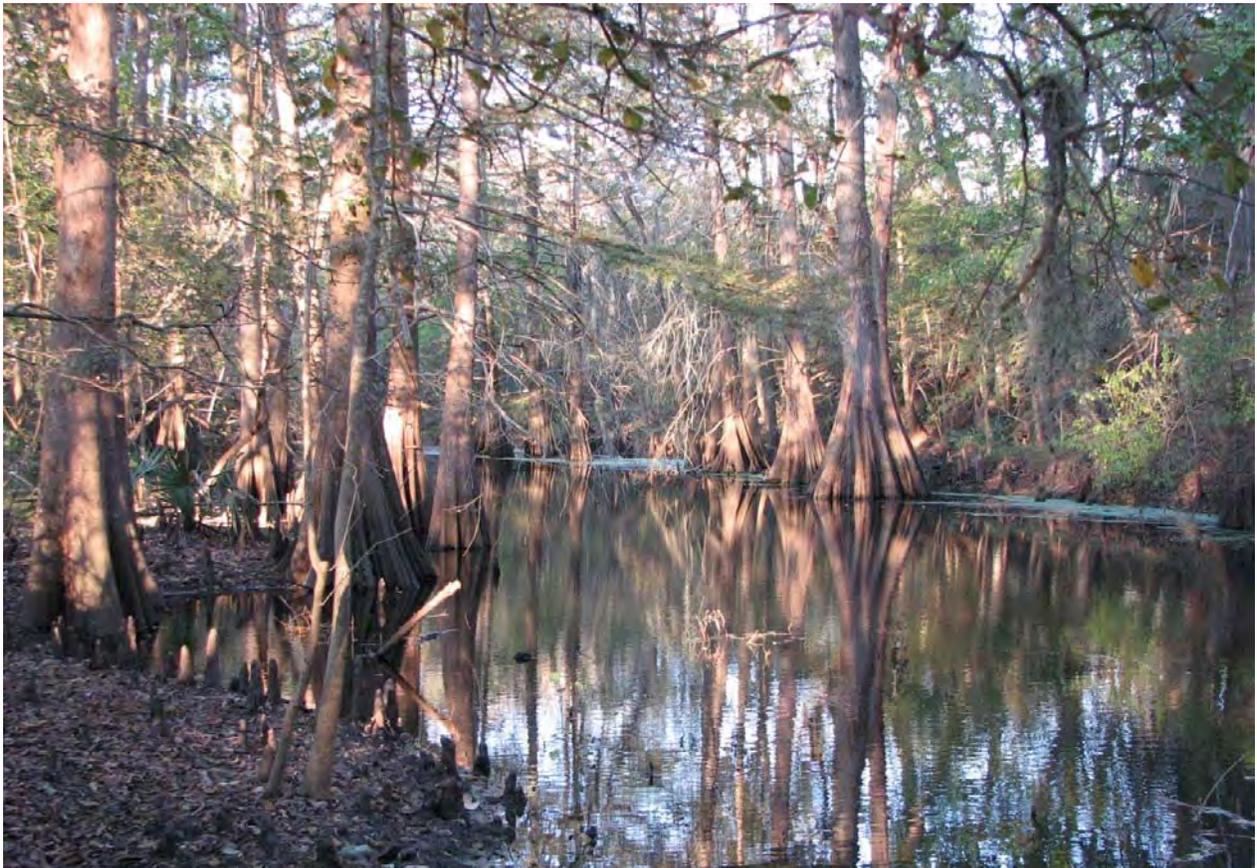


Draft Land Protection Plan

*Austin's Woods
San Bernard National Wildlife Refuge
Brazoria, Fort Bend, Matagorda and Wharton Counties*

Texas



Bald cypress along Linville Bayou in the Columbia Bottomlands, San Bernard NWR

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1. Introduction and Project Description

The Southwest Region of the U.S. Fish and Wildlife Service (Service) currently has approval to acquire up to 28,000 acres of bottomland hardwoods as part of the San Bernard National Wildlife Refuge (NWR) in accordance with the Austin's Woods Conservation Plan (Plan). The 1997 Decision Document for the Austin's Woods Conservation Plan authorized "...the acquisition of fee and easement interests of no more than 28,000 acres from willing sellers and donors in Brazoria, Fort Bend, Matagorda and Wharton Counties, Texas." With the strong support and assistance of local government, local businesses, the National Fish and Wildlife Foundation (NFWF), and other conservation organizations, the Service has successfully conserved lands which are now a part of the National Wildlife Refuge System. A lack of funding opportunities, exacerbated by the economic recession has impeded conservation by state, county, and private partners. Partners have been less able to contribute towards the 70,000-acre protection goal. However, partners have been extremely valuable assisting with the Service's acquisition by contributing donated funds as partial matches and applying for and receiving grants toward the Service's acquisition efforts. The Service proposes to increase the 28,000 acre cap by an additional 42,000 acres (to a total of 70,000 acres); continuing conservation efforts in the Columbia Bottomlands and associated habitats. This expansion would remain within the approved project geographical boundary in Brazoria, Matagorda, Fort Bend, and Wharton counties in Texas.

This Land Protection Plan (LPP) has been prepared to support continued conservation efforts within the Austin's Woods Conservation Project. The original Conservation Plan, approved in 1997 was intended to counter the rapid destruction of prime, old-growth bottomland hardwood forests in the Columbia Bottomlands ecosystem. That Plan responded to concerns shared by the Service, the Texas Parks and Wildlife Department (TPWD), local government agencies, conservation organizations and landowners over preserving a sustainable portion of this internationally-significant ecosystem. The original overall goal shared by all of the project partners was to protect approximately 10 percent of the estimated original 700,000-acre ecosystem to sustain plant and animal populations and maintain the ecosystem's diversity.

The Columbia Bottomlands are an important link to the history of Texas. Stephen F. Austin chose this area for the location of his First Colony of 300 in 1828. The first capital of Texas was located in the center of the bottomlands in East Columbia. From this history both names: Austin's Woods and Columbia Bottomlands were derived and are essentially interchangeable. The Service generally refers to the project as Austin's Woods but the habitat and ecosystem as the Columbia Bottomlands.



Ancient stream beds create flooded sloughs that meander through the bottomland

1.1 Project Description

Region 2 proposes this 42,000-acre expansion of the San Bernard NWR in order to achieve the project goals of the Austin's Woods Conservation Partnership; to conserve at least 10 percent of the historic bottomland forest. Since 1995, the Service has been working with other Federal and State agencies, non-profit organizations and private landowners to conserve, through fee title acquisition and conservation easements this unique and internationally important wetland forest ecosystem.

