

UNITED STATES FISH AND WILDLIFE SERVICE

ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA), and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and determined that the proposed Hunting Plan for Grand Bay National Wildlife Refuge in Jackson County, Mississippi and Mobile County, Alabama:

Check One:

\_\_\_\_\_ is a categorical exclusion as provided by 516 DM 2, Appendix 1 and 516 DM 6, Appendix 1, Section 1.4 A (4). No further NEPA documentation will therefore be made.

X \_\_\_\_\_ is found not to have significant environmental effects as determined by the attached Environmental Assessment and Finding of No Significant Impact.

\_\_\_\_\_ is found to have significant effects and, therefore, further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

\_\_\_\_\_ is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.

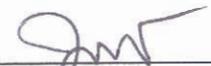
\_\_\_\_\_ is an emergency action within the context of 40 CFR 1 506.1 1. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other Supporting Documents:

Endangered Species Act, Section 7 Consultation, 2007  
Compatibility Determination, 2007

Signature Approval:

  
\_\_\_\_\_  
(1) Originator                      04/10/07  
Date

  
\_\_\_\_\_  
(2) Regional Environmental  
Coordinator                      4/19/07  
Date

  
\_\_\_\_\_  
(3) Regional Chief, NWRS  
Southeast Region                      4/19/2007  
Date

  
\_\_\_\_\_  
(4) Regional Director,  
Southeast Region                      4/25/07  
Date

Sport Hunting

Decision Document Package

for

**GRAND BAY NATIONAL WILDLIFE REFUGE**

**Contents**

2. EA

Environmental Assessment

**2007 Sport Hunt Plan**

on

GRAND BAY NATIONAL WILDLIFE REFUGE  
Jackson County, Mississippi and Mobile County, Alabama

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February 2007

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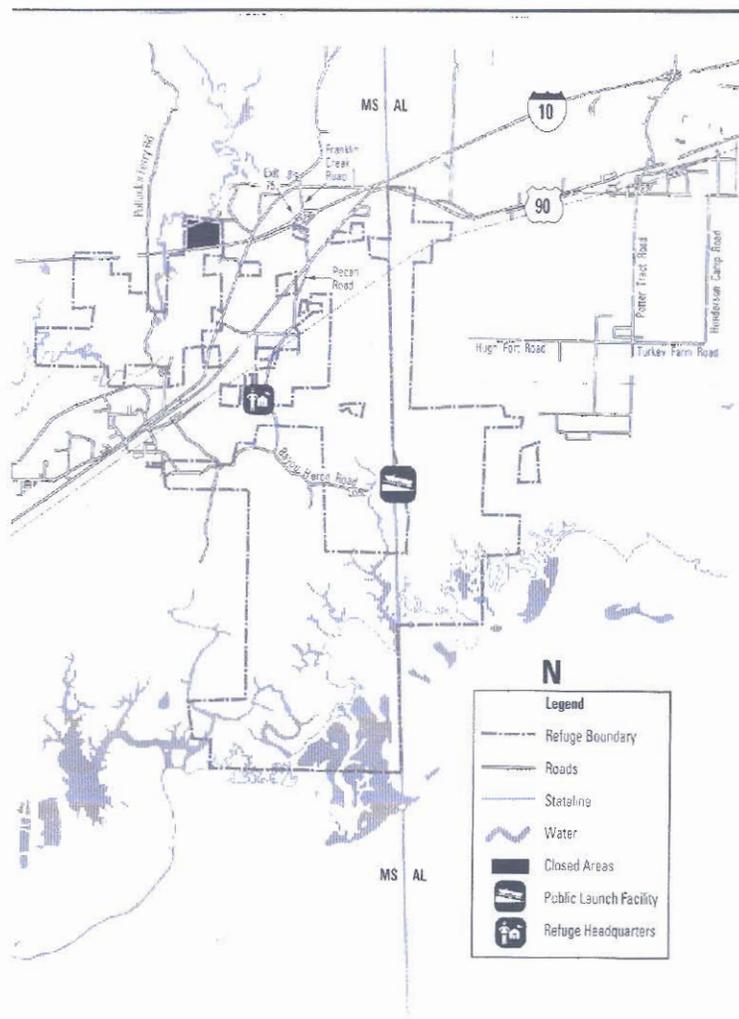


Image1. Areas open and closed to hunting on Grand Bay National Wildlife Refuge

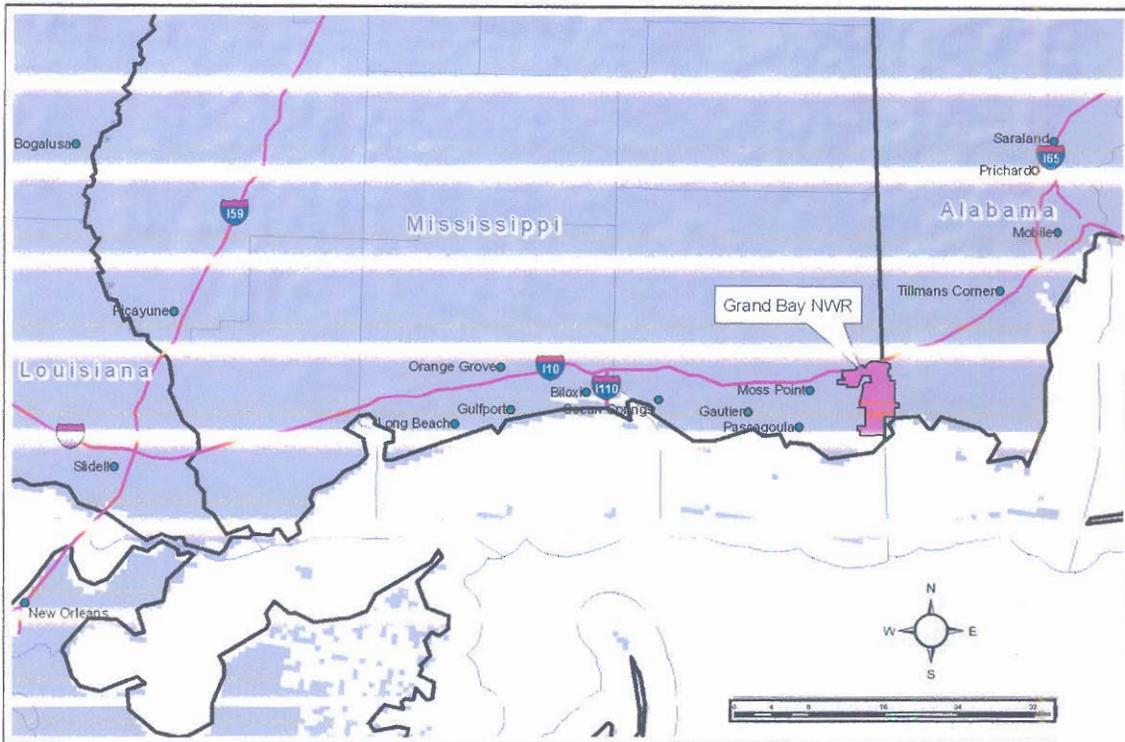


Figure 2. Location of Grand Bay National Wildlife Refuge

## **Chapter 1      Purpose and Need for Action**

In response to a 2003 lawsuit filed by the Fund for Animals, the U.S. Fish and Wildlife Service (Service) will amend or rewrite environmental assessments that describe hunting programs at twenty-three national wildlife refuges located in the Southeast Region. The new environmental assessments will address the cumulative impacts of hunting at all refuges which were named in or otherwise affected by the lawsuit. This document addresses the hunting programs at Grand Bay National Wildlife Refuge in Mississippi and Alabama.

The federally legislated purpose for which the refuge was established is the Emergency Wetland Resources Act of 1986 (100 USC Sec 3582-91). This act calls for "...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 USC 3901 (b), 100 Stat. 3583). Also the Endangered Species Act of 1973 which calls for the refuge "... to conserve (A) fish or wildlife which are listed as endangered species or threatened species ... or (B) plants ..." 16 USC Sec 1534 and the Fish and Wildlife Act of 1956 which calls "...for the development, advancement, management, conservation, and protection of fish and wildlife resources..." 16 USC Sec 742f(a)(4) "... 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 USC Sec 742f(b)(1).

The National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd et seq.) provides authority for the Service to manage the Refuge and its wildlife populations. In addition it declares that compatible wildlife-dependent public uses are legitimate and appropriate uses of the Refuge System that are to receive priority consideration in planning and management. There are six wildlife-dependent public uses: hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation. It directs managers to increase recreational opportunities including hunting on National Wildlife Refuges when compatible with the purposes for which the Refuge was established and the mission of the National Wildlife Refuge System.

