotation.

Rationale
Prescribed fires help reduce vegetation litter and buildup, increase biodiversity of plants, and reduce woody invasion of plants, and replicate historical natural fire events. Fire lanes are routinely maintained by refuge staff and the Zone Fire Crew is stationed at Wichita Mountains NWR. During prescribed fire activity, local regular and volunteer fire departments are invited to, and assist, with both starting and containing fire.

Strategy 1: Incorporate a Fire Management Plan that implements a long-term prescribed fire program to remove invader species from specifically targeted areas and reduce native vegetation litter while restoring and enhancing native grassland species.

Objective 3: Within 2 years of the plan's approval, incorporates a 2-year high intensity short duration grazing system to promote habitat diversity and prairie restoration efforts.

Rationale
Grazing assists in the stimulation of habitat diversity, removes plant litter from the previous year, and mimic historical grazing by bison. In some cases, the Refuge participates in the scientific research of different types of grazing practices and/or the effects of grazing on wildlife. Limited and controlled grazing as a management tool can be used to reestablish natural grassland communities with minimal short-term adverse affects to wildlife and habitats. Cattle grazing provides the hoof cultivation similar to native ungulates (bison, antelope, and elk) resulting in aeration of soils and reseeding of native plants. Grazing, however, needs to be monitored and controlled to ensure light grazing to maintain grassland habitat for the benefit of breeding bird species such as the grasshopper sparrow and species that utilize grasslands during migration such as the Sprague's pipit. Due to the nature of scientific grazing, livestock owners must be familiar with, and willing to accept certain restrictions, such as the immediate and unscheduled movement, or removal, of livestock from grasslands.

Strategy 1: Revise and update the refuge's Grazing Management Plan so as to allow grazing (on a 2 plus year rotation) for removal of excess plant litter, aerate the soil, promote seed development and increase biodiversity of plants and retard vegetative invasion of woody species.

Strategy 2: Establish an annual bidding process for the leasing of refuge lands for the purposes of placing grazing animals to achieve habitat and wildlife objectives. In the case of grazing for research or experimental purposes, refuge neighbors may be utilized bypassing the bidding process due to the difficult requirements to move cattle rapidly from unit to unit and sudden limits imposed on animal units.

Strategy 3: Monitor habitat to ensure that grazing lands are meeting habitat and wildlife objectives. If grazing strategies are not meeting habitat and wildlife objectives, cancel the contract and a pro-rated sum of money is returned to the leasee. The same

return of pro-rated funds would occur should habitat conditions such as drought and water shortage occur resulting in the removal of cattle. The leasee is responsible for maintaining all fences and assuring that cattle remain where they are assigned and do not egress into nearby units or neighboring private lands and are meeting all habitat and wildlife objectives.

Objective 4: Within 2 years of the approval of this plan, contribute to improved water quality of the watershed by reducing the amount of degradation and contamination (i.e. fecal coli) by 20 percent.

Rationale
Fecal coli has been a problem throughout the entire watershed from flood events originating in Hereford, Texas, upstream from the refuge. Fecal coli forms are incredibly harmful to humans. Reducing fecal coli forms throughout the watershed will benefit downstream populated areas. The current Hazardous Dam Standard Operating Procedures and Emergency Action Plan impose a requirement to keep the dam flood gate open one inch. This allows the highly contaminated water to traverse through the City of Canyon and other downstream areas. Changes must be made to the Standard Operating Procedure and Emergency Action Plan to allow the refuge to retain water to provide wildlife habitat. Should water levels behind the dam reach dangerous gage height, the gate can then be opened.

Strategy 1: Continue to work with EPA to monitor inputs from potential upstream contaminant sources.

Strategy 2: Continue to use farming on the dry lakebed as a tool to reduce nitrogen and phosphate loads from deposition of upstream fecal coli forms contaminants.

Strategy 3: Retain water during flood events by keeping the flood gate at Umbarger Dam closed.

