

Sport Hunting
Decision Document Package
for
St. Marks NWR

Contents
Environmental Assessment

Environmental Assessment

2012 Sport Hunt Plan

on

ST. MARKS NATIONAL WILDLIFE REFUGE
Wakulla County, Florida

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Chapter 1 Purpose and Need for Action

The U.S. Fish and Wildlife Service (Service) has prepared this Environmental Assessment for St. Marks National Wildlife Refuge in compliance with the National Environmental Policy Act of 1969 and the National Wildlife Refuge System Improvement Act of 1997. The St. Marks National Wildlife Refuge is a model for conserving the natural diversity of plants and animals, preserving cultural resources, and providing opportunities for research, environmental education, and quality outdoor recreation. The refuge links other north Florida wild lands with vital habitat for threatened and endangered species, migratory birds, and resident wildlife, and protects the rich resources of Apalachee Bay. Conservation of the natural health and beauty of the refuge is our promise to the community and future generations.

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 refuge has an existing hunt plan, compatibility determinations, and an approved Comprehensive Conservation Plan (CCP) that address hunting. The purpose of this Environmental Assessment is to update and implement a Sport Hunt Plan for the refuge as identified in the refuge's Comprehensive Conservation Plan (FWS 2006). Specifically, Goal 4. Visitor Services of the CCP includes an objective 3 to "provide biologically sound hunting opportunities commensurate with population status of game species on the refuge". Objective 3 includes two strategies. The first is to assess the feasibility of incorporating youth hunt programs into the refuge hunt program. The second is to update the current Hunt Plan (1983). The proposed action would address Goal 4, Objective 3 and these two strategies.

The proposed 2012 Sport Hunt plan and EA address the need to evaluate whether the proposed action of opening additional lands and hunts to the existing hunt program will have any significant environmental effects. If not, a Finding of No Significant Impacts would be issued and the refuge's hunt plan and hunting compatibility determinations would be revised and updated as a result of this proposed action.

Chapter 2 Alternatives Including the Proposed Action

This chapter discusses the alternatives considered for hunting on St. Marks National Wildlife Refuge. These alternatives are: the 1) no action which continues with current management of the hunt program and 2) proposed action which implements the Refuge's 2012 Sport Hunting Management Plan with the addition of the St. Marks Unit Hunting Area.

Hunting has occurred on the lands included in St. Marks NWR since before the refuge's establishment in 1931. The negative impacts of overpopulation of white-tailed deer and non-native feral hogs have been documented on the Refuge. "White-tailed deer are also one of a few species of wildlife whose over-abundance can seriously degrade its own habitat as well as the habitat of other wildlife species, and inflict serious damage on agricultural crops and ornamental plantings. Their over-abundance can also facilitate the outbreak of diseases and parasites that can threaten the health of both livestock and humans. Deer harvest management will likely continue to be a necessary and desirable practice in Florida." (FWC 2008). Feral hogs are an invasive exotic species that cause damage to the environment, prey on native

species, and increase the spread of other invasive species such as Chinese tallow. These negative impacts have altered the habitat the refuge was created to protect. The harvest of small game and wild turkey will allow a traditional use of the land to continue without adding additional mortality to the population.

2.1 No Action Alternative: Current Management

Under this alternative, hunting would be limited to the approximately 40,000 acres currently open to hunting and to species currently allowed to be hunted, including deer, turkey, feral hogs, gray squirrel, rabbit, and raccoon. There would be no change to current public use and wildlife management programs.

Hunting is currently conducted in the Wakulla and Panacea units of the refuge in the following manner:

- One five day archery hunt is conducted for white-tailed deer and feral hog in each unit on different dates.
- One three day modern gun hunt is conducted for white-tailed deer and feral hog in each unit on different dates.
- One two week small game season is conducted for feral hog, gray squirrel, rabbit and raccoon in each unit concurrently in both units.
- One five day spring turkey hunt conducted concurrently in both units.
- One three day mobility impaired hunter opportunity conducted in one unit.

Hunting in the St. Marks Unit is currently conducted in the following manner:

- One youth deer hunt in the Port Leon area of the St. Marks unit. This hunt is being conducted in partnership with the education division of the Florida Wildlife Conservation Commission.
- There is a small game hunt conducted in the Aucilla portion of the St. Marks Unit conducted concurrently with the hunts in the Panacea and Wakulla Units.

Specific hunting regulations are printed in brochure form and posted annually with the current season dates, bag limits, and closed areas. Season length and bag limit are adjusted annually based on harvest needs and refuge funding availability. The 2012 Brochure contains specific information for the current St. Marks Refuge Hunting Program. (see attached brochure, map is contained in Appendix 2)

The St. Marks National Wildlife Refuge currently offers quota hunts for White-tailed Deer and Eastern Wild Turkey. The Florida Fish and Wildlife Conservation Commission (FWCC) is currently handling all quota permitting through local tax collectors offices and web-based programs. According to FWCC data, and our biological and public use data, St. Marks NWR conventional gun quota hunts rival the top public hunts in the state with over 5percent success rate. We currently offer 230 slots for conventional weapons, 400 slots for archery, and 15 slots for Mobility Impaired hunters. We offer 100 slots for Spring Gobbler Turkey season. Small game permits, that also permit take of feral hogs, are available as non-quota permits.

2.2 Proposed Action: 2013 Sport Hunting Plan With the addition of the St. Marks Unit hunting area and other lands included in the approved acquisition boundary.

We propose to open additional lands in the St. Marks Unit that are currently within our acquisition

boundary and are being acquired in phases. The following areas are proposed to be opened to hunting (see Appendix 2):

- Area A: Lands in the approved acquisition boundary that are adjacent to the Wakulla or Panacea Unit.
- Area B: The Port Leon Portion of the St. Marks Unit including portions of the wilderness area.
- Area C: The area south of Highway 98, east of Lighthouse Road and north of the Tram Road (Refuge Road 105)

The proposed hunts for each area will be:

- Area A: These lands would be included in the current Wakulla and Panacea hunt units. The hunts on these lands would be the same as the No Action alternative listed above.
- Area B: In addition to the youth deer hunt, we propose to open a youth spring turkey hunt. These hunts would initially be conducted in partnership with the education division of FWC. St. Marks may continue these hunts even if FWC is not a partner. We also propose allowing archery hunting for white-tailed deer and feral hog, gun hunting of white-tailed deer and feral hog, small game hunting for gray squirrel, raccoon, and rabbit, and spring turkey hunting. Season length and bag limits will be evaluated and adjusted annually based on harvest needs and refuge funding.
- Area C: As lands are purchased in these two areas, we also allow archery hunting for white-tailed deer and feral hog, gun hunting of white-tailed deer and feral hog, small game hunting for gray squirrel, raccoon, and rabbit, and spring turkey hunting. Season length and bag limits will be evaluated and adjusted annually based on harvest needs and refuge funding.

Every effort will be made to coordinate all hunting seasons with FWC. On lands adjacent to active FWC Wildlife Management Areas, partnerships will be considered to allow St. Marks Lands to be hunted as a part of the Wildlife Management Area.

The quota permit system or some form of the system described above will continue. A quota system for the small game hunt will be considered if hunter pressure results in a reduced quality hunt.

Chapter 3 Affected Environments

3.1 NATIVE VEGETATION/PLANT COMMUNITIES/FLORA

The refuge encompasses more than 43 miles of coastal salt marshes backed by hardwood swamps, hardwood hammocks, and upland pine communities within Florida's Big Bend region. The dominant forces affecting vegetation characteristics are ground water table and soil moisture gradient in response to minor elevation changes, fire history and current fire management practices, historical timber harvest, and current timber management practices.