The purpose of the proposed action would permit hunting on Grand Bay NWR, but would administratively limit it to those areas specified in the refuge-specific regulations. It is fulfilling a promise to the general public, partners, state agencies and federal agencies, and legislators to allow some form of hunting in the area. Hunting of big game, small game, and migratory birds is compatible with refuge objectives, and in the public's interest on Grand Bay NWR.

The proposed action will permit the public to hunt resident game species and waterfowl on Grand Bay National Wildlife Refuge (NWR) without negatively affecting population numbers. The seasons will be within, the framework of the State of Alabama and the State of Mississippi state seasons and further regulated by refuge in accordance to U.S. Fish and Wildlife Service (USFWS) policy. Refuge Management goals and objectives

may require occasional modifications to the hunting program as harvest data, public use pressure, new lands are acquired, and programs are developed.

The proposed action is needed to implement the 2007 Sport Hunting Plan for Grand Bay NWR which would provide the public with a high quality recreational experience and provide the refuge with a wildlife management tool to promote the biological integrity of the refuge.

## **Chapter 2          Alternatives Including the Proposed Action**

This chapter discusses the alternatives considered for hunting Grand Bay National Wildlife Refuge. These alternatives are the 1) no action in which the refuge would not be opened to sport hunting 2) proposed action which would permit hunting on Grand Bay NWR but would administratively limit it to those areas specified in the refuge-specific regulations, and 3) open entire refuge to harvest so that the U.S. Fish and Wildlife Service would provide wider hunting opportunities throughout the hunting season.

### **2.1 No Action Alternative:          2007 Sport Hunting Plan for Grand Bay NWR**

Under this alternative the refuge would not be opened to sport hunting. There would be no impact from public use beyond what is naturally occurring (we are aware of some illegal deer hunting in the area).

### **2.2 Proposed Action:**

Under this alternative, the refuge would permit hunting on Grand Bay NWR but would administratively limit it to those areas specified in the refuge-specific regulations.

- Big Game                                      Archery- deer and feral hog, no dogs
- Migratory Birds                                      Waterfowl with retrieval dog
- Upland Migratory Birds                                      Dove with retriever dogs
- Small Game                                      Squirrel, no dogs

### **2.3 Open Entire Refuge to Harvest Alternative:**

Under this alternative, the U.S. Fish and Wildlife Service would provide wider hunting opportunities throughout the hunting seasons. Expansion of refuge hunting opportunities would not be limited to additional species but to additional lands open to hunting. This alternative would allow hunting within any area of the Grand Bay NWR.

Refer to the 2007 Sport Hunting Plan for Grand Bay NWR for specific regulations.

## **Chapter 3      Affected Environment**

Grand Bay NWR is located along the coast of Mobile County, Alabama and Jackson County, Mississippi, about 20 miles west of Mobile (Alabama) and 10 miles east of the city of Pascagoula (Mississippi). Upon completion of acquisition, the refuge boundary will encompass approximately 14,000 acres of which about 4,000 acres are in Alabama with the remainder in Mississippi. Currently, the refuge consists of approximately 10,000 acres. This document describes the proposed hunting plan for the 14,000 acres within the approved acquisition boundary.

The refuge lies on late Quaternary deposits of the coastal terrace, adjacent to the Escatawpa River Basin, which drains directly into the Gulf of Mexico. The Escatawpa River historically meandered through what is now the “core” tract of the refuge. The river now flows through the westernmost section of the refuge adding the diversity of small pockets of bottomland hardwoods to the overall landscape of the pine savanna and salt marshes of the refuge.

The climate is semi-tropical and the entire refuge is subject to periodic flooding from tropical storms and hurricanes. Significant rainfall events cause sheet flow of water to spread across flat expanses of the refuge, which is critical for the wet pine savanna habitat type. Rainfall totals are upwards of 65 inches per year. Temperatures can range from highs near 100 degrees Fahrenheit during the summer months, to below freezing during winter months.

### **3.1      Physical Environment**

Grand Bay National Wildlife Refuge is located along the Mississippi and Alabama border. The northern portion of the refuge is bisected by Interstate 10. The north-western portion of the refuge encompasses an area along the Escatawpa River and ranges from frequently flooded bottomland hardwood forest along the river to pine savannas. The entire refuge is subject to flooding due to low elevations (USFWS, Grand Bay NWR web site). The eastern portions of the refuge are found in Alabama. Sandy soils to the adjacent to I-10 in Alabama provide suitable habitat for one of the resident endangered species the gopher tortoise. The southern portion of the refuge is dominated by estuary and marsh habitat which empty directly into the Gulf of Mexico. The bayous and salt marsh provide easy access to the waters of the Gulf of Mexico.

The wet pine savanna habitats found within the Grand Bay NWR are a consequence of soil type and hydrology. Soils found here on the refuge are characterized as Ustisols with clayey horizons and frequently are impervious to groundwater percolation (Clewell and Raymond, 1995). The soils are very acidic, infertile, and can water at the surface for days if not weeks supporting the wet pine savanna (Grand Bay NWR CCP, In progress). Soil types can be described as follows:

Loamy sands: Scranton, Klej, Plummer

Very fine sandy loams: Lynchburg (Harleston)

Loams: Rains (Atmore), Goldsboro( Harleston)

Silt-loams: Bayboro (Hyde)

Undefined series supporting swamps and tidal marshes: (Croatan)

(Grand Bay NWR CCP, In Progress).

### **3.2 Vegetation and Habitat**

There are 5 major habitat types associated with Grand Bay NWR. The vegetation consists of a mosaic of Pine Savannas and Pinelands interspersed with Forested Bayheads and Cypress-Tupelo Drains with estuarine, brackish, and salt marsh to the south.

**Pine Savannas** are open park-like fire dependent plant communities dominated by a well-developed ground cover, some low-growing shrubs with scattered pine (longleaf and slash) trees. The ground-level plant community is highly species rich and consists of grasses sedges, and rushes, interspersed with numerous forbs including candy roots, pipeworts, yellow-eyed grasses, redroot, goldcrest, orchids, balduina, and featuring a high diversity of insectivorous plants such as pitcher plants, sundews, bladderworts, and butterworts. Wet pine savannas are one of the most endangered ecosystems in North America; only 3-5% of the original area remains. Grand Bay NWR contains one of the last large remaining tracts of pine savanna.

**Pinelands** included pine flatwoods and pine scrub which are similar to savannas but have high diversity of pine trees (longleaf and slash) in the canopy and a herbaceous cover that has been overtaken by gallberry, titi, and wax myrtle.

**Cypress-Tupelo Drains** occupy broad flat depressional area lacking clearly defined drainage ways. Fires are not uncommon. Pond cypress, swamps tupelo, red maple, sweet bay are common trees in the overstory. The midstory consists of hollies and overstory saplings. The ground cover consists of sedges and ferns.

**Forested Bayheads** occupy flat topography upstream from cypress tupelo drains with narrow, well defined drainage ways. Fires are rare. The vegetation is like cypress-tupelo drains but sweet bay is more abundant and the midstory is far denser and contains titi, swamp bay, fetterbush, and large gallberry. There may be several grasses on the ground.

**Estuarine, brackish and salt marshes** comprise much of the southern part of the refuge in the intertidal zone. The most common tidal marsh species include saltmeadow cordgrass and black needlerush. The brackish and salt marshes are important nursery areas for marine fish.

### 3.2.1 Invasive Species

At least 2 types of exotic, invasive plant species have spread onto the Grand Bay NWR and are causing environmental damage. Additional dispersal of these pest plant species needs to be minimized by limiting vehicle access on the refuge. For example, illegal ATV trails on refuge land are destroying habitat, creating erosion culverts during rain episodes further increasing the spread of invasive grasses.

Cogon grass is a non-native, terrestrial grass that is now believed to be one of the world's worst weeds. It is a very invasive and competitive grass that thrives on disturbed ground and forms large, dense stands choking out native plant species. It is from Southeast Asia and was brought here as packing material and then also used as forage and soil stabilization. Besides reproduction due to light wind-borne seeds and aggressive rhizome growth, spread is accelerated through contaminated agricultural and mowing equipment. It spreads initially along transportation and utility corridors but is moving out onto natural areas and wildlife habitat. It has very little value to wildlife and is considerably volatile when burned. Because of these properties, cogon grass is a serious threat to managed forests and wildlife habitat and to the ecological integrity and species richness of savannas and other natural areas.

Torpedo grass is a non-native panic grass that is considered one of the most serious grass weeds. It was introduced from Australia into the Gulf Coast states and used for forage. It quickly forms stands that displace native vegetation, especially in or near shallow waters, but also in pastures, grove lands, and even sand dunes. It is also difficult to control.

