Appendix D. Compatibility Determinations

The following uses were found to be appropriate and evaluated to determine their compatibility with the mission of the Refuge System and the purposes of the Refuge. Compatibility determinations are included in this appendix.

1. Cooperative Grazing Program
2. Environmental Education
3. Harvesting Native Prairie Seed
4. Interpretation
5. Scientific Research
6. Wildlife Observation and Wildlife Photography

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COMPATIBILITY DETERMINATION

USE: Agricultural: Cooperative Grazing Program

REFUGE NAME: Attwater Prairie Chicken National Wildlife Refuge

ESTABLISHING AND ACQUISITION AUTHORITIES:
Fish and Wildlife Act of 1956
Endangered Species Act of 1973

REFUGE PURPOSE(S):
"… to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" 16 U.S.C. § 1534 (Endangered Species Act of 1973) and;

"...for the development, advancement, management, conservation and protection of fish and wildlife resources...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(a)(4), as amended, and "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(b)(1), as amended.

NATIONAL WILDLIFE REFUGE SYSTEM (NWRS) MISSION:
The mission of the System is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

DESCRIPTION OF USE:
(a) What is the use?
Attwater Prairie Chicken National Wildlife Refuge (APCNWR, Refuge) proposes to continue grazing cattle and bison in designated areas of the Refuge. Grazing is an economic use that contributes to an important habitat management tool (native prairie restoration) to benefit the endangered Attwater's prairie chicken (APC) and other grassland-dependent wildlife. This compatibility determination considers the continuation of the controlled grazing program and includes consideration of modifications to the program proposed by the Service under Refuge Management Alternative B (proposed action) of the Attwater Prairie Chicken National Wildlife Refuge Comprehensive Conservation Plan (CCP).

(b) Where is the use conducted?
Cattle are grazed in designated areas on approximately 7,062 acres of the Refuge in Colorado County. American bison are grazed on the 763-acre Lafitte pasture located within the auto tour route loop near the Refuge headquarters. Grazing currently does not occur on Refuge lands in Austin County or on recently restored lands at the south end of the Refuge. However, these areas will eventually be incorporated into the grazing program as habitat conditions indicate necessary for Attwater prairie-chicken management.

(c) When is the use conducted?
Currently, cattle and bison are grazed in a year-long cow-calf operation.

(d) How is the use conducted?
Grazing by cattle and American bison is conducted on designated areas of the Refuge by two Refuge grazing permitees. Up to 40 American bison graze in the Lafitte pasture to manage habitat and provide viewing opportunities for Refuge visitors. Up to 450 cattle graze on approximately 7,063 acres of the Refuge in Colorado County.

Pastures are stocked at light to moderate levels based on recommendations published in the U.S. Natural Resources Conservation Service range site descriptions for the area and on recommendations made by the Refuge biologist based on observed and measured habitat conditions. Responses of vegetation are monitored and stocking rates evaluated by the Refuge biologist on a constant basis. Livestock are deferred as necessary to meet management objectives. Current stocking rates range from 9–40 acres/animal unit-year (AUY) and average 18.2 acres/AUY.

(e) Why is this use being proposed?
Light to moderate grazing, often in combination with prescribed fire, is a generally accepted tool in prairie chicken management for preventing creation of an overly dense, matted grassland cover situation (Lehmann 1941, Hamerstrom et al. 1957, Chamrad and Dodd 1972, Cogar et al. 1977, Kessler 1978a, Kessler 1978b, Jurries 1979, USFWS 2010).

Kessler (1978b) stated: "Judiciously controlled livestock grazing may be the single most important management tool for maintaining favorable Attwater's prairie chicken habitat within remnant coastal prairie areas." Grazing enhances APC habitat by facilitating movements and feeding through reduced litter accumulation, creation of cover openings, and increased cover heterogeneity (Lehmann 1941, Kessler 1978a, Kessler 1978b). Additionally, grazing creates short grass cover at livestock concentration points (e.g., watering points) suitable for APC courtship activities (Kessler 1978b). Proper grazing may also slow succession of woody plant species, which has resulted in loss of thousands of acres of APC habitat in historic times (Kessler 1978b). It must be emphasized, however, that desired benefits are realized only when livestock numbers are strictly regulated according to forage availability (Lehmann 1941).

Watering tanks and windmills are located on the Refuge to support the grazing program. Fencing is also necessary for controlling livestock. The Refuge generally covers the initial installation costs of fences and maintenance of fences is the responsibility of the permitees. The Refuge is proposing through the CCP to consolidate pastures to decrease fragmentation due to infrastructure and reduce APC collision hazards. The overall amount of fencing on the Refuge will be reduced. Fence removal and installation of new fencing for this consolidation will be done in partnership with the grazing permittees.

AVAILABILITY OF RESOURCES:
Through the issuance of Refuge Special Use Permits (SUP), this use is a cooperative, commercial program whereby the permittee is leased the grazing rights, and the Refuge dictates the number of cattle and/or bison to meet objectives. Direct annual costs to administer this program and facilities are primarily in the form of staff time. Refuge staff spend approximately 0.25 FTE's and $25,000 in salary, materials, and supplies annually to administer the Refuge grazing program. Regular communication with the permittees, rotation and resting planning, boundary and interior fence inspection, and vegetation transects are all necessary to gather information and make informed decisions to use this tool.

ANTICIPATED IMPACTS OF THE USE:

Short and Long-term Impacts:

Always of primary concern at APCNWR are the anticipated impacts to the Attwater's prairie-chicken population. APCs avoid dense grassland cover, particularly if this cover exists in a thick, matted structure (Lehmann 1941, Kessler 1978a, Kessler 1978b). Cover of this nature impedes movements by adults and especially young chicks (Lehmann 1941, Hamerstrom et al. 1957, Kessler 1978a, Kessler 1978b). Stands of matted grass also result in reduced availability of APC foods (Lehmann 1941). Grazing has been shown to benefit Attwater's prairie-chickens when properly managed. Previous research indicated no use by Attwater's prairie-chicken of a 160-acre (65-ha) ungrazed pasture, despite heavy use of adjacent pastures (Chamrad and Dodd 1972).

Although releases of captive-reared Houston toads occurred on APCNWR during the early to mid-1980s, no Houston toads have been documented on the Refuge in recent years. Therefore, it is unlikely that continuing the grazing program would affect Houston toads. Overall, no significant negative impacts to federally listed threatened and endangered species are expected to occur due to grazing on the Refuge.

Continuing the current grazing program is projected to have positive benefits to uplands, threatened and endangered species, other wildlife and plant species, and socio-economics. In general, light to moderate grazing results in an increased species richness of both plants and animals (Kantrud and Kologiski 1982, Archer and Smeins 1991). It must be noted, however, that while grazing is a viable tool for managing wildlife habitat (Lehmann 1941, Kessler 1978a, Kessler 1978b, Ryder 1980, Bryant et al. 1982, Kantrud and Kologiski 1982), not all wildlife species have the same habitat requirements. Therefore, not all species respond similarly to grazing (Phillips 1936, Ryder 1980, Kantrud and Kologiski 1982, Hanley and Page 1982, Clark et al. 1989).