While elevation on the refuge ranges from sea level to 45 feet, subtle changes in topography result in substantial vegetation differences. Historically, frequent low-intensity fires burned the uplands every 1 to 8 years, resulting in a classic mosaic of longleaf and slash pine-dominated flatwoods and sandhills on the refuge's uplands. Prior to refuge acquisition, much of the original growth of pine and cypress was commercially harvested for lumber. Subsequent to refuge acquisition in 1931, approximately 1,900 acres of brackish and salt marshes were enclosed by levees and water management structures. These areas, formerly dominated by salt-tolerant marsh vegetation, now support a diverse assemblage of freshwater and brackish emergent, aquatic, and floating plants, including sedges, rushes, spikerushes, cattails, water lilies, and widgeon grass.

The following are generalized habitat descriptions of the four most common habitat assemblages on the refuge and collectively account for 91 percent of the refuge area. The remaining 9 percent of vegetation assemblages are primarily Mesic Hammock, Maritime Hammock, and various human-altered habitat types.

3.1.1 Salt Marsh (Tidal Marsh)

Salt marshes cover 29 percent of lands within the refuge, forming the immediate landward side of the low energy coastline along Apalachee Bay and extending up tidally influenced rivers. They are plant communities of the intertidal zone, the transition area between terrestrial and marine environments. The dominant plant is black needlerush, found in expansive stands with few other plants, generally slightly elevated above average tidal influence. The lowest fringes of the salt marsh, inundated at least twice daily by tides, are dominated by smooth cordgrass. Saltmeadow cordgrass transitions between the tidal reach and the highest portions of the salt marsh community, which are only flooded during the highest tides or storm surges. There a mix of herbaceous and woody salt-tolerant vegetation is found, which includes saltbush, marsh elder, Christmas berry, seaside goldenrod, sea blite, marsh hay cordgrass, saltwort, glasswort, sea purslane, coastal dropseed, and sand cordgrass.

3.1.2 Longleaf and Slash Pine Flatwoods and Sandhills

Pine-dominated uplands occupy about 28 percent of the total refuge area, and are represented by four Florida Natural Areas Inventory natural community types: mesic flatwoods, scrubby flatwoods, wet flatwoods, and sandhill. While great variation exists between these communities, all are influenced by frequent fire. They typically have pine-dominated overstory and ground cover with a highly diverse herbaceous component. Vegetation plots representative of the various pine types on the refuge document approximately 650 vascular plant species. Four of the six native pine species present on the refuge are common: longleaf, slash, pond, and loblolly. Sand pine is rare, occurring as scattered individual trees on the Panacea Unit, while spruce pine is an occasional component of some hardwood hammock forests. Woody midstory species are typically dominated by scrub oaks (e.g., turkey, bluejack, sand-live, and sand-post); hollies (e.g., large gallberry, gallberry, and yaupon); oaks (e.g., live, laurel, and water); blueberry species (e.g., sparkleberry, highbush, and deerberry); and a variety of other trees (e.g., sweetgum, persimmon, red maple, swamp bay, pond cypress, and cabbage palm). The greatest diversity of these communities resides in the understory. The most common grasses, forbs, and woody plants include wiregrass, Florida dropseed, blueberries, huckleberries, and saw palmetto.

3.1.3 Hardwood Swamp Forest and Hydric Hammock

In contrast to the pinelands of the refuge, hardwood habitat types generally have a closed canopy formed by a diverse array of overstory tree species. Lowland hardwood forests occupy 24 percent of the refuge, typically situated between saltmarsh communities and pine-dominated uplands, as a wetland mosaic interspersed within pine flatwoods, or associated with river and creek systems. Though represented by a broad array of ten FNAI community types, lowland hardwood forests frequently share several dominant common tree species: pond cypress, cabbage palm, live oak, water oak, red maple, blackgum, Southern and sweetbay magnolias, red cedar, and loblolly pine.

3.1.4 Freshwater Lakes, Marshes, and Impoundments

These habitat types collectively amount to 10 percent of the refuge's surface area, and provide a majority of the seasonal waterfowl and shorebird habitat available on the refuge. Public use activities such as wildlife viewing, photography, and freshwater fishing are highly concentrated within the roughly 1,600 acres of managed impoundments present on the refuge. Numerous natural freshwater lakes occur in the Panacea Unit, while extensive freshwater marshes are associated with the upper tidal portions of the Sopchoppy and St. Marks/Wakulla river systems. Dominant vegetation in these communities includes emergent herbaceous plants (e.g., cattails, sawgrass, spikerushes, and sedges); grasses (e.g., switchgrass, maidencane, and cord grasses); and sparse woody shrubs or small trees (e.g., willows, buttonbush, and

wax myrtle).

3.2 WILDLIFE RESOURCES

3.2.1 Birds

The documented natural communities of the refuge provide habitat for 278 species of birds throughout the year. A total of 116 are considered to be common or abundant during some seasons. Avian species that are listed under the provisions of the Endangered Species Act and documented on the refuge include the red-cockaded woodpecker, wood stork, whooping crane, and piping plover. State-listed species include the least tern, Peregrine falcon and Southeastern American kestrel. Situated between the Atlantic and Mississippi Flyways, the refuge provides important breeding, wintering, and stopover habitat for neotropical migratory birds (e.g., songbirds, raptors, and shorebirds). Few systematic surveys for migratory nongame birds are currently underway on the refuge. Red-cockaded woodpeckers are monitored and banded yearly, in accordance with the Red-cockaded Woodpecker Recovery Plan (USFWS 2003). Some nesting bald eagles, wading birds, and least terns are also surveyed annually.

St. Marks' coastal marshes, seagrass beds, and riverine estuaries are important wintering and migration areas for several diving ducks of national importance (redheads and scaup). Additionally, the managed impoundments provide a mix of habitats and water depth capabilities not readily available in adjacent marshes or associated habitats of Apalachee Bay. Teal, pintail, widgeon, mallard, and many other ducks are common in the impoundments and may exceed 8,000 birds on any single survey event.

Of the refuge's 104,826 plus acres (including the Executive Closure Areas) less than two percent have the capability for water management. When managed, the 1,600 acres of impoundments provide flexibility for creating habitats scarce throughout the refuge and Apalachee Bay ecosystem. Impoundment management adds a multitude of plant/water communities required by a large variety of migratory bird groups (e.g., fresh water, shallow depths, and multi-vegetation types).

The refuge is host to 28 species of breeding shorebirds, waterbirds, and marshbirds. Another 57 species of this group use refuge habitats for non-breeding portions of their life cycles. Examples of high-priority species found on the refuge include the black, king, and yellow rails; piping plover; little blue heron; American avocet; lesser yellowlegs; and Wilson's plover.

Tower Pond and Stoney Bayou 1 have been specifically managed for shorebirds over the past few years. Thousands of shorebirds use the other impoundments during drought conditions also, which attests to the importance of the pools in providing quality northbound and likely southbound shorebird stopover habitat when it is made available. Similarly, these conditions can benefit wading birds, terns, and other species.

The refuge also contains inland waterbird rookeries within depressional marsh, scrub/shrub, and swamp forest habitat types.

Certain small islands in Apalachee Bay (especially Palmetto and Smith) are critically important as waterbird and shorebird nesting habitat, but only Palmetto Island is owned by the refuge. These two islands support one of the few brown pelican rookeries in the northeast Gulf of Mexico. The number of nesting wading birds shifts among islands over the years, demonstrating their collective importance.

3.2.2 Mammals

Fifty species of mammals are known or suspected to occur on the refuge, including the least shrew, Seminole bat, golden mouse, rice rat, fox squirrel, gray fox, river otter, bobcat, black bear, coyote, and manatees. Presently, no surveys are being conducted to monitor the population levels of these species.

White-tailed deer are currently monitored through data collected at check stations during refuge hunts and occasionally through herd health checks by the Southeastern Cooperative Wildlife Disease Study, which is based in Athens, Georgia. The last health check was conducted in July 2002, and future checks are planned on an as needed basis.