The project is located in the broad combined floodplains of the lower Brazos, San Bernard and Colorado Rivers and smaller creeks and bayous. This forested habitat is the southern-most bottomland forest on the Gulf of Mexico and lies within the Coastal Prairies and Marshes Ecoregion. The Columbia Bottomlands are the only significant expanse of forest adjacent to the Gulf of Mexico along the western side. Its southern edge extends to within 6 miles of the Gulf of Mexico and forms a passageway that reaches 50 miles inland (Figure. 1).

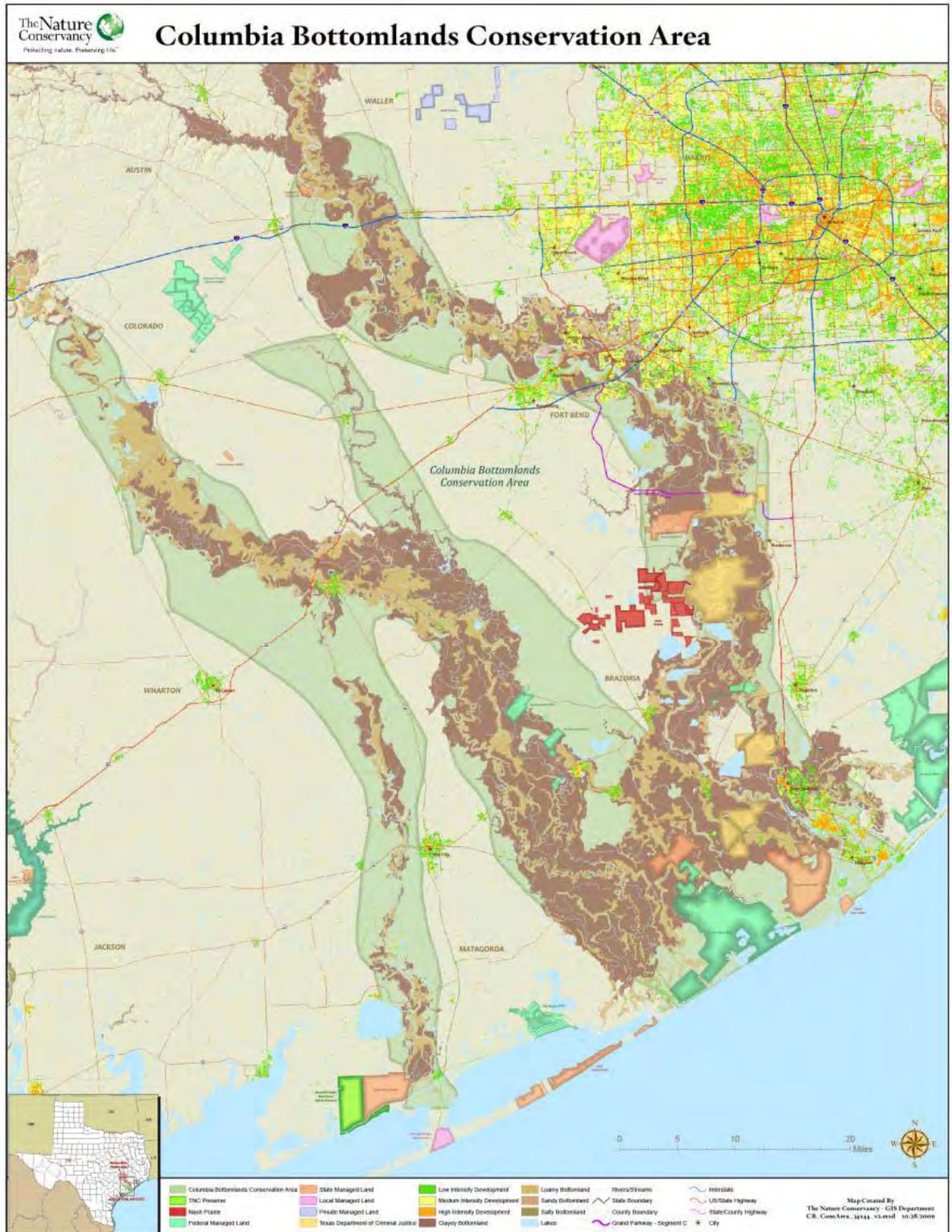
Bottomland hardwood forests are extremely diverse and productive habitats. In addition to neotropical migrants, the forested areas are important resting, breeding, feeding, and escape habitats for a great number of other birds. Waterfowl winter in the bottomlands and associated wetlands and prairie wetlands. A significant population of bald eagles are year-round residents, building large nests and raising their young throughout the area.

The Austin's Woods Conservation Plan was approved by the Service in April 1997, to conserve parts of the Columbia Bottomlands ecosystem, a critically important area for millions of migrating birds that use it as a staging area between wintering habitats in the Caribbean and South America and breeding habitats in North America. In the 1997 Decision Document, the Service agreed to:

1. Be a part of the long-term monitoring effort;
2. Assist local agencies and other entities in protection efforts;
3. Provide technical assistance and Partners for Wildlife funds;
4. Hold conservation easements when other organizations are unable; and
5. Acquire fee and easement interests in lands when other organizations are unable.

Although the primary goal is conservation of bottomland forests, coastal prairie, and open water habitats have been acquired when offered along with the forested habitats. These adjacent habitats are integral parts of the ecosystem in that they can often provide transition habitats which support additional wildlife species. Coastal prairies are the primary habitat which has been acquired. Three units with nearly 2,000 acres of former prairie habitat have been acquired. These habitats generally require restoration, but when restored, are representatives of a once vast ecosystem where today only 1-2 percent of the historic prairie remains intact.

Figure 1.



Reflecting the concept of a bio-reserve network, the Austin's Woods Conservation Plan is an active land acquisition and conservation program administered by the Service along with its governmental and non-governmental partners. In response to local concerns about maintaining land use options for private landowners, an important aspect of the plan is the emphasis on cooperation with local conservation partners. The Service has not designated an all-encompassing "acquisition boundary" that would impact non-Service lands across the Columbia Bottomlands area. This strategy allows for promoting private conservation efforts (e.g., conservation easements and habitat management cooperatives) but does not restrict development or other land uses on private lands adjacent to refuge units. The Service acquires lands from willing sellers and donors, particularly where local conservation initiatives are not feasible. The outcome is a mosaic of land blocks that collectively protect the regional ecosystem and maintain essential ecological functions.

Through this LPP, the Service proposes to continue conservation efforts up to 70,000 acres within the Columbia Bottomlands as outlined in the 1997 Austin's Woods Conservation Plan, Land Protection Compliance Document and Conceptual Management Plan. Specifically the Service will

1. Cooperate and assist other agencies and organizations in conserving a network of lands within the Columbia Bottomlands ecosystem for migratory birds, native fish, resident wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered.
2. Promote scientific research and participate in long-term monitoring to ensure biological integrity within the Columbia Bottomlands;
3. Work with partners and where applicable, restore fish, wildlife, and their habitats within the Columbia Bottomlands;
4. Provide and enhance opportunities for the public to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation, photography, environmental education and interpretation);
5. Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants within the Columbia Bottomlands; and
6. Acquire fee and easement interests in lands when other organizations are unable.

