CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

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I. Statement of Proposed Actions 2

II. Purposes of Proposed Actions 2

III. Need for Proposed Actions 2

IV. Environmental Impact Statement (EIS) Planning Process 4

A. NEPA Planning Process 4
B. Comprehensive Conservation Plan (CCP) and Land Protection Plan (LPP) Planning Processes 5
C. Decisions to be Made and Criteria for Decision Making 6
D. Legal Mandates and Policy Guidance 7

V. Background 7

A. Brief History of the Texas Chenier Plain Refuge Complex 7
B. Refuge Purposes and the Migratory Bird Conservation Act 8
C. National Wildlife Refuge System Mission and Goals 9
D. The Texas Gulf Coast Ecosystem Goals 10
E. Refuge Vision Statement 10
F. Refuge Goals 11

VI. Scoping and Summary of Public Involvement 11

VII. Description of Major Issues 14

A. Expansion of the Refuge Complex (Land Acquisition) 14
B. Administration of Wildlife-Dependent Recreational Uses 17
C. Habitat Management and Restoration of Refuge Lands 18
D. Threats to the Ecosystem 20

VIII. Issue Outside the Scope of the EIS – STATE Highway 87 21

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

Introduction

This Environmental Impact Statement/Comprehensive Conservation Plan/Land Protection Plan (EIS/CCP/LPP) for the Texas Chenier Plain National Wildlife Refuge Complex (Refuge Complex) combines three documents required by federal laws and U.S. Fish and Wildlife Service (USFWS) policy: an Environmental Impact Statement required by the National Environmental Policy Act (NEPA) of 1969,a Comprehensive Conservation Plan required by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57) (Refuge System Improvement Act), and a Land Protection Plan required by Service policy. The Texas Chenier Plain Refuge Complex (Refuge Complex) consists of four separate units of the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service (USFWS) as one Refuge Complex. The four units are: Anahuac National Wildlife Refuge (NWR), McFaddin NWR, Texas Point NWR, and Moody NWR. These refuge units are located along the upper Texas Gulf Coast in Chambers County, Jefferson County, and Galveston County.

The EIS/CCP/LPP accomplishes several functions including the following:

- Identification of the USFWS proposed action and alternatives for management of habitat and wildlife resources on the refuges

- Identification of the USFWS proposed action and alternatives involving expansion of land acquisition boundaries at all four of the refuges in the Refuge Complex. The set of alternatives for land protection/acquisition describe a range of approaches that would meet specific conservation goals and objectives

- Analysis of the effects of the proposals and alternatives on the human environment.

The CCP will be used by the refuge staff and other partners for refuge management and resource conservation, protection and restoration purposes. The CCP will guide management decisions throughout the next fifteen years. The plan serves to identify strategies for achieving Refuge goals and objectives. The LPP will implement a refuge acquisition boundary expansion proposal for Anahuac, Moody, McFaddin and Texas Point NWRs. Although achievement of the refuge purposes is not necessarily dependent upon additional land acquisition, the possible inclusion of other lands within the refuges will greatly benefit management of existing refuge lands and assist the USFWS in achieving its larger ecosystem-wide goals and objectives to ensure the long-term sustainability of migratory bird populations.

The Refuge Complex contributes to the conservation of wildlife and their habitats in the Texas Gulf Coast Ecosystem. The individual refuges in the Refuge Complex encompass a diversity of habitats: aquatic habitats (open water and near-shore Gulf habitats), freshwater to saline marshes, riparian habitats, coastal woodlots, rice fields, native prairies, cheniers and coastal beach and dune habitats. These areas host a multitude of plant, invertebrate and vertebrate species including over 300 bird species, 75 species of freshwater fish, and 400 species of salt and brackish water fish and shellfish. The Refuge Complex protects quality habitats for migrating, wintering and breeding waterfowl, shorebirds and waterbirds, and provides strategic and crucial resting areas for neotropical migratory songbirds migrating across the Gulf of Mexico.

Waterfowl hunting has long been a tradition in the coastal wetlands of Texas. Hunting and fishing date back to the area's earliest occupants, the Karankawa and Atakapa Indians. More recently, wildlife observation, particularly bird watching, has become increasingly popular, as has environmental education. Individuals who have experienced and come to appreciate the wealth of natural resources in the area have become the most vocal supporters of the Refuge Complex' many wildlife resources.

I. STATEMENT OF PROPOSED ACTIONS

This planning document involves two separate, but related Federal actions:

1. First, the document proposes the approval and implementation of a compendium of programmatic refuge management goals, objectives and strategies. The goals and associated objectives and strategies have varying degrees of specificity, and it is clear that additional environmental analysis per NEPA may be necessary prior to implementation of a specific strategy. Nevertheless, these goals, objectives and strategies are proposed because the USFWS has concluded that in comparison to other considered alternatives, those proposed, best achieve the purpose, vision and goals of the Refuge Complex, contribute to the National Wildlife Refuge System mission, are consistent with the principles of sound fish and wildlife management, and address relevant mandates and the major issues identified during scoping.

2. The second proposal is that of expanding the acquisition boundary of the four constituent refuges, increasing the habitat and wildlife resources already managed for wildlife conservation and habitat purposes, especially migratory waterfowl. Expansion of any of the Refuge Complex's constituent refuge acquisition boundaries would then authorize the USFWS to work with willing sellers using the acquisition standards and parameters defined in USFWS law, policy, and government regulation. Lands acquired by the USFWS would be managed as part of the Refuge System.

II. PURPOSES OF PROPOSED ACTIONS

As there are essentially two separate but related Federal Actions in this integrated EIS/CCP/LPP, there are two separate but related purposes for these proposals:

1. **Comprehensive Conservation Plan** - The purpose of proposing the compendium of goals, objectives and strategies as represented in the draft Comprehensive Conservation Plan for the Texas Chenier Plain Refuge Complex is to provide managers with a 15 year vision that contributes to the achievement of Refuge purposes and the mission of the Refuge System.

2. **Land Protection Plan – Refuge Acquisition Boundary Expansion** - The purpose of establishing new approved refuge boundaries for the Moody, Anahuac, McFaddin and Texas Point NWRs by implementing a refuge acquisition boundary expansion proposal is to help the USFWS better achieve Refuge purposes and accomplish mandates provided by law and treaty that are related to the protection of migratory birds and other USFWS Trust resources. Implementation of a boundary expansion proposal is expected to assist the USFWS meet its goals and objectives of the ecosystem plan for the Texas Gulf Coast Ecosystem. Although achievement of the refuge purposes is not necessarily dependent upon additional land acquisition, the possible inclusion of other lands within the refuges will greatly benefit management of existing refuge lands and assist the USFWS in achieving its larger ecosystem-wide goals and objectives to ensure the long-term sustainability of migratory bird populations.

III. NEED FOR PROPOSED ACTIONS

A. Comprehensive Conservation Plan

The Texas Chenier Plain Refuge Complex administers four of the more than 540 refuges in the National Wildlife Refuge System managed by the USFWS. Overall, there is a need to make the management of each refuge consistent with the new National Wildlife Refuge System mission, goals and policies. A Comprehensive Conservation Plan, required by the Refuge System Improvement Act, is needed to

address "...significant problems that may adversely affect the populations and habitats of fish, wildlife and plants and the actions necessary to correct or mitigate such problems."