### 3.3 Wildlife Resources

According to Biologists with the Mississippi Department of Wildlife Fisheries and Parks, and USFWS staff observations, the white tailed deer population is not heavy in the Grand Bay area. Reproduction is only "fair" due to the poor soil of the area (per conversations). Due to a late rut season (January 24<sup>th</sup> – average timeframe) fawns are still on the ground extremely late in the season when the vegetation is "hardening up" (less palatable, less nutritious). One hundred percent of fawns are 60 days old or older and are self sufficient by mid November. It has been recommended by State Biologists to take one deer per every 100-150 acres since body weights and overall populations are low (per conversations).

The area provides valuable bald eagle nesting and foraging habitat. It supports many species of shorebirds, wading birds and resident and migratory waterfowl, as well as neotropical songbirds during their annual migrations between North and South America. Other animals include raccoon, feral hogs, mink, nutria, river otter, alligator, bobcat, coyote, and gray and red fox.

The most prevalent waterfowl species are the red-breasted merganser, lesser scaup, redhead, ring-necked duck, mallard, and American widgeon. The Mississippi side of the

Grand Bay NWR winters about 16 percent of coastal Mississippi's total waterfowl population. However, population levels of migratory waterfowl on the refuge are directly dependant on factors such as flyway populations, weather, tide levels, disturbance on adjacent areas, etc. which the refuge has no control over. Population levels will essentially control the amount of hunter activity in the area or on the refuge.

According to sightings by refuge personnel and a State of Alabama Biologist, dove populations seem to be healthy on the refuge. Doves are using pine savannas and neighboring farm fields on the Alabama side of the refuge. Birds seem to be roosting in the pine trees. To date no wildlife surveys have been completed on Grand Bay NWR.

### **3.4 Threatened and Endangered Species**

#### **3.4.1 Bald Eagle**

Bald eagles are seasonal visitors and are often seen during the fall and winter months on Grand Bay National Wildlife Refuge. To our knowledge no eagles are currently nesting on the refuge; however, nesting has been documented in the past and nesting probably continues adjacent the refuge. If nesting occurs or high use forging areas are identified on the refuge, these sites would be restricted from all potential impacts (refuge visitor or refuge management activities).

#### **3.4.2 Gopher Tortoise**

Gopher Tortoise occur year round and prefer the higher sandy soils primarily located on the Alabama side of the refuge. Since there will be no off-road vehicle or ATV use allowed on the refuge, no adverse impacts to this threatened species are expected to result from hunting activity.

#### **3.4.3 Brown Pelican**

Brown pelicans which are not a federally listed species in Alabama but are endangered in Mississippi frequent the open waters and marshes of the southern portion of the refuge. These large birds nest in the spring and generally on isolated sections of coastal islands. The size, physical makeup, and flight of Brown Pelicans bare no resemblance or similarity to that of the waterfowl that will be allowed for harvesting. For these reasons we do not believe that hunting will have any adverse impact on this species.

#### **3.4.4 Mississippi Sandhill Crane**

A population of the endangered Mississippi sandhill crane will be reintroduced at Grand Bay NWR, using release of captive-reared cranes, as done at the Mississippi Sandhill Crane NWR. Because Grand Bay is a National Wildlife Refuge, this population would still have threatened species protection. It is planned that an exception for accidental take

due to hunting will be incorporated as hunters may disrupt and flush cranes in their pursuit of deer.

### **3.5 Fishery Resources**

The fishery resources found in the boundaries of the refuge are in the the Escatawpa River system and its associated sloughs in the northwestern area and in the estuary found in the southern area of the refuge. Fishery resources found in the Escatawpa River System are fishes such as largemouth bass, bream, crappie, and catfish. Public fishing is very popular along this river system river. In the estuary fishery resources are far more numerous. Over 80 species of fish have been reported from the estuarine habitats of Grand Bay including species such as Atlantic croaker, spot, menhaden, spotted sea trout, flounder, red drum, oysters, mullet, and several species of shrimp (USFWS Grand Bay NWR Web site).

### **3.6 Cultural Resources**

The body of federal historic preservation laws has grown dramatically since the enactment of the Antiquities Act of 1906. Several themes recur in these laws, their promulgating regulations, and more recent Executive Orders. They include: 1) each agency is to systematically inventory the historic properties on their holdings and to scientifically assess each property's eligibility for the National Register of Historic Places; 2) federal agencies are to consider the impacts to cultural resources during the agencies' management activities and seek to avoid or mitigate adverse impacts; 3) the protection of cultural resources from looting and vandalism are to be accomplished through a mix of informed management, law enforcement efforts, and public education; and 4) the increasing role of consultation with groups, such as Native American tribes, in addressing how a project or management activity may impact specific archaeological sites and landscapes deemed important to those groups. The U.S. Fish and Wildlife Service, like other federal agencies, are legally mandated to inventory, assess, and protect cultural resources located on those lands that the agency owns, manages, or controls. The Service's cultural resource policy is delineated in 614 FW 1-5 and 126 FW 1-3. In the FWS's Southeast Region, the cultural resource review and compliance process is initiated by contacting the Regional Historic Preservation Officer/Regional Archaeologist (RHPO/RA). The RHPO/RA will determine whether the proposed undertaking has the potential to impact cultural resources, identify the "area of potential effect," determine the appropriate level of scientific investigation necessary to ensure legal compliance, and initiates consultation with the pertinent State Historic Preservation Office (SHPO) and federally recognized Tribes.

There are between 7-12 known sites identified by the Historic Preservation Division of the Mississippi Department of Archives. The Alabama Historical Commission has not identified any sites on the Alabama side of the refuge to date, although they believe it is possible that some sites associated with Bayou La Batre culture around 100 B.C. may be present. There may also be some historical shipwrecks in the area and shell middens have

been documented offshore. These identified sites have been affected by erosion and scavenging prior to refuge establishment and are highly disturbed.

### **3.7 Socio Economic**

The area surrounding the refuge is still rural and is made up primarily of small private land holdings with dispersed housing. The small town of Pecan borders the northwest boundary of the refuge. Some large parcels of land nearby are owned by land speculators and/or trust funds for private families. The area includes retirees, self employed people, and industrial workers from nearby Moss Point and Pascagoula, Mississippi.

The local population has a long history of hunting and fishing. The population living near the refuge is relatively stable consisting of people and families who have been in the area for a long period of time.

## **Chapter 4      Environmental Consequences**

### **4.1 Introduction**

This chapter describes the foreseeable environmental consequences of implementing the three management alternatives in Chapter 2. When detailed information is available, a scientific and analytic comparison between alternatives and their anticipated consequences is presented, which is described as “impacts” or “effects.” When detailed information is not available, those comparisons are based on the professional judgment and experience of refuge staff and Service and State biologists.

This chapter forms the scientific and analytic basis for the comparisons under NEPA Section 1502.14. By law, certain topics must be mentioned, although in this case, they will not be affected by the implementation of this plan. This plan will have no impact either positively or negatively on the resource values of air quality, farm lands, flood plains, grazing, Native American religious concerns, water quality (drinking and ground), wild and scenic rivers, and wilderness. Special status species gopher tortoise and brown pelican will not be impacted

### **4.2 Effects Common to All Alternatives**

#### **4.2.1 Environmental Justice**

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority and low-income communities access to public information and participation in matters relating to human health or the environment. This assessment has not identified any adverse or beneficial effects for either alternative unique to minority or low-income populations in the affected area. Neither alternative will disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low-income populations.

#### **4.2.2 Public Health and Safety**

Each alternative would have similar effects or minimal to negligible effects on human health and safety.

### **4.2.3 Fisheries**

There should be no impact on fisheries from waterfowl hunters. Non-toxic shots are required (steel), lead shots are prohibited during all refuge hunts.

### **4.2.4 Hazardous Materials**

Current and expected public use, increases the potential of discarded hazardous materials on site. If this occurs, the refuge would remove such waste according to safety guidelines.

### **4.1.2 Refuge Physical Environment**

Impacts of each alternative on the refuge physical environment would have similar minimal to negligible effects. Some disturbance to surface soils, topography, and vegetation would occur in areas selected for hunting; however effects would be minimal. Hunting would benefit vegetation as it is used to keep many resident wildlife populations in balance with the habitat's carrying capacity. The refuge would also control access to minimize habitat degradation.

Impacts to the natural hydrology would have negligible effects. The refuge expects impacts to air and water quality to be minimal and only due to refuge visitors' automobile emissions and run-off from road and trail sides. The effect of these refuge-related activities on overall air and water quality in the region are anticipated to be relatively negligible. Existing State water quality criteria and use classifications are adequate to achieve desired on-refuge conditions; thus, implementation of the proposed action would not impact adjacent landowners or users beyond the constraints already implemented under existing State standards and laws.