Grazing generally results in adverse impacts to watershed hydrologic parameters such as infiltration and run-off (Gifford and Hawkins 1978, Blackburn et al. 1982). Gifford and Hawkins (1978) indicated that on average soils, light to moderate grazing decreases infiltration by approximately 25 percent compared to the ungrazed condition; heavy grazing decreased infiltration by 50 percent. Gifford and Hawkins (1978) and Blackburn et al. (1982) concluded that there was little difference in the infiltration rates of lightly and moderately grazed areas. Infiltration rates are influenced by plant biomass, especially that of bunchgrass species (McGinty et al. 1979, McCalla et al. 1984a). Run-off and sedimentation also increase with grazing pressure (Sharp et al. 1964, Rauzi and Hanson 1966, McGinty et al. 1979, Wood and Blackburn 1981, McCalla et al. 1984b). In terms of water quality impacts, the major pollutant from grazed watersheds is sediments (Thurow 1991). However, Wood and Blackburn (1981) noted that even on heavily grazed areas, sediment production was extremely small when compared to annual tolerance levels of croplands. Due to the generally flat topography of the Refuge, sedimentation—although a potential impact of grazing—is not expected to affect water quality in the area. The San Bernard River has been classified as impaired on the Texas Commission of Environmental Quality's 303(d) list due to bacteria levels, but tests conducted by State agencies report that river bacteria counts just south of the Refuge (at the FM 3013 bridge) are usually at acceptable levels or better for most of the year than at points further downstream. Water quantity is not expected to be impacted based on cattle consumption; intake by cattle is minimal, especially in comparison to irrigated agricultural production in the surrounding areas.

Grazing impacts on wetlands are highly variable and are dependent upon grazing intensity, wetland species composition, and the wetland system. For example, Quinn et al. (1992) observed increased water temperature, increased sedimentation, and decreased invertebrate populations in riparian wetlands. However, Pehrsson (1988) found that grazing increased vegetative species diversity, increased production

of herbage- and seed-producing vegetation, and decreased production of rushes (e.g., *Phragmites spp.*) in salt marshes. Weller (1987) speculated that light grazing might simulate the effects of historic grazing by bison, resulting in more attractive and accessible cover for birds. Properly managed grazing of wetlands has been beneficial to prairie wetland species such as willets (Ryan and Renken 1987) and marbled godwits (Ryan et.al. 1984), as well as a number of waterfowl species (Burgess et al. 1965, Duebbert et al. 1986, Barker et al. 1990, Sedivec et al. 1990).

Wetlands on APCNWR are primarily small, ephemeral or semi-permanent, widely scattered within upland prairie sites, and comprise approximately 15 percent of total Refuge acreage. Whyte and Cain (1981) concluded that grazing, which allows key rest and grazing periods, will minimize the impact of grazing on shoreline vegetation of small impoundments. These investigators also found that cattle least affected the seasonal aquatic community, which maintained good stands of waterfowl food plants. Past experience on APCNWR has shown that appropriate distribution of artificial watering sources for cattle has proven successful in avoiding excessive disturbance to wetland areas.

Cumulative Impacts:
Grazing is not expected to have cumulative negative impacts to migratory birds, the viability of any fish, wildlife, plant populations, or other biological or physical resources.

PUBLIC REVIEW AND COMMENT:
This compatibility determination was published and available for public review and comment concurrent with the Draft CCP and EA released December 12, 2011 and closing January 23, 2012. Public notification included a notice in the Federal Register, media announcements, public notices posted throughout the local communities, and a public meeting. There was only one comment received specifically about grazing that fully supported the grazing program and associated patch burn system.

DETERMINATION (CHECK ONE BELOW):

_____Use is Not Compatible

_X___Use is Compatible with Following Stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:
Grazing activities are monitored closely by Refuge management. Evaluation of activities is conducted periodically to determine (1) if impacts have become unacceptable and (2) if objectives are not being met. The Refuge annually conducts vegetation transect monitoring to determine acceptability and stocking rates. If evidence of unacceptable adverse impacts appears or objectives are not being met, the Refuge Manager reserves the right to modify stocking rates as necessary to meet Refuge management and APC recovery objectives.

JUSTIFICATION:
Numerous research studies have documented the beneficial impacts of carefully managed grazing on prairie-chicken habitat. These studies are summarized in the supporting discussion above. The approved Attwater's Prairie-Chicken Recovery Plan also reflects the importance of grazing as a tool for management of Attwater's prairie-chicken habitat. Therefore, continuation of this grazing program will contribute to enhanced habitat quality for the endangered Attwater's prairie-chicken on APCNWR. Attwater Prairie Chicken National Wildlife Refuge has determined that grazing, in accordance with the stipulations provided above, will not materially interfere with or detract from the fulfillment of the

National Wildlife Refuge System mission or the purposes of the Refuge. The Refuge will continue to monitor this use and adjust the program as necessary to protect and enhance Refuge resources. The benefits of the grazing program are expected to outweigh associated impacts.

SIGNATURE: **Refuge Manager** Jerry A. Ponignal 3/27/2012
(Signature and Date)

CONCURRENCE: Regional Chief 4/20/12
(Signature and Date)

MANDATORY 10- OR 15-YEAR RE-EVALUATION DATE: 2022

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COMPATIBILITY DETERMINATION

USE: Environmental Education

REFUGE NAME: Attwater Prairie Chicken National Wildlife Refuge

ESTABLISHING AND ACQUISITION AUTHORITY:
Fish and Wildlife Act of 1956
Endangered Species Act of 1973

REFUGE PURPOSE(S):
"… to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" 16 U.S.C. § 1534 (Endangered Species Act of 1973) and;

"...for the development, advancement, management, conservation and protection of fish and wildlife resources...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(a)(4), as amended, and "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(b)(1), as amended.

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:
The mission of the National Wildlife Refuge System (Refuge System) is "to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

DESCRIPTION OF USE:
(a) What is the use?
Attwater Prairie Chicken National Wildlife Refuge (APCNWR, Refuge) proposes to continue and expand the environmental education program in designated areas of the Refuge that are compatible with Refuge purposes. This activity is a wildlife-dependent, priority public use of the Refuge System under the National Wildlife Refuge System Improvement Act of 1997. The continuation and enhancement of this program will be addressed in this compatibility determination. The Refuge generally hosts 75–100 students at the Refuge annually and will also host two or three adult continuing education programs each year for approximately 50 individuals. The Refuge is proposing through the Comprehensive Conservation Plan (CCP) to hire a visitor services specialist to expand all public use programs. The Refuge will expand the environmental education program to reach approximately 1,000 students annually on and off-site.

Environmental education may occur in many forms. Whenever possible, students (both youth and adults) will be encouraged to participate in environmental education on the Refuge so they can fully appreciate the native prairie and Refuge efforts to restore native prairie and recover the Attwater's prairie-chicken. On-Refuge programs may include staff or teacher led investigations, presentations, and hands-on learning through the collection of data or materials that allow the students to connect the principles and theories behind conservation. Currently, education programs on the Refuge are led by Refuge staff or partner organizations such as Texas Master Naturalist or county extension offices. These programs involve tours and talks followed by classroom discussion, tests, and formal certifications. School aged children will often take what they have learned at the Refuge and apply it in the classroom upon returning to their school.

Off-Refuge education programs usually involve Refuge staff speaking to classes about conservation, restoration, and endangered species. Talks are geared toward addressing specific priorities or curriculum for those classes to help them meet education goals.

Once a dedicated public use staff is hired at APCNWR, both on- and off-Refuge education programs will be expanded to accommodate more students, broaden the scope of programs and create a deeper understanding of the Refuge mission and goals. This staff person will develop partnerships with local school districts to deliver environmental education that helps the district meet their education goals and requirements while also teaching the students about the purpose of the Refuge. Outdoor classroom activities will be more formalized so that students in a variety of courses can apply their learning using examples in the natural world.

(b) Where is the use conducted?
Environmental education generally occurs in the public use area on the Refuge, at the visitor contact station, along the auto tour route, or on one of the walking trails. Programs occasionally take students into the restricted use area to view prairie restoration or APC release sites. Environmental education may also occur off-site at schools or other centers where it is appropriate for staff to bring materials and presentations to the students.