3.2.3 Amphibians

Forty species of amphibians (21 frogs and 19 salamanders) are known or suspected to occur on the refuge. These include the barking tree frog, river frog, gopher frog, striped newt, flatwoods salamander, and one-toed amphiuma. The U.S. Geological Survey's Florida Integrated Science Center continues to examine the amphibians on the refuge as part of its Southeastern Amphibian Research and Monitoring Initiative.

3.2.4 Reptiles

Sixty-eight species of reptiles are known or suspected to occur on the refuge. These include the American alligator, 13 species of lizards, 36 species of snakes, and 18 species of turtles. The mole skink, island glass lizard, pine snake, eastern indigo snake, southern hognose snake, blue-striped garter snake, blue-striped ribbon snake, alligator snapping turtle, spotted turtle, gopher tortoise, Kemp's ridley sea turtle, and diamondback terrapin are noteworthy species. No specific monitoring of refuge reptiles is currently underway, although the amphibian surveys may generate some information on reptiles.

3.2.5 Invertebrates

No attempt has been made to catalogue the of invertebrates on the refuge, although some outside researchers have studied certain species or groups.

The monarch butterfly fall migration roosting aggregation at the lighthouse area has been studied since 1981. The monarchs have been regularly banded at the lighthouse since 1989, first by researchers, then by refuge volunteers. As an outgrowth of the popular tagging project and general interest in migrating butterflies by the visiting public, the St. Marks Refuge Association, Inc. and refuge volunteers developed a checklist of butterflies in 2002.

3.2.6 Exotic Animal Species

Considered the most destructive exotic animal on the refuge, the feral hog competes with native wildlife for mast. It preys upon small vertebrates and invertebrates. By rooting it destroys wetland vegetation including many rare species. Hog rooting also damages grassy refuge roads and dikes and provides favorable conditions for the spread of invasive exotic plants. Refuge hunts provide some control of the hog population on the Wakulla and Panacea Units. The hunting pressure does not entirely control feral hog populations, but it is a cost effective part of a Integrated Pest Management Program.

3.3 THREATENED AND ENDANGERED SPECIES

At least 60 imperiled animal and plant species have been documented on the refuge. These species are either federal or state listed as threatened, endangered, or species of special concern. There are no federally listed plants known on the refuge at this time, although one endemic species (the Godfrey's spiderlily) is under review. The Service has primary responsibility for federally listed species.

By perpetuating intact natural communities, restoring degraded natural communities and processes (e.g., fire-driven longleaf pine-wiregrass ecosystem), and eliminating adverse human impacts, the refuge can contribute to species recovery goals and benefit other plants and animals dependent on these endangered ecosystems.

A description of selected federally listed threatened and endangered species in the proposed hunt area follows:

Endangered Species

Red-cockaded Woodpecker. Management efforts have increased the refuge's red-cockaded woodpecker population from 6 occupied clusters in 1999 to 31 occupied clusters in the spring of 2012. The refuge will continue to implement intensive species-specific management techniques, such as artificial cavity placement and translocation. These will be implemented in conjunction with landscape-scale habitat restoration and maintenance projects such as prescribed burning, uneven-aged pine management, and groundcover restoration. All nestling red-cockaded woodpeckers in the refuge population are banded, and the clusters are monitored yearly in cooperation with the primary core population recovery partners.

Wood Stork. No known nesting sites of wood storks are located on the refuge. However, isolated ponds, coastal marshes, and shallow water areas in impoundments provide important feeding habitat for this species on the refuge, particularly during the summer and fall months. The wetlands around Otter Lake provide roosting habitat during the warmer months.

Threatened Species

Frosted Flatwoods Salamander. The flatwoods salamander is restricted to intact longleaf and slash pine-dominated flatwoods of the lower Southeast Coastal Plain in Florida, Georgia and South Carolina. The refuge has three populations consisting of at least 41 locations/breeding ponds, all in the St. Marks Unit (David Cook, Florida Fish and Wildlife Conservation Commission, 2003, pers. comm.). The adjacent Apalachicola National Forest has 20 known populations at approximately 50 locations/breeding ponds. Within Florida, 30 populations are on public lands and 16 populations on private lands. Range-wide, the only other populations for the species occur in Georgia (11) and South Carolina (4). Adults dwell primarily beneath the ground and migrate seasonally during fall rain events to ephemeral breeding ponds, where eggs are deposited and hatch into larvae during the winter. Protection of the flatwoods salamander from mechanical groundcover disturbance and protection of breeding ponds from hydrological alteration are critical measures to ensure survival of this species. Additional surveys are being conducted cooperatively with the Florida Fish and Wildlife Conservation Commission and the U.S. Geological Survey, Florida Integrated Science Center.

Piping Plover. The piping plover is found on open, sandy beaches and on tidal mudflats and sandflats, and winters along both coasts of Florida. A winter census in 1991 found 511 plovers on the Gulf Coast. While Florida has much suitable habitat, increasing recreational demands have resulted in the harassment of foraging and roosting birds. Since the refuge has little open, sandy beach habitat, sightings have been rare and occur every few years.

Eastern Indigo Snake. This large, stout-bodied, shiny black snake can be up to 8 feet long. It is docile, non-poisonous and occurs throughout Florida, but is rare in the Panhandle. It inhabits scrub and sandhills and often winters in gopher tortoise burrows in sandy uplands while foraging in hydric habitats. It requires large tracts (over 5000 acres) of land to survive.

3.4 WILDERNESS AREA DESIGNATION

Congress designated 17,746 acres of the refuge as the St. Marks Wilderness Area on January 3, 1975 (Public Law 93-632), to be managed under the Wilderness Act of 1964 (78 Stat. 890.892: 16 U.S.C. 1132). This Wilderness Area consists of four units. They are described below.

The 1,250-acre Thoms Island (Panacea Unit) is located just west of Ochlockonee Bay and is bounded on all four sides by tidal waterways, including the Ochlockonee, Dead, Sopchoppy, and Shell Rivers. The majority of the unit is marsh dominated by black needlerush, but it also contains a mix of sawgrass and a small portion of mesic longleaf pine-wiregrass flatwoods.

The 1,066-acre St. Marks Natural Area (St. Marks Unit) is a long, narrow tract bordering Lighthouse Road on the west, from the south end of East River Pool to the boat ramp near the lighthouse. This area is comprised of 828 acres of tidal salt marshes, 203 acres of coastal slash pine flatwoods, and 24 acres of cabbage palmetto.

The East River-St. Marks River peninsula (St. Marks Unit) is an area of 3,630 acres. Most is salt marsh although 700 acres are coastal slash pine flatwoods interspersed with mesic and hydric hammock. A portion of the Florida National Scenic Trail passes through this area along the old railroad bed from St. Marks to Port Leon. This area will be opened to youth and other hunting in conjunction with other lands to the north and east.

The largest unit is 11,800 acres and extends from just east of the St. Marks Lighthouse to the eastern boundary of the refuge, from a southern boundary that extends from mean high tide to the Mounds and Stoney Bayou dikes, and generally east to the northeast boundary of the refuge (St. Marks Unit). This area is characterized by expansive needlerush-dominated salt marsh and small tree islands vegetated primarily with slash pine, southern red cedar, live oak, and cabbage palmetto. Bottomland hardwoods and hydric hardwood hammock border the Pinhook and Aucilla rivers.

In all cases, the refuge ownership extends only to mean high tide. Below mean high tide are State of Florida sovereign, submerged lands. All areas are open to the public unless posted for seasonal closures.

Under the Wilderness Act, wilderness areas "...shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

A portion of the area proposed to be opened to hunting contains some wilderness area. See the map for Area B in Appendix 2.

3.5 FOREST MANAGEMENT

Forest management consists of prescribed burning and commercial harvests in the pine habitats to create open diverse multi-aged pine forests. Swamps and hardwood hammocks are generally excluded from harvests and naturally excluded from fire.