Specifically, these problems at this Refuge Complex include the need to ensure biological integrity and maintain biological diversity and environmental health by reducing saltwater intrusion and restoring freshwater and sediment inflows to marshes and littoral systems, restoring altered wetland systems, restoring degraded prairie and woodland habitats, protecting unique and rare habitats and fish and wildlife species, controlling exotic and invasive species, reducing threats from contaminants, and considering and addressing the future impacts of relative sea level rise.

With appropriate implementation, the CCP maps out strategies that will:

- Accomplish management goals and objectives
- Describe habitat projects that support goals and objectives
- Initiate step-down management planning
- Outline compatible wildlife-dependent recreational uses

The CCP provides a framework for future refuge management. This CCP is designed to serve as a vision for the Refuge Complex, and provide management guidance through maintenance, restoration and use of Refuge resources during the next 15 years. The environmental analysis of this plan is addressed at the conceptual and programmatic level. While it contains some relative analytical specificity, it is not intended to be a detailed site plan with exact locations for facilities or precise descriptions of programs.

B. Land Protection Plan – Refuge Acquisition Boundary Expansion

In a recent 25 year period, over 100,000 acres of coastal wetlands were lost in the upper Texas Gulf Coast region (Moulton *et al*. 1997). Also, this area contains three (3) nationally recognized scarce and declining wetland types: estuarine intertidal emergent, palustrine emergent and palustrine forested wetlands. Less than one-percent of the historic 9,000,000 acre tallgrass prairie once found along the Louisiana and Texas Gulf coasts remains (Diamond and Smeins 1984, Smeins *et al.* 1991), and the majority of the native coastal prairie in the project area has been lost. Direct loss of native habitat to development and conversion to other land uses within the project area has been extensive. Native prairies have been converted for agricultural uses and residential and industrial development. Development has greatly altered natural hydrological and sediment regimes, resulting in loss or severe restriction of freshwater and sediment inflows and increased saltwater intrusion. These changes continue to impact the project area's native prairie and coastal marshes, resulting in a continuing trend of habitat loss and degradation.

Coastal wetland habitats are being lost directly through erosion along the shorelines of the Gulf of Mexico, bays and lakes, and navigation channels (particularly the Gulf Intracoastal Waterway). Average annual rates of shoreline retreat along the Gulf at Texas Point and McFaddin NWRs are significant, ranging from 9 to over 50 feet per year. Interior marsh loss is occurring due to the combined effects of saltwater intrusion, land subsidence and sea level rise, resulting in the conversion of emergent marsh habitats to open water. Due to channelization and a reduction of freshwater inflows, saltwater now reaches farther inland into historically freshwater marshes, changing the plant and animal communities and reducing the overall biological diversity. Construction of the Gulf Intracoastal Waterway (GIWW) in 1933 divided the once-contiguous marshes in the project area, of the Chenier Plain, severed the natural freshwater inflows of the bayou systems to downstream marshes, and channelized several miles of the natural bayous which drained into the Galveston Bay and Sabine Lake estuaries.

The large scale alterations to the project area and ongoing threats from sea level rise and land subsidence require that the USFWS adopt a proactive approach to ensure the long-term protection of natural resources in the region. USFWS acquisition from willing sellers would provide an opportunity to extend protection, management and restoration to important segments of this marsh and coastal prairie ecosystem. Some of the areas adjoining already acquired refuge lands have important hydrological links

to those refuge lands and increased wildlife habitat benefits would result from single ownership and management. Future development would further reduce an important natural resource area which has already been significantly diminished in size and quality.

IV. ENVIRONMENTAL IMPACT STATEMENT (EIS) PLANNING PROCESS

A. NEPA Planning Process

The overall process used to develop this EIS/CCP/LPP is consistent with the planning requirements specified in the National Environmental Policy Act (NEPA), (42 U.S.C. 4321-4347) and the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA (CEQ) (40 CFR 1500-1508). The five (5) major steps in the NEPA process for developing an EIS were utilized in the preparation of this document and are summarized as follows:

1. Scoping

Following publication of a Notice of Intent to prepare an EIS in the Federal Register, scoping is the early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. The agency shall invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, the affected public, and any other interested persons, including those who might not be in accord with the action on environmental grounds. Major issues identified during the public and internal scoping process will be considered during the development of alternatives and evaluations of environmental impacts.

2. Alternative Development

The purpose of this step is to develop alternative approaches to the major issues. The alternatives must meet the purposes of the Federal proposal, meet the goals of the refuges and comply with the missions of the refuge system and the USFWS. The alternatives shall include the alternative of "No Action" and shall rigorously explore and objectively evaluate a reasonable range of alternatives. This document contains two separate sets of alternatives addressing the two separate but related purposes in this integrated EIS/CCP/LPP.

3. Environmental Impact Analysis

This is the heart of the EIS and presents the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among the options for the decision maker and the public. Impacts mean the same thing as effects. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.

4. Draft EIS

A Notice of Availability is published in the Federal Register announcing completion and distribution of the Draft EIS. Copies of the draft are made available to the public, and public meetings are held to present/discuss the document and illicit comments. The range of alternatives addressed in the draft will include those to be considered by the ultimate USFWS decision maker and will identify the USFWS' preferred alternative.

5. Final EIS

The final EIS will review and analyze all the comments received on the Draft EIS and modify the draft as needed, including refining the preferred alternative and publishing a Final EIS. Following a 30-day review

period for additional public comment or protest, a Record of Decision is issued that describes the actions that will be implemented. The Record of Decision identifies the rationale the decision maker used to make the decision on the actions to be implemented.

B. Comprehensive Conservation Plan (CCP) and Land Protection Plan (LPP) Planning Processes

The process for the preparation of the CCP is guided by requirements in the Refuge System Improvement Act, the Refuge Planning Chapter of the U.S. Fish and Wildlife Manual (Part 602 FW 2; 1, November 1996), and the evolving policy related to the implementation of the Refuge System Improvement Act.

The Refuge System Improvement Act specifies two areas that are to be addressed in the CCP process: (1) identification and description of problems that may adversely affect populations and habitats of fish, wildlife, and plants within the planning unit, and the actions necessary to correct or mitigate such problems; and (2) identification, description, and facilitation of opportunities for wildlife-dependent recreation and a determination that these recreational uses (specific activities, levels of use and distribution) will be compatible with refuge purposes. The major issues, identified during scoping, relative to these two areas provide the primary guidance in developing objectives and strategies within the CCP to achieve refuge goals and purposes. While the life-span of the CCP is fifteen (15) years, periodically the USFWS will review the plan. The plan may be amended, as necessary, at any time under an adaptive management strategy.

As to the development of the CCP and the management strategies, this EIS is a comprehensive or "**programmatic**" EIS addressing a broad agency program which is the development of a formal plan for the management of the Complex. This differs from the more typical project-specific EIS which addresses a new construction project, substantial modification of a facility, or some similar type of project. This "programmatic" EIS does not attempt to provide NEPA compliance for site-specific projects which may be undertaken in the future to implement the plan strategies. If these projects are proposed in the future, then the Service will provide whatever compliance is required for the project. This compliance may be accomplished within a step-down plan or on a project-by-project basis.