(c) When is the use conducted?
Environmental education programs are conducted on an as-needed basis, generally during normal work hours, year round. Occasionally, programs will be delivered on weekends or evenings. With the addition of dedicated public use staff, regularly scheduled programs may be made available to the public on weekends.

(d) How is the use conducted?
Programs are available on request as time permits, and Refuge staff will work closely with schools and teachers to tailor a visit to the Refuge that will meet requirements in the students' curriculum.

Additional strategies to support and increase environmental education opportunities are identified in Chapter 4 of the APCNWR Comprehensive Conservation Plan and outlined in the visitor services section under Alternative B of the Environmental Assessment (EA). These strategies include:

- Replacing the underutilized Pipit Trail with a new trail near Horseshoe Lake.
- Excluding livestock from the public trails to avoid interaction with visitors.
- Constructing a new accessible parking area, boardwalk, and viewing platform on Horseshoe Lake.
- Increasing Attwater's prairie-chicken viewing opportunities by providing more guided tours.
- Increasing outreach and environmental education programs by adding public use staff.

All of these strategies will support environmental education through increased exposure and interaction between the visitor and the Refuge environment. However, true education only occurs when understanding is reached, and introducing the visitor to the Refuge is only the first step in this process. Following the initial interaction, materials, presentations and dialogue must occur to achieve education. Programs may be staff led and interactive or can be self-guided through brochures, workbooks, or even podcasts. All of these tools will be used to deliver environmental education both on and off-Refuge.

(e) Why is this use being proposed?
Environmental education is an existing Refuge use and is identified as one of the six wildlife-dependent priority public uses for the Refuge System. Developing an educational program for visitors to enhance

their knowledge of APC recovery efforts, the Refuge, and the Refuge System as a whole will increase support for conservation efforts.

AVAILABILITY OF RESOURCES:

Direct annual costs to administer these programs and facilities are primarily in the form of staff time. Refuge staff spends approximately 0.25 full-time equivalents (FTEs) and $30,000 in utilities, materials, and supplies annually to administer the environmental education program. The development of new facilities, programs, and materials, as well as their maintenance and upkeep, will be the primary costs associated with environmental education offered on the Refuge. In addition, staff time to deliver programs adds to the expense of environmental education.

Additional funding of approximately 0.5 FTE's and $40,000 annually will be required before the facilities and programs listed in Chapter 4 of the CCP can be fully implemented. Refuge staff will pursue funding options through partnerships with other non-governmental organizations, including the development of Friends of Attwater Prairie Chicken NWR, and will pursue grants and matching funds to ensure that these strategies are implemented. The volunteer program at APCNWR plays an important role in the Refuge's ability to offer the existing programs, and volunteer support will continue to be critical in the Refuge's ability to fully implement the proposed strategies.

ANTICIPATED IMPACTS OF THE USE:

Short and Long-Term Impacts:

Always of primary concern at APCNWR are the anticipated impacts to the Attwater's prairie-chicken population. Refuge visitors are not allowed in the core use area for prairie-chickens unless accompanied by Refuge staff, and while this may lead to a significantly reduced opportunity for visitors to see prairie-chickens, it reduces potential negative impacts as well. Environmental education specific to the Attwater's prairie-chicken is a primary goal of the Refuge and will include some staff-led tours in the restricted use area, which may cause temporary and mild amounts of disturbance to prairie-chickens and other Refuge wildlife.

Although releases of captive-reared Houston toads occurred on APCNWR during the early to mid-1980s, no Houston toads have been documented on the Refuge in recent years. Therefore, it is unlikely that continuing or expanding the environmental education program would impact Houston toads. Overall, no significant impacts to federally listed threatened and endangered species are expected to occur due to environmental education on the Refuge.

Impacts on other Refuge wildlife associated with environmental education activities vary based on mode of access. Overall, it is likely that species composition and abundance may temporarily decrease in areas supporting this use. However, by concentrating disturbances to these designated areas, which constitute a very small portion of the Refuge, large and extensive tracts of undisturbed habitat remain available for wildlife throughout the Refuge.

Litter improperly discarded by visitors can entangle wildlife or be ingested, potentially resulting in injury or death. Efforts to educate the public about such issues are incorporated into outreach efforts and educational programs. In almost every case, visitors will be accompanied by a member of the Refuge staff or volunteer while participating in education programs. This will significantly reduce the potential for litter on the Refuge that may affect wildlife or other Refuge visitors' use. In addition, the use of trails for environmental education may result in soil compaction, erosion, and trampling of vegetation. Visitor

access, however, is typically by individuals or groups that participate in recreational activities for short durations, therefore, impacts on water quality and soils are negligible.

The mentioned impacts are minimized on the Refuge by conducting environmental education programs away from sensitive areas, by restricting access to existing roads and trails, and through the strategic location of trails whenever possible. While some disturbance impacts occur along these linear corridors, extensive tracts of undisturbed habitats remain available for wildlife in areas adjacent to public use facilities and throughout the Refuge. Additionally, impacts are minimized through development and active enforcement of Refuge-specific rules and regulations, including emergency closures if warranted, and through educational materials made available to the visiting public and by accompanying participants during education programs.

Cumulative Impacts:
There are no anticipated adverse cumulative impacts resulting from environmental education. Ultimately, this activity will add to public use opportunities on the Refuge, which will result in beneficial cumulative impacts on the human environment. Public use opportunities available on the Refuge will increase public awareness about conservation issues and the Refuge System. This will benefit the Service's overall mission and the Refuge purpose.

PUBLIC REVIEW AND COMMENT:
This compatibility determination was published and available for public review and comment concurrent with the Draft CCP and EA released December 12, 2011 and closing January 23, 2012. Public notification included a notice in the Federal Register, media announcements, public notices posted throughout the local communities, and a public meeting. No comments specific to this determination were received.

DETERMINATION (CHECK ONE BELOW):
_____Use is Not Compatible
_X___Use is Compatible with Following Stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:
- Only authorized education programs will be allowed.
- Collection of plants or animals, or feeding or disturbing wildlife without a special use permit, is prohibited.
- Special entry into the Refuge's closed area for environmental education purposes will be accompanied by Refuge personnel and avoid peak APC breeding periods (i.e., March, from sunrise to 10:00 am).
- Public use trends and associated impacts from human activity will be continually monitored by Refuge staff. If significant increases in use occur and/or if impacts to resources are determined significant, the program will be re-evaluated and modified as necessary to ensure compatibility.

JUSTIFICATION:
An environmental education program is determined to be compatible with the establishment purposes of the Refuge and the mission of the Refuge System. Environmental education is a wildlife-dependent, priority public use of the Refuge System under the National Wildlife Refuge System Improvement Act of 1997. The Service strives to provide priority public uses when compatible with the purpose of the Refuge and the mission of the Refuge System. Facilities and activities related to environmental education occur in designated areas of the Refuge, leaving large areas of undisturbed habitat available for wildlife. The

stipulations outlined here are specifically designed to and should minimize potential impacts of these activities. The Refuge will continue to monitor uses and adjust programs as necessary to protect Refuge resources. The educational benefits gained from this activity are expected to outweigh their associated impacts. Attwater Prairie Chicken National Wildlife Refuge has determined that environmental education, in accordance with the stipulations provided above, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the Refuge. Instead, expanding environmental education will give many people a deeper appreciation of wildlife and a better understanding of the importance of conserving habitat, thereby further contributing to the overall mission of the Refuge System.