Strategy 4: Install biofilters and necessary groundwater pump infrastructure in order to remove coli forms from surface and groundwater flowing from adjacent and nearby cattle operations.

Objective 5: Within 5 years of the approval of this plan, update the existing Preliminary Project Proposal (PPP) by adding a Land Protection Plan (LPP) to add approximately 20,000 acres to acquisition and conservation easement efforts to the refuge.

Rationale
Human encroachment on critical refuge habitat increases corridor interruption and habitat fragmentation. A Land Protection Plan is

necessary to assist the Refuge in identifying, maintaining and protecting habitat that is utilized by native flora.

Strategy 1: Develop a LPP and expand refuge acquisition boundary to include fee-titles and conservation easements. A new LPP will incorporate all National Environmental Policy Act requirements including all public comment periods.

Strategy 2: Develop an updated PPP increasing and redefining refuge acquisition boundary by 20,000 acres to include fee-titles and conservation easements. An updated PPP will incorporate all National Environmental Policy Act requirements including all public comment periods.

Objective 6: Within one year of the approval of this CCP, monitor and treat approximately 150 acres annually of grasslands and associated prairie habitat for encroachment of exotic vegetative species to achieve a 90 percent kill rate with herbicides approved for use by the Service.

Rationale

Several invasive plant species are well established in the area; however, it is estimated that only two percent of the refuge has been encroached upon. Invasive plant species pose a biological threat to the refuge as they reduce the quality and potential of the native grassland and riparian communities. Invasive species displace native plant and wildlife species which results in a reduction of natural diversity and wildlife habitat values. Further, invasive species have the potential to out-compete native species by dominating light, water, and nutrient resources. Once established, removal of invasive plants is expensive and labor-intensive. Unfortunately, their characteristic abilities to establish easily, reproduce prolifically, and disperse readily make eradication difficult. Many of these plants cause measurable economic impacts, particularly in agricultural fields. Preventing new invasions is extremely important for maintaining biodiversity and native plant populations.

This objective is critical to restore and maintain habitat useful to migratory birds, other species and general ecosystem health. The development and implementation of an integrated pest management strategy is the initial phase of the process of eradicating pest flora species or at least decreasing crop damage. Other strategies for reducing pest damage involve experimentation with various crop planting regimes. The control of existing affected areas requires extensive partnerships with the adjacent landowners, state, and local governments. The species of greatest concern on the refuge are musk thistle, salt cedar, Russian olive, Siberian elm, and kochia. To a lesser degree, the refuge also contains field bind weed, Johnson grass and Canadian thistle. The refuge currently uses mechanical

and chemical methods to control and/or attempt to eradicate these invasive plant species.

Strategy 1: Develop an Integrated Pest Management Plan.

Strategy 2: Identify and map all known invasive species problem areas.

Strategy 3: Remove non-native brush and woodlands in areas can potentially be restored to native grasslands.

Strategy 4: Develop GIS maps of current infestations and monitor changes in occurrence of all problem species; if encroachment increases, adjust management accordingly.

Strategy 5: Continue to make control of musk thistle and Salt Cedar a top priority, while infestations are still relatively small.

Strategy 6: Pursue funding to reduce, contain, and control salt cedar, Russian thistle, and Johnson grass, as well as any other known invasive species problem areas.

Strategy 7: Use adaptive management techniques to monitor ongoing treatments and potential new infestations, so management can be adjusted as necessary and new problems can be addressed while they are still small.

Strategy 8: Monitor effects of salt cedar removal on resident wildlife, such as, white-tailed deer, mule deer, mourning dove, and other nesting species.

Objective 7: Upon the approval of this plan, implement invasive fauna control policies which would eliminate the encroachment of invasive fauna species on the refuge.

