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 Cat Island National Wildlife Refuge in West Feliciana Parish, Louisiana:

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, 2001

Signature Approval:

Mindy Cantrelle	4-10-07	Richard Narron	04/19/07
(1) Originator	Date	(2) Regional Environmental Coordinator	Date
Bud Oliver	4/19/2007	C K Johns	4/20/07
(3) Regional Chief, NWRS, Southeast Region	Date	(4) Regional Director, Southeast Region	Date

Environmental Assessment

Sport Hunt Plan

on

CAT ISLAND NATIONAL WILDLIFE REFUGE
West Feliciana Parish, Louisiana

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TABLE OF CONTENTS

Chapter 1 PURPOSE AND NEED FOR ACTION 23

Chapter 2 ALTERNATIVES INCLUDING THE PROPOSED ACTION 23

Chapter 3 AFFECTED ENVIRONMENT 24

Chapter 4 ENVIRONMENTAL CONSEQUENCES.....28

Chapter 5 CONSULTATION AND COORDINATION WITH OTHERS.....44

Chapter 6 REGULATORY COMPLIANCE.....45

Chapter 7 CAT ISLAND NATIONAL WILDLIFE REFUGE OBJECTIVES.....45

Appendix LITERATURE REFERENCES 46

Appendix RESPONSE TO PUBLIC COMMENTS 47

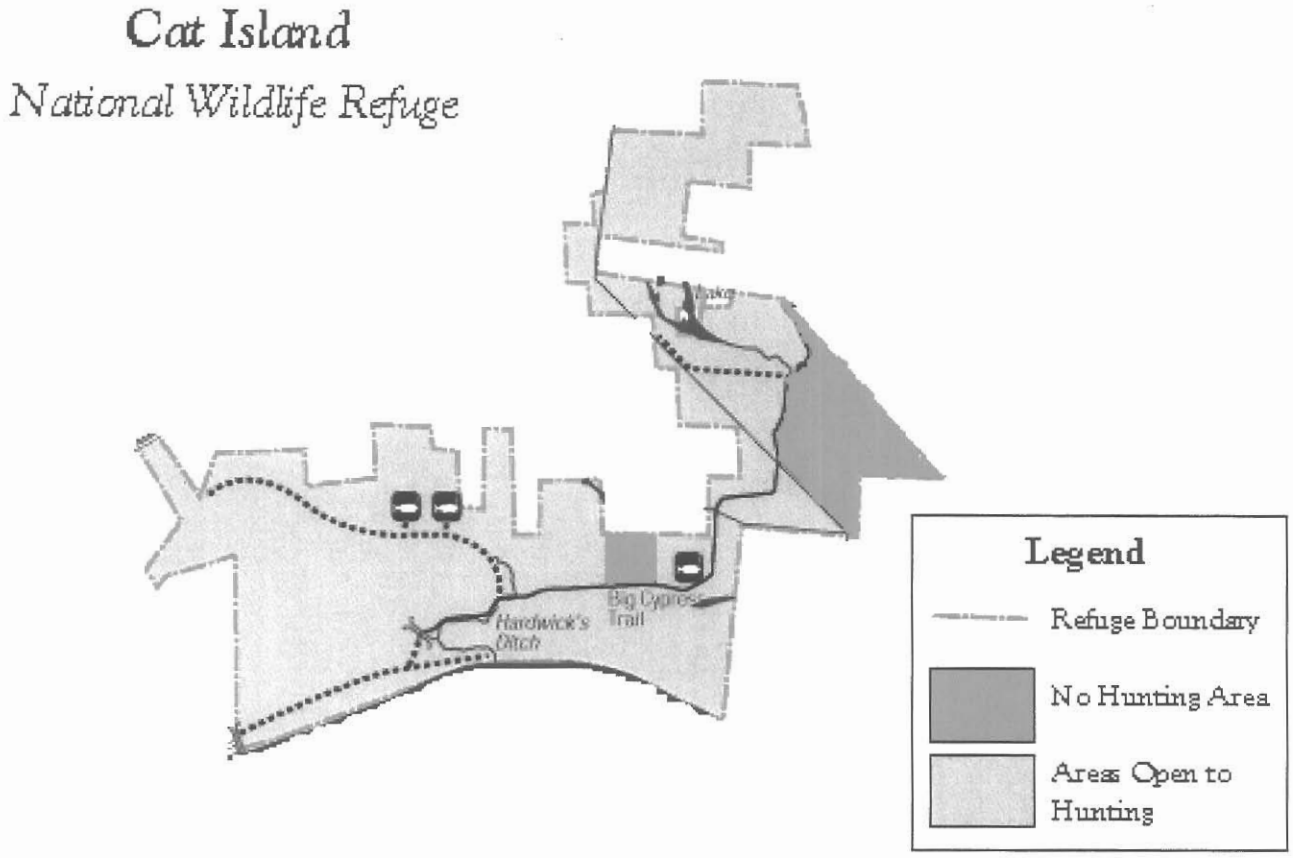

Figure 1. Areas open and closed to hunting on Cat Island NWR.