The CCP provides programmatic guidance, in the form of goals, objectives, and strategies, for several refuge program areas. Specific implementation will be developed for individual program areas through step-down management plans within approximately 5 years after CCP completion. Some step-down plans may require additional NEPA compliance. Step-down plans for the Texas Chenier Plain Refuge Complex include the following:

Step-Down Management Plans	Status
Revised Fire Management Plan	Future planning
Habitat Management Plan	In progress
Oil & Gas Management Plan	Future planning
Inventory and Monitoring Plan	Future planning
Revised Hunt Plan	Future planning
Visitor Services Plan	Future planning
Integrated Pest Management Plan	Future planning

The process for the preparation of the LPP is guided by the Land Acquisition Planning Chapter of the U.S. Fish and Wildlife Manual (Part 341 FW 2; 12, April 1996), and the evolving policy related to the Land Acquisition Planning Procedures. This includes the Director's memo of Aug. 11, 2000, requiring Director's approval of all documents proposing the significant expansion of an existing unit of the National Wildlife Refuge System.

C. Decisions to be Made and Criteria for Decision Making

1. Land Protection/Acquisition

The Director of the U.S. Fish and Wildlife Service will decide which of the refuge boundary expansion alternatives best meet the criteria described below. This decision will be made in full recognition of the environmental effects of each alternative. The decision will be designated in a Record of Decision (ROD) document no sooner than 30 days after the final EIS is filed with the Environmental Protection Agency (EPA) and distributed to the public.

2. Comprehensive Conservation Plan

The USFWS Southwest Regional Director will select an alternative to implement as the Texas Chenier Plain Refuge Complex Comprehensive Conservation Plan. This decision will be made with an understanding of the environmental consequences of all alternatives considered. The decision will be documented in a ROD no sooner than 30 days after the final EIS is filed with the EPA and distributed to the public. Implementation of the plan will begin immediately upon publishing a summary of the ROD in the Federal Register.
The following criteria will be used in selecting the alternatives for implementation:

- Best meets the Refuge System mission
- Best meets the refuge purposes
- Best meets the USFWS Biological Integrity, Diversity, and Environmental Health Policy

The National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act) established that the fundamental mission of the 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 habitat within the United States for the benefit of present and future generations of Americans." The primary refuge purpose for refuges within the Texas Chenier Plain Refuge Complex is: "...for use as an inviolate sanctuary, or for any other management purpose for migratory birds." 16 U.S.C. § 715d (Migratory Bird Conservation Act). Therefore of primary consideration will be the alternative that best facilitates this mission and this refuge purpose.

The Biological Integrity, Diversity, and Environmental Health Policy is an additional directive for refuge managers to follow while achieving refuge purpose(s) and System mission. It provides for the consideration and protection of the broad spectrum of fish, wildlife and habitat resources found on refuges and associated ecosystems. Further, it provides refuge managers with an evaluation process to analyze their refuge and recommend the best management direction to prevent further degradation of environmental conditions; and where appropriate and in concert with refuge purposes and System mission, restore lost or severely degraded components.

Further the Refuge Improvement Act recognizes wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation as the priority public uses of the Refuge System. These uses are legitimate and appropriate public uses where compatible with the Refuge System mission and the individual refuge purposes. When a proposed wildlife-dependent recreational use is a compatible use within a refuge, that activity should be facilitated, subject to such restrictions or regulations as may be necessary, reasonable, and appropriate. The legislation also states that these priority public uses receive enhanced consideration over other uses in planning and management. Consideration of alternatives will include evaluating how opportunities for compatible wildlife-dependent recreation are best facilitated and/or enhanced.

In summary, the selection of an alternative for implementation on refuge lands within the Texas Chenier Plain Refuge Complex will be based primarily on the extent to which it would meet the following criteria, listed in priority order, as compared to the other alternatives:

1. Conservation of native fish, wildlife, plants, and their habitats with an emphasis on migratory birds consistent with refuge purposes.

2. Provide balanced opportunities for wildlife -dependent recreational uses that are compatible with Refuge purposes.

D. Legal Mandates and Policy Guidance

Refuges are guided by the mission and goals of the National Wildlife Refuge System (NWRS), the designated purpose of the Refuge unit as described in establishing legislation or executive orders, USFWS laws and policy, and international treaties. Key concepts and guidance of the System are covered in the NWR Administration Act of 1966, the Refuge Recreation Act of 1962, Title 50 of the Codes of Federal Regulations, the U.S. Fish and Wildlife Service Manual, and, most recently, through the National Wildlife Refuge System Improvement Act of 1997.

The Refuge Improvement Act amends the Refuge Administration Act of 1966 by including a unifying mission for the Refuge System, a new process for determining compatible uses on refuges, and a requirement that each refuge will be managed under a Comprehensive Conservation Plan. The Refuge Improvement Act states that wildlife conservation is the priority of NWRS lands and that the Secretary of the Interior shall "…ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans…." Each refuge must be managed to fulfill the Refuge System mission and the specific purposes for which it was established. Additionally, this Act identifies the six wildlife-dependent recreational uses (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) that are to be priority public uses of the Refuge System. These uses will receive enhanced consideration over other uses in planning and management.

Lands within the National Wildlife Refuge System are different from other, multiple use public lands in that they are closed to all public uses unless specifically and legally opened. No use may be allowed on a refuge unless it is determined to be compatible with the purposes of which each refuge was established. A compatible use is a use that, in the sound professional judgment of the refuge manager, will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge. Sound professional judgment is further defined as a decision that is consistent with principles of fish and wildlife management and administration, available science and resources and adherence with law.

The Refuge Improvement Act requires that a Comprehensive Conservation Plan (CCP) be in place for each refuge by the year 2012 and that the public have an opportunity for active involvement in plan development and revision. It is USFWS policy that CCPs are developed in an open public process and the USFWS is committed to securing public input throughout the process.

V. BACKGROUND

A. Brief History of the Texas Chenier Plain Refuge Complex

As the coastal region of Texas became settled, the early economy of the area was based on raising cattle and growing rice. A demand for farmland and later land for industry developed. Marshlands were drained or altered to make rice fields and to provide sites for industrial installations. Waterfowl suffered loss of nesting, feeding, and resting areas when vast tracts of marshland were drained but thrived on the feed available from the rice fields and cultivated pasture lands which replaced the wetlands. The metropolitan area, centered around Houston, with its major seaport and growing complex of industrial, petrochemical, scientific research, and transportation installations, has been the major influence on the land use of a large segment of southeast Texas. As more industry flourished in the Galveston-Houston- Beaumont metropolitan area, the economic expansion created a demand for more land to accommodate the

continued growth. Coastal marshes have been filled to provide sites for factories, refineries, roads, commercial, and residential areas. The USFWS identified a need to retain and intensively manage a significant block of the coastal marsh for waterfowl habitat in the upper coastal region of Texas.

Through his will in 1954, W. L. Moody, Jr. conveyed as a gift to the USFWS an undivided ½ fee interest in 714 acre Lake Surprise, which became Moody NWR on November 9, 1961. In 1982, the USFWS exchanged the fee interest in Lake Surprise with the Moody Foundation for a non-development conservation easement on a little over 3500 acres of wetland habitat around Lake Surprise which comprises the current Moody NWR. Anahuac NWR was established on February 27, 1963 through donation and fee-title acquisition under authority of the Migratory Bird Conservation Act of 1929 (MBCA). Since then, the boundary was expanded in 1979, 1982, 1989, 1991, 1993, and 2005 under authority of the MBCA, Emergency Wetlands Resources Act, Refuge Recreation Act and Fish and Wildlife Coordination Act. Total acreage in fee title ownership is currently 34,339 acres. McFaddin NWR was established on May 1, 1980, under authority of the MBCA. Its boundary was expanded in 1995, 1996, and 2005, also under authority of the MBCA. Currently, the Refuge administers a total of 58,861 acres in combined fee title and conservation easements. Texas Point National Wildlife Refuge was established in 1979, under authority of the MBCA. It is comprised of 8,952 acres in fee title ownership.