SIGNATURE: **Refuge Manager** Irvin A. Romignal 3/27/2012
(Signature and Date)

CONCURRENCE: **Regional Chief** 4/20/12
(Signature and Date)

MANDATORY 10- OR 15-YEAR RE-EVALUATION DATE: 2027

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COMPATIBILITY DETERMINATION

USE: Harvesting Native Prairie Seed

REFUGE NAME: Attwater Prairie Chicken National Wildlife Refuge

ESTABLISHING AND ACQUISITION AUTHORITIES:
Fish and Wildlife Act of 1956
Endangered Species Act of 1973

REFUGE PURPOSE(S):
"… to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" 16 U.S.C. § 1534 (Endangered Species Act of 1973) and;

"...for the development, advancement, management, conservation and protection of fish and wildlife resources...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(a)(4), as amended, and "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(b)(1), as amended.

NATIONAL WILDLIFE REFUGE SYSTEM (NWRS) MISSION:
The mission of the National Wildlife Refuge System is "to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

DESCRIPTION OF USE:
(a) What is the use?
Attwater Prairie Chicken National Wildlife Refuge (APCNWR, Refuge) proposes to continue the harvest of native prairie grass seeds in designated areas of the Refuge. Harvesting native seed is an economic use that contributes to an important habitat management tool (native prairie restoration) to benefit the endangered Attwater's prairie-chicken and other grassland-dependant wildlife. This compatibility determination considers the continuation of the native seed harvesting program and includes consideration of modifications to the program proposed by the Service under Refuge Management Alternative B (preferred alternative) of the Attwater Prairie Chicken National Wildlife Refuge Comprehensive Conservation Plan (CCP).

(b) Where is the use conducted?
Harvesting of native prairie seeds is conducted along sandier soils in the Housh, Duncan, East Reichardt, Duncan Sands, Foster, Sandy River, and Cranz pastures of the Refuge. Other suitable areas on the Refuge could be used as dictated by seed availability and accessibility.

(c) When is the use conducted?
Seed harvesting is conducted only during years when seed is abundant (due to rainfall or a combination of other environmental conditions) and when soil conditions are not too wet to preclude harvest, generally beginning in late October/early November.

(d) How is the use conducted?
Native prairie seeds are harvested on designated areas of the Refuge by a single permittee using modified combines and tractors equipped with hydraulic rotating brush seed collectors. The combine cuts the seed heads as high off the ground as possible (no lower than 10" above ground level), and the grass stubble and straw are left behind once the machine has passed over and stripped the seedhead from the straw. The tractors with brush collectors simply drive over the prairie and "sweep" the seedheads into a hopper, leaving the grasses mostly intact.

After cutting and storing the seedheads, the combines empty their load into trucks that are waiting nearby to haul the load into storage barns. When conditions are suitable and the situation warrants, trucks will go out into the prairie to allow the combines to unload their hoppers without returning all the way to the nearest road. However, access is not allowed if prairie conditions are too wet to avoid creating ruts and compacting prairie soils.

In order to avoid the introduction or spread of invasive species, the contractor's equipment is cleaned before it arrives at the Refuge and again prior to leaving the Refuge.

(e) Why is this use being proposed?
A portion of the Refuge (approximately 35 percent) was former cropland in need of restoration to native coastal prairie. Native prairie restoration can be accomplished in a variety of ways depending on prior land uses and the duration and impacts of those uses on the particular site. In some cases, the native seeds already occur in the soils and—by simply returning natural processes such as fire, restoring topography and drainage, controlling invasive or exotic plants, or reducing or removing grazing livestock—the areas can be returned to their native condition. However, some areas no longer have sufficient native seeds in the soils as a result of prior uses such as farming rice or conversion to exotic grasses. In these cases, supplementing these areas with native seeds is the preferred method of restoring native prairies.

In order to re-introduce or supplement native seed sources, native prairie hay can be harvested and spread on the area to be restored with a "bale buster" or mulching machine. Although less efficient than planting native seeds, over time, this has proven effective in some areas of the Refuge but can be a very slow process that produces an often uneven distribution of native plants.

Commercial harvesting of native prairie seeds and the planting of those harvested, processed seeds has proven to be a very effective and efficient tool for restoring disturbed sites to native prairie. Within several years, an evenly distributed, robust stand of native plants can be established on a site if proper site preparation is done and care is taken to use quality seed. Several hundred acres of the APCNWR have been successfully restored to native grasses using this method.

AVAILABILITY OF RESOURCES:
Through the issuance of a Refuge Special Use Permit (SUP), this use is a cooperative, commercial program whereby the permittee cleans, processes, tests, and returns a portion of the harvested seed to the Refuge as payment for the portion that they retain. Because no fees are charged or incurred, direct annual costs to administer this program and facilities are primarily in the form of staff time. Refuge staff spend approximately 0.1 FTE's and $5,000 in salary, materials, and supplies annually to administer the seed harvesting program. Regular communication with the permittee, site inspections, rotation, and harvest planning are all necessary to gather information and make informed decisions to use this tool.

ANTICIPATED IMPACTS OF THE USE:

Short and Long Term Impacts:

Always of primary concern at APCNWR are the anticipated impacts to the Attwater's prairie-chicken population. APCs depend on healthy native prairie. Temporary impacts to the bird's grassland habitat occurs as tall grasses are pushed over by the harvest equipment, creating a two-track trail in some cases. However, because most plants are entering fall and winter dormancy at the time of harvest, impacts from harvesting equipment are short-term and minimal.

Harvesting native seed occurs in the fall when APCs dispersal is most widespread. Direct impacts to prairie-chickens are not expected to occur. In fact, observations suggest that although harvesting activities may result in temporary disturbance, APCs may actually select these recently harvested sites for cover due to the physical arrangement of grass stubble and straw.

Although releases of captive-reared Houston toads occurred on APCNWR during the early to mid-1980s, no Houston toads have been documented on the Refuge in recent years. Therefore, it is unlikely that continuing the seed harvesting would impact Houston toads. Overall, no significant negative impacts to federally-listed threatened and endangered species are expected to occur due to harvesting native seed on the Refuge.

Continuing the seed harvesting program is projected to have positive benefits to uplands, threatened and endangered species, other wildlife and plant species, and socio-economics. In general, harvesting native seed and the resulting restoration efforts lead to an increased species richness of both plants and animals.

Native seed harvesting may result in temporary adverse impacts to watershed hydrologic parameters such as infiltration and run-off due to soil disturbance and compaction. However, sediment production should be extremely small when compared to annual tolerance levels from croplands. This use may have a slightly negative impact on water quality due to increased sedimentation from soil disturbance and compaction, although leaving grass roots and stubble intact will certainly reduce this impact. Impacts on air quality may be negative, as well as a result of additional releases of exhaust from harvesting machines (combines and tractors). By making the high quality native prairie on the Refuge available for commercial harvest, seed is available to other landowners in the region who are interested in restoring native prairie. Therefore, positive impacts to the regional prairie restoration efforts will be seen because of this program. As a result of seed harvesting, indirect and cumulative impacts to migratory birds and other biological resources from this use remains at acceptable levels and will not affect the viability of any fish, wildlife, or plant population on the Refuge.

Socio-economic benefits from the current seed harvesting program are attributable to the fact that the operation is accomplished in cooperation with a private sector enterprise. As such, expenditures and profits associated with the operation are important inputs to the local and regional economy.

Cumulative Impacts:

Cumulative impacts to migratory birds and other biological resources remain at acceptable levels and will not affect the viability of any fish, wildlife, or plant population on the Refuge.

PUBLIC REVIEW AND COMMENT:

This compatibility determination was published and available for public review and comment concurrent with the Draft CCP and EA released December 12, 2011 and closing January 23, 2012. Public notification included a notice in the Federal Register, media announcements, public notices posted

throughout the local communities, and a public meeting. No comments specific to this determination were received.