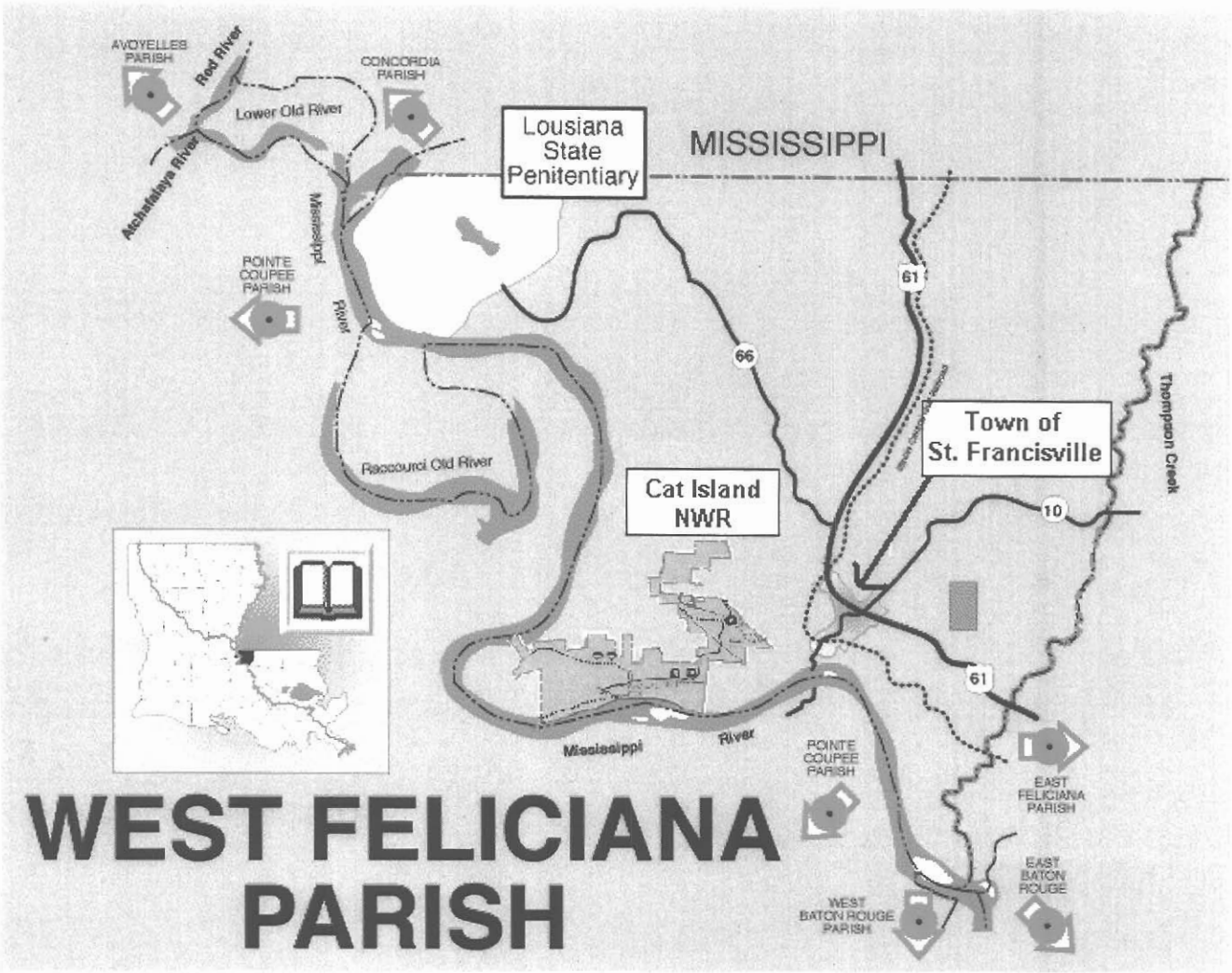

Figure 2. Location of Cat Island National Wildlife Refuge.

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 Cat Island National Wildlife Refuge in Louisiana.

The primary purpose of the proposed action is to provide recreational hunting opportunities on Cat Island National Wildlife Refuge. One of the six priority public uses of a refuge is to provide hunting, which is a traditional wildlife-oriented recreational opportunity that is compatible with the purposes for which the refuge was established.

Chapter 2 Alternatives Including the Proposed Action

This chapter discusses the alternatives considered for hunting on Cat Island National Wildlife Refuge. These alternatives are the 1) proposed action which would implement the Sport Hunting Management Plan, 2) the no action alternative which would not allow recreational hunting, and 3) the last alternative which would open the entire refuge to hunting.

2.1 Alternative A - Proposed Action (Open a Limited Hunt):

The proposed action would establish a recreational hunting program on most of Cat Island NWR (approximately 8,000 acres). A portion of the refuge (about 800 acres) would remain closed to hunting to develop environmental education and interpretation sites. The hunt program would comply with all State, Federal and refuge-specific regulations, and Service policies and directives. 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 administrative reasons.

Refer to Sport Hunting Plan for Cat Island NWR for specific regulations.

2.2 Alternative B - No Action (No Hunting):

This alternative would not allow recreational hunting to occur on Cat Island NWR. Visitors would be prohibited from taking any game species during approved State hunting seasons. There would be no change to the current public use and wildlife management programs at the refuge.

2.3 Alternative C - Open Entire Refuge to Hunting:

This alternative would allow recreational hunting on all areas of the refuge open to public use.

Chapter 3 Affected Environment

The Cat Island National Wildlife Refuge (NWR) became the 526th National Wildlife Refuge established when the Cat Island National Wildlife Refuge Establishment Act was signed into public law (Public Law 106-369) on October 27, 2000. It is located near the town of St. Francisville, Louisiana, which is about 25 miles north of Baton Rouge.

The refuge was established to conserve, restore, and manage native forested wetland habitats for migratory birds, aquatic resources, and endangered and threatened plants and animals. Additionally, it was created to encourage the use of volunteers and facilitate partnerships among the U.S. Fish and Wildlife Service, local communities, and conservation organizations to promote public awareness of resources of the refuge and the National Wildlife Refuge System.

In 2000, 9,463 acres of forested wetlands were purchased by The Nature Conservancy of Louisiana from The Timber Company (formerly Georgia Pacific) for eventual purchase by the Fish and Wildlife Service. In 2003, the final portion of phase I was purchased with funds provided by the Land and Water Conservation Fund. In 2006, an additional 160 acres was added to the refuge with the purchase of the Elder Properties to make the current refuge area 9,623 acres. The Congressionally-approved acquisition boundary is 36,500 acres.