1.2 Authorizing Legislation and Refuge Purposes

The project will continue under the same acquisition authorities approved in the 1997 land protection plan. Those authorities are the Migratory Bird Conservation Act of 1929, the Fish and Wildlife Act of 1956, and the Refuge Recreation Act of 1962.

The purposes of Austin's Woods units in the San Bernard NWR are as follows:

"...for use as an inviolate sanctuary, ... for any other management purposes, ... for migratory birds." Migratory Bird Conservation Act (16 U.S.C. 715d).

"...for the development, advancement, management, conservation, and protection of fish and wildlife resources . . ." 16 U.S.C. 742(a)(4) 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 . . .” 16 U.S.C. 742(b)(1) (Fish and Wildlife Act of 1956).

“...suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donor ...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460K-460k-4), as amended).

1.3 Related Actions and Activities

Migratory Bird Conservation Plans - The project directly addresses the objectives of migratory bird conservation plans including the Texas Mid-coast Initiative of the Gulf Coast Joint Venture of the North American Waterfowl Management Plan, the Texas Wildlife Action Plan, and the Land Bird Protection Plan. Associated with the bottomland forest are green ash swamps, slow moving bayous, fresh and tidally influenced creeks and rivers. In addition, adjacent to the forest are several natural lakes and wet prairies. Conservation of these wetlands helps sustain waterfowl and water bird populations by protecting winter, migratory and breeding habitats for waterfowl. Securing acreage along the Gulf Coast is a priority in conservation plans for this region. Prairie bird populations, including bobwhite quail, sparrows and raptors are some of the fastest declining populations in the nation. The proposal targets acreage in the Gulf Coast Prairie (BCR 37), an area of continental significance for North American ducks, geese, and swans. In line with the Gulf Coast Joint Venture’s implementation plan for the Texas Mid-coast region, the project prevents additional loss and degradation of wetlands in a highly threatened area.

National Wildlife Refuge System – Within the project area are Brazoria NWR, located 6 miles northeast of Freeport, Texas and Big Boggy NWR, located 15 miles northeast of Matagorda, Texas. Brazoria NWR, established in 1966, includes more than 44,400 acres of salt marsh, open water, and coastal prairie habitats. Big Boggy NWR, established in 1982 includes more than 4,500 acres of salt marsh habitat. The San Bernard NWR was established on November 7, 1968, with the acquisition of 14,906 acres. Since that date, 38,572 acres have been added to the Refuge through fee title purchases and fee title and conservation easement donations, bringing the total to 53,478 acres as of May 4, 2012. Since 1997, the Service has acquired more than 24,500 acres of bottomland, prairie and wetland habitats under the Austin’s Woods Conservation Plan. All of the above refuges are displayed on Figure 2. Raising the cap on the Service’s contribution to the overall protection goal an additional 42,000 acres will enable the Service to continue to work with partners, and eventually fulfill the overall conservation goal established in 1997. Working with multiple partners and utilizing a variety of funding sources has been the key to past success in the Austin’s Woods Project. The Service will continue to work with these partners, seek out new partners and utilize a variety of funding mechanisms to facilitate conservation.



Eagle Nest Lake Unit was acquired as a partnership with the Natural Resource Conservation Service. The 2000-acre lake will be restored to its original function as an emergent marsh. The Service is planning on providing public use opportunities around this natural wetland.

Table 1 outlines previous acquisition means and acreage acquired. To date, there have been a total of 45 acquisitions. Approximately 30 percent of the acreage conserved by the Service was acquired through direct donations and grants. Many parcels acquired in the past utilize a combination of funding sources. For instance, private donations through a non-profit organization are combined with a grant and Migratory Bird Conservation Act funds.

Table 1. Previous Austin's Wood Projects

Funding source	Projects	Value of land or donation funds
Donation of easement	5	\$665,000
Donation of fee title	4	\$2,365,000
Donation of funds used toward fee title purchase	12	\$856,000
Wetland Mitigation Funds	4	\$1,725,000
Clean Air or Water Act Violations	3	\$1,290,039
Grants (NAWCA, CIAP) used for fee title purchase	9	\$3,427,360
Federal Acquisition Funds (MBCF, LWCF)	22	\$20,070,533
	Total	\$30,453,932