Impacts associated with solitude are expected to be minimal given time and space zone management techniques, such as seasonal access and area closures, used to avoid conflicts among user groups.

### **4.1.4. Cultural Resources**

Under each alternative, hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties on and/or near the Refuge.

### **4.1.5. Facilities**

Maintenance or improvement of existing facilities (i.e. parking areas, roads, trails, and boat ramps) will cause minimal short term impacts to localized soils and waters and may cause some wildlife disturbances and damage to vegetation.

## 4.2 Summary of Effects

### 4.2.1 Impacts to Habitat

#### *No Action Alternative*

The habitat would not be impacted via hunter use because under this alternative the refuge would not be opened to sport hunting. There are at least 50 plant species designated as rare by the Grand Bay Bioreserve. However, none have federal conservation status (threatened or endangered). Because of the low intensity of use expected, there should be little change of habitat.

#### *Proposed Action*

The biological integrity of the refuge would be protected under this alternative, and the refuge purpose of conserving wetlands for wildlife would be achieved. The hunting of feral hogs and white-tailed deer would positively impact wildlife habitat by promoting plant health and diversity. Feral hog hunting will in turn reduce hog wallowing which destroys vegetation, compacts soils, and negatively impacts seedling survival.

The additional acreage would be utilized more by the public (hunters) than previously which might cause increased trampling of vegetation. Impacts to vegetation should be minor. Hunter density is estimated to be an average of 1 hunter/1,000 acres throughout the hunting season. Refuge-regulations would not permit the use of ATVs anywhere on Grand Bay NWR. Approved vehicles would be confined to existing roads and parking areas along roadsides. To minimize further impacts to the habitat during the hunting season the following measures have been taken: 1) hunters putting up blinds and stands must not use nails, spikes, or other objects driven into any trees, 2) designated parking areas, away from flood prone areas, will be clearly marked and well established in advance of hunting season, 3) no ATV use will be allowed. Although hunters would be allowed to traverse across the refuge which may cause damage to individual plants via trampling, if hunting were not allowed on the refuge similar impacts would be realized by non-consumptive users who would traverse the refuge.

#### *Open Entire Refuge to Harvest Alternative*

Under this alternative there would be measurable difference from what is found under the proposed alternative. Both alternatives would allow hunting within the boundaries of the refuge. Refuge management would have greater authority to limit hunting to certain areas of the refuge. This would be a useful tool if unexpected habitat impacts materialize in particular areas of the refuge. If hunters physically alter the habitat via hunting activity, refuge management would not retain the flexibility to limit hunting to specified areas. All other impacts that are described under the proposed action alternative would be seen under this alternative as well.

## 4.2.2 Impacts to Hunted Wildlife

### *No Action Alternative*

Additional mortality of individual hunted animals would not occur under this alternative. Disturbance by hunters to hunted wildlife would not occur; however, other public uses that cause disturbance, such as wildlife observation and photography, would still be permitted.

White-tailed deer and feral hog, populations could increase above the habitat's carrying capacity in the area not opened to hunting. The likelihood of starvation and diseases in white-tailed deer would emerge as would a potential increase of vehicle-deer collisions. Feral hogs can harbor several infectious diseases, some of which can be fatal to wildlife. Additionally, feral hogs compete directly for food with deer, turkeys, squirrels and many other birds and mammals.

### *Proposed Action*

In terms of general wildlife impacts there may be minimal disturbance to non-target wildlife populations on the refuge. However, few conflicts are expected with neo-tropical migrants, reptiles, or amphibians. During large game hunts on the refuge the use of dogs is prohibited and we anticipate that dog forced running of deer will disturb all wildlife in its path therefore, dogs will not be permitted during deer hunts. Additional mortality of individual hunted animals would occur under this alternative, estimated by the refuge to be a maximum of 10 deer and approximately 200 ducks annually. Estimates for other hunted species (squirrel, dove, hog) would be less than 20 individuals per species. Due to staff size, funding, and access issues harvest estimates are used by refuge management at this time. Hunting causes some disturbance to not only the species being hunted but other game species as well. However, time and space zoning established by refuge regulations would minimize incidental disturbance and any impacts would be realized and addressed during the annual review of the hunting program.

Hunting of white-tailed deer and feral hogs, would help maintain their populations at or below carrying-capacity. The likelihood of starvation and diseases, such as bluetongue and EHD in deer and distemper, would be decreased as would deer-vehicle collisions. Reduction of the hog population would decrease risk of transmitting fatal diseases by hogs to other wildlife species. Fewer hogs would decrease competition for food with native wildlife, such as deer, turkey, and squirrel and all impacts to the habitat associated with wallowing would be reduced.

### *Open Entire Refuge to Harvest Alternative*

Under this alternative the impacts to hunted wildlife species would be identical to the findings of the proposed action. The negative aspect of this alternative is that refuge management would not have the flexibility to administratively limit hunting to areas of the refuge specified in the refuge specific regulations.

### **4.2.3 Impacts to Non-hunted Wildlife**

#### *No Action Alternative*

Depradation rates on salamanders, small mammals, and ground-nesting birds would increase under this alternative as feral hog populations would increase at an alarming rate. Non-native hogs prey on these and other species. Also although impacts associated from hunters accessing the lands on foot would not materialize under this alternative, non-consumptive users would still be granted access into these areas, which may still impact wildlife.

#### *Proposed Action*

In terms of general wildlife impacts there may be minimal disturbance to non-target wildlife populations on the refuge. However, few conflicts are expected with neo-tropical migrants, reptiles, or amphibians. Overall disturbance to non-hunted wildlife would increase slightly. However, significant disturbance would be unlikely for the following reasons. Small mammals, including bats, are inactive during winter when hunting season occurs. These species are also nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blood reptiles and amphibians also limits their activity during the hunting season when temperatures are lower. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. The refuge has an estimated low hunter density rate. During the vast majority of the hunting season, hunter density is much lower (1 hunter/1,000 acres). Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to roads, ATVs are not permitted on the refuge, and the harassment or taking of any wildlife other than the game species legal for the season is not permitted. Disturbance to birds by hunters would probably be commensurate with that caused by non-consumptive users.

#### *Open Entire Refuge to Harvest Alternative*

Under this alternative the measurable impacts would be similar to the findings of the proposed action alternative. The major differences may include even lower hunting densities since wider hunting opportunities would be offered under this alternative. Also refuge management would not have the flexibility to direct hunters towards or away from areas of interest i.e. sections of refuge densely populated with feral hogs or vapid of feral hogs which may restrict wildlife management options.

### **4.2.4 Impacts to Endangered and Threatened Species**

#### *No Action Alternative*

Because current public use levels on the refuge would remain the same. Impacts to endangered and threatened species would not increase under this alternative.

#### *Proposed Action*

A potential disadvantage of this alternative is its effect on bald eagles, brown pelicans, gopher tortoises, or Mississippi sandhill cranes. Although there is a potential impact to each of these species when all are present on the refuge in the future, an annual review of the hunting program allows refuge management the ability to mitigate any adverse impacts to these species. Furthermore, a Section 7 Evaluation associated with this assessment was conducted, and it was determined that the proposed action is not likely to adversely affect any of the above species (Refuge to 2007 Section 7 Evaluation for Hunting on Grand Bay National Wildlife Refuge).

#### *Open Entire Refuge to Harvest Alternative*

Similar findings discussed in the proposed action alternative would also be relevant under this alternative. The major shortcoming of this proposal would be the inability of refuge management to limit hunting to those areas specified in the refuge specific regulations. For instance after the re-introduction of Mississippi sandhill cranes certain area of refuge may need to be closed to hunting if conflicts arise with these or any threatened or endangered species.

### **4.2.5 Impacts to Refuge Facilities (roads, trails, paking lots)**

#### *No Action Alternative*

Additional damage to dirt parking areas near gates during wet weather periods would not occur, however non-consumptive users may impact these areas as well. Cost associated with boundary posting, brochure generation, and law enforcement would not be applicable.

#### *Proposed Action*

Additional damage to dirt parking areas would occur during wet weather periods. There would be minimal cost associated with sign posting, brochure generation, and law enforcement of hunting regulations under this alternative. These costs should be minimal in comparison to the refuge operations and maintenance costs. Complex Law Enforcement staff present conduct compliance checks of hunters in the field and enhance visitor safety during hunt season. The refuge manager, law enforcement officers, and partners disseminate hunting permits to the general public throughout the year. The joint Refuge headquarters is staff by either USFWS employees or partners who field questions on a regular basis concerning hunting opportunities. Refuge staff needs to allocate nominal amounts of funding and staff time to maintain boundary posting. Since Grand Bay has an active land acquisition program ongoing there remains a critical need to keep

up with boundary posting to assist hunters in delineating hunt zones from non-hunting zones.