3.1 Physical Environment

Cat Island NWR is located about 5 miles from St. Francisville, Louisiana, located in West Feliciana Parish on a peninsula that is surrounded by the Mississippi River. This peninsula is along the southernmost unleveed portion of the river. The river overflows the area at least once in most years, and often floods the area twice (early spring and "the June rise"). Much of the refuge may be flooded at least 10-feet-deep in those instances. Once river levels drop, the refuge "dries up" and can be traversed by foot. Some sloughs and small lakes remain wet for much of the year. There are a few roads and over four miles of trails on the refuge that allow easy access to the areas open to the public. The entire refuge is a bottomland hardwood forest/swamp. Wildlife moves seasonally to escape rising river waters. Many species of neotropical migrant songbirds, resident birds, mammals, fish and other wildlife breed here.

3.2 Vegetation

The refuge is comprised of varying communities of hardwoods. Several habitat types including overcup oak-bitter pecan, hackberry-elm-ash, nuttall oak-ash-sweetgum, and shrub-scrub swamp occur. The most unique type, however, is old growth cypress-tupelo.

Many of the cypress trees are estimated to be 500 to 1,000 years old. In fact, Cat Island is home to the largest baldcypress tree in the United States, which is also the largest tree of any species east of the Sierra Nevada Mountains, is located on the refuge. The refuge's National Champion baldcypress tree is 96 feet tall, has a circumference of 53 feet, 11 inches, and maintains a crown spread of 74 feet.

Several canals and bayous traverse the peninsula. These canals were dug in the 1960's to increase the drainage rate of the swamp to aid soybean farmers to the north. These canals, which were not all completed, force water to move off the area at a faster rate than historically occurred. The refuge is surrounded by privately-held lands to the west, north and east. Much of the land is forested and leased to hunting clubs. Several thousand acres is maintained in agriculture and currently farmed.

A detailed description of the major vegetation types are listed below.

Baldcypress-Water Tupelo Forest Type

Baldcypress and water tupelo together make up the majority of stocking in this forest type, which occurs in swamps, deep sloughs, and very low, poorly drained flats. The sites are always very wet, and surface water stands well into or throughout the growing season. Soils are generally mucks, clays, or fine sand. Common trees associated with this type are black willow, water locust, overcup oak, green ash, and persimmon. Among the shrub species are swamp privet, buttonbush, and planer tree. Woody vines include red vine. A variety of herbaceous plants will be commonly seen and take the form of floatants, emergents, and submergents. Frequently, a variety of mosses and lichens adorn the exposed tree trunks, and the crowns may be draped with Spanish moss.

Overcup Oak-Water Hickory Forest Type

This type usually occurs in low, poorly drained flats and sloughs with tight clay or silty clay soils. These sites are the lowest within the first bottoms and are subject to late spring inundations. Overcup oak and water hickory together constitute the majority. Associates include willow oak, Nuttall oak, cedar elm, green ash, and water locust. Minor associates include black willow, persimmon, and sweetgum. Common shrub species include swamp privet, hawthorn, buttonbush, planer tree, and possumhaw. Woody vine species often associated include redvine, peppervine, trumpet-creeper, dewberry, and possibly greenbrier. Panicums, asters, annual grasses, and cocklebur may occur in openings within the stand.

3.3 Wildlife Resources

The refuge is a haven to myriad wildlife species. When river levels rise, much of the wildlife moves to the adjacent Tunica Hills and upland areas to the east. This includes wild turkey, white-tailed deer, coyotes, and the threatened Louisiana black bear. Other species of wildlife utilize flooded areas while the river is rising and falling. As the river falls, thousands of wading birds and shorebirds take advantage of fish and invertebrates

in pools and canals. Osprey fly in to feed on fish that are concentrated in these areas as well. River otters use flooded areas that are dry throughout most of the year.

When the river drains, mammals on the refuge include white-tailed deer, coyote, fox squirrel, cottontail rabbit, Louisiana black bear, mink, beaver, nutria, raccoon, opossum, and armadillo. Neotropical migrant songbirds that breed on the area include Northern parula, prothonotary warbler, painted bunting, yellow-billed cuckoo, and swallow-tailed kite. Resident birds include wild turkey, wood duck, carolina wren, pileated woodpecker, and red-shouldered hawk. Wintering birds include blue-winged weal, Northern pintail, American wigeon, and American woodcock. Hundreds of additional species of birds use the area but are too numerous to mention here. Reptiles and amphibians found on the refuge include American alligator, yellow-bellied water snake, red-eared slider, green treefrog, bullfrog, and bronzed frog. Dozens of butterfly species occur including red-spotted purple, viceroy, Eastern tiger swallowtail, giant swallowtail, and Horace's duskywing.

3.4 Threatened and Endangered Species

3.4.1 Bald Eagle

Bald eagles are occasionally seen throughout the year on the refuge. One nest has been confirmed on the refuge and is checked annually to observe reproductive success of the nesting pair. For two consecutive years, juvenile bald eagles have been observed on the nest in addition to observing the adults foraging nearby. The nest is located in an area of the refuge open to hunting, however, it is in a densely forested area that is logistically challenging for the public to access because there are no roads or trails in that area. If in the future the public begins to access that area of the refuge more and there is cause for concern, then a ¼ mile no-hunting restriction zone will be implemented around the location of the nest.

3.4.2 Louisiana Black Bear

Louisiana black bears (*Ursus americanus luteolus*) occasionally utilize the refuge throughout the year. Several sightings are reported each year by the public; however, there is not a breeding population of black bear on the refuge. Most bears are likely passing through the area or may den for the winter.

3.5 Fishery Resources

As the Mississippi River rises it carries numerous fish species into the refuge. These include largemouth bass, bream, channel catfish, crappie, buffalo, and alligator gar. As the river drops, fish become concentrated in the canals that drain the area. Pools that remain filled with water can hold fish for months. The bigger lakes in the area are breeding grounds for some of these species. The endangered pallid sturgeon is known to occur in the Mississippi River near the refuge. The extent of the mussel population on the refuge is currently unknown.