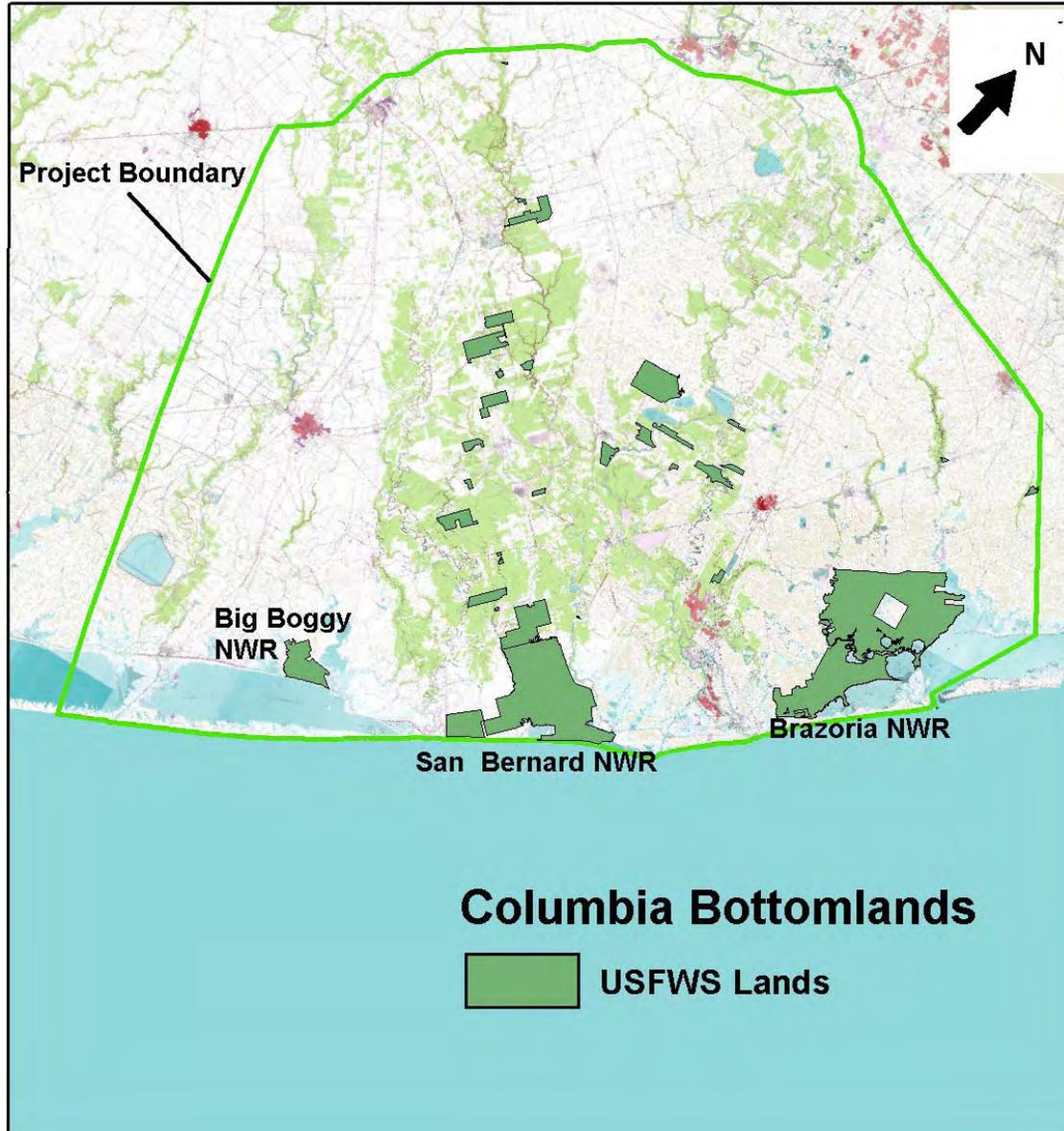


Figure 2, U.S. Fish and Wildlife Service lands within the Austin Woods Conservation Plan Boundary.

Other Conservation Programs

- Conservation Easements held by non-profit organizations – Several non-profit organizations, including: Cradle of Texas Conservancy, Bayou Land Conservancy, Texas Land Conservancy, and Ducks Unlimited hold donated conservation easements within the Columbia Bottomlands. All are active partners in the Austin’s Woods Conservation Project and the Service provides information on these options to land owners interested in Conservation. The majority of these donations are mitigation for development. Two mitigation banks have been recently established within the Project area. One of these areas is located adjacent to the Dance

Bayou Unit and the other adjacent to the Hudson Woods Unit. Both of the projects involve extensive forest restoration and some wetland restoration.

- Texas Parks and Wildlife – Two Wildlife Management Areas (WMA) and one state park are within the Austin’s Woods Conservation Project. Justin Hurst WMA is located less than five miles south of Freeport Texas. Although the WMA is primarily marsh, the upper edge includes forested wetlands. The Nannie M. Stringfellow WMA shares a boundary with the Stringfellow/McNiel Unit of the Refuge. The WMA was acquired by the Texas Department of Transportation as mitigation for road expansion through the bottomlands. The Brazos Bend State Park is a popular destination on the Brazos River west of Rosharon, Texas. The Service notifies TPWD when contacted by a landowner that is near or adjacent to existing State areas and the land owner is interested in conservation opportunities so TPWD can consider the opportunity to participate. In addition, TPWD can assist private landowners with advice on wildlife enhancement and management on private lands.
- Natural Resource Conservation Service (NRCS) – Department of Agriculture, NRCS works extensively with private lands owners within a variety of agricultural and conservation programs. Utilizing the Wetland Reserve Program, NRCS has purchased conservation easements on six properties within the Austin’s Woods Project Area. All but one of these easements is held in perpetuity. In addition to purchasing the easement, NRCS will provide funding for on-the-ground restoration; including invasive species control, planting, and restoring natural drainage on these easements.
- Partners for Fish and Wildlife – This program is administered by the Service and provides financial and technical assistance, and works cooperatively with landowners to voluntarily restore and enhance wildlife habitat on private land. There are several past projects within the project area.
- Gulf Coast Bird Observatory (GCBO) – GCBO is a non-profit organization that promotes the conservation of lands and wildlife, sound science and environmental education. Their headquarters is located in the Columbia Bottomlands and they have partnered with the Service on research as well as assisted with the donation of funds toward acquisition through the Texas Birding Classic, a state-wide birding competition.

2. Resources to be Protected and Their Status

2.1 Habitat

The ecosystem protected under this plan encompasses bottomland hardwood wetland forest and associated wetlands and prairie habitats. The bottomland forests of the ecosystem, which often appear to be like tropical rainforests, have high wildlife and wetland values. This ecosystem is the only expanse of forested wetlands adjacent to the Gulf of Mexico in Texas.

The bottomland forests of what is now Brazoria, Fort Bend, Matagorda and Wharton Counties were known to the settlers of the mid 1800s as the “canebrake forest” due to the understory of

native bamboo. In 1838, the extent of the forest in the project area was described by an early settler as “a district of canebrake and forest, forty miles wide and sixty miles in length.” In 1900, the forest still occupied nearly 700,000 acres, an area of over 1,000 square miles of bottomland hardwood forest adjacent to the Gulf of Mexico. In 1995 a Columbia Bottomlands (Four County) Task Force estimated that only 177,000 acres of forest remained. Today, much more of the forest has been cleared, drained or altered, and it is estimated that only 150,000 acres remain. In addition to the bottomland forest, the floodplain ecosystem also has a variety of other wetland habitats, including bayous, sloughs, marshes, ponds, lakes, along with areas of native prairie.

Because the timber in the Columbia Bottomlands was not of high commercial value, tracts of old-growth forest remain, even today. Instead of selling timber, settlers cleared the land for grazing and other agriculture uses. Those practices continue to the present. Today, many acres are cleared for housing development as well as roads and pipeline rights-of-way. The forest is increasingly fragmented as Houston and local cities and towns expand. Although many landowners and cities have promoted the conservation of trees, even in suburban communities, these open forests and parks do not have the multiple canopy layers and undergrowth needed to support a diversity of migratory birds.

The project mitigates threats to the natural community by conserving some of the remaining forests, and restoring forest and prairie habitats. The Columbia Bottomlands ecosystem continues to lose thousands of acres of forested habitat each year. Remaining bottomland tracts are threatened with urbanization, logging, drainage and clearing for agriculture. Levee districts are being created where thousands of acres are cleared and removed from the floodplain for development. Since recent court decisions, many very valuable wetlands are no longer considered jurisdictional by the Army Corps of Engineers (ACOE); this has resulted in the acceleration of habitat loss. Other threats include pipeline construction, road building, and power line construction - a swath of trees is cut for every corridor, further fragmenting the forest. The economic forces driving the destruction of forest habitat are very difficult to counter. Few landowners can afford to keep the land as forest and garner a higher value through agriculture. The project alleviates the threats through a system-based protection initiative that serves to avoid conflicts with industry: rather than being in a position of



Natural pot-hole prairie wetlands on the Buffalo Creek Unit provide habitat for waterfowl, rails and waterbirds 45 miles inland from the Gulf of Mexico. Since acquired in 2007, the Service has been working to restore native prairie diversity and control invasive species on this 800-acre prairie.

opposing individual activities, the initiative offers landowners economic alternatives to habitat destruction. Having this system-based project area allows flexibility in protecting properties, as long as the protection objective is met. The flexibility and willing-seller aspect of the initiative means conflicts over individual tracts are avoided or minimized.