3.6 SOCIOECONOMIC STATS.

REGIONAL DEMOGRAPHICS AND ECONOMY

According to the 2010 U.S. Census, the local, four-county area of Franklin, Jefferson, Taylor and Wakulla is sparsely settled and economically depressed when compared to the state at large (Table 2). Leon County to the north is urban, affluent and densely populated in comparison. Wakulla County has the highest population density within the four-county area, and Taylor County the lowest. Taylor County is the largest of the four in land area (1,042 square miles), while Franklin County is the smallest (545 square miles).

Table 2. Socioeconomic profile - U.S. Census 2010

Characteristic	Franklin County	Wakulla County	Leon County	Jefferson County	Taylor County
Population (number)	11,549	30,776	275,487	14,761	22,570
Population Density (pop./square mile)	22	51	413	25	22
Total Land Area in square miles	544	607	667	598	1,042
Race/Ethnicity (Percent of Population):					
Caucasian	82.6	82.0	63.0	60.4	75.0
African American	13.8	14.5	30.3	36.2	20.7
Hispanic	4.6	3.3	5.6	3.7	3.4
Native American	0.5	0.6	0.3	0.3	0.8
Asian	0.2	0.6	2.9	0.4	0.7
Education:					
% Pop. over 25 w/high school degree	79.8	84.1	90.1	81.6	79.9
% Pop. over 25 w/college degree	19.3	17.3	41	17.3	10.7
Median Family Income (\$)	33,956	48,022	40,725	38,193	34,240
Per Capita Income (\$)	22,924	22,114	25,467	20,323	17,248

Historically, the economy of the local area has been based on the seafood industry, tourism, timber, naval stores, pulpwood production, and some manufacturing. Tourism and the seafood industry continue to be the mainstays of Franklin County. Apalachicola oysters have made the county famous statewide. Forest products are highly important to Taylor County, which leads the state in this industry.

Jefferson County has a diverse economic base and depends more on agriculture than the other counties. The 1995 restriction of using entangling nets for saltwater fishing reduced commercial fishing in the coastal counties of Taylor, Wakulla, and Franklin and spurred unemployment. Construction and tourism are growth industries for these counties.

Most of the St. Marks National Wildlife Refuge land base is within Wakulla County. The primary employment is in management, professional, and sales occupations. A third of Wakulla County's population is employed by local, state, or federal government agencies. Wakulla County continues to be an important residential area for commuters who work in nearby Tallahassee (Leon County), the state capital.

Wakulla has been the fourth fastest growing county in the state for the past decade. Wakulla's immigration, particularly along its coastal areas, consists of affluent retirees and professionals from Tallahassee. More than half of the working individuals who reside in Wakulla County work outside the county and spend much of their income elsewhere. Development is most intense in the northeastern portion of the county, but it is also accelerating in the southern portion.

3.7 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 no historic structures in the proposed hunt addition. There is always the possibility of Native American cultural sites in this area. We always check for sites before proceeding with construction and ground disturbing activity.

3.8 Visitor Services Programs

The purpose of St. Marks National Wildlife Refuge (NWR) visitor services program is to foster understanding and instill appreciation of the fish, wildlife, and plants and their conservation by providing the public with safe, high quality, appropriate, and compatible wildlife-dependent recreational and educational programs and activities. In 1997, Congress passed the National Wildlife Refuge Improvement Act (Improvement Act) which clearly states, that on national wildlife refuges, wildlife comes first. The Improvement Act also identified six priority wildlife-dependent public use activities and programs that are compatible with the mission of the National Wildlife Refuge System. These uses include hunting, fishing, wildlife observation, photography, environmental education, and interpretation.

With the adoption and implementation of the Comprehensive Conservation Plan (CCP) in 2006 and the Visitor Services Management step-down plan currently in production, all visitor services activities and programs on the Refuge would be in conformance with national guidelines and all visitor activities will be compatible with the Refuge's overarching wildlife mission and purposes.

Chapter 4 Environmental Consequences

This chapter describes the foreseeable environmental consequences of implementing the two 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. Hunters are required to abide by the State laws concerning the wearing of hunter orange and the hunter safety training/certification requirements.

4.1.3 Refuge Physical Environment

Impacts of each alternative on the refuge physical environment would have minimal to negligible effects. Some disturbance to surface soils, topography, and vegetation would occur in areas selected for hunting; however effects would be minimal. Vehicles would only be allowed on existing roads. No off road vehicles are allowed.

Hunting would benefit vegetation as it is used to keep deer and swine resident populations in balance with the habitat’s carrying capacity. Hunting is one tool used in our Integrated Pest Management Program to control feral pig populations.

Impacts to the natural hydrology would be negligible. The road system has already been established in the proposed hunting areas by the current or previous land owners. When the lands are purchased by St. Marks NWR, we will evaluate road impacts and consider removing roads that are impacting the hydrology.

The refuge expects minimal impacts to air and water quality 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 negligible. The areas are already used by the public so opening them to hunting once they are purchased will not have any additional impacts.

Impacts associated with solitude in the wilderness area proposed to be open to hunting are expected to be minimal. Time and space zone management techniques, such as seasonal access and area closures, are used to avoid conflicts among user groups. Few people will be using the wilderness area during a hunt.

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. Law enforcement officers patrol during the hunts and would provide additional protection of cultural resources during those periods.

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. Minor expansion of facilities such as signs and check stations may be required. The installation of facilities will be kept to the minimum possible. We will select sites that have been the most impacted by previous land practices to install new check stations.

4.2 Summary of Effects

4.2.1 Impacts to Habitat

No Action Alternative

Under this alternative, additional acreage would not be opened to hunting. The increase of native and exotic wildlife would have negative impacts on refuge habitats. The acquisition areas (Area C) are currently being hunted as a Wildlife Management Area and other areas (Area B) were previously hunted as a Wildlife Management Area. Removing hunting as a management tool would result in increased deer and feral pig populations. Over-population of wildlife leads to habitat degradation and modification. In turn, this would negatively impact future resident and migratory wildlife populations (including the threatened flatwoods salamander).

Proposed Action Alternative

The biological integrity of the refuge would be protected under this alternative, and the refuge purpose of conserving wetlands for wildlife would be enhanced. The hunting of hogs and deer 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.

The additional acreage would be used more by the public (hunters) than previously which could cause increased trampling of vegetation. Impacts to vegetation should be minor. Minor trampling of vegetation by hunters would be offset by the removal of surplus animals that would either over browse or root up the vegetation. Vehicles would be confined to existing roads and parking lots.

4.2.3 Impacts to Hunted Wildlife

No Action Alternative

Additional mortality of individual hunted animals on the refuge would not occur under this alternative. The deer population currently being hunted in the Flint Rock WMA (Area C) would cease to be hunted as these lands are acquired. 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 and hog populations could increase above the habitat's carrying capacity in the area not opened to hunting. The likelihood of diseases, such as bluetongue and Epizootic Hemorrhagic Disease (EHD) in deer would increase. Feral hogs can harbor several infectious diseases, some of which can be fatal to wildlife. Additionally, hogs compete directly for food with deer, bears, turkeys, squirrels and many other birds and mammals.

Proposed Action Alternative

Small increases in mortality of individual animals would occur in Area B (Port Leon Area) and Area A under this alternative, however, the mortality would be similar to what is being currently harvested in Area C (Flint Rock). Added lands in Area A and B are adjacent to private lands that are currently hunted and the effected deer herd home range overlays private and refuge land. Any added harvest on the refuge hunts will likely be compensated in part by the reduction of harvest on the adjacent property. Our bag limits would be the same as the state bag limits or more restrictive than the state bag limits. 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 deer, hog, turkey, and small game would help maintain their populations at or below carrying-capacity. The likelihood of diseases, such as bluetongue and EHD in deer would be decreased. Reduction of the hog population would decrease risk of transmitting diseases by hogs to other wildlife species. Fewer hogs would decrease competition for food with native wildlife, such as deer, turkey, and squirrel.