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.

3.7 Socio Economic

West Feliciana Parish is a parish rich in southern charm and history and with an economy based on tourism, art, recreation, and commerce. Population estimates, total households, housing units, and median annual household incomes for the parish are listed below in Table 1 (U.S. Census Bureau, 2005 data).

Table 1. Demographics of West Feliciana Parish, LA (U.S. Census Bureau, 2005).

Parish	*Population*	*Households*	*Housing Units*	*Median Annual Household Income ($)*
West Feliciana	15,199	3,645	4,812	$37,012

Hunting is a traditional form of outdoor recreation for many people in West Feliciana Parish and for some households, hunting participation provides food at a much cheaper cost. The number of licenses sold to hunters in West Feliciana Parish during the 2004/05 hunting season was 627 respectively (*LDWF, personal comm.*). After adjusting for the 15% of Louisiana hunters that are seniors over age 65 and youth under age 16 that are not

required to buy licenses, the number of hunters for West Feliciana Parish increases to 721 (*LDWF, personal comm.*).

In addition, the refuge receives many of its hunters from the highly populated town of Baton Rouge, which is located in East Baton Rouge Parish approximately 25 miles south of St. Francisville, and also from communities located across the Mississippi river in Pointe Coupee Parish.

Chapter 4 Environmental Consequences

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.

4.1 Effects Common to all Alternatives

4.1.1 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.

4.1.2 Public Health and Safety

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

4.1.3 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 and off-road vehicle 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

Alternative A – 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. Limited hunting of migratory and resident birds while providing areas of sanctuary will produce benefits to both habitat and populations. Most waterfowl hunting is limited to specific areas, therefore, reducing the trampling of vegetation. Limiting the areas open to deer, rabbit, squirrel, woodcock, turkey, feral hog, nutria, raccoon, coyote and beaver hunting also will reduce the amount of vegetation affected. The hunting of deer, feral hogs, nutria, and beaver would positively impact wildlife habitat by promoting plant health and

diversity, reducing hog wallowing which destroys vegetation and compacts soils, and increasing tree seedling survival. Hunting of beavers would decrease their populations and in effect, increase the health of forested wetlands.

Impacts to vegetation should be minor. Hunter density is estimated to be an average of 2 hunters/1,000 acres throughout the hunting season. Refuge-regulations would not permit the use of ATVs off of designated trails. Vehicles would be confined to existing roads and parking lots.

Alternative B – No Hunting

Under this alternative, the Refuge would not be opened to deer, feral hogs, ducks, geese, gallinules, coots, woodcock, squirrel, rabbit, nutria, raccoon, coyote, and beaver hunting. When deer are overpopulated, they over-browse their habitat, which can change the structure and plant composition of a forest. The refuge has reforested or allowed natural regeneration on approximately 2,762 acres with bottomland hardwood tree species in recent years. Young tree seedlings (1-9 years old) can be killed by over-browsing. Failure to establish this forest would have negative impacts on future resident and non-resident wildlife populations as well as the purpose of the refuge. Feral hogs are considered a threat to the biological integrity of the refuge because they are an extremely invasive, non-native species. By rooting and wallowing, feral hogs destroy wildlife habitat. Damage includes erosion along waterways and wetlands and the loss of native plants. Beavers can kill thousands of acres of bottomland hardwood trees by damming sloughs and brakes. Forests inundated into the growing season quickly show signs of stress and trees eventually die. Beavers can have negative impacts on future resident and non-resident wildlife by killing large portions of the few remaining intact bottomland hardwood forests remaining in the United States.

Although hunters would not be traversing across designated areas open to hunting, which could cause damage to individual plants by trampling vegetation, non-consumptive users would still be able to walk throughout these areas.

Alternative C – Open Entire Refuge to Hunting

The biological integrity of the refuge would be not protected under this alternative, and the refuge purpose of conserving wetlands for wildlife would not be achieved. Sanctuary areas for migratory and resident game birds would not be provided and impacts to habitat would increase above Alternative A and B. Without limiting the areas open to hunting the amount of vegetation affected will increase. The hunting of deer, feral hogs, nutria, and beaver would positively impact wildlife habitat by promoting plant health and diversity, reducing hog wallowing which destroys vegetation and compacts soils, and increasing tree seedling survival. Hunting of beavers would decrease their populations and in effect, increase the health of forested wetlands. This effect on habitat may initially be beneficial; however, it is possible that hunted species populations could be overhunted and in turn benefits of harvesting on habitat could be reversed.

Impacts to vegetation would be more than Alternative A and B levels. Hunter density is estimated to be an average of 2 hunters/1,000 acres throughout the hunting season; however, this would occur on all areas of the refuge. Refuge-regulations would not permit the use of ATVs off of designated trails. Vehicles would be confined to existing roads and parking lots.

4.2.2 Impacts to Hunted Wildlife

Alternative A – Proposed Action

Additional mortality of individual hunted animals would occur under this alternative, estimated by the refuge to be a maximum of 350 deer, 2000 squirrels, 500 ducks, 5 snow geese, 5 white-fronted geese, and 20 woodcock annually. Estimates for other hunted species (beaver, nutria, rabbit, coyote, feral hog) would be less than 20 individuals per species. 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.

Hunting of migratory birds would fit well within Mississippi flyway objectives and national, regional, and local populations would not be adversely affected. Hunting of deer, hog, beaver, coyote, rabbit, and nutria 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 and rabies in raccoon and opossum, 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, bear, turkey, and squirrel.

All seasons will be coordinated with and within the framework of the Louisiana Department of Wildlife & Fisheries Commission. Some hunting regulations may be more restrictive than State regulations to meet refuge objectives. The recreational hunting program will be an adaptive program. If necessary, modifications may be made to refuge specific regulations and/or the hunt program based on harvest data and/or public use issues.