Summary of Current Land Acquisition Status

Refuge	Approved Boundary	Acquired Lands	Percentage Acquired
Moody NWR	3,516 acres	3,516 acres	100%
Anahuac NWR	34,339 acres	34,339 acres	100%
McFaddin NWR	70,710 acres	58,861 acres	83%
Texas Point NWR	8,952 acres	8,952 acres	100%

As additional parcels were added to the National Wildlife Refuge System for the protection of coastal waterfowl habitat through the Migratory Bird Conservation Act, these acquisitions created a closely linked cluster of refuges along the coast. In the early 1980's, the USFWS decided that this closely-related group of four refuges could be more efficiently administered as one Refuge Complex. Subsequently, the Refuge Complex was named for the geologic/geographic feature called "cheniers" important along this part of the Louisiana and Texas coastline. "Cheniers" are described in more detail in Chapter Three, Affected Environment.

The initial management focus of these refuges was to retain and intensively manage this significant block of the coastal marsh for waterfowl habitat. Water management, prescribed burning, and controlled grazing have been traditional tools in the management of coastal marshes on these refuges. Rice farming has been continued on Anahuac NWR to provide valuable foraging habitats for waterfowl.

B. Refuge Purposes and the Migratory Bird Conservation Act

National Wildlife Refuge System lands are acquired and refuges are established under a variety of legislative acts and administrative orders. The USFWS defines the purposes of national wildlife refuges when a refuge is established, based upon the establishing authorities or legislation. The primary authority used in establishing the four refuges comprising the Texas Chenier Plain Refuge Complex was the Migratory Bird Conservation Act. National wildlife refuges established through this act were acquired:

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

Three other acquisition authorities have been utilized at Anahuac NWR, with the three following additional purposes:

"...the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions..." 16 U.S.C. § 3901 (b), 100 Sta. 3583 (Emergency Wetlands Resources Act);

"...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 (Refuge Recreation Act); and,

"... for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon..." 16 U.S.C. § 661-667e (Fish and Wildlife Coordination Act).

The Migratory Bird Conservation Act, passed in 1929, authorized the acquisition and management of refuges as "inviolate sanctuaries" for migratory birds. This Act originally required that all refuges be inviolate sanctuaries and deemed that refuges primary purposes were as breeding ground and habitat for migratory birds. Further, the Migratory Bird Hunting and Conservation Stamp Act of 1934 (Duck Stamp Act) required that lands purchased with revenues from this Act are to be managed as "inviolate migratory bird sanctuaries" and prohibited migratory bird hunting. The 1949 Amendment to the Duck Stamp Act modified the "inviolate sanctuary" requirement and allowed public waterfowl hunting on up to 25% of the lands acquired with Migratory Bird Conservation Funds in a refuge. The portion of refuge lands acquired with Migratory Bird Conservation Funds which could be opened to hunting was increased to 40% by the 1958 Amendment to the Duck Stamp Act. The large majority of lands within the Texas Chenier Plain Refuge Complex were acquired with Migratory Bird Conservation Funds and in compliance with the statutory restrictions; approximately 40% of Anahuac, McFaddin, and Texas Point NWRs are open to waterfowl hunting.

The Refuge Recreation Act of 1962 further defined how recreational uses on refuges would be evaluated and firmly established the concept of compatibility. The 1966 Refuge System Administration Act permitted "the use of any area within the system for any purposes, including but not limited to hunting, fishing, public recreation and accommodations, as long as such uses are compatible with the major purposes for which such areas were established. " Typically, a refuge is closed to a particular use until it is opened administratively through the Federal Register. Refuge managers must determine compatibility of all public, economic, and military uses proposed or occurring on a refuge. The 1997 National Wildlife Refuge System Improvement Act amended the Refuge System Administration Act and further defined priority uses to be the following six wildlife-dependent uses: hunting, fishing, wildlife observation and photography, and environmental education and interpretation. Existing compatibility policy is described in the Refuge Manual (5 RM 20). Compatibility Determinations for existing and proposed uses on the Texas Chenier Plain Refuge Complex are in Appendix E.

C. National Wildlife Refuge System Mission and Goals

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 Improvement Act of 1997)

Starting with the first refuge, Florida's Pelican Island, established in 1903 by President Theodore Roosevelt, the National Wildlife Refuge System has grown to more than 96 million acres in size. It includes more than 540 refuges, at least one in every state, and over 3,000 Waterfowl Production Areas. The needs of wildlife and their habitats come first on refuges, in contrast to other public lands managed for multiple uses.

The goals of the National Wildlife Refuge System (Director's Order No. 132, January 18, 2001) are:

- To fulfill our statutory duty to achieve refuge purpose(s) and further the System mission.

- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.

- Perpetuate migratory bird, inter-jurisdictional fish, and marine mammal populations.

- Conserve a diversity of fish, wildlife, and plants.

- Conserve and restore, where appropriate, representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.

- To foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

D. The Texas Gulf Coast Ecosystem Goals

The Texas Chenier Plain Refuge Complex, comprised of Moody NWR, Anahuac NWR, McFaddin NWR, and Texas Point NWR, is located within the USFWS administrative boundary of the Texas Gulf Coast Ecosystem and is expected to fulfill the ecosystem goals and objectives outlined below:

Goal - To help restore, maintain and enhance the level of natural species diversity (floral and faunal communities) indigenous to the Texas Gulf Coast ecosystem, in close cooperation with resource management agencies, other government and non-government entities, industries, private landowners and other citizenry.

Objective 1 - Maintain, restore, and create wetlands in order to achieve a net gain in wetland quality, quantity (based on National Wetlands Inventory data), and natural productivity.

Objective 2 - Restore, conserve, enhance, and maintain approximately 25% of the historic Gulf coastal prairies in Texas, Louisiana, and Mexico to ensure the continued existence of native flora and fauna.

Objective 3 - Protect, restore, and enhance the biological integrity of the near coastal forest systems to maintain viable communities of natural flora and fauna.

Objective 4 - Maintain and where possible, enhance the biological productivity of existing high quality habitat and restore the biological productivity of degraded estuarine habitat.

Objective 5 - Develop and provide environmental education, outreach programs, and outdoor wildlife activities (consumptive and non-consumptive) involving at least 2 million public contacts annually to foster a broad conservation ethic.

E. Refuge Vision Statement

The Texas Chenier Plain Refuge Complex, comprised of Moody NWR, Anahuac NWR, McFaddin NWR, and Texas Point NWRs and located on the Upper Texas Gulf Coast in Chambers, Jefferson, and Galveston counties, will provide healthy and sustainable habitats for the diverse fish and wildlife resources of this rich coastal ecosystem. The full array of the region's native habitats - coastal marshes and prairie wetlands, coastal tallgrass prairie, and coastal woodlands - will be represented on the Refuge Complex. Protection, enhancement and restoration of these habitats will help maintain and restore the ecosystem's rich biological diversity.

Refuge habitats will be enhanced through management and restoration with an emphasis on benefiting waterfowl and other wetland-dependent migratory birds, declining songbird species, and all other species

at risk within the ecosystem. Management activities on the refuges will also seek to maintain and enhance habitat values for coastal fisheries, which support vital recreational and commercial fishing industries. Sound scientific monitoring and research will support an adaptive approach to management, facilitating continual refinement and improvement of refuge management practices.