DETERMINATION (CHECK ONE BELOW):
_____Use is Not Compatible
_X___Use is Compatible with Following Stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:
Seed harvesting activities are planned and monitored closely by Refuge management. Evaluation of activities is conducted periodically to determine: (1) if impacts have become unacceptable, and (2) if objectives are being met. A number of things are done to ensure that impacts are not unacceptable. The Refuge determines whether seed production is enough for harvesting beforehand. During dry years when production is low, seed harvesting is not conducted. The Refuge carefully observes soil conditions to limit adverse impacts. During wet conditions, when soil is soft, harvesting is not conducted. If evidence of unacceptable adverse impacts appears or objectives are not being met, the Refuge manager reserves the right to modify or terminate the program as necessary to meet Refuge management and APC recovery objectives. Ensuring that the permittee's equipment is thoroughly cleaned prior to accessing APCNWR will prevent the spread of unwanted invasive species onto the Refuge. Access is denied if ground conditions are too wet to support harvest equipment. Combine cuts should be no lower than 10" above ground level. The use of seed or hay from off-Refuge sites (except future sites specifically established to increase seed production for the Refuge) should be avoided.

JUSTIFICATION:
Numerous research studies have documented the beneficial impacts to APCs of restoring high quality native prairie. The approved Attwater's Prairie-Chicken Recovery Plan also reflects the importance of restoring native prairie as a tool for the recovery of Attwater's prairie-chicken. Therefore, continuation of this program will contribute to enhanced habitat quality and quantity for the endangered Attwater's prairie-chicken on the Attwater Prairie Chicken National Wildlife Refuge and provide native grass seed to private landowners in the region. It is unlikely that other endangered or threatened species or their habitat will be impacted.

Attwater Prairie Chicken National Wildlife Refuge has determined that harvesting native prairie seed, in accordance with the stipulations provided here, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the Refuge. The Refuge will continue to monitor this use and adjust the program as necessary to protect and enhance Refuge resources. The benefits of native prairie grass seed harvesting is expected to outweigh associated impacts.

SIGNATURE: **Refuge Manager** Jerry A. Ponigow 3/27/2012
(Signature and Date)

CONCURRENCE: **Regional Chief** 4/20/12
(Signature and Date)

MANDATORY 10- OR 15-YEAR RE-EVALUATION DATE: __2022__

COMPATIBILITY DETERMINATION

USE: Interpretation

REFUGE NAME: Attwater Prairie Chicken National Wildlife Refuge

ESTABLISHING AND ACQUISITION AUTHORITIES:
Fish and Wildlife Act of 1956
Endangered Species Act of 1973

REFUGE PURPOSE(S):
"… to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" 16 U.S.C. § 1534 (Endangered Species Act of 1973) and;

"...for the development, advancement, management, conservation and protection of fish and wildlife resources...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(a)(4), as amended, and "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(b)(1), as amended.

NATIONAL WILDLIFE REFUGE SYSTEM (NWRS) MISSION:
The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

DESCRIPTION OF USE:
(a) What is the use?
Attwater Prairie Chicken National Wildlife Refuge (APCNWR, Refuge) proposes to continue to provide interpretation, an existing wildlife-dependent recreational opportunity, in designated areas of the Refuge. In accordance with Chapter 4 of the Comprehensive Conservation Plan (CCP), the Refuge is proposing the continuation and enhancement of the interpretive program to ensure that all visitors gain a better understanding of the purpose of the Refuge and its role in the recovery of the endangered Attwater's prairie-chicken. The use is provided through an annual festival, interpretive panels, printed materials, videos and brochures, Refuge Visitor Contact Station displays, and interaction with Service volunteers and staff.

(b) Where is the use conducted?
The Refuge hosts a variety of interpretative opportunities. The Refuge holds an annual Attwater's Prairie-chicken Festival every second weekend in April. This two-day event offers a number of guided tours and walks. These tours allow visitors to experience the beauty of the Refuge, including a tour to view the courtship dance of the Attwater's prairie-chicken, a tour of virgin coastal prairie habitat, a tour to view prairie and marshbirds, and an opportunity to get up close to flowering plants. Several interpretive panels at the Sycamore Trail Kiosk describe the life history of the APC, why the species is on the brink of extinction, and what is being done to help this species recover. Another interpretive feature is a panel located along the auto tour route explaining the importance of prescribed burning for the maintenance and restoration of native prairie. The Refuge also has a Visitor Contact Station with a collection of mounted birds and a series of videos about the Attwater's prairie-chicken. Outside of the Visitor Contact Station is

a kiosk with interpretative panels and an interactive audio display with sounds of the Attwater's prairie-chicken. These kiosks also provide brochures and maps for visitors that arrive after business hours or on weekends. The CCP is proposing to relocate and add interpretive information along the auto tour route and to add an additional interpretive trail near Horseshoe Lake. Most interpretation that occurs on the Refuge takes place at the Visitor Contact Station through interaction with Refuge staff or through self-guided interpretation using brochures and kiosk panels when staff are not available.

(c) When is the use conducted?
Interpretation occurs year round through the Visitor Contact Station and interpretative panels located in the Public Use Area of the Refuge. The Refuge hosts an annual special event—the Attwater's Prairie-chicken Festival—each spring to allow visitors an opportunity to view prairie-chickens on their booming grounds (leks) and participate in guided walks and tours throughout the Refuge. Expanded interpretive opportunities on the weekends and/or holidays may occur with the addition of a permanent public use specialist.

(d) How is the use conducted?
The Refuge provides multiple means for Refuge visitors to experience the interpretive program. All interpretive panels are accessible, easy to read and understand and staff is available during regular business hours at the Visitor Contact Station to answer questions. Additional strategies to support interpretation are identified under Visitor Services Alternative B (proposed action) of the APCNWR Comprehensive Conservation Plan and Environmental Assessment (EA) and are outlined in Chapter 4 of the Plan. These strategies include:

- Realigning the auto tour route to provide a more realistic and meaningful prairie experience by allowing visitors to spend a greater portion of their time viewing high quality prairie habitat.
- Replacing the underutilized Pipit Trail with a new trail near Horseshoe Lake.
- Excluding livestock from the public trails to avoid impacts to visitors.
- Constructing a new accessible parking area, boardwalk and viewing platform on Horseshoe Lake.
- Developing new interpretive signage for the auto tour route and walking trails.
- Increasing Attwater's prairie-chicken viewing opportunities by providing more guided tours.
- Constructing new headquarters facility to include an improved Visitor Contact Station
- Providing weekend visiting hours at the Visitor Contact Station by adding dedicated visitor services staff.

The effectiveness of this program will be measured through visitor feedback, comment cards, and possible periodic surveys.

(e) Why is this use being proposed?
Interpretation is an existing Refuge use, and expanding this program will enhance opportunities for a high quality visitor experience on the Refuge. It promotes visitor understanding for America's natural resources by providing safe, enjoyable, and accessible interpretative opportunities. Developing and enhancing opportunities for people to learn about APC recovery efforts, the Refuge, and the Refuge System as a whole will increase support for conservation efforts.

Availability of Resources:
Direct annual costs to administer this program and facilities are primarily in the form of staff time. Refuge staff spends approximately 0.25 FTE's and $35,000 in utilities, materials, and supplies annually to administer the environmental interpretation program. The development of new facilities, programs and

materials, as well as their maintenance and upkeep, will be the primary costs associated with interpretation offered on the Refuge. In addition, staff time to deliver programs adds to the expense of interpretation.

Additional funding of approximately 0.25 FTE's and $75,000 annually will be required before the facilities and programs listed in Chapter 4 of the Plan can be fully implemented. An additional estimated $1.5 million will be needed to construct a proposed environmental education and Visitor Contact Station. Refuge staff will pursue funding options through partnerships with other non-governmental organizations, including the development of Friends of Attwater Prairie Chicken NWR, and will pursue grants and matching funds to ensure that these strategies are implemented. The volunteer program at APCNWR plays an important role in the Refuge's ability to offer the existing programs, and volunteer support will continue to be critical in the Refuge's ability to fully implement the proposed strategies.