Rationale

Invasive fauna has traditionally out-competes the native fauna species that is present on the Refuge. Controlling invasive fauna is critical for the Refuge to protect native species throughout the area. Feral hog populations can be devastating to the habitats of the refuge. Feral hogs are known to carry diseases such as pseudorabies, swine brucellosis, tuberculosis, bubonic plague, tularemia, hog colera, foot and mouth disease, anthrax, as well as internal and external parasites. These diseases and parasites can be transmitted to native wildlife species thereby causing a disruption in their natural processes. Currently, there is no population of

feral hogs on the refuge. There has been an increase in feral hogs in the Texas Panhandle. The purpose of this step down plan would be to prevent a population of feral hogs from inhabiting the Refuge.

Strategy1: Implement immediate removal activities when invasive fauna species are identified.

Strategy 2: Develop feral hog hunting and trapping programs on the refuge if the need arises.

Strategy 3: Deprive feral hog populations of sanctuary areas on the refuge by initiating hunting and trapping programs.

Strategy 4: Partner with adjacent landowners to expand feral hog management to areas outside of the refuge boundary.

4.2. Wildlife Goal

Implement new wildlife management programs to promote ecological integrity and wildlife diversity.

Photo 4-2 Mule Deer Buck at Dawn. USFWS

Objective 1: Enhance the quality and quantity of refuge wetlands with the addition of 120 acres of moist soil units in order to provide supplementary migrating and wintering habitat for an additional 3,000 geese, 15,000 ducks, as

well as shorebirds, wading birds, other migratory bird and resident wildlife; restore and enhance wetlands, springs, and other water sources.

Rationale
The primary purpose of refuge establishment was to provide quality habitat to maintain the health and condition of the birds wintering in the refuge. Since the lake has dried, the refuge has lost some key resting and feeding areas for waterfowl, shorebirds and wading birds. By providing additional moist soil units on the refuge, we are taking management actions to try and provide additional habitat that is limiting throughout this entire stretch of the central flyway.

Currently there are as many as 30,000 ducks and large amounts of shorebirds, wading birds, and other migratory birds utilizing the refuge for migrating and wintering habitat. This benefits migratory waterfowl in the Central Flyway by continuing to maintain and restore habitats for the waterfowl species that have historically used the refuge as a stopping or nesting point. Management of the moist soil units sustain limited amounts of waterfowl habitat lost when Buffalo Lake dried. As managed, the moist soil units further the ecosystem goal of increasing waterfowl habitats in the Playa Lake Region and the High Plains Conservation Area. They provide food and water for waterfowl, other migratory birds and resident wildlife

Strategy 1: Provide 40 additional acres of wetland habitat on the refuge to increase habitat for waterfowl and other migratory birds by the year 2015. Incorporate vegetation monitoring as it relates to moist-soil seed production, calculation of carrying capacity, and other management actions.

Strategy 2: Construct a 40 acre moist soil management unit below Stewart Marsh Dike to increase habitat for waterfowl and other migratory birds by constructing a well that utilizes the Santa Rosa Aquifer.

Strategy 3: Design and build a water delivery and control system consisting of dikes, water control structures, and related pipe to deliver water to five eight acre sites providing 40 acres of additional moist soil habitat.

Strategy 4: Manage and maintain facilities, dikes, pumps, and wells on the existing 40 acre moist soil unit and planned additional 40 acre unit below Stewart Marsh. Provide fuel to well pump providing water for water level manipulation in each unit.

Strategy 5: By the year 2020, construct two additional 40 acre

units with associated pumps, dikes and delivery systems in the Buffalo Lake bed to increase moist soil unit acreage by 80 acres

Strategy 6: Continue to incorporate data, update methodologies, and adjust population objectives for waterfowl in the Refuge Inventory and Monitoring Plan as appropriate.

Strategy 7: Continue to maintain breeding and brood-rearing habitats for ducks (northern pintail, gadwall, mallard, green-winged teal, blue-winged teal, cinnamon teal, canvasback, redhead, ruddy duck, american widgeon, northern shoveler, ring-necked duck, lesser scaup, common goldeneye, bufflehead, common merganser, and hooded merganser) and geese. Maintain 120 acres of breeding and brood rearing habitat per year.