This alternative will allow the refuge to maintain existing sanctuary areas. Since the primary refuge objective is to preserve wintering habitat for mallards, pintails, and wood ducks, care will be taken to minimize human disturbance in the sanctuary areas. Sanctuary areas will be seasonally closed to all activities.

Alternative B – No Hunting

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.

Deer, hog, beaver, coyote, raccoon, rabbit, and nutria populations could increase above the habitat's carrying capacity in the area not opened to hunting. Migratory and resident game birds could overpopulate an area and cause large groups of birds to congregate. The likelihood of starvation and diseases, such as bluetongue and EHD in deer and avian cholera and bird flu in migratory and resident birds, would increase, as would 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, bears, turkeys, squirrels and many other birds and mammals.

Alternative C – Open Entire Refuge to Hunting

Additional mortality of individual hunted animals would occur under this alternative, estimated by the refuge to initially be a maximum of 500 deer, 3000 squirrel, 1,000 ducks, 25 snow geese, and 25 white-fronted geese annually. Estimates for other hunted species (beaver, nutria, rabbit, woodcock, coyote, and feral hog) would be less than 80 individuals per species. This estimate would possibly decrease substantially after the first few years of hunting.
Hunting of migratory birds would fit well within Mississippi flyway objectives and national, regional, and local populations would not be adversely affected; however the use of the refuge would most likely decrease due to not maintaining closed areas. If the entire refuge is open to hunting waterfowl sanctuary areas would not be maintained and the refuge could not provide the undisturbed habitat needed to support the recommended population objectives or the objectives for which the refuge was established.

Hunting of deer, hog, beaver, coyote, raccoon, rabbit, and nutria would help maintain their populations at or below carrying-capacity; however these populations may be kept so far below carrying-capacity it may affect local populations on the Refuge. 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, bear, turkey, and squirrel.

All seasons will be coordinated with and within the framework of the Louisiana Department of Wildlife & Fisheries Commission.

4.2.3 Impacts to Non-hunted Wildlife

Alternative A – Proposed Action

Depredation rates of birds, turtles and their nests would decrease as populations of raccoon and coyote would be decreased through hunting under this alternative. In North Louisiana, research conducted on one population of alligator snapping turtles has shown that raccoons are responsible for depredating 93% of turtle nests (USFWS 2002). Feral hog populations would be reduced thereby decreasing predation of deer fawns, turkey polts, and small mammals.

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 low. 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 estimated current hunter density on peak days to be no more than 3 hunters/100 acres. Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted. Disturbance to the daily wintering activities, such as feeding and resting, of birds might occur, but would be transitory as hunters traverse habitat. Disturbance to birds by hunters would probably be commensurate with that caused by non-consumptive users.

Alternative B – No Hunting

Ground and shrub nesting birds and turtles are subject to high egg depredation rates if raccoon and coyote populations are not kept in check through harvest. In North Louisiana, research conducted on one population of alligator snapping turtles has shown that raccoons are responsible for depredating 93% of turtle nests (USFWS 2002). Under this alternative raccoon, coyote, and feral hog populations would increase dramatically. Non-native hogs would increase under this alternative as would depredation rates on small mammals and deer fawns as well as ground-nesting birds.

Increased disturbance to non-hunted wildlife would not occur on the refuge; however, non-consumptive users would still be permitted to access this land, which might cause disturbance to wildlife.

Alternative C – Open Entire Refuge to Hunting

Same as Alternative A except disturbance to non-hunted species would increase above levels outlined above.

4.2.4 Impacts to Endangered and Threatened Species

Alternative A – Proposed Action

This alternative would not have adverse affects to threatened and endangered species on the refuge. A Section 7 Evaluation associated with this assessment was conducted, and it was determined that the proposed action is not likely to adversely affect bald eagle and Louisiana black bear (Refer to Section 7 Evaluation for Sport Hunting on Cat Island NWR).

Alternative B – No Hunting

Because current public use levels on the refuge would remain the same, there would be no increased chance of adversely affecting threatened and endangered species.

Alternative C – Open Entire Refuge to Hunting

Same as Alternative A.

4.2.5 Impacts to Refuge Facilities (roads, trails, parking lots, levees)

Alternative A – Proposed Action

Additional damage to roads and ATV trails due to hunter use during wet weather periods might occur. The current refuge hunt program on 8,000 for the past five years has shown these impacts to be minimal. There would be some costs associated with a hunting program in the form of road and ATV trail maintenance, instructional sign needs, and law enforcement. These costs should be minimal relative to total refuge operations and maintenance costs and would not diminish resources dedicated to other refuge management programs.

Alternative B – No Hunting

Additional damage to roads and ATV trails due to hunter use during wet weather periods would not occur; however, other users would still be using roads, thereby necessitating periodic maintenance. Additionally, costs associated with an expanded hunting program in the form of road and levee maintenance, instructional sign needs, and law enforcement would not be applicable.

Alternative C – Open Entire Refuge to Hunting

Increased additional damage to roads and ATV trails due to hunter use during wet weather periods might occur. Increased costs associated with road and ATV trail maintenance, signage, and law enforcement would increase possibly detracting from resources dedicated to other refuge management programs.

4.2.6 Impacts to Wildlife Dependant Recreation

Alternative A – Proposed Action

As public use levels expand across time, unanticipated conflicts between user groups may occur. 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. Raccoon hunting (which the State allows to be open all year) would be limited to daylight hours and animals may only be taken incidental to refuge hunts with weapons legal for that hunt until the daily bag limit of game is taken. This would limit conflicts between raccoon hunters and deer gun hunters. This would also limit disturbance to wildlife during the spring and summer when most

species reproduce. Youth waterfowl hunts coincides with other hunt season and would provide youth the opportunity to hunt without having to compete with adults. Conflicts between hunters and non-consumptive users might occur but would be mitigated by time (non-hunting season) and space zoning. The refuge would focus non-consumptive use (mainly birdwatching and other wildlife viewing) in the 800 acres that is closed to hunting. These "no hunting" areas on the refuge would facilitate all six of the Priority Public Uses as defined in the Refuge Improvement Act of 1997.