Several remnant prairies have been acquired along with adjacent bottomland forest. Although native coastal prairie once stretched from Louisiana across the coastal plains to south Texas, less than one percent of the historic prairie exists in a natural state. Easily cleared for agricultural and development, coastal prairie is recognized as an endangered habitat. More than 1,000 plant species created a diverse ecosystem; much of this diversity is forever lost. However, where prairies have been acquired by the Service, these prairies are being restored to provide native habitat for prairie wildlife. To date, approximately 1,800 acres of former prairie have been conserved by the Service as well as the adjacent bottomland forest. Invasive species treatment, seeding and shredding native hay across the field, and fire are being used to restore native prairie habitats. It is hoped that larger prairies near Damon, Texas may one day allow for the future reintroduction of Attwater's prairie-chickens.

2.2 Wildlife

The Columbia Bottomlands habitat supports a great diversity of wildlife. The bottomlands are home to large populations of both resident and migratory wildlife, including more than 400 different wildlife species. The refuge, as part of the Texas Coastal Plain, annually provides critical habitat for numerous neotropical migrants which pass through the area during fall and spring migration. The freshwater fishery within the Columbia Bottomlands consists primarily of marshes, creeks, sloughs, bayous, the San Bernard River, Brazos, and Colorado Rivers. Oxbow lakes such as Soby and Sally Lakes are scattered across the landscape. These lakes can support native and non-native fisheries. The forests are diverse with localized populations of uncommon species. The wildlife that this project provides habitat for includes waterfowl and waterbirds, Nearctic-Neotropical migrant birds, as well as resident reptiles, amphibians and mammals.



Prothonotary Warbler

This ecosystem is especially important for Nearctic-Neotropical migratory birds because of its proximity to the Gulf of Mexico. Millions of Nearctic-Neotropical migrants make landfall in the bottomlands during spring migration and also use the area during fall migration. Migrating birds depend on bottomland forests for rest and feeding before and after crossing the Gulf of Mexico on fall and spring migration, respectively. In 1997, the Columbia Bottomlands Task Force found that 237 species of birds, totaling at least 29 million individuals, migrate through the forest every year. This is the chief

spatially explicit rationale for proposing additional protection for this project area. The bottomlands provide habitat to more than 30 species of warblers, including the Swainson's warbler and Prothonotary warbler. The Swainson's warbler nests in the project area in thick understory, specifically cherry-laurel thickets. The Prothonotary warbler is unique because they nest in low cavities of bald cypress, willows, and sweet gum. The cavities may be in trees near or over standing water and usually created by woodpeckers (Cornell 2012). Other migrant passerines include many species of sparrows, vireos, tanagers, thrushes, orioles, wrens, swallows, grosbeaks, and buntings. Dr. Sidney Gauthreaux, Jr., using Doppler radar (Figure 3), documented that the Columbia Bottomlands is a major stopover area for these migrants.

2.3 Climate Change Management Adaptation and Mitigation

Department of Interior Secretarial Orders 3226 and 3289 direct the Service to "...consider and analyze potential climate change impacts when undertaking long-range planning exercises....and/or when making major decisions regarding the potential utilization of resources under the Department's purview," and to "coordinate an effective response to its impacts on ...the land, water, ocean, fish and wildlife, and cultural heritage resources..." A rapidly changing climate presents challenges to habitat conservation nation-wide. In the Texas Mid-coast area the coastal San Bernard NWR may be impacted by sea-level rise, increased drought, more erratic weather events, overall warming of habitats, and changes in plant and animal phenology (timing of life events like budding, migration, and nesting) for species occurring on the refuge. The Service's strategic response to climate change involves three core strategies: adaptation, migration and engagement (USFWS 2011). The Austin's Woods Conservation Plan provides the elements necessary to minimize the impact on wildlife: resilience, redundancy, adaptation potential, habitat connectivity, drought-tolerant plant communities, natural hydrology, and large and connected ecosystem segments.

Through adaptation, the impacts of climate change on wildlife can be reduced by conserving habitats expected to be resilient. Intact ecosystems are more able to react and adapt to climate change and still support a variety of wildlife than damaged ecosystems with low species diversity. This was evident during the recent drought cycle. A census by the Texas Forest Service showed that the loss of trees, primarily water oaks in the Columbia Bottomlands, were prevalent along edges rather than in the intact forest (Merritt 2012). Further, the Refuge Columbia Bottomland units withstood the drought much better than the other forests surrounding the greater Houston communities, where millions of trees died.

The expansion of the refuge inland is essential to adapt to the anticipated impacts on the refuge coming as a result of climate change without losing critically important habitat for coastal bird species and fisheries resources on the Texas Gulf Coast. The project is essential in adding a buffer of higher elevation lands (20 to 50 feet above sea-level) to the lower marshes and salt