Strategy 8: Continue to provide food, habitat, and feeding areas for migrating waterfowl through creation and management of 140 acres of moist soil units

Strategy 9: Incorporate the goals of the North American Waterfowl Management Plan, Central Flyway, High Plains Conservation Area and the Playa Lakes Joint Venture and regional plans focusing on species such as mallard, pintail, and gadwall.

Strategy 10: Clean out six 20' x 40' wildlife watering ponds in the dry lake bed with the excavator, reduce slope to aid moist soil vegetative growth for increased wildlife use.

Strategy 11: Improve wetland protection efforts through acquisition of water rights.

Strategy 12: Purchase moist soil management and quick mapping computer software to aid the management activities on moist soil units currently in operation and future units planned.

4.3. Climate Change Goals

Goal 1: Adaptive Response in Habitat.

Objective 1: Within 5 years of the plan's approval, complete a refuge-wide survey of the refuges habitat resources using various scientific methods, including historical imagery and tabular data, existing maps and records, contemporary ortho-rectifed imagery, ground truthing, and on-screen digitizing; develop and establish a decision-based research and monitoring program.

Rationale
A refuge-wide survey of the Refuge provides the most up to date and scientific information from which the staff can base decisions on the implementation of the best management action for the Refuge.

Strategy 1: Initiate refuge-wide inventories for vegetation (floor to canopy), soils and geology (biotic resources)

Strategy 2: Inventory all infrastructure, buildings, roads, water bodies, campsites, piers, feeders, hunting improvements (blinds, stands, etc), trails, infrastructure, etc. (a-biotic resources).

Goal 2: Adaptive Responses on Wildlife

Objective 2: Within 5 years of the plan's approval, complete a refuge-wide survey of wildlife resources.

Rationale
A refuge-wide survey would provide the most up to date and scientific information to base decisions on the implementation of the best management action for the Refuge.

Strategy 1: Insure bird point monitoring surveys will meet Service standards, continuation of aerial waterfowl surveys and the collection of biological data from harvested fauna (biotic resources).

Strategy 2: Collect biological data from all wildlife taken during hunting activities and invasive species control management would provide critical baseline data for wildlife management programs on the refuge (biotic resources).

Strategy 3: Initiate inventories for mammals, birds, reptiles and amphibians, fish, and invertebrates (biotic resources).

Goal 3: **Establish a refuge-wide baseline inventory of all biotic and abiotic resources within existing refuge boundary.**

Objective 3: One year from the respective completion of biotic and a-biotic inventories, combine results into a comprehensive baseline inventory; the data collected will be used to monitor changes for the purpose of enforcing negative easement covenants, wildlife and habitat monitoring programs, habitat management and climate change.

Rationale
The completion of biotic and a-biotic inventories will allow the Refuge follow to identify and implement the best management techniques which benefits wildlife.

Strategy 1: Combine habitat and wildlife inventory data (biotic) with that of man-made infrastructure (a-biotic).

4.4. Visitor Services Opportunities Goal

To provide the public with opportunities for quality wildlife-dependent recreation and access that will lead to a greater understanding and enjoyment of fish, wildlife, and their habitats on the refuge and throughout the National Wildlife Refuge System.

Photo 4-3 Refuge Photo Blind USFWS

Objective 1: Hunting
Over the life of the Plan, the refuge will continue to work through partnerships and TPWD to initiate hunting on the refuge to control invasive fauna species and to maintain carrying capacity of big game species.