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 Cat Island NWR and the National Wildlife Refuge System and public demand for more hunting would be met. Waterfowl and white-tailed deer hunting are both very popular activities in South Louisiana. Opening designated areas of the refuge to hunting would allow the general public an opportunity that was once afforded only to paying lease-holders. 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, often costing a person $300-$2000/year for membership. Hunting will allow for the consumptive use of a renewable resource without adversely impacting wildlife populations, habitat, or other refuge objectives. Resident and migratory game animals will be harvested at levels sufficient to provide a quality, recreational experience while maintaining healthy, viable wildlife populations. This alternative would allow youth the opportunity to experience a wildlife-dependant recreation, instill an appreciation for and understanding of wildlife, the natural world and the environment and promote a land ethic and environmental awareness.

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.

Alternative B – No Hunting

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 Cat Island NWR and the National Wildlife Refuge System; nor would the Service be meeting public use demand. Public relations would not be enhanced with the local community. Under this alternative, youth would be unable to experience hunting. This would be a missed opportunity to promote youth, wildlife-dependant recreation.

Alternative C – Open Entire Refuge to Hunting

Same as Alternative A except as public use levels expand across time, conflicts between user groups would occur under this alternative. 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. Under this alternative, the entire refuge would be open to hunting throughout the entire

hunting season. No areas would be closed to hunting or specifically designated as sanctuary areas, as proposed in Alternative "A". Conflicts between non-consumptive and consumptive users would occur.

Impacts associated with solitude are expected to increase given time and space zone management techniques would not be used to avoid conflicts among user groups.

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. Cat Island 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, opening Cat Island National Wildlife Refuge to hunting should not have cumulative impacts on migratory birds. Cat Island NWR estimates a maximum additional 500 ducks, 5 snow geese, and 5 white-fronted geese would be harvested each year. Waterfowl hunting is only allowed until noon each day, during the season, which is more restrictive than regulations set forth by Louisiana Department of Wildlife and Fisheries (LDWF). This harvest impact represents 0.0005% and negligible take of geese of Louisiana's four-year average harvest of 921,990 ducks, 60,830 snow geese, and 72,611 white-fronted geese (USFWS 2005).

Although woodcock are showing declines in numbers on their breeding grounds, habitat loss is considered to be the culprit, not hunting. This assertion was tested in a study conducted by the U.S. Geological Patuxent Wildlife Research Center in 2005 (McAuley *et al.* 2005). Results showed no significant differences in woodcock survival between hunted and non-hunted areas. Furthermore, the authors concluded that hunting was not having a considerable impact on woodcock numbers in the Northeast (McAuley *et al.* 2005).

An estimated 24,000 woodcock were harvested in the 2005/06 season in the state of Louisiana. Louisiana's harvest of 24,000 woodcock represented 0.5% of the estimated 4.6 million North American woodcock population. Limited woodcock habitat exists during most of the hunting season because back water flooding inundates the refuge. During extremely dry years, when more woodcock habitat becomes available, they may experience higher harvest rates. With such relatively few woodcock being currently harvested on the refuge, the opening of additional acreage to hunting as stated in the proposed action should have no adverse cumulative effects on their local, regional or flyway populations. Woodcock hunting is not popular in South Louisiana, the refuge draws less than 10 woodcock hunters a year

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. At Cat Island NWR, season length is more restrictive for waterfowl 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 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). Therefore, only local impacts occur.

Deer herd health checks are conducted every 5 years on Cat Island NWR by the Southeast Cooperative Wildlife Disease Study at the University of Georgia. In 2003, the

health check report stated that "...from a health perspective the [deer] population density probably needs to be contained near its present level". The 8,000 acres of refuge lands currently open to deer gun hunting for two days and deer muzzleloader season for two days have averaged less than 40 deer harvested per year.

Harvest and survey data confirm that decades of deer hunting on private lands surrounding Cat Island NWR (using bait and a longer season) have not had a local cumulative effect on the deer population. LDWF estimate 209,200 deer were harvested throughout the state in 2005/06. The average annual statewide harvest since 1995 is 234,000 deer. The refuge estimates an additional maximum 350 deer would be harvested under the proposed action, representing only 0.001% of the long-term average state harvest. Hunting in limited areas on the refuge for a very limited deer gun, archery, and muzzleloader hunt should not have cumulative impacts on the deer herd.

4.3.1.2.2 Feral Hogs

Feral hogs are an extremely invasive introduced, non-native species and is not considered a game species by the State of Louisiana. 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 negative 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.

4.3.1.3 Small Game (Squirrel, Rabbit, Raccoon, Coyote, and Beaver)

Squirrels, rabbit, raccoon, and opossum cannot be affected regionally by refuge hunting because of their limited home ranges. Only local effects will be discussed. Opossum and raccoon are hunted primarily at night. Raccoon are more sought after than opossum by the public. Hunting helps regulate opossum and raccoon populations; however, unless the popularity of this type of hunting increases, raccoons and opossums numbers will always be higher than desired. When these species become extremely overabundant, diseases such as distemper and rabies reduce the populations. However, waiting for disease outbreak to regulate their numbers can be a human health hazard. Cumulative adverse impacts to raccoon and opossum are unlikely considering they reproduce quickly, are difficult to hunt due to their nocturnal habits, and are not as popular for hunting as other game species.

Studies have been conducted within and outside of Louisiana 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. The refuge consulted with biologists at the Louisiana Dept of Wildlife and Fisheries (LDWF) in association with this assessment on the cumulative impacts of hunting on rabbits and squirrel. The statewide Louisiana harvest for 2005/06 was estimated at 1,253,900. On Cat Island NWR, from 2001-2004, hunter harvest data reports indicated a peak of 1944 squirrels/season, representing 0.002% of the state's harvest. LDWF estimated 255,200 rabbits killed by hunters in the 2005/06 season. Under the proposed action, the refuge estimates a maximum additional 20 rabbits would be harvested, representing only 0.00008% of the statewide harvest. Gray squirrels, fox squirrels, eastern cottontails, and swamp rabbits are prolific breeders and their populations have never been threatened by hunting in Louisiana even prior to the passing of hunting regulations as we know them today.