4.2.4 Impacts to Non-hunted Wildlife

No Action Alternative

Ground and shrub nesting birds and turtles are subject to high egg depredation rates if hog populations are not kept in check through harvest. Under this alternative, feral hog populations would remain high. Non-native hogs are predators of small mammals and deer fawns, reptiles and amphibians, including the threatened flatwoods salamander, as well as ground-nesting birds such as turkeys.

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

Proposed Action Alternative

Populations of deer and hogs would be decreased through hunting under this alternative. Depredation rates of songbirds, turkeys, turtles and their nests would decrease. Feral hog populations would be reduced thereby decreasing predation of deer fawns, turkeys, and small animals such as the Flatwoods Salamander.

The cumulative effects of disturbance to non-hunted wildlife under the proposed action are expected to be negligible. Small mammals, including bats, are rarely encountered during the hunting season. Many of these species are also nocturnal. Hunters occasionally encounter reptiles and amphibians during most of the hunting season and may kill large-bodied snakes such as Eastern diamondback rattlesnakes and cottonmouths. Refuge regulations strictly prohibit this and refuge staff work to educate hunters during contacts with them.

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. 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. Disturbance to important wildlife use areas is mitigated by closing the areas to all public use.

4.2.5 Impacts to Endangered and Threatened Species

No Action Alternative

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.

Proposed Action Alternative

This alternative could have both positive and negative effects on the threatened and endangered species on the refuge such as the flatwoods salamander. The positive effect would be reduced rooting by reducing the feral hog population and its detrimental impacts to salamander habitat. The negative effect could be harming or killing salamanders when they cross the road. The salamanders migrate from wooded habitats to ephemeral ponds in the fall to breed. We would mitigate impacts by considering closing roads near critical flatwoods salamander habitats from October to December 15 if impacts to frosted flatwoods salamanders are observed.

The population impacts to other endangered and threatened species are anticipated to be negligible. There is no other critical habitat in the proposed hunting area.

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

No Action Alternative

Additional damage to roads and trails due to hunter use during wet weather periods would not occur. 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.

Proposed Action Alternative

Additional damage to roads and trails due to hunter use during wet weather periods might occur. The current refuge hunt program has been in place on 40,000 acres for the past 30 years and has shown these impacts can be managed. Closing roads during wet weather periods and utilizing fee monies collected to resurface damaged roads have been successfully limiting and repairing damages. There would be some costs associated with a hunting program in the form of road and 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. Some of the additional costs would be offset by hunt fee collections.

4.2.7 Impacts to Wildlife Dependent Recreation

No Action Alternative

The public would not have the expanded opportunity to harvest a renewable resource, participating in wildlife-oriented recreation that is compatible with the purposes for which the refuge was established.

Proposed Action Alternative

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. Conflicts between hunters and non-consumptive users might occur but would be mitigated by time (non-hunting season) and space zoning. The refuge would generally attempt to focus non-consumptive use (mainly birdwatching and other wildlife viewing) on areas that are closed to hunting. Portions of the hunt area are used by Florida National Scenic Trail (FNST) hikers. Approximately one-half of the 42 mile segment of the FNST within the St. Marks NWR is already within areas open to hunting. This proposal would impact an additional four miles of trail. There have been very few user conflicts and no related accidents reported. The hikers are asked to wear orange during the hunting season. Conflicts during the youth hunt will be mitigated by stand placement.

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 St. Marks 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, often costing a person \$300-\$2000/year for membership. This alternative would allow hunters 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.

4.3 Cumulative Impacts Analysis

We have considered the current use of the lands in the acquisition boundary and the past use of land that is being opened within the refuge boundary and have reached the following conclusion.

Neither of the alternatives is anticipated to have significant cumulative adverse impacts to white-tailed deer populations, wild turkey populations, migratory birds, small game, non-target wildlife, wildlife-dependent recreation, refuge facilities, cultural resources, adjacent lands, and the local community and economy, nor are significant cumulative adverse impacts expected for refuge habitats, soils, vegetation, air quality, water quality, hydrology, floodplains, biological resources, or the existing Refuge hunting program.

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

Resident Big Game

Deer

Deer hunts have proven to be not only compatible with refuge objectives but also beneficial in meeting them. Deer harvest is essential to maintain the herd at or below habitat carrying capacity in the absence of apex predators. When deer are overpopulated, they over-browse their habitat, which can completely change the plant composition of a forest. Overpopulation can also lead to outbreaks of devastating diseases such as Epizootic Hemorrhagic Disease (EHD) and bluetongue. Overpopulation also leads to increased car-deer collisions and poor overall herd health. The expansion of hunting on additional refuge lands would not negatively impact the deer herd instead it would help maintain the herd at a healthy level.

Expansion of deer hunting will be coordinated with the Florida Wildlife Conservation Commission to ensure that the hunt is compatible with their “Strategic Plan for Deer Management in Florida 2008-2018.” (FWC 2008) Area B and C which constitute most of the area proposed for hunt expansion were previously hunted as an FWCC wildlife management area or are currently being hunted as a Wildlife Management area. The small area (<400 acres) in Area A was previously leased for hunting. Therefore, refuge hunters harvesting the deer would not result in cumulative additional effects since our bag limits would be the same as the state or more restrictive than the state.

Feral Hogs

Feral hogs are an extremely invasive, introduced, non-native species. They can harbor several infectious diseases, some of which are transmissible to humans. By rooting and wallowing, feral hogs destroy wildlife habitat. Damage includes erosion along waterways and wetlands and the loss of native plants. Additionally, feral hogs compete directly for food with deer, bears, turkeys, squirrels and many other birds and mammals. They are predators of small mammals and deer fawns as well as nests of ground-nesting birds such as turkeys. They also prey on other ground dwelling reptiles and amphibians, and likely negatively impact the endangered frosted flatwoods salamander and their designated Critical Habitat on the refuge.

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

Wild Turkey

Turkeys are non-migratory and therefore hunting only impacts the local population. Wild Turkey in Florida are managed under the guidance of the Florida Fish and Wildlife Conservation Commission’s Wild Turkey Management Program (WTMP). The WTMP is charged with coordinating wild turkey management and research activities across the state and providing a statewide approach to conservation and management of Florida’s wild turkey population. As a part of the 10 year strategic plan (2008-2018) the following goal was developed; “Ensure healthy and sustainable wild turkey populations throughout the state while providing and promoting compatible uses of the resource (FWCC 2008)” High mortality is a significant aspect of turkey life history, and its role as a prey species is well illustrated by the fact that approximately 70 percent of poults will not survive beyond two weeks of age. While their survival increases substantially after three weeks of age, their overall life expectancy is still only about 18 months (FWCC, 2008). Therefore, hunting is not considered as additive mortality on the species. In fact, funds provided through the State sale of turkey stamps are used to fund biologists and research projects to increase knowledge and to improve turkey management in the State. The refuge will coordinate with the State of Florida to ensure that our turkey hunts and harvest are within their management guidelines.

Migratory Birds

The U.S. Fish and Wildlife Service annually prescribes 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 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 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.

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 U.S. Virgin Islands; migratory game birds other than waterfowl (e.g., dove, woodcock, etc.); and special early waterfowl seasons, such as those for 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).

Because the Service is required to take abundance of migratory birds and other factors into 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 (restrictive) in their selections than the federal frameworks, but never more liberal (less restrictive). 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. The Service published a Notice of Availability in the *Federal Register* on June 16, 1988 (53 FR 22582), and a Record of Decision on August 18, 1988 (53 FR 31341). Annual NEPA considerations for waterfowl hunting frameworks are covered under separate, tiered environmental assessments. 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, Washington, D.C. 20240.