Rationale
The refuge works to foster public understanding and appreciation of the natural world through wildlife-oriented recreation. This includes hunting. Hunters have supported the conservation of our nation's wildlife resources, including the refuge, through the purchase of the Federal Duck Stamp. Currently the refuge

does not provide any hunting opportunities but would like to initiate a hunting program to help control nuisance fauna and maintain carrying capacity of native big game species. Hunting would be initiated if determined to be appropriate and compatible with Refuge purposes and would require initiating a hunting package and associated NEPA and associated environmental impact evaluation, to determine if the use is compatible and consistent with refuge purpose. Although Texas has one of the largest hunting populations; estimated at 16 percent in 2001(TPWD, 2001); similar to national trends, it is declining. Comparing 1991 to 2006 estimates, the number of all hunters declined by 11 percent nationwide (USFWS, 2006).

Adding hunting on the refuge will provide additional wildlife-dependent recreational opportunities. Current data, by way of refuge browse surveys, anecdotal information, and personal observation, indicate that deer are remaining stable or increasing. While similar opportunities exist nearby on private lands, these new hunting oppurtunities would provide additional quality recreational opportunities for users who do not have access to private land (approximately 97 percent of land in Texas is privately owned). By conducting hunts on the refuge, we are encouraging family oriented outdoor recreation while supporting the tradition of hunting.

Strategy 1: Within five years of the signing of this Plan, develop a Visitor Services Plan that evaluates existing public use facilities, identifies additional facilities needed to provide high-quality compatible wildlife-dependent recreation, and identify sources of funding for development and maintenance of facilities.

Strategy 2: In cooperation with Texas Parks and Wildlife Department (TPWD), provide additional hunting opportunities that foster an appreciation of refuge resources and are appropriate and compatible.

Strategy 3: Partner with TPWD and Texas Youth Hunting Program, to offer opportunities for youth deer and feral hog hunting.

Strategy 4: Encourage hunting participation of under-represented segments of the public such as disadvantaged youth, persons with disabilities, and women, through various outreach.

Objective 2: Fishing

Over the life of the Plan, provide a compatible, safe, accessible, and quality recreational fishing experience while minimizing conflicts with other non-fishing visitors.

Rationale

Fishing is a traditional use of the area's lakes that adjoin the refuge. TPWD (2001) estimated 38 percent of Texans participate in fishing as a recreational activity. Historically, fishing took place on the refuge but since the 1960's human

consumption of fish was banned in the area due to high nitrate and fecal coliform rates. Additionally, the drop in the water table and the subsequent drying of Buffalo Lake, no fishery habitat is available on the refuge. Fishing provides opportunities to connect many people, particularly children, with nature. By providing safe and accessible fishing opportunities to the public, the refuge will continue to meet public needs while protecting resources.

Photo 4-4 Fishing at Buffalo Lake NWR. USFWS

Strategy 1: Within five years of the signing of this Plan, develop a Visitor Services Plan that evaluates existing public use facilities, identifies additional facilities needed to provide high-quality compatible wildlife-dependent recreation, and identify sources of funding for development and maintenance of facilities

Strategy 1: Develop a Refuge Fishing Plan.

Strategy 2: Construct a 6+ acre public fishing pond.

Strategy 3: Encourage fishing participation by under-represented segments of the public such as disadvantaged youth, persons with disabilities, and women, through outreach to various organizations.

Strategy 4: Within three years, provide at least one educational fishing event for local youth with an emphasis on disadvantaged and minorities.

Strategy 5: Throughout the life of this Plan, promote angler compliance with federal and state regulations and encourage good sportsmanship, conservation practices, and understanding of the Refuge and its purposes through law enforcement visibility and effective wording within informational brochures with high quality maps, signs, and on the Refuge Web site.

Strategy 6: Conduct all fishing activities in accordance with State of Texas regulations.

Objective 3: Wildlife Observation Opportunities

Over the term of this Plan, provide visitors with quality wildlife observation opportunities by maintaining existing viewing areas and infrastructure while expanding opportunities at new Moist Soil Units.