Coyotes and beaver cannot be affected regionally by refuge hunting because of their limited home ranges. Only local effects will be discussed. Coyotes and beaver reproduce rapidly, are overpopulated, and can have adverse effects on their habitats. Coyotes depredate small mammals, songbirds and their nests, turkey and quail nests and any other animal they opportunistically encounter. When coyote numbers are high, local wildlife populations can be negatively affected. Coyotes are probably the most resilient species in North America. Today regulated hunting has no negative cumulative impact on their populations. Hunting of both coyotes and beaver is beneficial in helping meet refuge objectives.

4.3.1.4 Non-hunted Wildlife

Non-hunted wildlife would include 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 seasons 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 wildlife under the proposed action are expected to be negligible for the following reasons. However, 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 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 current hunter density on peak days to be no more than 3 hunters per 100 acres. During the vast majority of the hunting season, hunter density is much lower (2 hunters/1,000 acres). Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to roads, all-terrain vehicles (ATV) are restricted to ATV trails, 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 relevant to Cat Island 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 Central Louisiana 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 the bald eagle and the Louisiana black bear. A Section 7 Evaluation was conducted in association with this assessment for opening hunting on Cat Island 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. Actually, in the past few years, an active bald eagle nest on the refuge has been observed with juvenile birds on the nest, indicating reproductive success. Though this nest is located in a hunting area, the densely forested habitat and lack of roads or trails in that area prohibits most hunters from accessing the area.

Few Louisiana black bears occur on the refuge and encounters by hunters with bears would be rare. Prohibiting the use of bait would also contribute to keeping bear/hunter interactions low.

Refer to the Section 7 Evaluation for the 2007 Sport Hunting on Cat Island 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.

The opportunities for hunting would occur 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, such as waterfowl sanctuaries, would be closed seasonally to hunting to minimize disturbance to wintering waterfowl.

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, and trails. Maintenance or improvement of existing facilities (i.e. parking areas, roads, trails) 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, and trails 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, licenses, 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' automobile and off-road vehicle emissions 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 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 Sport Hunting Plan for Cat Island 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. Changes to the hunt program in the past decade have been made to open hunting on more land within the refuge. These lands were usually those that had been recently acquired. 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 Cat Island NWR, conduct hunting programs within the framework of State and Federal regulations. Cat Island NWR is at least as restrictive as the State of Louisiana (squirrel, rabbit, woodcock) and in many cases more restrictive (deer, hog, waterfowl, raccoon, coyote, beaver). 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 Louisiana Department of Wildlife and Fisheries. Additionally, refuges coordinate with LDWF annually to maintain regulations and programs that are consistent with the State management program.

Chapter 5 Consultation and Coordination with Others

The Louisiana Department of Wildlife and Fisheries (LDWF) concurs and fully supports the regulated consumptive public use of the natural resources associated with the Cat Island NWR. Throughout the year, the Refuge consults with State LDWF Biologists and Enforcement Agents on various wildlife management issues. Additionally, the Service and State LDWF meet annually to present and receive feedback on proposed refuge hunting regulations for the upcoming hunting season. 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.

Chapter 6 Regulatory Compliance

The actions proposed in the preferred alternative will be carried out according to all applicable local, State and Federal laws.

Chapter 7 Cat Island National Wildlife Refuge Objectives

The purposes for which Cat Island NWR was established are:

1. to conserve, restore and manage habitats to contribute to migratory bird population goals;

2. to conserve, restore, and manage aquatic resources;

3. to conserve, enhance, and restore the historic native bottomland community and its associated fish, wildlife, and plant species;

4. to conserve, enhance, and restore habitat to maintain and assist in the recovery of endangered and threatened plants and animals; and

5. to encourage the use of volunteers and facilitate partnerships among the Service, local communities, conservation organizations, and others to promote public awareness of the resources of the refuge and the National Wildlife Refuge System.

Appendix Literature References

Campbell, L. Janice. 1981. A Cultural Resources Survey of Pre-Selected Portions of the Upper Ouachita National Wildlife Refuge, Union and Morehouse Parishes, Louisiana. Report of Investigations No. 39. New World Research, Inc.,

Louisiana Dept. of Wildlife and Fisheries. 2003. Deer harvest summary 1994-2003: Georgia Pacific Wildlife Management Area. Technical Report. District II, Monroe, Louisiana.

Mott, S.E., R.L. Tucker, D.C. Guynn, H.A. Jacobson. 1985. Use of Mississippi bottomland hardwoods by white-tailed deer. Proceedings of the Southeast Association of Fish and Wildlife Agencies 39: 403-411.

McAuley, D.G, J.R. Longcore, D.A. Clugston, R. B. Allen, A. Weik, S. Staats, G.F. Sepik, Wl Halteman. 2005. Effects of hunting on survival of American woodcock in the northeast. Journal of Wildlife Management 69(4): 1565–1577.

Savage, L. 2005. Wild turkey poult production survey 2005. Technical Report. Louisiana Dept. of Wildlife and Fisheries, Baton Rouge, Louisiana.

U.S. Fish and Wildlife Service. 1988. Forest Habitat Management Plan, Upper Ouachita National Wildlife Refuge, Union and Morehouse Parishes, Louisiana.

U.S. Fish and Wildlife Service. 2002. Alligator Snapping Turtle Nest Survey at Black Bayou Lake NWR, Monroe, Louisiana.