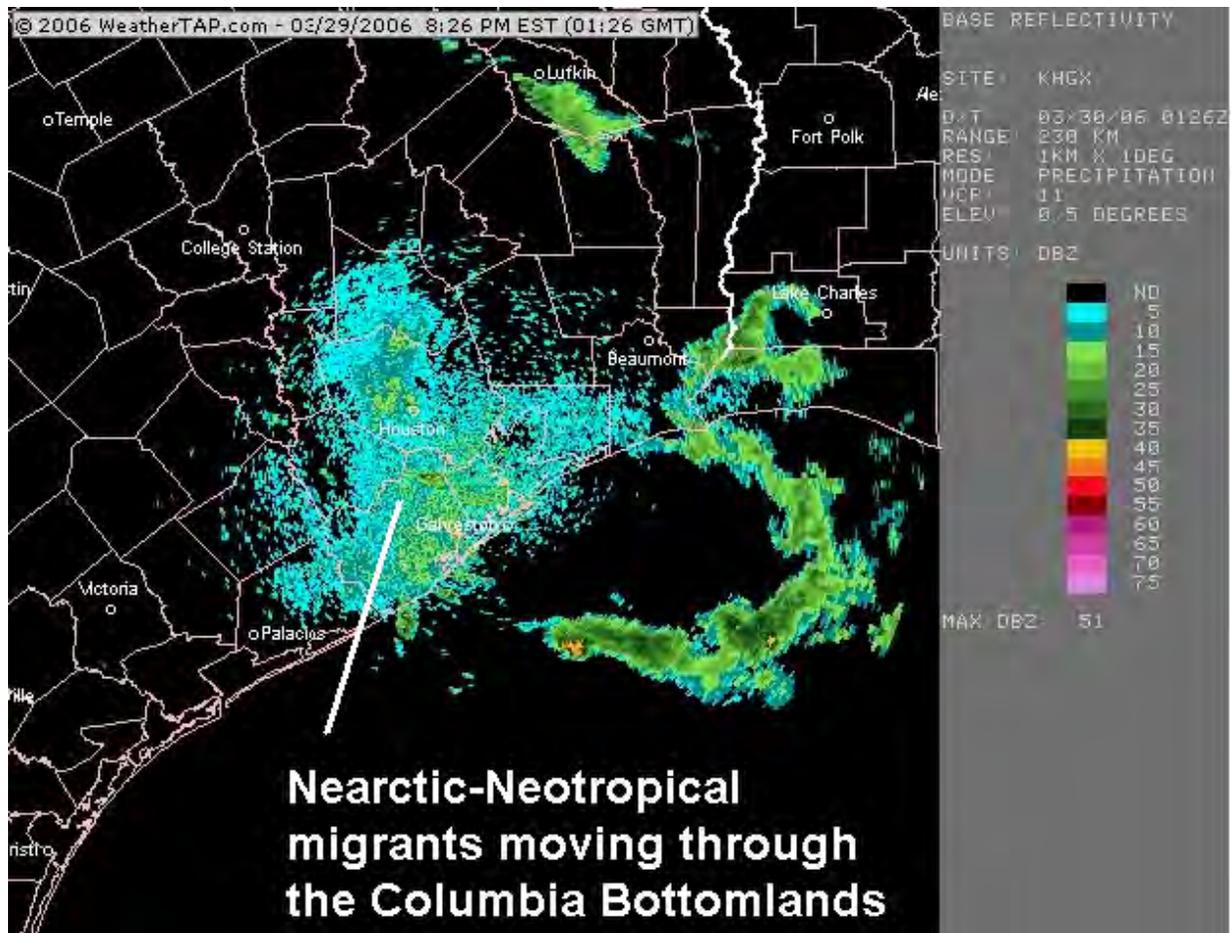


Figure 3. Doppler radar showing movement of Nearctic-Neotropical migrants moving through the Columbia Bottomlands.

marshes of the San Bernard NWR. The adjacent bottomlands help facilitate and allow the movement of coastal species inland as sea level rises in the coming decades. Located inland from the coastal marshes along the Gulf of Mexico, tracts in the Columbia Bottomlands sit at a sufficiently high elevation that they would not be inundated by sea-level rise (based on current worst-case predictions). However, the tracts will provide a buffer to lower-lying lands which may be inundated by rising sea levels due to climate change. The tracts will provide a species reservoir and habitat for a variety of species which may need to move along corridors as changes in climate occur. Future plant and animal species composition may shift with climate change, but the land will still provide quality habitat for forest, and prairie dependent species.

The Refuge may also manage its resources to help mitigate climate change impacts. In November, 2002, the NFWF contracted with Winrock International to provide the Service and the project partners with a detailed baseline study of carbon sequestration potentials of the Columbia Bottomlands. Based on the study specific to the forest biomass of the Columbia Bottomlands, the conservation of forested wetlands will prevent the release of over 78 metric tons of carbon per acre into the atmosphere. If the lands are not conserved, they are likely to be deforested, resulting in the release of carbon.

3. Project Implementation

3.1 Protection Alternatives Considered

No Action

Under the No Action Alternative, continuation of current management, the Service would be limited to 28,000 acres of land acquisitions (fee title and conservation easement) in accordance with the Austin's Woods Conservation Plan of 1997. The plan set a goal for the Austin's Woods Conservation Partnership to conserve 10 percent of the historic bottomlands forest (70,000 acres). To date, the Service has been very successful in working with other Federal and State agencies, non-profit organizations and private landowners to conserve parts of the Columbia bottomland as part of the National Wildlife Refuge System and has nearly met its 28,000 acre acquisition cap. However, a lack of funding exacerbated by the economic recession has impeded conservation by state, county, and private partners. Partners have been less able to contribute towards the 70,000-acre protection goal. This alternative would hamper the Service's ability to continue its conservation efforts in the Columbia Bottomlands. Under this alternative, the Service would not acquire additional fee title and conservation easements (over 28,000 acres), severely diminishing the potential of ever meeting the recommendation of the 1995 task force; that conservation of 10 percent of the original ecosystem was needed in order to sustain this unique ecosystem. Without the Service's funding mechanisms, leadership, ability to leverage partner contributions, and position as the primary contact for landowners interested in finding ways to conserve their lands, future conservation will be limited. The future of the Columbia Bottomlands would be subject to the discretion of the landowners whether the land would stay in an undeveloped setting or be converted to other uses in the long-term, which may include eventual development. The current quantity of land in conservation status is not adequate to protect either the ecosystem or dependent wildlife species. If the Service stops land acquisition now, less than five percent of the historical ecosystem will be conserved. By preserving less than ten percent, the ecosystem may not be able to sustain its botanical diversity on which substantial populations of migratory wildlife species depend. We could lose populations, or even species, of plants with subsequent consequences to resident and migratory wildlife.

Acquisition and/or Management by Others

The alternative was thoroughly considered in the 1997 Austin's Woods Conservation Plan, and was found not be practical in and of itself. This alternative is an ongoing and important part of current management (the no action alternative). In addition to acquisition, the Service has facilitated contacts between landowners and the Department of Agriculture, NRCS to conserve lands through the Wetland Reserve Program. NRCS has purchased permanent conservation easements on 7,700 acres in the Columbia Bottomlands. However, most landowners are not interested in holding conservation lands and the fee title is later purchased by the Service. This is primarily due to the fact that most land owners do not wish to continue to pay taxes on lands where income from the land is curtailed due to conservation and wetland restoration actions. However, in partnering with NRCS the Service accepts the constraints of their conservation easements, works with NRCS on wetland restoration and restores and manages other habitat values including controlling invasive species and restoring native coastal prairie on agricultural lands. In an area that has heavy development pressure due to the proximity of the Houston

Metropolitan Area, this partnership may have been the only means by which these acres could have been conserved.

The TPWD manages one state park, one state historical site, and two WMAs within the project boundary. The Stringfellow WMA which shares a common boundary with San Bernard NWR enabled the conservation of the largest block of forest and a migratory corridor reaching from the coast nine miles inland. The Service will continue to share information about potential projects within the vicinity of existing State areas with TPWD as funding opportunities may arise in the future.

The Service has facilitated the conservation of smaller tracts through donations of conservation easements to area land trusts where the location or size of the property was not suitable for acquisition by the Service. The Service will continue to seek opportunities, working with partners to help all landowners interested in conservation of natural forested habitats. Private land trusts have conserved approximately 1,800 acres.