By working with partners both governmental and private, the Refuge Complex will seek to ensure the long-term sustainability of coastal wetlands threatened by erosion, subsidence, rising sea levels and altered hydrological regimes. Working with the scientific community, the Refuge Complex will actively seek to develop and implement solutions to these complex problems.

The refuges will provide high quality recreational and educational opportunities for the public. The importance of the Refuge Complex in supporting a rapidly expanding nature tourism industry will be increased. By reaching out to and working within our communities, awareness of the importance of conserving fish, wildlife and habitats will increase and new and innovative opportunities to promote and implement conservation on private lands will emerge. By helping to conserve natural resources, the refuges will maintain and enhance the quality of life for residents, who have always greatly valued and treasured the region's rich natural heritage.

F. Refuge Goals

Goal 1 - Conserve, enhance and restore the Texas Chenier Plain region's coastal wetlands to provide wintering, migrational, and nesting/brood-rearing habitat for waterfowl, shorebirds, marsh and wading birds, other wetland-dependent migratory birds, and habitat for other native fish and wildlife.

Goal 2 - Conserve, enhance and restore the Texas Chenier Plain region's coastal prairies and coastal woodlands to provide wintering, migrational, and nesting habitat for resident and migratory landbirds, including neotropical/neartic migratory birds, and habitat for other native wildlife.

Goal 3 - A comprehensive biological program will guide and support conservation efforts for all species of native fish, wildlife and plants on the Texas Chenier Plain Refuge Complex.

Goal 4 - By working with others locally and on a landscape level, threats to biological integrity, biological diversity and environmental health on the Refuge Complex will be addressed.

Goals 5 - All local, national and international visitors will enjoy safe and high quality outdoor experiences on the Refuge Complex, and learn of the Refuge Complex's role in conserving the region's coastal natural resources. New partnerships with our local communities will be forged to highlight, promote and conserve the unique natural assets of the upper Texas Gulf Coast.

VI. SCOPING AND SUMMARY OF PUBLIC INVOLVEMENT

A. Summary of Public Involvement

Major issues related to the proposed actions were actively solicited from the general public, local public officials, local governmental entities, affected landowners, federal and state agencies, private organizations, and the USFWS' interdisciplinary core Planning Team. A "Notice of Intent to Prepare a Comprehensive Conservation Plan and Associated Environmental Impact Statement" was published in the Federal Register on October 21, 1999. Public scoping efforts included two series of public scoping meetings, public workshops, a town hall meeting, multiple briefings for local government officials and their staffs, and a waterfowl hunters' forum. A mailing list of over 1200 persons and organizations is maintained at the Refuge Complex Office and was used to distribute planning newsletters and public meeting announcements. The following is a summary of public involvement efforts.

B. Interdisciplinary Core Planning Team

The USFWS chartered a core planning team consisting of refuge managers, wildlife biologists, realty specialists, migratory bird specialists, geographic information specialists, NEPA specialists, and natural resource planners. At the request of the USFWS, an employee of the Texas Parks and Wildlife Department was named to represent the state fish and wildlife agency and actively participated on the core planning team. This team met regularly, providing important input in the scoping process and the issues development. The team also provided invaluable advice and comment during the development of the alternatives and other sections of the document.

C. Initial Public Scoping Meetings: January 11 & 12, 2000

Notices of the meetings were mailed to a list of over 1200 affected individuals, agencies, and organizations. Additionally, meeting notices were published in the local newspapers during the week prior to the meetings. Personal invitations were sent to the local Congressman, County Judges, and other public officials. "Fact Sheets", summarizing the proposals to be presented, were prepared to be handed out to all attendees at the meetings. Each meeting included an open public forum and breakout sessions to allow the concerned public to present their views and concerns in either a general or a smaller group setting to accommodate individual comfort levels. Light refreshments were provided for the public at each meeting.

The January 11th meeting was held from 4:00 p.m. to 7:00 p.m. at the Ramada Inn at 3801 Highway 73 in Port Arthur, Jefferson County, Texas. The meeting was attended by well over 150 people. Congressman Nick Lampson and Jefferson County Judge Carl Griffith personally made statements to begin the meeting. USFWS personnel/contractors gave a presentation explaining the EIS planning process and describing the two related purposes to be addressed in this document. There was a lively exchange with a number of verbal comments and questions coming from the audience during different parts of the presentation. Responding to the USFWS' invitation, some 30 individuals came forward and made verbal statements on the public address system. The USFWS recorded these statements as part of the public input to be used in identifying issues to be addressed in this EIS. Afterwards, the public was invited to talk individually with the dozen or so USFWS personnel stationed around the room. Comment sheets were provided for the public and a large number of people filled-in and left comment sheets. Announcements were made during this meeting and the subsequent meeting in Hankamer that everyone could mail or e-mail comments to the USFWS during the next few months, and cumulatively, the USFWS received nearly 100 additional comments by mail/e-mail.

The January 12th meeting was held from 4:00 p.m. to 7:00 p.m. at White's Park off of Interstate 10 near Hankamer, Chambers County, Texas. The meeting was attended by approximately 80 people. To begin the meeting, USFWS personnel/contractors gave a presentation explaining the EIS planning process and describing the two related purposes to be addressed in this document. Responding to the USFWS' invitation, some 19 individuals came forward and made verbal statements on the public address system, including Congressman Lampson's staff person, reading a prepared statement from the Congressman. The USFWS recorded these statements as part of the public input to be used in identifying issues to be addressed in this EIS. Afterwards, the public was invited to talk individually with the dozen or so USFWS personnel available in the building. Comment sheets were provided for the public and a large number of people filled-in and left comment sheets. As mentioned above, announcements were made that people could mail or e-mail comments to the USFWS during the next few months.

D. Town Hall Meeting: March 20, 2000

U.S. Congressman Nick Lampson hosted a U.S. Fish and Wildlife Service Town Hall Meeting in the Port Arthur Civic Center from 3:00 – 6:00 p.m. on March 20, 2000. The purpose of the meeting was to explore the USFWS' plan that will guide the management of the Texas Chenier Plain Refuge Complex and also address the agency's role in the State Highway 87 rebuilding project. Congressman Lampson, Nancy Kaufman, USFWS Regional Director from Albuquerque, NM, and Jefferson County Judge Carl Griffith

made presentations to begin the meeting. Afterwards, the public was invited to give statements. The public testimony was followed by a question/answer session with a panel of USFWS representatives. The meeting was attended by just over 100 people and about two dozen people voiced their opinions on USFWS activities and State Highway 87 in public statements.

E. Waterfowl Hunt Program Forum: October 23, 2000

An annual meeting on public waterfowl hunts for the McFaddin, Texas Point, and Anahuac National Wildlife Refuges was held on Monday, October 23rd, beginning at 6:00 p.m. at the Port Arthur Public Library in Port Arthur, Jefferson County, Texas. The meeting was jointly hosted by the USFWS and Texas Parks and Wildlife Department. Notices for the meeting were included in local newspapers and the meeting was attended by 24 interested hunters. The meeting provided hunters with information on current hunt programs and invited their input on possible changes/improvements for future hunts. Then, the hunters were given worksheets listing five hunt program issues identified in earlier scoping efforts and were broken into workgroups of 6-8 individuals for discussion. They were asked to provide input on these issues and any other items/issues they wished to comment on for the EIS/CCP/LPP. Most of the worksheets and comments were collected at the end of the meeting, but several were received by mail in the weeks following.