Rationale

Most visitors come to the Refuge to view wildlife and enjoy nature. The refuge has received requests to expand wildlife-viewing opportunities. The refuge will balance wildlife observation opportunities with the conservation and protection of habitats and species. This ensures that the conservation of lands is meeting the purpose for which the refuge was established.

Strategy 1: Within five years of the signing of this Plan, develop a Visitor Services Plan that evaluates existing public use facilities, identifies additional facilities needed to provide high-quality compatible wildlife-dependent recreation, and identify sources of funding for development and maintenance of facilities.

Strategy 2: Construct six additional blinds near moist soil units to provide additional opportunities for wildlife observation.

Strategy 3: Maintain all viewing areas on the refuge including the auto tour route, observation decks, viewing blinds and scenic overlooks.

Strategy 4: Continue to evaluate existing facilities for accessibility requirements every three years and make necessary improvements to these facilities as resources allow.

Objective 4: Wildlife Photography

The Refuge will provide safe and high quality opportunities by maintaining existing photo blinds and viewing areas and develop new opportunities where appropriate to achieve a 10 percent annual increase in wildlife photography participants throughout the Refuge.

Photo 4-5 Refuge Lizard. USFWS

Rationale

The refuge is a destination for both professional and novice wildlife photographers. Wildlife photography is a means of exploring and sharing the natural resources within the refuge promoting both wildlife and wildlife dependent recreational opportunities. A variety of opportunities exist for wildlife photography on the refuge through the use of hiking trails and the auto tour route, observation decks, viewing blinds and scenic overlooks. Recreational wildlife photography programs will promote an understanding and appreciation of natural resources and their management on all lands and waters in the Refuge System (General Guidelines for Wildlife Dependent Recreation 605 FW1).

Strategy 1: Within five years of the signing of this Plan, develop a Visitor Services Plan that evaluates existing public use facilities, identifies additional facilities needed to provide high-quality compatible wildlife-dependent recreation, and identify sources of funding for development and maintenance of facilities.

Strategy 2: Construct six additional blinds near moist soil units to provide additional opportunities for wildlife observation.

Objective 5: Interpretation
Over the life of the Plan, the refuge will increase the effectiveness of all interpretive activities by 25 percent above current levels.

Rationale
A more informed public historically increases public participation and use of the Refuge. Many visitors do not realize the distinction between a national wildlife refuge and a park or federal or state agency lands managed for different purposes. Increased efforts are needed to help people better understand the role of national wildlife refuges, the Service mission, and to have a heightened awareness of conservation and stewardship concepts.

Strategy 1: Within five years of the signing of this CCP, develop a Visitor Services Plan that evaluates existing public use facilities, identifies additional facilities needed to provide high-quality compatible wildlife-dependent recreation, and identify sources of funding for development and maintenance of facilities.

Strategy 2: Develop and construct interpretive panels throughout the refuge.

Strategy 3: Develop a Refuge Outreach Plan which promotes the refuge to the public through various media outlets. This promotion should include a process for the advertisement of refuge operating hours, new facilities, and special events.

Strategy 4: Update/maintain the refuge website with current events and changes to the refuge.

Objective 6: Environmental Education

Rationale
A more informed public historically increases public participation and use of the Refuge. Environmental education is a critical first step in providing visitors with an awareness of the refuge and the Refuge System and will ultimately translate into support for the refuge and the Refuge System mission. Environmental education provides a way for people to connect with nature through a “hands on” approach, and provides educational experiences not easily gained in a classroom. Environmental education programs can promote understanding and appreciation of natural and cultural resources and their management on all lands and waters in the Refuge System.

Strategy 1: Within five years of the signing of this Plan, develop a Visitor Services Plan that evaluates existing public use facilities, identifies additional facilities needed to provide high-quality

compatible wildlife-dependent recreation, and identify sources of funding for development and maintenance of facilities.

Strategy 2: Promote additional opportunities for environmental education for local schools and programs in the environmental education area of the refuge.