#### *Open the Entire Refuge to Harvest Alternative*

There would be no measurable difference under this alternative that is not mentioned under the proposed action alternative.

### **4.2.6 Impacts to Wildlife Dependant Recreation**

#### *No Action Alternative*

The public would not have the opportunity to harvest a renewable resource, participate in wildlife-oriented recreation that is compatible with the purposes for which the refuge was established, have an increased awareness of Grand Bay NWR and the National Wildlife Refuge System; nor would the Service be meeting one of its public use demands. Public relations would not be enhanced with the local community.

#### *Proposed Action*

Presently the hunting program is designed through a time and space zoning to minimize conflicts between other refuge programs. Grand Bay NWR is presently highly active in land acquisition and developing non-consumptive wildlife oriented uses such as interpretive and educational opportunities with assistance through our partner the Department of Marine Resources. Modifications to the hunting program may arise as additional non-consumptive uses are further developed. Hunting opportunities may increase or decrease depending upon future management activities but non-consumptive uses will remain available year-round in areas that are closed to hunting.

The public would be allowed to harvest a renewable resource, and the refuge would be promoting a wildlife-oriented recreational opportunity that is compatible with the purpose for which the refuge was established. The public would have an increased awareness of Grand Bay NWR and the National Wildlife Refuge System and public demand for more hunting would be met. The public would also have the opportunity to harvest a renewable resource in a traditional manner, which is culturally important to the local community. This alternative would also allow the public to enjoy hunting at no or little cost in a region where private land is leased for hunting, oftentimes which is limited to the affluent individuals.

#### *Open Entire Refuge to Harvest Alternative*

The time and space zoning to minimize conflicts between other refuge programs may be more difficult to realize under this alternative. Due to other non-consumptive wildlife dependant recreation conflicts may arise with hunting activities if the entire refuge was

open to harvests. Equal opportunities should be provided to all six wildlife dependant recreational activities if they are deemed possible and compatible.

### **4.3 Cumulative Impacts Analysis**

#### **4.3.1 Anticipated Direct and Indirect Impacts of Proposed Action on Wildlife Species.**

##### 4.3.1.1 Migratory Birds

The U.S. Fish and Wildlife Service, working with partners, annually prescribe frameworks, or outer limits, for dates and times when hunting may occur and the number of birds that may be taken and possessed. These frameworks are necessary to allow State selections of season and limits for recreation and sustenance; aid Federal, State, and tribal governments in the management of migratory game birds; and permit harvests at levels compatible with population status and habitat conditions. Because the Migratory Bird Treaty Act stipulates that all hunting seasons for migratory game birds are closed unless specifically opened by the Secretary of the Interior, the Service annually promulgates regulations (50 CFR Part 20) establishing the frameworks from which States may select season dates, bag limits, shooting hours, and other options for the each migratory bird hunting season. The frameworks are essentially permissive in that hunting of migratory birds would not be permitted without them. Thus, in effect, Federal annual regulations both allow and limit the hunting of migratory birds.

Migratory game birds are those bird species so designated in conventions between the United States and several foreign nations for the protection and management of these birds. Under the Migratory Bird Treaty Act (16 U.S.C. 703-712), the Secretary of the Interior is authorized to determine when "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any ... bird, or any part, nest, or egg" of migratory game birds can take place, and to adopt regulations for this purpose. These regulations are written after giving due regard to "the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times and lines of migratory flight of such birds, and are updated annually (16 U.S.C. 704(a)). This responsibility has been delegated to the U.S. Fish and Wildlife Service as the lead federal agency for managing and conserving migratory birds in the United States. Acknowledging regional differences in hunting conditions, the Service has administratively divided the nation into four Flyways for the primary purpose of managing migratory game birds. Each Flyway (Atlantic, Mississippi, Central, and Pacific) has a Flyway Council, a formal organization generally composed of one member from each State and Province in that Flyway. Grand Bay NWR is within the Mississippi Flyway.

The process for adopting migratory game bird hunting regulations, located in 50 CFR part 20, is constrained by three primary factors. Legal and administrative considerations dictate how long the rule making process will last. Most importantly, however, the

biological cycle of migratory game birds controls the timing of data-gathering activities and thus the dates on which these results are available for consideration and deliberation. The process of adopting migratory game bird hunting regulations includes two separate regulations-development schedules, based on "early" and "late" hunting season regulations. Early hunting seasons pertain to all migratory game bird species in Alaska, Hawaii, Puerto Rico, and the Virgin Islands; migratory game birds other than waterfowl (e.g. dove, woodcock, etc.); and special early waterfowl seasons, such as teal or resident Canada geese. Early hunting seasons generally begin prior to October 1. Late hunting seasons generally start on or after October 1 and include most waterfowl seasons not already established. There are basically no differences in the processes for establishing either early or late hunting seasons. For each cycle, Service biologists and others gather, analyze, and interpret biological survey data and provide this information to all those involved in the process through a series of published status reports and presentations to Flyway Councils and other interested parties (USFWS 2006).

Under the proposed action, Grand Bay NWR estimates a maximum additional 200 ducks, and less than 15 geese would be harvested each year constituting well below 1% of Mississippi's and less than 1% of Alabama's four-year average harvest ducks and geese (USFWS 2005). Mourning Dove harvest estimates are for an additional 20 doves constituting well below 1% of each state's four-year average dove harvest (Sharpre 2007, Shelton, 2007, Shultz, 2006). Expansion of hunting on Grand Bay NWR should not have cumulative impacts on migratory bird populations.

Because the Service is required to take abundance of migratory birds and other factors in to consideration, the Service undertakes a number of surveys throughout the year in conjunction with the Canadian Wildlife Service, State and Provincial wildlife-management agencies, and others. To determine the appropriate frameworks for each species, the Service considers factors such as population size and trend, geographical distribution, annual breeding effort, the condition of breeding and wintering habitat, the number of hunters, and the anticipated harvest. After frameworks are established for season lengths, bag limits, and areas for migratory game bird hunting, migratory game bird management becomes a cooperative effort of State and Federal Governments. After Service establishment of final frameworks for hunting seasons, the States may select season dates, bag limits, and other regulatory options for the hunting seasons. States may always be more conservative in their selections than the Federal frameworks but never more liberal. Season dates and bag limits for National Wildlife Refuges open to hunting are never longer or larger than the State regulations. In fact, based upon the findings of an environmental assessment developed when a National Wildlife Refuge opens a new hunting activity, season dates and bag limits may be more restrictive than the State allows.

NEPA considerations by the Service for hunted migratory game bird species are addressed by the programmatic document, "Final Supplemental Environmental Impact Statement: Issuance of Annual Regulations Permitting the Sport Hunting of Migratory Birds (FSES 88- 14)," filed with the Environmental Protection Agency on June 9, 1988. We published Notice of Availability in the Federal Register on June 16, 1988 (53 FR

22582), and our Record of Decision on August 18, 1988 (53 FR 31341). Annual NEPA considerations for waterfowl hunting frameworks are covered under a separate Environmental Assessment, "Duck Hunting Regulations for 2006-07," and an August 24, 2006, Finding of No Significant Impact. Further, in a notice published in the September 8, 2005, Federal Register (70 FR 53376), the Service announced its intent to develop a new Supplemental Environmental Impact Statement for the migratory bird hunting program. Public scoping meetings were held in the spring of 2006, as announced in a March 9, 2006, Federal Register notice (71 FR 12216). More information may be obtained from: Chief, Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Department of the Interior, MS MBSP-4107-ARLSQ, 1849 C Street, NWR, Washington, DC 20240.

### **4.3.1.2 Resident Big Game**

#### **4.3.1.2.1 White-tailed Deer**

Deer hunting does not have regional population impacts due to restricted home ranges. The average home range of a male deer in Mississippi is 1,511 ±571 S.D. hectares (Mott *et al.* 1985). Since Grand Bay NWR is located in Jackson County Mississippi and Mobile County Alabama multiple data sets must be used to quantify hunter harvest.

In Mississippi, the Mississippi Department of Wildlife Fisheries and Parks Biologist Kathy Shelton reported 3 deer in 2005, 20 deer in 2004, 16 deer in 2003, 24 deer in 2002 and 26 deer in 2001 harvested from Ward Bayou Management Area in Jackson County, Mississippi. Ward Bayou is 13,234 acres with 2,000 of the acres in process of longleaf pine restoration and the remainder is bottomland hardwoods (Shelton, per conversation). The hunter use days for these hunts were 1078 in 2005, 1881 in 2004, 3670 in 2003, 1721 in 2002 and 2065 in 2001. The number of acres per deer ranged from 4333 acres per deer in 2005 to 500 acres per deer in 2001. At the Pascagoula River WMA also located in Jackson County reflect similar numbers with 7 deer harvested in 2005, 30 deer harvested in 2004, 71 deer harvested in 2003, 59 deer harvested in 2002, and 64 deer harvested in 2001 (Shelton per conversation).