F. Workshops: November 16 & 18, 2000

Two workshops were held to provide an exchange of information and opinions between interested members of the public and the USFWS planning team. The affected public was invited to participate in the workshops through a very large (1200+) mail-out of Planning Newsletter 2. Prior to the workshops, each pre-registered participant was sent a package of preliminary draft management scenarios drawn from issues identified in the earlier scoping meetings. After a general presentation on the Refuge Complex, planning process, alternative management scenarios, and land acquisition options, the attendees were divided into small (5-6 persons) workgroups for discussions. The USFWS provided professional facilitators to direct the workshops and interact with the workgroups. The facilitators captured the opinions and comments of the individual members of the workgroups in notes and on flipcharts. The opinions and comments from the participants in the workshops were consolidated and documented in a Workshop Summary prepared by the facilitators/contractors.

The November 16, 2000, workshop was held on a Thursday from 6:00 p.m. to 9:00 p.m. at White's Park off of Interstate 10 near Hankamer, Chambers County, Texas. Twenty-two (22) people from the affected public participated with the USFWS planning team in this workshop.

The November 18, 2000 workshop was held on a Saturday from 1:00 p.m. to 4:00 p.m. at the Ramada Inn in Port Arthur, Jefferson County, Texas. Twenty-five (25) people from the affected public participated with the USFWS planning team in this workshop.

G. Final Public Scoping Meetings: June 18 & 20, 2002

The USFWS conducted a final series of scoping meetings, one in the afternoon and one in the evening at each of two different locations, to present to the public preliminary drafts of conceptual alternative outlines for both the refuge management and refuge boundary expansion portions of the EIS/CCP/LPP. These preliminary alternative outlines were drawn from the scoping efforts up to this point and strived to present a reasonable range of alternatives to accomplish project purposes. Maps based on aerial photography detailing four refuge expansion alternatives (including the "No Action" alternative) were hung from the walls at each meeting site. Also, large poster boards outlining key elements for each of five refuge management alternatives (including the "No Action" alternative) were displayed at each meeting site. The meeting rooms were open for at least an hour before each presentation to provide an opportunity for the public to look at the maps and poster boards. The public was invited to attend these meetings by numerous notices in the local newspapers, press releases, extensive press coverage in local newspaper articles, and a very large (2100+) mail-out of a special Planning Update which included outlines of the

management and expansion alternatives. Additionally, personal invitations had been extended to each public official during the briefings presented by the Refuge Complex Project Leader in May and June.

Each session included a joint presentation by the Refuge Complex Project Leader and the Lead Planner. Each presentation consisted of a short explanation of the planning process, a statement of the current status of work on this project, and a conceptual description of each of the refuge management and refuge boundary expansion alternatives being considered. After the presentation, the meetings were opened to the public for a question/answer or comment session. The two presenters remained in front of the audience and answered the questions or listened to the comments. USFWS personnel captured the gist of the questions and comments on laptop computers for consideration in finalizing the alternatives. Additionally, the public was offered comment sheets to fill-out and return, and were given the option of dictating their comments to USFWS personnel who recorded them using laptop computers.

The June 18, 2002, meetings were held on a Tuesday at White's Park off of Interstate 10 near Hankamer, Chambers County, Texas. The afternoon presentation started at 2:00 p.m. and the evening presentation started at 7:00 p.m. Total attendance at these meetings was approximately 30 people. There were good question and answer sessions with a number of questions coming mainly from land owners in the Anahuac NWR area and people interested in the refuge hunt program.

The June 20, 2002, meetings were held on a Thursday in the John Gray Center at Lamar University, Beaumont, Jefferson County, Texas. The afternoon presentation started at 2:00 p.m. and the evening presentation started at 7:00 p.m. About 60 people attended these sessions. The question and answer portion of the evening session was particularly lively with many questions or comments from the public primarily focused on land acquisition, including some from Jefferson County Judge Carl Griffith.

In addition to these scoping efforts focused on the public, the USFWS tried to actively engage county and other local governments in the scoping process. Similarly, the USFWS sought to obtain input from elected representatives in the project area by briefing them on the issues developed in the scoping process. The USFWS planning team conducted a number of personal meeting/briefings and telephone briefings during the scoping process. Documentation and description of the many briefings given to County officials, other local government officials, and elected representatives are contained in Chapter 5: Coordination and Consultation.

VII. DESCRIPTION OF MAJOR ISSUES

Under the National Environmental Policy Act (NEPA), federal agencies must identify the issues associated with the proposed action(s). The following four (4) major issues identified during the public and internal scoping process were considered during the development of alternatives and evaluations of environmental impacts. The Summary of Concerns and Recommendations listed under each major issue consolidates the input provided by the public and the core planning team during the scoping process.

A. Expansion of the Refuge Complex (Land Acquisition)

One of the ways the United States protects wildlife habitat is through acquisition of land for management in the National Wildlife Refuge System. Should the USFWS expand the refuge boundaries of the Texas Chenier Plain Refuge Complex refuges and acquire additional lands in the project area to benefit wildlife and to protect and restore native habitats?

The USFWS is only authorized to acquire land within the approved boundary of a National Wildlife Refuge. To acquire additional lands, the USFWS must first expand existing refuge boundaries to include those lands with high habitat values which the USFWS would be interested in acquiring. This expanded boundary then constitutes the approved refuge boundary. Subsequently, if a landowner within the approved refuge boundary wants to sell to the USFWS, the USFWS can seek funding and acquire that person's property. Although the United States government has the authority to condemn land (called the power of eminent domain), it is the policy of the USFWS to acquire land only from willing sellers. The

only time the USFWS uses condemnation is the rare situation when a willing seller has such a serious title problem that it can only be cured by judicial action.

The USFWS can acquire land, or interests in land, within an approved refuge boundary in two basic ways: 1) acquisition of fee title, or 2) acquisition of a conservation easement. Both methods have been used in acquiring lands for the refuges in the past and both would be used, as appropriate, in the future. The habitat management needs of a particular property determine which acquisition strategy the USFWS should use.

Most of the previous boundary expansions on the Refuge Complex were driven by an opportunity to purchase a single ownership. When a landowner in close proximity to the existing refuge was interested in selling to the USFWS, the NEPA compliance document addressed the expansion of the refuge boundary for only that ownership. Even though much habitat has been acquired and conserved in the past with this somewhat piece-meal planning approach, the USFWS feels that it is necessary to take a long-term, ecosystem-wide planning approach to preserve the important, remaining coastal marsh and prairie habitats in the project area.

Summary of Concerns and Recommendations

- The USFWS has insufficient resources (people and money) to adequately manage current lands, never mind any additional lands it might acquire. USFWS should spend its money on taking care of what they already own, not spend it on buying more land that they won't be able to adequately manage.

- Private lands would be taken away through condemnation in a big Federal "land grab."

- Federal land acquisition removes lands from the tax rolls and causes a permanent loss of tax base. This results in substantially lower revenues to the counties, school districts, and other taxing entities.

- USFWS should have a large expansion of the Refuge Complex to include all the marshes and adjoining uplands in both Jefferson and Chambers Counties because all of those lands will eventually be lost to development.

- Land acquisition by USFWS would cause large negative economic impacts to agribusiness and the service industry that supports it because ongoing agricultural practices will cease when USFWS acquires land.

- Land acquisition by USFWS would harm the commercial waterfowl guide and outfitter industry because commercial guides/outfitters would lose leases on lands acquired in fee title by the USFWS.

- The commercial alligator ranching industry would be negatively impacted by USFWS land acquisition. Most alligator eggs supporting this industry come from the wild on private lands and most eggs are currently collected in areas identified for refuge expansion. Alligator egg collecting is not allowed on refuge lands.