The TPWD and a host of conservation groups continue to advocate for this preservation effort. However, because of the current slow economic recovery, these entities do not have the necessary resources to acquire, and manage the habitat. Therefore, the land acquisition functions in the Austin's Woods Conservation Plan largely fall to the Service.

Acquisition in Fee and Conservation Easement

Purchase of fee title has been the primary means through which acquisition has occurred in the past. Although funding through the traditional refuge funding mechanisms, Migratory Bird Conservation Act Fund and Land and Water Conservation Fund, has been the primary source, the Service has received substantial assistance from other sources. Working with non-profit organizations, private funds have been raised, and wetland mitigation funds have been held for use in future acquisitions. Both the Trust for Public Land and The Conservation Fund have purchased and held lands as the Service completes due diligence and secures funding for acquisition. The National Fish and Wildlife Foundation has been instrumental in nearly all acquisitions, providing guidance, assisting with landowner negotiations, buying and holding tracts until the Service could obtain the funds, and purchasing appraisals. Under this plan, the Service would continue to be opportunistic and utilize a variety of funding avenues for fee title acquisition.

The purchase of conservation easements has not been readily employed in the past due to the desires of several landowners. Since the purpose of this program is the conservation of forested landscapes, residual rights would preclude the ability to use the land for agriculture (including grazing). Although landowners can reduce their taxes by showing a reduction in their owned value, without an income from the land, few landowners are interested in this approach. Landowners interested in easement opportunities are generally conservation-oriented, where they enjoy the natural landscape and generally own small (<100 acres) tracts.

3.2 U.S. Fish and Wildlife Service Land Acquisition Policy

Land interests are acquired only from willing sellers/donors and are subject to the availability of funding. The presence of a national wildlife refuge would not mean increased regulation of adjacent private land uses. The Service acquires lands and interests in lands, such as easements, and management rights in lands through leases or cooperative agreements, consistent with legislation or other congressional guidelines and executive orders, for the conservation of fish and wildlife and to provide wildlife-dependent public use for recreational and educational purposes. When land is needed to achieve those objectives, the Service seeks to acquire the minimum interest necessary to reach those objectives. If fee title is required, the Service gives full consideration to extended use reservations, exchanges, or other alternatives that will lessen the impact on the owner and the community. Donations of desired lands or interests are accepted. In all fee title acquisition cases, the Service is required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) to offer 100 percent of the property's appraised market value, as set out in an approved appraisal that meets professional standards and federal requirements.

We only propose fee acquisition when adequate land protection is not assured under other ownerships, active land management is required, or we determine the current landowner would be unwilling to sell a partial interest such as a conservation easement. Generally, the lands we would acquire in fee require more than passive management to meet the wildlife conservation goals.

Conservation easements leave the parcel in private ownership, while allowing the Service involvement in land management decisions in a way that enables us to meet our conservation goals, as well as being able to provide some assistance to the landowner with stewardship and management of their lands. Easements are a property right, and typically are perpetual. If a landowner later sells the property, the easement continues as part of the title. The structure of such easements would provide permanent protection of existing wildlife habitats while also allowing habitat management or improvements and access to sensitive habitats, such as for endangered species or migratory birds. We would determine, on a case-by-case basis, and negotiate with each landowner, the extent of the rights we would be interested in buying. Those may vary depending on the configuration and location of the parcel, the nature of wildlife activities in the immediate vicinity, the needs of the landowner, and other considerations. In general, easement acquisition would maintain the land in its current configuration with no further subdivision or development.

Properties subject to easements generally remain on the tax rolls and taxes are still paid by the landowner. The Service does not pay refuge revenue sharing (i.e., funds the Service pays to counties in lieu of taxes) on easement rights. Easements generally work best when:

- only minimal management of the resource is needed, but there is a desire to ensure the continuation of current undeveloped uses and to prevent fragmentation over the long term;
- a landowner is interested in maintaining ownership of the land, does not want it to be substantially altered, and would like to realize the benefits of selling development rights;
- current land use regulations do not limit the potential for adverse management practices;

- the protection strategy calls for the creation and maintenance of a conservation area that can be accommodated with passive management; or
- only a portion of the parcel contains lands of interest to the Service.

On easement lands the opportunities for wildlife-dependent public uses, partnerships, or scientific research would be at the discretion of the landowner. These uses would be considered on lands owned in fee title by the Service.

While land owned by the U.S. Government is not taxable by state or local authorities, the Service has a program in place to compensate local governments for foregone tax revenues. The Refuge Revenue Sharing Act of June 15, 1935, as amended (16 U.S.C. 715s) requires the Service to make payments to local taxing authorities, typically counties, to at least partially offset the loss of local tax revenues as a result of federal acquisition of private property. The Service makes annual payments to local taxing authorities, based on the estimated values of lands that the Service owns located in those jurisdictions. The actual Refuge Revenue Sharing payment does vary from year to year because Congress may or may not appropriate sufficient funds to make full payment.

3.3 Criteria for Protection Priorities

The Austin's Woods Conservation Plan, approved in 1997, addressed the need for biological integrity of each individual acquired tract as well as the contribution that each tract makes to the integrity of the overall project area. In the Plan, the Service identified 15 criteria for evaluating each proposed new satellite addition to the San Bernard NWR. This criteria system is used instead of identifying specific tracts in a land protection plan. The specific criteria are:

1. Exceptional/unique plant communities (e.g., canebrakes, willow swamps, bald cypress swamps, Carolina cherry laurel, (also known as wild peach) stands, rare Brazoria palm stands, and southern red cedar stands.
2. High quality undisturbed habitat (remaining old growth highest priority)
3. No minimum size, but large tracts are preferred (recognizing that larger tracts maximize ecological integrity)
4. The tract compliments, is adjacent to, or near other protected areas, particularly where natural links exist such as the same hydrologic system or seed dispersal corridors. Acquisition would establish linkage between other protected sites.
5. Expansion capability (will acquisition of this site add to adjacent acquisitions or other protection strategies to build a larger unit?).
6. Other known exceptional biological elements (an element is an exceptional biological occurrence such as an active bald eagle nest, a rare plant population, or a heron rookery).

7. Would acquisition maximize maintenance of natural ecological functions and processes (e.g., natural hydrological patterns)?
8. Presence of intact natural biological diversity characteristic of healthy bottomland hardwood forests.
9. Degree of human-caused disturbance to the communities (e.g., roads, houses, utility corridors, etc.).
10. Proximity to development (threats or vulnerability).
11. Degree of fragmentation of surrounding habitats.
12. Ease of restoration (enough of the basic ecological processes such as hydrologic regime are present to support restoration so as not to require intensive restoration efforts).
13. Level and kind of current disturbance.
14. Hydrologic/watershed influences.
15. Degree of structural (plant community and topographic) complexity.