In Alabama W.L. Holland and Mobile Tensaw Delta Wildlife Management Area is the closest public land that offers hunting which would provide comparable harvest reports to Grand Bay NWR. The Holland/Delta Management Area is 58,321 acres of marsh and timber and 15,000 acres of shallow waters which straddles causeway in Mobile and Baldwin counties in Alabama. The northern portions of the management area has habitat comparable to the pine savannas found at Grand Bay NWR while the southern marsh area is comparable to the salt marshes found within the Grand Bay NWR (per conversation with State of Alabama Biologist). In 2005-2006 State of Alabama Biologists reported in the Management Area Harvest Report that 11 deer were harvested (gun hunt) and 20 deer were harvested with archery at the W.L. Holland and Mobile Tensaw Delta Wildlife Management Area. For a period of 1996 to 2006 a total of 204 deer were harvested using archery from the Holland/Delta Management Area (20 deer per year) (McCutcheon 2005-

2006). These values are comparable with harvest rates found in Mississippi and at the Grand Bay NWR (Sharp, per conversation).

Although we do not presently have deer check stations nor do we have staff and funding to record harvest rates at Grand Bay NWR our estimates on annual harvest are either at or below the observed rates of the neighboring Mississippi and Alabama management areas. Of the 204 deer that were harvest on the neighboring wildlife management area that is only a small percentage (0.49%) of the total 41,601 deer that were harvested on all of the State of Alabama management areas between 1996 to 2006 (archery and guns). Of course if harvest rates of deer on private lands were also included into these calucaltions the percentage of deer harvested would more than likely decrease. The refuge estimates that less than 15 deer per year will be harvested from the refuge since only archery hunting is permitted. This value constitutes a less than 1% of the long term average state harvest. Harvest estimates and surveys of neighboring wildlife management areas should not have a significant cumulative effect on the overall state deer populations of Mississippi or Alabama.

#### 4.3.1.2.2 Feral Hogs

Feral hogs are an extremely invasive, introduced, non-native species in Alabama and Mississippi. No bag limits are established for feral hogs. Hunting of feral hogs provides the refuge with another management tool in reducing this detrimental species, and at the same time, is widely enjoyed by local hunters. Cumulative effects to an exotic, invasive species should not be of concern because the refuge would like to extirpate this species on refuge lands. Hunting of hogs is not considered detrimental to the biological integrity of the refuge, is not likely to create conflict with other public uses and is within the wildlife dependant public uses to be given priority consideration. Since hogs are exotic, they are a priority species for refuge management only in terms of their impacts on refuge biota and need for eradication. They are a popular game species though, and the public interest would best be served by allowing this activity on the refuge. However, even with hunting, feral hogs are likely to always be present because they are prolific breeders. State biologists from Jackson County Mississippi report that the following harvest rates of feral hogs from Ward Bayou WMA: 14 hogs were harvested in 2005, 69 hogs were harvested in 2003, and 10 hogs were harvested in 2001 (Shelton, per conversation).

#### 4.3.1.3 Small Game (Squirrel)

Squirrels cannot be affected regionally by refuge hunting because of their limited home ranges. Only local effects will be discussed. When these species become extremely overabundant, diseases may reduce the populations. However, waiting for disease outbreak to regulate their numbers can be a human health hazard. Cumulative impacts to small game are unlikely considering they reproduce quickly, and are not as popular for hunting as other game species.

Studies have been conducted to determine the effects of hunting on the population dynamics of small game. Results from studies have consistently shown that small game,

such as rabbits and squirrels, are not affected by hunting, but rather are limited by food resources. At the neighboring management areas in Mississippi squirrel harvests have been declining over the past 5 years at both locations. Ward Bayou Management Area reported the following 1071 squirrels in 2001, 301 squirrels in 2002, 9992 squirrels in 2003, 170 squirrels in 2004, and 58 squirrels in 2005. Similar trends were reported at the Pascagoula River WMA with 2069 squirrels harvested in 2001, 1293 squirrels harvested in 2002, 1518 squirrels harvested in 2003, 1157 squirrels harvested in 2004, and 113 squirrels harvested in 2005 (Shelton, per conversation). Similar trends were reported in Alabama management areas. Of the 420 squirrels that were reported in 2005-2006 at the Mobile Tensaw site that only represented 1.9% of the total number of squirrels harvested from all of the State of Alabama WMA for the year of 2005-2006 (McCutcheon, 2006). Gray squirrels are prolific breeders and their populations have never been threatened by hunting in Alabama or Mississippi even prior to the passing of hunting regulations as we know them today.

#### **4.3.1.4 Non-hunted Wildlife**

Non-hunted wildlife would include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as voles, moles, mice, shrews, and bats; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs and toads; and invertebrates such as butterflies, moths, other insects and spiders. Except for migratory birds and some species of migratory bats, butterflies and moths, these species have very limited home ranges and hunting could not affect their populations regionally; thus, only local effects will be discussed.

Disturbance to non-hunted migratory birds could have regional, local, and flyway effects. Regional and flyway effects would not be applicable to species that do not migrate such as most woodpeckers, and some songbirds including cardinals, titmice, wrens, chickadees, etc. The cumulative effects of disturbance to non-hunted migratory birds under the proposed action are expected to be negligible for the following reasons. Hunting season would not coincide with the nesting season. Long-term future impacts that could occur if reproduction was reduced by hunting are not relevant for this reason. Disturbance to the daily wintering activities, such as feeding and resting, of birds might occur. Disturbance to birds by hunters would probably be commensurate with that caused by non-consumptive users.

The cumulative effects of disturbance to non-hunted migratory birds under the proposed action are expected to be negligible as would be the likelihood of disturbance of non-hunted wildlife for the following reasons. Small mammals, including bats, are inactive during winter when hunting season occurs. These species are also nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blood reptiles and amphibians also limits their activity during the hunting season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Encounters with reptiles and amphibians in the early fall are few and should not have cumulative effects on reptile and amphibian populations. Invertebrates are also not active during cold weather and would have few

interactions with hunters during the hunting season. The refuge has estimated hunter density is much lower than 1 hunter/1,000 acres. Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to roads, ATV usage is prohibited and the harassment or taking of any wildlife other than the game species legal for the season is not permitted.

Although ingestion of lead-shot by non-hunted wildlife could be a cumulative impact, it is not a minimal concern on Grand Bay NWR because the use of lead shot would not be permitted on the refuge for any type of hunting.

Some species of bats, butterflies and moths are migratory. Cumulative effects to these species at the “flyway” level should be negligible. These species are in torpor or have completely passed through southern Alabama and Mississippi by peak hunting season in Nov-Jan. Some hunting occurs during September and October when these species are migrating; however, hunter interaction would be commensurate with that of non-consumptive users.

#### **4.3.1.5 Endangered Species**

Endangered and threatened species that utilize the refuge are bald eagle, gopher tortoise, and brown pelican. One of the stated purposes of Grand Bay NWR is to support a second breeding pair of the endangered Mississippi sandhill cranes. A Section 7 Evaluation was conducted in association with this assessment of the hunting program on Grand Bay NWR. It was determined that the proposed alternative would not likely adversely affect these endangered species.

Bald eagles currently winter in areas that are open to waterfowl, deer, and small game hunting without noticeable adverse effects. To date no nest sites or breeding sites have been found on Grand Bay NWR. If nesting is determined to occur within the boundaries of the refuge, measures will be taken to ensure that hunting and other refuge activities do not interfere with this listed species. Annual reviews of the hunting program are conducted and changes to this program are reviewed annually by refuge management.

Gopher tortoises are found in the sandy soils of the Alabama portion of the refuge. Although this area is open to hunting and other public uses there have been no impacts to gopher tortoises to date. Access to areas used by gopher tortoises is limited to foot traffic only, no ATVs. ATVs would negatively impact tortoise burrows and the fragile wet pine savanna habitat of Grand Bay NWR.

Brown pelicans, which are not a federally listed species in Alabama but are listed as endangered species in Mississippi, are found in the open waters and marshes of the southern portion of the refuge. These large birds nest on the southern isolated sections of the refuge in the spring and their large size, flight patterns, and behavior have not resulted in any incidents of accidental take during the refuge waterfowl hunting season.