Currently the majority of the waterfowl habitat on the refuge is closed to waterfowl hunting, providing ducks and geese with ample sanctuary. In fact, approximately 47,000 acres are closed to waterfowl hunting including a 33,000 acre Executive Closure area and the impoundments of the St. Marks Unit. These areas comprise the largest concentrations of waterfowl on the refuge. Where large concentrations of waterfowl exist in the St. Marks Unit, we close the adjoining levees to all public use to minimize disturbance.

We allow the hunting of ducks and coots on Piney Island in the Panacea Unit as it offers some traditional recreational hunting. No other migratory bird species or refuge areas are hunted.

Small Game (Gray Squirrel, Rabbit, Raccoon)

Although no studies have been conducted on small game within the refuge, studies have been conducted elsewhere to determine the effects of hunting on the population dynamics of small game. Results have consistently shown that cottontail rabbit and gray squirrel populations are not affected by hunting, but rather are limited by food resources. Gray squirrels, Eastern cottontails, and marsh rabbits are prolific breeders and their populations have never been threatened by hunting in Florida even prior to the passing of modern hunting regulations.

4.3.2 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.

The cumulative effects of disturbance to non-hunted wildlife under the proposed action are expected to be negligible. Small mammals, including bats, are rarely encountered during the hunting season. Many of these species are also nocturnal. Hunters occasionally encounter reptiles and amphibians during most of the hunting season and may kill large-bodied snakes such as Eastern diamondback rattlesnakes and cottonmouths. Refuge regulations strictly prohibit this and refuge staff work to educate hunters during contacts with them. 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.

Use of lead bird shot is not permitted on St. Marks NWR. Ingestion of lead bullets has been shown to be a cause of lead poisoning to bald eagles and vultures in some locations as a result of scavenging. Unrecovered game that has not been shown to be a problem in this area.

4.3.2.3 Threatened and Endangered Species

Endangered and threatened species that use the refuge are red-cockaded woodpecker, frosted Flatwoods Salamander, wood stork, and whooping crane. An Intra-Service Section 7 Evaluation was conducted in association with this assessment for opening hunting on St. Marks National Wildlife Refuge. It was determined that the proposed alternative would not likely adversely affect these species.

Red-cockaded woodpeckers (RCW) previously occupied a portion of the proposed hunt addition, but there is currently not a population in the proposed area. In the future, translocations of RCW into the area is possible. The proposed action would not affect RCWs because the woodpeckers already inhabit areas open to hunting without suffering impacts.

This alternative could both positive and negative potential effects on the flatwoods salamander. The positive effect would be reduced rooting by reducing the feral hog population and its detrimental impacts to salamander habitat. The negative effect could be harming or killing salamanders by automobiles when they cross the road. The salamanders migrate from wooded habitats to ephemeral ponds in the fall to breed. We would mitigate impacts by considering closing roads near critical flatwoods salamander habitats from October to December 15 if impacts to frosted flatwoods salamanders are observed. Given the apparent small chance of vehicle-caused mortality verses the significantly greater cause of hog predation, the cumulative impacts to this species would be positive.

Refer to the Section 7 Evaluation for the 2011 Sport Hunting on St. Marks National Wildlife Refuge for more information.

4.3.3 Wildlife-Dependent 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 Florida National Scenic Trail traverses portions of the hunt area. Conflicts between hunters and trail users will be mitigated by requiring the hikers to wear orange during the hunting season. Conflicts with youth hunters will be mitigated by zoning.

The refuge would control access under this alternative to minimize wildlife disturbance and habitat degradation, while allowing current and proposed compatible wildlife-dependent recreation.

4.3.4 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, 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.

4.3.5 Cultural Resources

Hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties or cultural sites 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. To date, no properties on the refuge have been determined to be eligible for the National Register Historic Places.

4.4 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. A portion of the wilderness will be open to hunting, but seasons are of a limited nature and a short duration so disturbance to solitude would be limited. 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’ vehicle emissions and siltation run-off on roadways and trail sides.

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.

4.5 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.

The purchase of lands within the proposed hunting area will have no cumulative impacts on species hunted. The majority of the lands are currently open for hunting as Florida Wildlife Management Areas.

The implementation of any of the proposed actions described in this assessment includes actions relating to the refuge hunt program. 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 three decades 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.

4.6 Anticipated Impacts if Individual Hunts are Allowed to Accumulate

National Wildlife Refuges, including St. Marks NWR, conduct hunting programs within the framework of State and Federal regulations. St. Marks NWR is at least as restrictive as the State of Florida and in many cases more restrictive (deer, waterfowl, raccoon, and turkey). 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. This draft Environmental Assessment and the proposed Hunt Plan will be reviewed by the FWC. Additionally, refuges coordinate with FWC annually to maintain regulations and programs that are consistent with the State hunt and biological management programs.

Chapter 5 Consultation and Coordination with Others

The Florida Fish and Wildlife Conservation Commission (FWCC) concurs and fully supports the regulated consumptive public use of the natural resources associated with the St. Marks NWR (Refer to quota permit sales agreement, appendix 1b). This plan will be review by FWCC, the Fish and Wildlife Service Region 4 Regional Office, and will be offered to the public for review and comment.

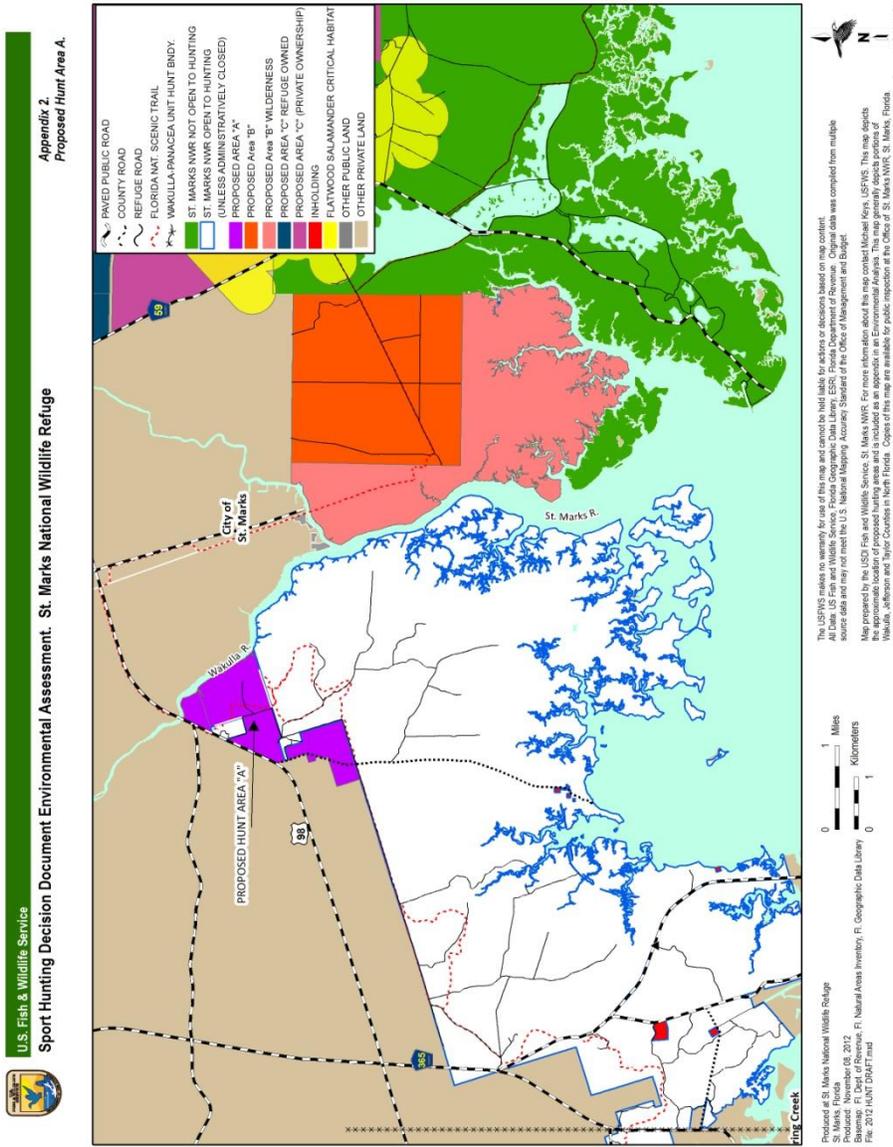
The Service solicited public comment for the 2012 Sport Hunt Plan and associated Environmental Assessment. **The 14-day review period began November 14 and ended on November 28, 2012.** Copies of the document were placed in local newspapers and the Wakulla County Public Library and the Leon County Public Library. The document was also made available on the St. Marks Refuge website (<http://www.fws.gov/saintmarks/>) and the St. Marks Refuge Association website (<http://www.stmarksrefuge.org/>).