ANTICIPATED IMPACTS OF THE USE:

Short and Long-Term Impacts:

Always of primary concern at APCNWR are the anticipated impacts to the Attwater's prairie-chicken population. Refuge visitors are not allowed in the core use area for prairie-chickens unless accompanied by Refuge staff, and while this may lead to a significantly reduced opportunity for visitors to see prairie-chickens, it reduces potential negative impacts as well. Interpretation specific to the Attwater's prairie-chicken is a primary goal of the Refuge and will include some staff-led tours into the restricted APC core use area, which may cause temporary and mild amounts of disturbance to prairie-chickens and other Refuge wildlife.

Although releases of captive-reared Houston toads occurred on APCNWR during the early to mid-1980s, no Houston toads have been documented on the Refuge in recent years. Therefore, it is unlikely that continuing or expanding the interpretation program would impact Houston toads. Overall, no significant impacts to federally listed threatened and endangered species are expected to occur due to improving the interpretation program on the Refuge.

Motorized vehicles and walking are used to access areas used for interpretation on the Refuge. Impacts associated with interpretation activities vary based on mode of access. Pedestrians, vehicles, and bicycles have the potential to disturb wildlife and influence wildlife distribution and habitat use. Disturbance of wildlife by visitors is likely to be greatest in concentrated areas of use, including along trails and roads. While some species appear to acclimate to vehicular traffic, and even presence of visitors on trails, other species are less tolerant of disturbance. Overall, it is likely that species composition and abundance is decreased in areas supporting interpretive uses. However, by concentrating disturbances to these designated areas that constitute a very small portion of the Refuge, large and extensive tracts of undisturbed habitat remain available for wildlife throughout the Refuge.

Litter improperly discarded by visitors can entangle wildlife or be ingested, potentially resulting in injury or death. Efforts to educate the public about such issues are incorporated into outreach efforts, educational programs, and interpretative programs. In addition, the use of trails for interpretation may result in soil compaction, erosion, and trampling of vegetation. Visitor access, however, is typically by individuals or groups that participate in recreational activities for short durations, therefore, impacts on water quality and soils are negligible.

The stated impacts are minimized on the Refuge by locating public use facilities away from sensitive areas, restricting public access to existing roads and trails, and strategically locating trails. While some disturbance impacts occur along these linear corridors, extensive tracts of undisturbed habitats remain

available for wildlife in areas adjacent to public use facilities and throughout the Refuge. Additionally, impacts are minimized through development and active enforcement of Refuge-specific rules and regulations, including emergency closures if warranted, and through educational materials made available to the visiting public.

Cumulative Impacts:
As a result of active management of this wildlife-dependent recreational use, cumulative impacts to migratory birds and other biological resources remain at acceptable levels and will not affect the viability of any fish, wildlife, or plant population on the Refuge.

PUBLIC REVIEW AND COMMENT:
This compatibility determination was published and available for public review and comment concurrent with the Draft CCP and EA released December 12, 2011 and closing January 23, 2012. Public notification included a notice in the Federal Register, media announcements, public notices posted throughout the local communities, and a public meeting. No comments specific to this determination were received.

DETERMINATION (CHECK ONE BELOW):
___ Use is Not Compatible
_X_ Use is Compatible with Following Stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

- Only authorized interpretive programs will be allowed.
- Collection of plants or animals, or feeding or disturbing wildlife without a special use permit, is prohibited.
- Special entry into the Refuge's closed area for interpretive purposes will be accompanied by Refuge personnel and avoid peak APC breeding periods (i.e., March, from sunrise to 10:00 am).
- Public use trends and associated impacts from human activity will be continually monitored by Refuge staff. If significant increases in use occur and/or if impacts to resources are determined significant, the program will be re-evaluated and modified as necessary to ensure compatibility.

JUSTIFICATION:
An interpretative program is determined to be compatible with the establishment purposes of the Refuge and the mission of the Refuge System. Interpretation is one of the six wildlife-dependent, priority public uses of the Refuge System under the National Wildlife Refuge System Improvement Act of 1997. The Service strives to provide priority public uses when compatible with the purpose of the Refuge and the mission of the Refuge System. Facilities and activities related to interpretation occur in designated areas of the Refuge, leaving large areas of undisturbed habitat available for wildlife. The stipulations outlined here are specifically designed to and should minimize potential impacts of these activities. The Refuge will continue to monitor uses and adjust programs as necessary to protect Refuge resources. The educational benefits gained from these interpretative activities are expected to outweigh their associated impacts. Attwater Prairie Chicken National Wildlife Refuge has determined that interpretation, in accordance with the stipulations provided here, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the Refuge. Instead, providing and enhancing opportunities for interpretation will give many people a deeper appreciation of wildlife and a better understanding of the importance of conserving habitat, thereby further contributing to the overall mission of the National Wildlife Refuge System.

Signature: **Refuge Manager** Jerry A. Rosignol 3/27/2012
(Signature and Date)

Concurrence: Regional Chief 4/20/12
(Signature and Date)

Mandatory 10- or 15-year Re-Evaluation Date: 2027

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COMPATIBILITY DETERMINATION

USE: Scientific Research

REFUGE NAME: Attwater Prairie Chicken National Wildlife Refuge

ESTABLISHING AND ACQUISITION AUTHORITY:
Fish and Wildlife Act of 1956
Endangered Species Act of 1973

REFUGE PURPOSE(S):
"… to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" 16 U.S.C. § 1534 (Endangered Species Act of 1973) and;

"...for the development, advancement, management, conservation and protection of fish and wildlife resources...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(a)(4), as amended, and "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(b)(1), as amended.

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:
The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

DESCRIPTION OF USE:
(a) What is the use?
This compatibility determination evaluates scientific research on the Attwater Prairie Chicken National Wildlife Refuge (APCNWR, Refuge). Research is occasionally conducted by outside authorities in accordance with Refuge regulations and goals and objectives. All outside requested research is evaluated on a case-by-case basis before approval is granted to ensure compatibility. This activity is not a priority public use of the Refuge System, and it requires a Special Use Permit.

(b) Where is the use conducted?
This use may occur Refuge-wide, though specific locations will be described in the individual Special Use Permits. Research proposed for core use areas occupied by the critically endangered Attwater's prairie-chicken will receive rigorous evaluation to ensure that proposed activities will not negatively impact prairie-chickens.

(c) When is the use conducted?
Timeframes for this use will vary depending on the request, and restrictions on when the use can be conducted will be described in the individual Special Use Permits.

(d) How is the use conducted?
When an individual requests to conduct scientific research on the Refuge, that individual must formally request such use from the Refuge Manager. The Refuge Manager then evaluates the following criteria to determine if the research will be allowed: 1) viability of research, 2) contributions to Refuge resources

and management implications, and 3) impacts on Refuge resources. When the use meets these criteria, the Refuge Manager then issues the individual a Special Use Permit with specific restrictions on the allowable timing, location, and methods of scientific research. Six special use permits for scientific research have been issued in the past five years.

(e) Why is this use being proposed?

Research by outside authorities provides valuable opportunities to the Refuge for study on various components of the Refuge environment and wildlife in a more comprehensive manner than Service staff time and funding allows. Researchers provide expertise in various fields to Refuge staff that can assist the Refuge in management planning. Outside research also provides educational opportunities to schools and universities that are not available at other locations.

AVAILABILITY OF RESOURCES:

There is very little Refuge staff or budgetary resources required to oversee scientific research. The resources that are necessary to provide and administer this use are already available within current and anticipated Refuge budgets. Staff time associated with the administration of this use is primarily related to interactions with individuals who request the use, issuance of Special Use Permits, and monitoring the impacts of the use on Refuge resources.