Strategy 3: Teach awareness, understanding, and appreciation of our natural and cultural resources and conservation history.

Strategy 4: Allow program participants to demonstrate learning through refuge-specific stewardship tasks and projects that they can carry over into their everyday lives.

Strategy 5: Throughout the life of this Plan, offer hands-on environmental education programs both on- and off-site, such as field trips, special educational events, and special-interest group programs.

Strategy 6: Sponsor education opportunities for surrounding schools and organizations to a minimum of one per year and a maximum of one per month in order to meet demand.

Objective 7: Outreach

Rationale
Create an outreach plan that lays out a strategy for promoting the Refuge and wildlife dependent recreational opportunities via additional media types and outreach specific talks to local community groups.

Strategy 1: Maintain refuge hours of 8:00 am to 6:00 pm from October 1 through March 31 and from 8:00 am to 8:00 pm from April 1 through September 31. Headquarter hours are 8:00 am to 4:30 pm, Monday through Friday. Exceptions are made and the refuge may be closed due to safety concerns (snow/ice, flooding prescribed fire, animal collection, etc).

Strategy 2: Expand the refuge staff through hiring of a refuge public use specialist and student hires to increase customer service.

Strategy 3: Develop additional viewing blinds and benches to increase wildlife viewing opportunities.

Objective 8: Partnerships

Rationale
Enhancing and developing the volunteer opportunities on the refuge will ensure that 1) individuals who want to give back to their communities, 2) parents who want to be good stewards of the land and set examples for their children, 3) retired people willing to share their wealth of knowledge, 4) concerned citizens of all ages who want to learn more about conservation, and 5) passionate people who enjoy the outdoors and want to spread the word about America's greatest natural treasures all have an opportunity to contribute to the refuge and to those who visit it.

Strategy 1: Within two years of the signing of this Plan, develop and revise the "Volunteer Manual" to ensure consistency in our message to the public to include the Service mission, Refuge System mission, Refuge purpose, and difference between state and federal areas.

Strategy 2: Continue to partner with local schools, state and federal agencies, and local organizations to promote the refuge and conservation of habitat throughout the High Plains Conservation Area.

4.5. Facilities Goal

Ensure that the refuge provides safe and quality facilities to all visitor and employees.

Objective 1: Within 2 year of this plans approval, develop and approve plans for repair and/or replacement of refuge facilities.

Photo 4-6 Refuge Photo Blind. USFWS

Rationale

Quality public use facilities enhance visitor experiences and encourage visitor's to return to the refuges, building a connection between the visitor and nature. Improving facilities will provide additional opportunities for quality public outreach and education. A combination administrative-laboratory facility will allow refuge staff to maximize efficiency and ability to monitor the refuge. Additionally, the ability to conduct valuable research is increased by improving the condition of the headquarters, and developing a visitor's center and biological lab.

Strategy 1: Develop and approve a site plan for a new integrated administrative complex within the existing administrative boundary which include a visitor center, biological lab and maintenance and storage facilities.

Strategy 2: As needed, replace and/or rehabilitate existing restroom facilities.

Strategy 3: Protect refuge facilities from vandalism by establishing a permanent, full-time law enforcement officer on the refuge.

Strategy 4: Ensure that the dam and related water control structures are maintained so as to effectively retain floodwaters, allowing fecal coli forms to fall out of suspension.

Strategy 5: Replace existing shop with larger facility with more equipment bays for repair/maintenance of heavy equipment purposes; this would include larger bays, heavy duty crane and other necessary elements.

Strategy 6: Maintain refuge roadways with grading activities on an as-needed basis.

Strategy 7: Rehabilitate refuge entry road to consist of two paved lane widths with adequate shoulders to common Texas Department of Transportation standards.

Strategy 8: Maintain existing windmills, providing a water source for grazing activities and wildlife; add additional windmills, to further supplement existing water pumping activities.