Brazoria Palms are found only in the south central part of the project area near Sweeney, TX

3.4 Acquisition Funding Alternatives

Under the San Bernard NWR's legislative authorities, the Service can acquire lands to be added to the National Wildlife Refuge System from willing sellers and donors through purchase or donation of either fee title or a conservation easement. This project has demonstrated the use of more innovative protection scenarios and accessed more funding sources than perhaps any other refuge protection project in the nation (see Table 1, page 5). Funding sources used to date, and which may be used in the future, include the Migratory Bird Conservation Act Fund, the Land and Water Conservation Fund, the National Fish and Wildlife Foundation, the North American Wetlands Conservation Act, the Coastal Impact Assistance Program of the Texas State General Land Office; donations and loans from the Houston Audubon Society, Houston Sierra Club, Gulf Coast Bird Observatory, The Conservation Fund, The Nature Conservancy, Trust for Public Land, Dow Chemical Company, ConocoPhillips Petroleum Company, The John O'Quinn Foundation, and numerous private landowners (plus project partner donations). The Service will continue to work with multiple partners, utilizing a variety of funding mechanisms to facilitate conservation.

3.5 Coordination

Since 1997 when the acquisition began, the Service has developed and nurtured strong partnerships in the area with landowners, public entities, and conservation organizations. The process of identifying, evaluating, and selecting tracts for refuge acquisition involves staff from the Service, TPWD, NFWF, NRCS, ACOE, Texas Commission on Environmental Quality (TCEQ), and county officials. Other partner organizations such as the Trust for Public Land, The Conservation Fund, The Nature Conservancy, as well as local organizations such as the Houston Audubon Society, Houston Sierra Club, Houston Wilderness, the Community Foundation of Brazoria County, and the Gulf Coast Bird Observatory have been essential to the success of this project. Communication with these organizations began with NEPA compliance and collaboration has continued on a regular basis since 1997. As key conservation tracts were added to the Refuge, partners have provided additional support. Their contributions include: funds toward tract acquisitions, providing land consultation services, and holding title to tracts until funding is secured. Of particular importance, in 1999, NFWF established a special fund for the Austin's Woods Conservation Project and provides expert land consultation. Since that initial agreement, NFWF has held in trust and provided several million dollars to the project from private sources and helped administer key public grants. The ACOE and Environmental Protection Agency have provided mitigation funds to NFWF for acquisition. Several local companies including the Dow Chemical Company, Shintech Corporation and ConocoPhillips have donated land to the Service for conservation. Because of the project's and partnerships' successes, opportunities for future collaborations are increasing and will continue to provide non-Service funding. Public support has continued to grow throughout the project's history, as the Service engaged local governments and provided public use opportunities on units near communities.

This LPP being completed as part of The Texas Mid-coast National Wildlife Refuge Complex (Complex) Draft Comprehensive Conservation Plan (CCP), which will be available for public review and comment in the summer of 2012. All comments will be addressed prior to the final decision.

3.6 Sociocultural Impacts

Impacts on Local Population and/or Economy

Refuge lands require very little in the way of services and infrastructure from local governments and often generate tax revenues from tourism. Nature tourism trends will continue to increase as the economy recovers. The refuge's location near Houston has encouraged visitors who want to experience natural areas instead of developed urban environments. Refuge visitors contribute to the local economy through their retail services purchases. Visitors from outside the local area bring an influx of new money to the local economy which stimulates growth and circulation to other economic sectors, such as construction, in the local economy.

The potential exists for some decline in tax revenue to local governments (as lands come under Service ownership). However, this decline may or may not occur, since those lost tax revenues would be at least partially offset by the Service through the Refuge Revenue Sharing Act. The

actual Refuge Revenue Sharing payment varies from year to year because Congress may or may not appropriate sufficient funds to make full payment. San Bernard NWR Refuge Revenue Sharing payments for 2010 were \$53,891 total to Brazoria, Fort Bend, and Matagorda Counties.

Impacts on Aesthetic and Visual Resources

Expanding population and increasing urban development spreading out from the metropolitan area of Houston, the fourth largest city in the Nation, are causing changes to the former rural nature of the four-county project area. Many city dwellers like the prospect of living in the rural and forested areas of the project area, along with the appeal of less expensive lands than those closer to Houston. Ironically, the urban expansion tends to diminish the rural qualities that attract people in the first place. One result of the refuge is the saving of open spaces that will continue to contribute to the positive perceptions of open spaces of residents and visitors in the project area.

Impacts on Public Use Opportunities

Because the Refuge is located close to Houston, Texas, the fourth largest city in the country, the Service would like to provide public use opportunities at some of the bottomland units. Most visitors come to the Refuge to view wildlife and enjoy nature. The Service will continue to offer public hunting, fishing, wildlife observation and wildlife photography, interpretation and environmental education opportunities as it has on other Austin's Woods units owned by the San Bernard Refuge. Demand for outdoor recreation is high in the greater Houston metropolitan area; however, public use opportunities are limited by a relative lack of public lands (only about 5% of Texas lands are held in federal, state, or local government ownership-(*LandWatch.com*). Where the Refuge only has a conservation easement, the public is not allowed on the property, unless the landowner approves. Additional lands acquired in fee will offer more public use opportunities than what the Refuge offers now. As it has in the past, the acquisition units selected for public use development are done so only after evaluating the cost/benefit of doing so. These units are generally located near population centers and provide unique observation opportunities.

The refuge must balance wildlife observation opportunities with the conservation and protection of habitats and species. Most newly acquired units will not be open for wildlife observation in order to ensure that the conservation of lands is meeting the purpose for which they were conserved, primarily migratory birds.

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



Visitors kayaking on Cedar Lake Creek.

educational experiences that are not easily gained in a classroom. An environmental education center has been developed at the Hudson’s Woods Unit. This has become a popular venue for classes to teach place-based environmental education about the unique habitats of the Columbia Bottomlands. College students have used several of the tracts for research that also benefits the refuge in learning more about the resources and providing impetus for adaptive management of the refuge. Environmental education will continue to be an important public use. The addition of new units will allow for the use of new outdoor “laboratories” for students of all ages.

Currently the refuge provides 6 miles of trails on four of the existing bottomland units. Associated observation decks, restrooms are provided at two sites. The development of these facilities has been partially funded through grants and donations. Most recently, the Dow Woods Unit, near Lake Jackson provides 2.5 miles of accessible walking trails and was funded with more than \$250,000 in grants and donations to the Refuge’s Friends Group. New opportunities in the bottomlands, including hunting for deer and feral hogs are being planned through the CCP for the Complex and will be opened following appropriate documentation and NEPA assessment.



The Discovery Outpost (above) provides environmental education opportunities for school children and Refuge Junior Naturalists (left) at Hudson Woods. Woods Unit.

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