Mississippi sandhill cranes have not been introduced to Grand Bay NWR. When the reintroduction of sandhill cranes takes place in the future all public use activities will be reviewed and measures will be taken to facilitate the recovery of this endangered species. After the introduction of the cranes we do not anticipate conflicts between cranes and waterfowl hunters since sandhill cranes do not generally use salt marsh areas. To minimize incompatibility of other hunting (non-waterfowl) with crane reintroduction, 1) all hunts will be conducted by mid-December to prevent disturbance and stress to introduced captive reared birds, 2) Grand Bay NWR Law Enforcement staff will continue to prevent poaching on refuge lands and waters, 3) hunts would be limited to areas unlikely to be used by cranes such as areas like bottomland hardwoods for small game hunting, and 4) dog use will be significantly limited during hunting season.

Refer to the Section 7 Evaluation for the 2007 Hunting on Grand Bay NWR for more information.

### **4.3.2 Anticipated Direct and Indirect Impacts of Proposed Action on Refuge Programs, Facilities, and Cultural Resources.**

#### **4.3.2.1 Wildlife-Dependant Recreation**

As public use levels expand across time, unanticipated conflicts between user groups may occur. The Refuge's visitor use programs would be adjusted as needed to eliminate or minimize each problem and provide quality wildlife-dependent recreational opportunities. Experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) is an effective tool in eliminating conflicts between user groups.

The level of recreation use and ground-based disturbance from visitors would be largely concentrated at trails and the Refuge's office and maintenance areas. This, combined with the addition of increased hunting opportunity, could have a negative effect on nesting bird populations. However, the hunting season is during the winter and not during most birds' nesting period. It is unlikely that bald eagles would establish nests near developed facilities or during the hunting season. Again no eagle nests have been observed on Grand Bay NWR.

The opportunities for hunting would expand under the proposed action. High deer numbers are recognized as a problem causing crop damage, reducing some forest understory species, and reducing reforestation seedling survival. Hunting would be used to keep the deer herd and other resident wildlife in balance with the habitat's carrying capacity, resulting in long-term positive impacts on wildlife habitat.

The refuge would control access under this alternative to minimize wildlife disturbance and habitat degradation, while allowing current and proposed compatible wildlife-dependent recreation. Some areas, may be closed seasonally to hunting to minimize disturbance to wintering waterfowl, or sensitive habitat.

#### 4.3.2.2 Refuge Facilities

The Service defines facilities as: “Real property that serves a particular function(s) such as buildings, roads, utilities, water control structures, raceways, etc.” Under the proposed action those facilities most utilized by hunters are: roads, parking lots, trails and boat launching ramps. Maintenance or improvement of existing facilities (i.e. parking areas, roads, trails, and boat ramps) will cause minimal short term impacts to localized soils and waters and may cause some wildlife disturbances and damage to vegetation. The facility maintenance and improvement activities described are periodically conducted to accommodate daily refuge management operations and general public uses such as wildlife observation and photography. These activities will be conducted at times (seasonal and/or daily) to cause the least amount of disturbance to wildlife. Siltation barriers will be used to minimize soil erosion, and all disturbed sites will be restored to as natural a condition as possible. During times when roads are impassible due to flood events or other natural causes those roads, parking lots, trails and boat ramps impacted by the event will be closed to vehicular use.

#### 4.3.2.3 Cultural Resources

Hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties on and/or near the Refuge. In fact, hunting meets only one of the two criteria used to identify an “undertaking” that triggers a federal agency’s need to comply with Section 106 of the National Historic Preservation Act. These criteria, which are delineated in 36 CFR Part 800, state:

- 1- an undertaking is any project, activity, or program that can alter the character or use of an archaeological or historic site located within the “area of potential effect;” and
- 2- the project, activity, or program must also be either funded, sponsored, performed, licensed, or have received assistance from the agency.

Consultation with the pertinent State Historic Preservation Office and federally recognized Tribes are, therefore, not required.

#### 4.3.2.4 Anticipated Impacts of Proposed Hunt on Refuge Environment and Community.

The refuge expects no sizeable adverse impacts of the proposed action on the refuge environment which consists of soils, vegetation, air quality, water quality and solitude. Some disturbance to surface soils and vegetation would occur in areas selected for hunting; however impacts would be minimal. Hunting would benefit vegetation as it is used to keep many resident wildlife populations in balance with the habitat’s carrying capacity. The refuge would also control access to minimize habitat degradation.

The refuge expects impacts to air and water quality to be minimal and only due to refuge visitors’ automobiles and run-off on road and trail sides. The effect of these refuge-



related activities, as well as other management activities, on overall air and water quality in the region are anticipated to be relatively negligible, compared to the contributions of industrial centers, power plants, and non-refuge vehicle traffic. Existing State water quality criteria and use classifications are adequate to achieve desired on-refuge conditions; thus, implementation of the proposed action would not impact adjacent landowners or users beyond the constraints already implemented under existing State standards and laws.

Impacts associated with solitude are expected to be minimal given time and space zone management techniques, such as seasonal access and area closures, used to avoid conflicts among user groups.

The refuge would work closely with State, Federal, and private partners to minimize impacts to adjacent lands and its associated natural resources; however, no indirect or direct impacts are anticipated. The newly opened hunts would result in a net gain of public hunting opportunities positively impacting the general public, nearby residents, and refuge visitors. The refuge expects increased visitation and tourism to bring additional revenues to local communities but not a significant increase in overall revenue in any area.

#### 4.3.2.5 Other Past, Present, Proposed, and Reasonably Foreseeable Hunts and Anticipated Impacts

Cumulative effects on the environment result from incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative effects may result from individually minor actions, they may, viewed as a whole, become substantial over time. The proposed hunt plan has been designed so as to be sustainable through time given relatively stable conditions. Changes in refuge conditions, such as sizeable increases in refuge acreage, increased funding, increased staffing, or public use, are likely to change the anticipated impacts of the current plan and would trigger a new hunt planning and assessment process.

The implementation of any of the proposed actions described in this assessment includes actions relating to the refuge hunt program (see 2007 Sport Hunting Plan for Grand Bay NWR). These actions would have both direct and indirect effects (e.g., new site inclusion would result in increased public use, thus increasing vehicular traffic, disturbance, etc); however, the cumulative effects of these actions are not expected to be substantial.

The past refuge hunting program has been very similar to the proposed action in season lengths, species hunted, and bag limits. Alterations to the hunting plan are needed because newly acquired lands were not included in the previous plans. The refuge does not foresee any changes to the proposed action in the way of increasing the intensity of hunting in the future.

#### 4.3.2.6 Anticipated Impacts if Individual Hunts are Allowed to Accumulate

National Wildlife Refuges, including Grand Bay NWR, conduct hunting programs within the framework of State and Federal regulations. Grand Bay NWR is at least as restrictive as the States of Mississippi and Alabama (big game, small game, migratory waterfowl, and migratory birds). By maintaining hunting regulations that are as, or more, restrictive than the State, individual refuges ensure that they are maintaining seasons which are supportive of management on a more regional basis. The proposed hunt plan has been reviewed and is supported by the Mississippi Department of Wildlife Fisheries and Parks and the State of Alabama Department of Conservation and Natural Resources. Additionally, refuges coordinate with both organizations annually to maintain regulations and programs that are consistent with the State management program.

## **Chapter 5 Consultation and Coordination with Others**

The Mississippi Department of Wildlife Fisheries and Parks and the State of Alabama Department of Conservation and Natural Resources fully support the regulated consumptive public use of the natural resources associated with the Grand Bay National Wildlife Refuge (Refer to Letters of Concurrence). The Fish and Wildlife Service also provided an in depth review by the Regional Office personnel and staff biologists. Numerous contacts were made throughout the area of the refuge soliciting comments, views, and ideas into the development of the accompanying hunting plan.

## Appendix Literature References

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## Appendix      Response to Public Comments

The United States Fish and Wildlife Service, Grand Bay National Wildlife Refuge, solicited public comment for the 2007 Sport Hunt Plan and associated Environmental Assessment. The 30-day review period began on March 5, 2007 and ended on April 4, 2007. Copies of the document were placed in the Fire Center at Mississippi Sandhill Crane National Wildlife Refuge located in Gautier Mississippi and at the Grand Bay National Wildlife Refuge Headquarters located in Moss Point, Mississippi. Digital copies were provided to the general public when requested. Three local newspapers were contacted to post announcements of the process to all interested parties.

Ten comments by the public were received during comment period. Six comments were against the Proposed Action which would permit hunting of deer, feral hogs, waterfowl, dove, and squirrel on Grand Bay NWR. Two comments were in favor of the Proposed Action while two comments stated no position. All of the public comments are addressed below:

### *Against the Proposed Action*

One comment was opposed to "... hunting of all types on the refuge." This comment was provided by a neighboring landowner who has objections to possible trespass on his property, possible poaching of livestock, and a lack of law enforcement to adequately protect his property. The Service notes the comment.