- Land acquisition by the USFWS would cause negative economic impacts because restrictions imposed on oil and gas development on refuges limits or prevents such development from occurring.

- The USFWS should acquire and protect woodlots as critical resting and foraging habitat for neotropical migratory birds.

- Conservation easements should be considered as a means of protecting wildlife habitat while still retaining lands in private ownership.

- Major drainage/flood control projects being planned for western Jefferson County and eastern Chambers County would be prevented or made more difficult by USFWS land acquisition.

- Waterfowl hunting would decrease on lands acquired by the USFWS because hunting is allowed on only up to 40% of the lands acquired with Migratory Bird Conservation Funds and hunting is allowed only three days a week until noon on the refuges.

- Conservation easements negatively impact waterfowl hunters who have helped fund the acquisition with their duck stamp purchases because typically, the USFWS doesn't purchase hunting rights, and therefore the property is not open for public hunting.

- Conservation of coastal wetlands and associated habitats in the project area through additional land acquisition by the USFWS is needed to ensure healthy populations of waterfowl, shorebirds and other migratory birds.

- Native coastal prairie should be acquired and protected because most of the native tallgrass coastal prairie on the Texas Gulf Coast has already been lost to development and conversion to other land uses. Protection of remaining prairies is critical to protecting the region's biological diversity.

- Many "at risk" fish, wildlife and plant species would benefit from additional habitat protection through USFWS land acquisition in the project area.

B. Administration of Wildlife-Dependent Recreational Uses

The Refuge Improvement Act declared that compatible wildlife-dependent recreational uses are legitimate and appropriate priority uses of the Refuge System. These six priority uses (hunting, fishing, wildlife observation, photography, environmental education, and interpretation) are to receive enhanced consideration in planning and management over all other general public uses; and, when compatible, are to be strongly encouraged on the refuges. A compatibility determination is required for a wildlife-dependent recreational use or any other public use of a Refuge. A compatible use is one which, in the sound professional judgment of the refuge manager, will not materially interfere with or detract from fulfillment of the Refuge System Mission or Refuge purposes.

All six of the priority wildlife-dependent public uses are now ongoing on the Refuge Complex. Waterfowl hunting and recreational fishing are popular uses on McFaddin, Texas Point and Anahuac NWRs. Opportunities for wildlife observation, particularly on Anahuac NWR, annually attract birders and other nature enthusiasts from throughout the U.S. and many foreign countries. Facilities including observation platforms, boardwalks, signs and brochures have been developed to provide wildlife observation and photography opportunities and to interpret the refuges' ecological values. Anahuac NWR now serves as an outdoor classroom for many area students participating in an environmental education program.

Challenges confronting the USFWS include providing quality recreational opportunities for the public while ensuring that public uses remain compatible with the refuges established purposes and mission of the NWRS, preventing conflicts between public uses, maintaining the quality of the visitor experiences, providing universally-accessible public use programs, providing information to the public through expanded outreach, and protecting public safety.

Summary of Concerns and Recommendations

- The areas on the refuges open to waterfowl hunting are inaccessible. Access to the marsh in the areas open to hunting is so difficult that it limits hunting to young, in-shape hunters.

- The USFWS closes the areas on the refuges where the best waterfowl hunting is located.

- All of the refuges should be closed to hunting and maintained as "inviolate sanctuaries."

- The USFWS does not provide adequate facilities for disabled hunters.

- The USFWS should allow hunting of other species including rails, gallinules, mourning doves, and feral hogs.

- Waterfowl hunting opportunities on the refuges are too restricted by only opening the refuges to hunting three days per week until noon.

- The reservation and permit issuance system at McFaddin NWR is not working well and is inherently unfair to parts of the working public. Also, waterfowl hunters accessing McFaddin's Star Lake from adjacent private lands have an unfair advantage over hunter's entering through the main refuge entrance.

- Airboats should or should not be allowed on the refuges.

- The USFWS should improve access for waterfowl hunting by developing more access facilities (roads, boat launches, access ditches, walkways, etc.) and by supporting the reconstruction of State Highway 87.

- An annual Hunting Permit which applies to the entire Refuge Complex should be made available to the public by the USFWS.

- The USFWS should offer more "spaced blind" hunting opportunities on the refuges to decrease the problems caused by hunters setting up too close to each other and interfering with the quality of each other's hunts.

- The USFWS should improve maintenance of existing facilities (roads, boat ramps, etc.) and develop new facilities (fishing piers, walkways, etc.) to support recreational fishing on the refuges.

- Additional fishing, wildlife observation and photography opportunities should be provided on McFaddin NWR by lengthening the hours the refuge is open on weekdays, opening the refuge on weekends, and allowing these uses in additional areas of the refuge.

- The USFWS should improve maintenance on existing and develop additional facilities for wildlife observation and photography (paths, boardwalks, observation platforms, photography blinds, etc.)

- More interpretive signs and kiosks are needed on the refuges to interpret natural resources and refuge management programs and to provide more information to orient visitors.

- The Refuge Complex needs a new Visitor Center/Administrative Headquarters in Chambers County. This building should include interpretive exhibits and classroom space to support the environmental education and interpretive programs on the refuges.

C. Habitat Management and Restoration of Refuge Lands

Consistent with the establishment purpose of its refuges, the primary objective of habitat management on the Refuge Complex is to enhance and restore habitat for wintering, migrating, and nesting waterfowl and other migratory bird species. Management practices for waterfowl, shorebirds and other wetland - dependent wildlife on the Refuge Complex include structural management for manipulating water levels and salinity within managed wetlands, prescribed burning, controlled livestock grazing, moist soil management, and rice farming. Prescribed burning, controlled grazing, mowing and haying are tools utilized to manage upland habitats including remnant stands of native prairie and newly-restored native prairie sites. Often, a combination of management activities is applied as appropriate to the various habitats on the Refuge Complex. Almost all acres receive some treatment annually.

Restoration of native habitats is another aspect of habitat management on the Refuge Complex. Wetland restoration activities include reestablishing shallow freshwater wetlands and initiating moist soil management practices in fallowed croplands, and restoring salt marsh along the Galveston Bay shoreline and the Gulf Intracoastal Waterway. Restoration of native prairie is ongoing in formerly farmed uplands, and additional woodlot habitats have been established.

The declining number of wetland acres within the project area accelerates the loss of wintering and migration habitat for waterfowl, shorebirds, wading birds and other wetland-dependent wildlife; and, highlights the need to continue intensive management for these species on the Refuge Complex. Recent declines have been greatest for freshwater wetlands including cultivated rice acreage and natural palustrine emergent wetlands. General declines in many grassland bird populations highlight the

importance of maintaining, enhancing, and restoring upland prairie habitats. Chenier and riparian woodlands within the project area are extremely important habitats for many neotropical/nearctic migratory birds making trans-Gulf migrations. The USFWS has adopted a landscape-level ecosystem approach to natural resource conservation. This broader approach challenges the Refuge Complex to ensure that habitat management practices to benefit waterfowl and other migratory birds remain consistent with maintaining the natural biological diversity of this rich coastal ecosystem. This approach also requires the USFWS to increase collaboration, coordination and partnerships with local communities, landowners, local and state governments and agencies, other federal agencies, industry, conservation organizations and other stakeholders.