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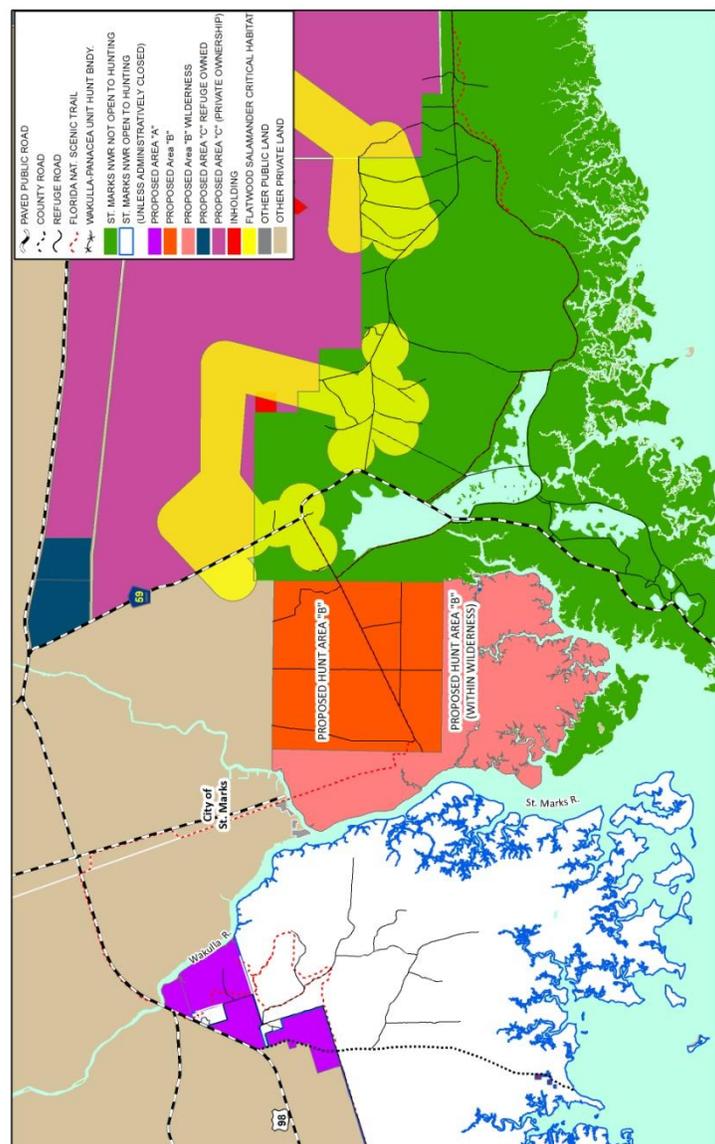
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Appendix 2: Maps

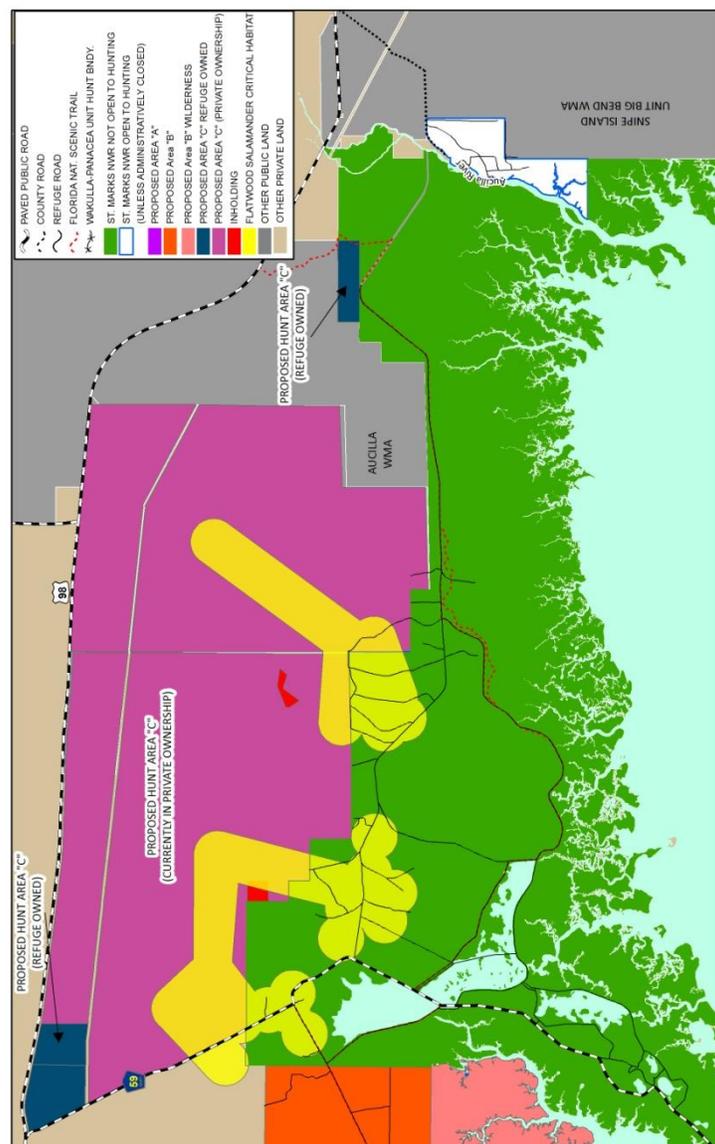


U.S. Fish & Wildlife Service
Sport Hunting Decision Document Environmental Assessment. St. Marks National Wildlife Refuge
Appendix 2.
Proposed Hunt Area B.



The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content.
 All Data: US Fish and Wildlife Service; Florida Geographic Data Library (ESRI); Florida Department of Revenue. Original data was compiled from multiple sources and may vary from the U.S. National Mapping Agency's Standard of the Office of Management and Budget.
 Map prepared by the USFWS Fish and Wildlife Service, St. Marks NWR. For more information about this map contact Michael Kozar, USFWS. This map depicts the St. Marks National Wildlife Refuge and is not intended to be used for any other purpose. Copies of this map are available for public inspection at the Office of St. Marks NWR, St. Marks, Florida.
 Date: 11/03/2012

U.S. Fish & Wildlife Service
Sport Hunting Decision Document Environmental Assessment. St. Marks National Wildlife Refuge
Appendix 2.
Proposed Hunt Area C.