Four comments shared the opinion that the name Grand Bay National Wildlife Refuge implies that the lands and waters within the boundary should be considered a sanctuary for wildlife and hunting of any wildlife would be a contradiction in terms and principle. These comments are noted but the National Wildlife Improvement Act of 1997 calls for wildlife dependant recreation of refuge lands when compatible. The six wildlife dependant recreational opportunities offered on refuges are environmental education, environmental interpretation, photography, wildlife observation, fishing, and hunting.

We received a letter from the Humane Society of the United States that contained comments related to hunting on the National Wildlife Refuge System as a whole and containing elements related to litigation filed in 2003 by the Fund for Animals against the Service. These comments were not specific to this draft EA and are noted but not responded to here.

### *For the Proposed Action*

The Service received a letter from the Safari Club International and Safari Club International Foundation. These organizations were very much in support of the proposed action but they did suggest more prominent placement of the refuge's consultation with

state game agencies and how the refuge hunt would effect the state's wildlife management goals. The service agrees with this comment and it is addressed on page 32 of the EA. Letters of concurrence for the Grand Bay NWR Hunt Plan from The Mississippi Department of Wildlife Fisheries and Parks and the State of Alabama Department of Conservation and Natural Resources will be submitted with this document. Comments concerning hunting on Grand Bay NWR and the subsequent effect of State of Alabama and State of Mississippi wildlife populations are noted by the Service. The Safari Club also suggested an additional to the cumulative effects section should focus on both the detrimental and beneficial effects of hunting. Comment is noted.

One letter was received which expressed support for the hunting program and the hunt plan. Comment is noted.

*No Position Stated*

One comment from the public stated criticism of hunting regulations on Grand Bay NWR such as prohibition of ATV use, hunter orange requirements, prohibition of lead shot, prohibition of firearms for feral hogs, and potential conflicts which may come from a neighboring shooting range. All comments were noted.

Another individual attempted to provide comments but instead mailed a news clipping of the media release concerning the details of the Hunt Plan, EA, and review which was drafted by the refuge staff. Comment was noted.

Sport Hunting

Decision Document Package

for

**Grand Bay National Wildlife Refuge**

**Contents**

3. FONSI

## FINDING OF NO SIGNIFICANT IMPACT

### 2007 Sport Hunting Plan for Grand Bay National Wildlife Refuge

**The U.S. Fish and Wildlife Service proposes to** open the lands and waters to a hunting program on Grand Bay National Wildlife Refuge. Hunting activities will be permitted, but administratively limited to those areas specified in the refuge-specific regulations. All or parts of the refuge may be closed to hunting at any time if necessary for public safety, to provide wildlife sanctuary, or for other reasons. Alternatives considered included: proposed action and no action.

**The Service has analyzed the following alternatives to the proposal in an Environmental Assessment (copy attached):**

No action alternative: Under this alternative the refuge would not be opened to sport hunting. There would be no impact from public use beyond what is naturally occurring (we are aware of some illegal deer hunting in the area).

Proposed action: Under this alternative, the refuge would permit hunting on Grand Bay NWR but would administratively limit it to those areas specified in the refuge-specific regulations.

Open entire refuge to harvest: Under this alternative, the refuge would provide wider hunting opportunities throughout the hunting seasons. Expansion of refuge hunting opportunities would not be limited to additional species but to additional lands open to hunting. This alternative would allow hunting within any area of Grand Bay NWR.

**The preferred alternative was selected over the other alternatives because:**

1. The preferred alternative would allow the refuge to manage wildlife populations, allow the public to harvest a renewable resource, promote a wildlife-oriented recreational opportunity, increase awareness of the Grand Bay NWR and the National Wildlife Refuge System, and meet public demand.
2. The preferred alternative is compatible with the Service policy regarding the establishment of hunting on National Wildlife Refuges.
3. The preferred alternative is compatible with the purpose for which Grand Bay NWR was established.
4. This proposal does not initiate widespread controversy or litigation.
5. There are no conflicts with local, state, regional, or federal plans or policies.

**Implementation of the agency's decision would be expected to result in the following environmental, social, and economic effects:**

1. The refuge could better manage wildlife populations.
2. This would allow the public to harvest a renewable resource.
3. The public would have increased opportunity for wildlife-oriented recreation.
4. Economic effects would remain neutral since hunting uses are not expected to be heavy due to the nonexistent fees associated with refuge permits
5. The Service will be perceived as a good steward of the land by continuing traditional uses of land in southeastern Mississippi and southwestern Alabama

**Measures to mitigate and/or minimize adverse effects have been incorporated into the proposal. Refuge specific regulations will include, but will not be limited to the following prohibited actions:**

1. Waterfowl hunting after 1:00 pm
2. Hunting blinds, stands, and decoys left overnight
3. Driving nails, spikes, or other objects into trees for blinds or stands, or hunting from trees into which objects have been driven.
4. Dogs for deer or feral hog hunting.
5. Camping/overnight parking
6. Littering
7. Taking, flushing or otherwise disturbing wildlife (or plants) other than specified in refuge regulations
8. Target practice
9. Baiting, or hunting over bait
10. Hunting within 100 feet of any designated road or trail
11. ATV and other off-road vehicle use
12. Marking area/trails with tape, paper, paint, etc.
13. Trapping, frogging, crawfishing, raccoon hunting
14. Use or possession of alcoholic beverages on refuge
15. Spot lighting (even just to look), night time hunting
16. Fires
17. Man-drives for deer
18. Entering and exiting hunt areas other than from designated parking lots (exception:boats)
19. Use of toxic shot, poisons, or muscle relaxants
20. Possession of slugs and buckshot, or .22 caliber center- or rim-fire rifle and pistol ammunition
21. Blocking gates or roadways with vehicles
22. Boats left on the refuge overnight

**The proposal is not expected to have any significant adverse effects on wetlands and flood plains, pursuant to Executive Orders 11990 and 11988.** The refuge must monitor human use in the area and adjust the hunt plan to keep habitat protected. If trails are deemed detrimental, it is the agency's responsibility to reprogram hunting to other areas and rehabilitate damaged areas.

**The proposal has been thoroughly coordinated with all interested and/or affected parties. Parties contacted include:**

- A. USFWS, Division of Ecological Services, Jackson, MS
- B. Mississippi Secretary of States Office
- C. Mississippi Department of Wildlife, Fisheries and Parks
- D. Alabama Department of Conservation and Natural Resources
- E. Mississippi Department of Marine Resources, Coastal Wetlands
- F. Grand Bay National Estuarine Research Reserve Board
- G. Grand Bay NERR/Department of Marine Resources
- H. The Nature Conservancy
- I. Clyde Brown (landowner)
- J. Robert Webb (landowner)
- K. Frank Ramsay (landowner)

**Copies of the Environmental Assessment are available by writing:**

Grand Bay National Wildlife Refuge  
6005 Bayou Heron Road  
Moss Point, MS  
39562

**Therefore, it is my determination that the proposal does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102(2)(c) of the National Environment Policy Act of 1969 (as amended). As such, an environmental impact statement is not required. This determination is based on the following factors (40 CFR 1508.27):**  
(for each factor list the page numbers of the EA where the factor was discussed.)

- 1. Both beneficial and adverse effects have been considered and this action will not have a significant effect on the human environment (EA, page 16-20).**
- 2. The actions will not have a significant effect on public health and safety (EA, page 15).**
- 3. The project will not significantly effect any unique characteristics of the geographic area such as proximity to historical or cultural resources, wild and scenic rivers, or ecologically critical areas (EA, page 16, 27-30).**
- 4. The effects on the quality of the human environment are not likely to be highly controversial (EA, page 14, 15).**

5. The actions do not involve highly uncertain, unique, or unknown environmental risks to the human environment (EA, page 14-16).
6. The actions will not establish a precedent for future actions with significant effects nor does it represent a decision in principle about a future consideration (EA, pages 29-31).
7. There will be no cumulative significant impacts on the environment. Cumulative impacts have been analyzed with consideration of other similar activities on adjacent lands, in past action, and in foreseeable future actions (EA, pages 22-31).
8. The actions will not significantly affect any site listed in, or eligible for listing in, the National Register of Historic Places, nor will they cause loss or destruction of significant scientific, cultural, or historic resources (EA, pages 16, 29).
9. The actions are not likely to adversely affect endangered or threatened species, or their habitats (Intra-Service Section 7 Biological Evaluation Form attached to EA).
10. The actions will not lead to a violation of federal, state, or local laws imposed for the protection of the environment (EA, pages 29-31).

**References:** Environmental Assessment of 2007 Sport Hunt Plan for Grand Bay NWR, Hunting Plan, Compatibility Determination, Letters of Concurrence, Refuge-specific Regulations, Intra-Service Section 7 Evaluation

  
\_\_\_\_\_  
Regional Director

4/20/07  
\_\_\_\_\_  
Date