ANTICIPATED IMPACTS OF THE USE:

Short and Long-Term Impacts:

Research proposals with the potential for adverse impacts to Refuge resources are not approved. Thus, scientific research projects that occur on the Refuge generally are limited to those with no or negligible effects on all Refuge resources. The action has the potential to result in some level of disturbance to wildlife, vegetation trampling, and soil compaction, but the very low frequency and duration of this use will not result in any measurable resource impacts.

Cumulative Impacts:

There are no anticipated adverse cumulative impacts resulting from scientific research. Ultimately, this activity will add to the body of scientific information about the refuge. This will result in more effective management of Refuge resources, which in turn leads to beneficial cumulative impacts on the human environment.

PUBLIC REVIEW AND COMMENT:

This compatibility determination was published and available for public review and comment concurrent with the Draft CCP and EA released December 12, 2011 and closing January 23, 2012. Public notification included a notice in the Federal Register, media announcements, public notices posted throughout the local communities, and a public meeting. No comments specific to this determination were received.

DETERMINATION (CHECK ONE BELOW):

___ Use is Not Compatible

_X_ Use is Compatible with Following Stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

Current research has and future research will be evaluated on a case-by-case basis to determine if the project supports Refuge and Service goals and if the project will be beneficial to Refuge purposes. Permits will not be issued to those projects not fulfilling these criteria.

JUSTIFICATION:
Regulated scientific research has negligible to minor impact to wildlife or habitat since few people participate and the Refuge only approves projects with little to no adverse impact on Refuge resources. Therefore, this activity will not conflict with any of the other priority public uses or adversely affect biological resources. Therefore, through the compatibility determination process, Attwater Prairie Chicken National Wildlife Refuge has determined that scientific research, in accordance with the stipulations provided above, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the Refuge.

Signature: Refuge Manager Jeremy A. Ronique 3/27/2012
(Signature and Date)

Concurrence: Regional Chief 4/20/12
(Signature and Date)

Mandatory 10-year Re-Evaluation Date: 2022

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COMPATIBILITY DETERMINATION

USE: Wildlife Observation and Wildlife Photography

REFUGE NAME: Attwater Prairie Chicken National Wildlife Refuge

ESTABLISHING AND ACQUISITION AUTHORITIES:
Fish and Wildlife Act of 1956
Endangered Species Act of 1973

REFUGE PURPOSE(S):
"… to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" 16 U.S.C. § 1534 (Endangered Species Act of 1973) and;

"...for the development, advancement, management, conservation and protection of fish and wildlife resources...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(a)(4), as amended, and "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...", Fish and Wildlife Act of 1956 (16 U.S.C. 742f(b)(1), as amended.

NATIONAL WILDLIFE REFUGE SYSTEM (NWRS) MISSION:
The mission of the National Wildlife Refuge System (Refuge System) is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

DESCRIPTION OF USE:
(a) What is the use?
Attwater Prairie Chicken National Wildlife Refuge (APCNWR, Refuge) proposes to continue and expand wildlife observation and photography in designated areas of the Refuge that are compatible with Refuge purposes. These activities are wildlife-dependent, priority public uses of the Refuge System under the National Wildlife Refuge System Improvement Act of 1997. The continuation and enhancement of these programs will be addressed in this compatibility determination. Observing wildlife is the most popular public use at APCNWR, with over 3,500 visitors each year participating in the activity. Most visitors come to the Refuge for the opportunity to view an Attwater's prairie-chicken, even though most fully understand that because of the historically low numbers, the chances of seeing one are not very high. The result of most Refuge visits is the observation of other wildlife associated with native Texas coastal prairies, including migratory birds and resident wildlife such as deer, quail, and American bison. Virtually all visitors have a camera with them these days, so photography—whether the purpose of their visit or incidental to their wildlife observation activities—is almost as common as wildlife observation itself.

(b) Where is the use conducted?
The Refuge offers a five-mile auto tour route and two maintained trails of approximately 1 to 1.25 miles each. It is generally along these designated routes of travel that wildlife is observed and photographed, although limited off-trail exploring is expected and does occur with the more adventurous visitor. Public use on the Refuge is restricted to the area south of Coushatta Creek, and visitors are strongly encouraged to stay on the trails when walking. Automobiles, bicycles, and motorcycles are allowed only on roads

open to the public (Refuge auto tour route). Additional observation and photography opportunities are included in Alternative B of the Refuge Comprehensive Conservation Plan (CCP). These include a re-aligned auto tour route and a new trail located near Horseshoe Lake that will feature a boardwalk and observation platform, which may be useful for photographers and others observing wildlife.

(c) When is the use conducted?

The Visitor Contact Station is open on weekdays during normal business hours year round. The possibility of expanding Visitor Contact Station hours to include some weekend hours will depend on the addition of visitor services staff. Refuge staff serve to orient visitors and provide specific information on wildlife viewing and photography opportunities that may otherwise go unnoticed. Visitors are welcome to engage in wildlife observation and photography in the area of the Refuge open to public use every day of the year, from sunrise to sunset.

(d) How is the use conducted?

Auto Tour Route:

Approximately 90 percent of visitors (roughly 3,150 per year) will drive the auto tour route in their automobile and use it as a mobile "blind" to view and photograph wildlife. The current five-mile loop takes visitors through a variety of Refuge habitats, including native and restored prairie, natural prairie wetlands, artificial wetland impoundments, and a riparian corridor (Coushatta Creek). From the tour route, visitors may also view neighboring private lands that are often in agricultural production (rice and livestock grazing). The Refuge bison herd is managed within the pasture located inside the auto tour route loop to provide additional wildlife viewing and photography opportunities. Changes proposed in the CCP will include a new auto tour route alignment that will offer visitors more opportunity to observe and photograph wildlife in a native prairie setting.

Wildlife Observation Trails:

Two designated trails (Pipit and Sycamore Trails) give visitors access to each of the native habitat types found on the Refuge—native prairie and riparian woodland corridors. Each trail is approximately 1 to 1.25 miles long, and the trails are maintained through regular mowing. Visitors can expect to see a variety of wildlife on these trails, including numerous bird species; mammals such as deer, raccoons, and armadillos; reptiles and amphibians; and interesting invertebrates such as dragonflies, spiders, and leafcutter ants. Native prairie plants, including native grasses, abundant spring wildflowers, and some native tree species, may also be enjoyed on these trails. The Pipit Trail is located approximately one-half mile prior to arriving at the Refuge headquarters, and the Sycamore Trail departs from the Refuge headquarters and returns to the visitor parking area. Because of the location of these trails, visitors are much more likely to walk the Sycamore Trail since they are already parked and out of their vehicles at the Refuge headquarters. The Sycamore Trail also offers the most access to the Coushatta Creek riparian corridor, appealing to birdwatchers that make up the bulk of the Refuge's visiting public. Establishment of a new trail at Horseshoe Lake is considered in the CCP. This trail would increase wildlife viewing and photography opportunities by allowing visitors into an area that has previously been closed to public entry (North of Coushatta Creek) and by offering more diverse habitats than are available on either of the existing trails.

Bicycling:

Bicycling in support of wildlife observation is permitted on roads open to motorized vehicles only. Bicycling occurs in very limited number on the Refuge.