U.S. Fish and Wildlife Service. 2005. Waterfowl harvest and population survey data: Estimates of U.S. harvest, hunting activity, and success derived from the state-federal cooperative harvest information program. Division of Migratory Bird Management, Columbia, Missouri, 92 pp.

U.S. Fish and Wildlife Service. 2006. Waterfowl population status, 2006. Division of Migratory Bird Management, Laurel, Maryland, 60 pp.

Vangilder, L.D. 1992. Population dynamics. Pages 144-164 *in* J.G. Dickson, *ed.* The wild turkey: biology and management. Stackpole Books, Harrisburg.

Appendix Response to Public Comments

The Service solicited public comment for the draft Sport Hunt Plan and Environmental Assessment for Cat Island National Wildlife Refuge from March 5- April 5, 2007. Copies of the document were placed in the refuge headquarters, the West Feliciana Parish Library in Saint Francisville, Louisiana, and news releases announcing its availability for comment were placed in three local newspapers.

We received thirteen comments overall on our draft EA titled Sport Hunt Plan for Cat Island National Wildlife Refuge. Twelve of these comments were in support of the Service's Preferred Alternative in the draft EA. One comment was in opposition to the Preferred Alternative.

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.

We received a letter from the Safari Club International (SCI) that "suggests the Hunt Plan and EA feature more prominently the refuge's consultation with the state fish and game agency," and include the state agency's input about how hunting on the refuge assists with their efforts to manage state wildlife populations. The Service agrees with this comment and adjusted the language in Chapter 5 of the EA to better reflect our working relationship and consultation efforts with the State fish and game agency.

SCI also recommends that the EA should include "an explanation of how the control and/or reduction of hunted populations, considered collectively with similar wildlife management efforts on numerous refuges throughout the National Wildlife Refuge System, conserves the cumulative health of the habitat of the flyway in which the refuge is located and the migratory birds that utilize that flyway." The Service notes the comment.

Sport Hunting

Decision Document Package

for

CAT ISLAND NWR

Contents

4. FONSI

FINDING OF NO SIGNIFICANT IMPACT

2007 Sport Hunting Plan for Cat Island National Wildlife Refuge

The U.S. Fish and Wildlife Service proposes to open areas of the refuge to hunting on Cat Island NWR. Hunting activities will be permitted, but administratively limited to those areas specified in the refuge-specific regulations. All or parts of the refuge may continue to be closed to hunting at any time if necessary for public safety, to provide wildlife sanctuary, or for administrative reasons. Alternatives considered included: proposed action (open limited hunt), no action (no hunting), and open entire refuge to hunting.

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

Proposed action- Under this alternative, a recreational hunting program would be established on most of Cat Island NWR (approximately 8,000 acres). A portion of the refuge (about 800 acres) would remain closed to hunting to develop environmental education and interpretation sites. All or parts of the refuge may continue to be closed to hunting at any time if necessary for public safety, to provide wildlife sanctuary, or for administrative reasons. The hunt program would comply with all State, Federal, and refuge-specific regulations, and Service policies and directives.

No action alternative- Under this alternative, there would not be any recreational hunting on Cat Island Wildlife Refuge. There would be no change in public use opportunities or management strategies.

Open Entire Refuge- To Hunting Under this alternative, recreational hunting would be allowed on all areas of Cat Island National Wildlife Refuge.

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 Cat Island NWR and the National Wildlife Refuge System, and meet public demand.

2. The preferred alternative is compatible with general Service policy regarding the establishment of hunting on National Wildlife Refuges.

3. The preferred alternative is compatible with the purpose for which Cat Island 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. Local businesses would benefit from hunters visiting from surrounding parishes.
5. The Service will be perceived as a good steward of the land by continuing traditional uses of land in Louisiana and by allowing youth an opportunity to learn about hunting.

Measures to mitigate and/or minimize adverse effects have been incorporated into the proposal. These measures include:

1. "No hunt zones" will be created on the refuge around designated hiking trails for non-consumptive public uses.
2. Motorized vehicles and ATV's will only be permitted on designated roads and ATV trails.
3. Refuge will be open to public access from 4:00 a.m. to one hour after sunset.
4. Refuge brochures and publications of hunt information in local newspapers and on the refuge's website will inform hunters of refuge regulations.
5. Waterfowl hunting will be limited to Tuesday, Thursdays, Saturdays and Sundays until 12:00 noon.
6. The refuge law enforcement program and closely regulated hunting season will ensure hunt regulation compliance and will protect refuge resources.

The proposal is not expected to have any significant adverse effects on wetlands and flood plains, pursuant to Executive Orders 11990 and 11988 because this area has historically had a high use of recreational hunting with no detrimental long-term effect on wetlands.

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

- U.S. Fish and Wildlife Service, Div. of Ecological Services, Lafayette, LA
- Louisiana Department of Wildlife and Fisheries, Office of the Secretary, Wildlife Division

Copies of the Environmental Assessment are available by writing:

Cat Island National Wildlife Refuge
401 Island Road
Marksville, LA 71351

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):

1. **Both beneficial and adverse effects have been considered and this action will not have a significant effect on the human environment (EA, page 29-36).**

2. **The project will not significantly affect 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 29, 30, 35, 43).**

3. **The effects on the quality of the human environment are not likely to be highly controversial (EA, page 28).**

4. **The actions do not involve highly uncertain, unique, or unknown environmental risks to the human environment (EA, page 29, 30).**

5. **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 43, 44).**

6. **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, pgs. 36-44).**

7. **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 29, 43).**

8. **The actions are not likely to adversely affect endangered or threatened species, or their habitats (Intra-Service Sect. 7 Biological Evaluation Form attached to EA).**

9. **The actions will not lead to a violation of federal, state, or local laws imposed for the protection of the environment (EA, pages 44, 45).**

References: Environmental Assessment of Sport Hunt Plan for Cat Island NWR, Hunting Plan, Compatibility Determination, Refuge-specific Regulations, Intra-Service Section 7 Evaluation.

Regional Director

4/20/07

Date