Summary of Concerns and Recommendations

- The USFWS has done a poor job managing for waterfowl because there were more ducks and geese in the marsh before the USFWS took over.
- The USFWS is holding too many ducks and geese in refuge sanctuary areas, where they are unavailable to hunters.
- The Willow Slough Levee and spillway project on the North Unit of McFaddin NWR has impeded drainage in upstream areas and has caused flooding on adjacent private land resulting in the landowners being unable to farm rice.
- Smoke from prescribed burning activities is causing air quality problems in the Beaumont-Port Arthur area. Even when prescribed burns are done on a north wind, smoke which has blown out over the Gulf gets blown back into town when the wind turns around the next day.
- The marshes on McFaddin NWR are drying up. When it was privately-owned, water was managed better and marshes stayed wet for waterfowl and other wildlife.
- Too much water is held on marshes on Anahuac NWR, for too long. This causes problems with the vegetation and also depletes oxygen from the water causing fish kills.
- The USFWS is not adequately maintaining water control structures and other infrastructure, thereby allowing saltwater intrusion which is destroying the marshes.
- Most of the refuges were bought with “Duck Stamp” dollars, generated by hunter’s purchases; therefore, the USFWS should be managing habitat on these refuges primarily for migratory waterfowl.
- The timing of refuge prescribed burns, combined with a better grazing program, should be modified to improve the habitat benefits to waterfowl.
- The USFWS should burn more acreage and more often.
- Prairie habitats should be restored because most native prairie on the Texas Gulf Coast has been lost and this habitat type is critically important for declining populations of grassland songbirds and other rare native plants and animals.
- The USFWS should restore, enhance and protect woodlots because these habitats are critical for neartic/neotropical migratory birds, especially those making trans-Gulf migrations in the spring.
- Refuges should expand habitat management efforts for shorebirds.
- Annual breeding pair and monthly wintering waterfowl surveys on Texas Coast national wildlife refuges indicate the Mottled Duck populations are declining. Refuge habitat projects are needed

to restore/enhance shallow freshwater wetlands and grasslands to provide brood-rearing and nesting habitat for Mottled Ducks.

- Alligator populations on the refuges are too high and may be negatively impacting Mottled Duck production.

- The USFWS needs to expand monitoring and biological research to gain baseline data on all native fish, wildlife and plant species, with rare and declining species being the priority.

- The USFWS should expand existing and develop new partnerships to enhance conservation of natural resources in the project area. This includes working with landowners, volunteers, conservation organizations, industry and other agencies.

D. Threats to the Ecosystem

Two factors, acting in combination with the loss of native habitat through development and conversion to other land uses, constitute the greatest threats to this area's ecosystem. They are:

- Loss of coastal and inland wetlands through land subsidence, sea level rise, loss of freshwater and sediment inflows and saltwater intrusion, manifested as shoreline erosion and retreat along the Gulf of Mexico and bay systems and conversion of inland vegetated marshes to open water.
- Occurrence and expansion of invasive plant and animal species in wetlands, uplands, and coastal woodlands.

These two region-wide factors contribute to the loss of native habitats and the destruction of biological integrity within the entire ecosystem, including the four refuges within the Refuge Complex.

The combination of rising sea levels, land subsidence, loss of freshwater and sediment inflows and saltwater intrusion has resulted in loss of coastal habitats as shorelines erode and retreat and vegetated marshes convert to open water. Development activities in the ecosystem have significantly altered hydrological and sedimentation regimes. A significant percentage of the project area's historical freshwater marshes have been converted to less diverse brackish marsh types.

As rice agriculture declines in the area, fallowed rice fields are rapidly overwhelmed by invading Chinese tallow which easily out-competes native vegetation. Chinese tallow also readily establishes itself on pasture, ditch banks, levees and any other land which no longer has native cover. Also, invasive aquatic plants like water hyacinth and Giant Salvinia are establishing themselves in the area's freshwater marshes.

Summary of Concerns and Recommendations

- Rising sea levels, land subsidence and reduced sediment supplies have accelerated coastal erosion along the Gulf of Mexico, resulting in significant loss of wetlands and other important coastal habitats on McFaddin and Texas Point NWRs. Shoreline erosion is also a concern along Anahuac NWR's Galveston Bay shoreline.

- Loss of the barrier beaches and dunes on McFaddin NWR has resulted in increased saltwater intrusion in interior marshes, and coastal erosion and wetland loss on McFaddin NWR will greatly accelerate if the already threatened beach ridge is lost completely.

- Saltwater intrusion, erosion of marsh soils, subsidence and rising sea levels are factors contributing to marsh loss (conversion of emergent marsh to open water) in the project area's interior marshes.

- Erosion along the Gulf Intracoastal Waterway is also causing wetland loss and is threatening thousands of acres of fresh and intermediate marshes on McFaddin and Anahuac NWRs with saltwater intrusion and conversion to brackish marsh.

- Land subsidence and eustatic sea level rise pose a significant future threat to the region's coastal wetlands. If marshes cannot accrete vertically (gain elevation through soil building processes) at a rate which keeps up with relative sea level rise (subsidence plus eustatic sea level rise), marshes will be inundated and converted to open water resulting in a major loss of wildlife habitat.

- Loss or restriction of freshwater inflows has contributed, along with saltwater intrusion, to the conversion of historically fresh or intermediate marsh to brackish marsh resulting in a loss of biological diversity.

- Chinese tallow is a highly invasive exotic plant species which rapidly invades upland habitats and shallow wetlands, levees, and fallowed fields in the project area. It quickly forms monotypic closed-canopy stands, out-competes native plants and provides few benefits to native wildlife resulting in a loss of biological diversity.

- Several invasive aquatic plant species, including water hyacinth and alligatorweed, are also threatening biological diversity and wetland habitat value for migratory waterfowl and other native fish and wildlife species. Giant Salvinia, which is a great threat to freshwater wetlands, has recently been discovered in the project area.

- Deep-rooted sedge, a South American sedge, has recently become established and is invading fallowed rice fields and wet pastures in the project area. Little is currently known about this invasive species, other than it forms dense monotypic stands and out-competes native plants.

- Feral hogs are causing damage to habitats and management infrastructure on the Refuge Complex.

- The USFWS must expand its Integrated Pest Management Program and overall efforts to manage exotic and invasive species.

- Contaminants in the air, water, and soils pose a threat to native fish and wildlife in the region. Petroleum and petrochemical spills from underground pipelines and shipping in the Gulf Intracoastal Waterway and the Gulf of Mexico could have significant negative impacts on habitats, fish and wildlife.

VIII. ISSUE OUTSIDE THE SCOPE OF THE EIS – STATE HIGHWAY 87

At the scoping meetings held in Jefferson County, the public raised the issue of relocating and reconstructing the closed portion of State Highway 87 along the Gulf shoreline and within the McFaddin NWR. Jefferson County elected officials also raised this issue during briefings provided them by the USFWS. The State Highway 87 project is a proposal of Jefferson County, the Texas Department of Transportation, and the Federal Highway Administration. The State Highway 87 project is currently being addressed in its own Environmental Impact Statement, with the Federal Highway Administration as the lead federal agency. The USFWS is participating as Cooperating Agency in the development of the State Highway 87 EIS because the proposed relocated highway lies within the McFaddin NWR.

The State Highway 87 project is not within the scope of this EIS because it is not a USFWS proposal and as such is not a part of either the Refuge Management Alternatives or the Refuge Boundary Expansion Alternatives. However, the project is addressed in the Cumulative Impacts section of Chapter 4 of this EIS, along with other proposed federal, state, and local government and private projects in the study area.