Additional strategies to support and increase wildlife observation and photography are identified under Visitor Services Alternative B (Proposed Action) of the APCNWR Comprehensive Conservation Plan and Environmental Assessment (CCP/EA). These strategies include:

- Re-aligning the auto tour route to provide a more natural and meaningful prairie experience.
- Replacing the underutilized Pipit Trail with a new trail near Horseshoe Lake.
- Excluding livestock from the public trails.
- Constructing a new accessible parking area, boardwalk, and viewing platform on Horseshoe Lake.
- Increasing Attwater's prairie-chicken viewing opportunities by providing more guided tours by Refuge staff to prairie chicken booming grounds and through live feed, webcam, and other technologies.
- Adding visitor services staff and volunteers to staff the Visitor Contact Station during weekends and holidays to orient visitors and provide information to enhance wildlife observation and photography opportunities.

(e) Why is this use being proposed?
Wildlife observation and photography are existing Refuge uses and are identified as wildlife-dependent priority public uses for the Refuge System. Appropriate development of infrastructure (e.g., pull-outs and viewing platforms) for visitors to photograph and observe wildlife enhances the opportunity for high quality wildlife observation and photography experiences.

AVAILABILITY OF RESOURCES:
Direct annual costs to administer these programs and facilities are primarily in the form of staff time, as well as directional and interpretive signage and the expense associated with operating a Visitor Contact Station at the Refuge headquarters. Refuge staff spends approximately 0.25 FTE's and $35,000 in utilities, materials, and supplies annually to administer the wildlife observation and photography program. The development of new facilities and opportunities, as well as the maintenance and upkeep of existing facilities, will be additional costs associated with expanded wildlife observation and photography opportunities on the Refuge. Some law enforcement support will continue to be necessary to ensure compliance with Refuge regulations. Approximately 0.25 FTE's and $75,000 in additional funding will be required before the facilities and programs listed as strategies under Visitor Services Alternative B (Proposed Action) of the CCP/EA can be fully implemented.

ANTICIPATED IMPACTS OF THE USE:
Short and Long-Term Impacts:
Always of primary concern at APCNWR are the anticipated impacts to the Attwater's prairie chicken population. Refuge visitors are not allowed in the APC core use area unless accompanied by Refuge staff. While this may lead to a significantly reduced opportunity for visitors to observe and photograph prairie-chickens, it reduces potential negative impacts to the birds as well. Wildlife observation and photography, specifically of the Attwater's prairie-chicken, is the most desired public use and a primary goal of the Refuge's visitor services program. To meet the observation and photography needs of Refuge visitors, some staff led tours may be conducted in the restricted use area, which may cause temporary and mild amounts of disturbance to prairie-chickens and other Refuge wildlife.

Although releases of captive-reared Houston toads occurred on APCNWR during the early to mid-1980s, no Houston toads have been documented on the Refuge in recent years. Therefore, it is unlikely that continuing or expanding the wildlife observation and photography program would impact Houston toads.

Overall, no significant impacts to federally listed threatened and endangered species are expected to occur due to wildlife observation and photography on the Refuge.

Primary means of access to areas on the Refuge used for wildlife observation and photography include motorized vehicles on Refuge roads open to the public and walking on trails. A very small number of visitors use bicycles on public roads. Impacts associated with wildlife observation and photography vary based on mode of access. Pedestrians, vehicles, and bicycles have the potential to disturb wildlife and influence wildlife distribution and habitat use. Disturbance of wildlife by visitors is likely to be greatest in concentrated areas of use, including along trails and roads. While some species appear to acclimate to vehicular traffic, and even the presence of visitors on trails, other species are less tolerant of disturbance. Overall, it is likely that species composition and abundance is decreased in areas supporting these recreational uses. However, by concentrating disturbances to these designated areas, which constitute a very small portion of the Refuge, large and extensive tracts of undisturbed habitat remain available for wildlife throughout the Refuge.

Disturbance impacts caused by wildlife photographers tend to be greater than other wildlife observation techniques, as photographers are much more likely to leave their vehicles and approach wildlife on foot. Other impacts include the potential for photographers to remain close to wildlife for extended periods of time in an attempt to habituate the wildlife subject to their presence and the tendency of casual photographers with low power lenses to get much closer to their subject than other activities would require.

Litter improperly discarded by visitors can entangle wildlife or be ingested, potentially resulting in injury or death. Efforts to educate the public about such issues are incorporated into outreach efforts, educational programs, and interpretative programs. In addition, the use of trails for wildlife observation and photography may result in soil compaction, erosion, and trampling of vegetation. Visitor access, however, is typically by individuals or groups that participate in recreational activities for short durations, therefore, impacts on water quality and soils are negligible.

These impacts are minimized on the Refuge by locating public use facilities away from sensitive areas, restricting public access to existing roads and trails, and strategically locating trails and observation blinds. While some disturbance impacts occur along these linear corridors, extensive tracts of undisturbed habitats remain available for wildlife in areas adjacent to public use facilities and throughout the Refuge. Additionally, impacts are minimized through development and active enforcement of Refuge-specific rules and regulations, including emergency closures if warranted, and through educational materials made available to the visiting public.

Cumulative Impacts:
As a result of active management of these wildlife-dependent recreational uses, cumulative impacts to migratory birds and other biological resources from these uses remain at acceptable levels and will not affect the viability of any fish, wildlife, or plant population on the Refuge.

PUBLIC REVIEW AND COMMENT:
This compatibility determination was published and available for public review and comment concurrent with the Draft CCP and EA released December 12, 2011 and closing January 23, 2012. Public notification included a notice in the Federal Register, media announcements, public notices posted throughout the local communities, and a public meeting. No comments specific to this determination were received.

DETERMINATION (CHECK ONE BELOW):

_____Use is Not Compatible

_X___Use is Compatible with Following Stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

- Designated Refuge public use areas are open during daylight hours only.
- Although wildlife observation and photography occur via several different modes of access, all users are strongly encouraged to stay on designated roads and trails and are restricted to the public use area only.
- All-terrain vehicles and off-road vehicle travel are prohibited.
- Bicycling in support of wildlife observation is permitted on gravel roads only.
- Playing electronic recordings to attract wildlife is prohibited.
- Collection of plants or animals, or feeding or disturbing wildlife, is prohibited.
- Pets must be leashed at all times.
- Special entry into the Refuge's closed area for festivals, special events, or special photography and/or videography projects will be accompanied by Refuge personnel and avoid peak APC breeding periods (i.e., March, from sunrise to 10:00 am).
- Public use trends and associated impacts from human activity will continue to be monitored. If significant increases in use occur and/or if impacts to resources are determined significant, the program will be re-evaluated and modified as necessary to ensure compatibility.

JUSTIFICATION:

These programs are determined to be compatible with the establishment purposes of the Refuge and the mission of the Refuge System. Wildlife observation and photography are wildlife-dependent, priority public uses of the Refuge System under the National Wildlife Refuge System Improvement Act of 1997. The Service strives to provide priority public uses when compatible with the purpose of the Refuge and the mission of the Refuge System. Facilities and activities related to wildlife observation and photography occur in designated areas of the Refuge, leaving large areas of undisturbed habitat available for wildlife. The stipulations outlined here are specifically designed to and should minimize potential impacts of these activities. The Refuge will continue to monitor uses and adjust programs as necessary to protect Refuge resources. The awareness, enjoyment, and education gained from these activities are expected to outweigh their associated impacts. Attwater Prairie Chicken National Wildlife Refuge has determined that wildlife observation and photography, in accordance with the stipulations provided here, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the Refuge. Instead, providing opportunities for wildlife observation and photography has given many people a deeper appreciation of wildlife and a better understanding of the importance of conserving habitat, thereby further contributing to the overall mission of the National Wildlife Refuge System.

SIGNATURE: **Refuge Manager** Jerry A. Ponigro 3/27/2012
(Signature and Date)

CONCURRENCE: Regional Chief 4/20/12
(Signature and Date)

MANDATORY 10- OR 15-YEAR RE-EVALUATION DATE: 2027

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