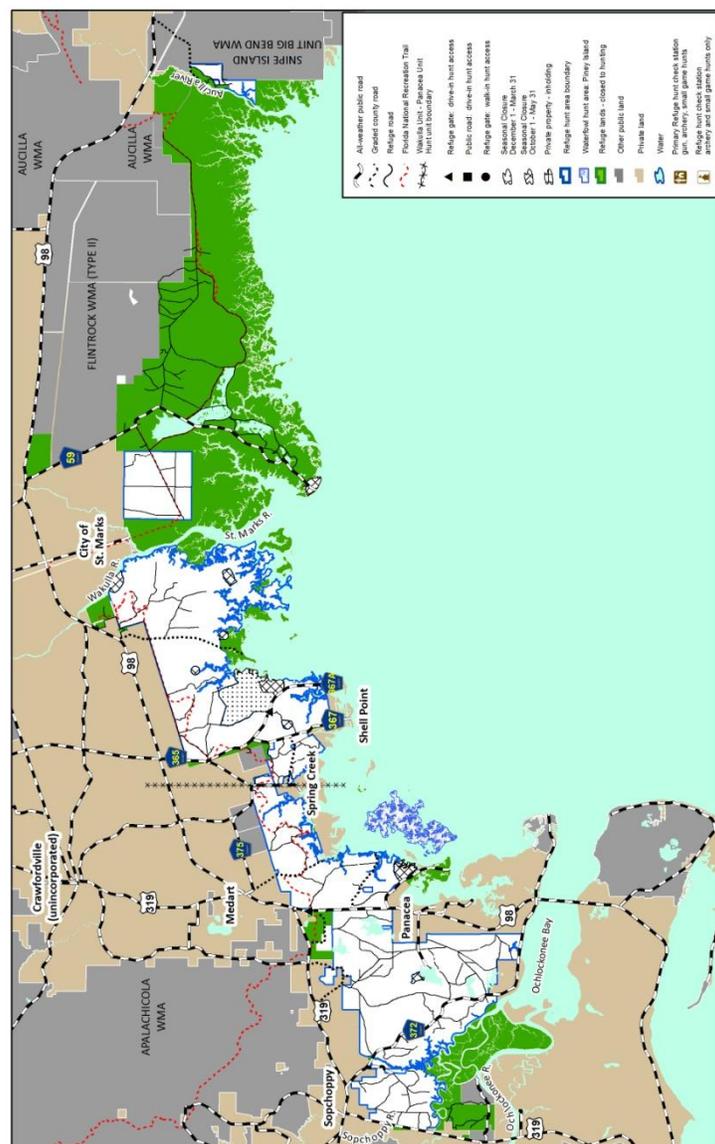
The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content. All Data: US Fish and Wildlife Service; Florida Geographic Data Library; ESRI; Florida Department of Revenue. Original data was compiled from multiple sources and may vary from the U.S. National Mapping Agency's Standard of the Office of Management and Budget.

Map prepared by the USDF Fish and Wildlife Services, St. Marks NWR. For more information about this map contact Michael Kory, USFWS. This map depicts WMA, Jefferson and Taylor Counties in North Florida. Copies of this map are available for public inspection at the Office of St. Marks NWR, St. Marks, Florida.

Produced at St. Marks National Wildlife Refuge
 St. Marks, Florida
 Date: 08/20/12
 By: [Redacted]
 Approved: [Redacted], F. Natural Areas Inventory, F. Geographic Data Library
 File: 2012 HUNT DRAFT.mxd

Date: 10/31/2012

U.S. Fish & Wildlife Service
Sport Hunting Decision Document Environmental Assessment. St. Marks National Wildlife Refuge
 Appendix 2.
 Current (2012-2013) Hunt Area Map



The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content.
 All Data: US Fish and Wildlife Service; Florida Geographic Data Library; ESRI; Florida Department of Revenue. Original data was compiled from multiple sources and may not be current.
 Map prepared by the USFWS Fish and Wildlife Service, St. Marks NWR. For more information about this map contact Michael Kory, USFWS. This map depicts the current hunt areas for the 2012-2013 season. Copies of this map are available for public inspection at the Office of St. Marks NWR, St. Marks, Florida.
 Produced at St. Marks National Wildlife Refuge
 St. Marks, Florida
 Date: 10/26/12
 By: [Name]
 File: 2012 HUNT DRAFT.mxd

Scale: 0 1 2 3 4 Miles
 0 1 2 3 4 Kilometers

Datum: NAD 83 HARN

Appendix 3: Agreement with the State of Florida

USFWS Agreement No. 41640-2009-01
QUOTA HUNT PERMITS

Agreement

between

Florida Fish and Wildlife Conservation Commission
2590 Executive Center Circle, Suite 200
Tallahassee, FL 32301

and

U.S. Fish and Wildlife Service, North Florida Refuge Complex
P.O. Box 68
St. Marks, FL 32355

This Agreement is made and entered into by and between the U.S. Fish and Wildlife Service, North Florida Refuge Complex, (hereinafter referred to as the NFRC) and Florida Fish and Wildlife Conservation Commission (hereafter referred to as the FWC) for the purpose of selling the ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS. This agreement is made and entered into by the parties under the authority of 16 USC 6803(c), Consolidated Appropriations Act (PL 108-447).

WITNESSETH THAT:

WHEREAS the NFRC is interested in making the ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS available to the public through the FWC's TOTAL LICENSING SYSTEM which is used by hunters to obtain State quota hunt permits, recreational permits, licenses, and other hunting information. The TOTAL LICENSING SYSTEM is readily accessible through the FWC website and through the county tax collector offices and sub-agents throughout the State. This system is well established and familiar to the hunting public.

WHEREAS, the FWC is willing to make the ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS available to the general public through their TOTAL LICENSING SYSTEM, county tax collector offices and other commercial retail outlets.

NOW THEREFORE, IN CONSIDERATION OF THE ABOVE STATED OBJECTIVE, the parties agree to the following:

- A. The U.S. Fish and Wildlife Service (NFRC) will:
Allow the FWC to sell the ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS and provide other information material necessary to carry out the sale of the permit. All information to carry out the sale covered by this agreement shall be provided to the FWC by the NFRC at the times mutually agreed upon by the parties.

B. The Florida Fish and Wildlife Conservation Commission (FWC) shall:

1. Make ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS available to the general public through the FWC's TOTAL LICENSING SYSTEM. The selling price will be \$25.00 for St. Vincent Recreational Permits; \$25.00 for St. Vincent Sambar Quota Permits; \$15.00 for St. Marks Quota Permits, and a \$5.00 non-refundable application fee for all quota hunts. A FWC administrative fee of \$1.00 per transaction will be debited from the application fee listed above, and \$1.50 will be debited from the actual permit sale. For example, a person applies for the St. Marks Refuge Spring Gobbler Hunt and pays \$5.00 to apply for the quota hunt, and if selected, pays \$15.00 to receive the quota permit. NFRC will receive \$17.50 and FWC will retain \$2.50 for administration costs.
2. Print the ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS with the name of the Refuge, the unit name(if appropriate), type of hunt(archery, primitive weapons, or conventional gun), and dates of the hunt, as instructed by NFRC.
3. Make records related to the ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS sales and collections available to NFRC at the conclusion of the sale.
4. Not make refunds to the public for ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS previously sold.
5. Transfer NFRC share of funds collected within 30 days of the final day of the sale and provide a spreadsheet to NFRC containing permit holders name and address for each hunt.

IT IS MUTALLY AGREED TO BY THE PARTIES THAT:

1. FWC, at its discretion, may advise the general public that the ST. VINCENT REFUGE QUOTA HUNT PERMITS, ST. VINCENT RECREATIONAL FEE PERMITS, AND ST. MARKS REFUGE QUOTA HUNT PERMITS and other informational materials are available through the FWC TOTAL LICENSING SYSTEM.
2. No member of, or delegate of Congress or Resident Commissioner, shall be admitted to any share or part of this agreement, or any benefit that may arise therefrom, but this provision shall not be construed to extend to the agreement if made with a corporation for its general benefit.
3. Pursuant to 31 USC 3716 and 7 CFR part 3, subpart B, any monies that are payable or may become payable to the United States under this agreement to FWC may be subject to administrative offset for the collection of a delinquent debt the FWC owes to the United States. Information on the FWC's responsibility for a commercial debit or delinquent consumer debit owed to the United States shall be disclosed to consumer or commercial credit reporting agencies.
4. This agreement may be terminated by either party giving 30-day notice to the other party.
5. Each permit will be valid for (1) one hunting season and one hunting season only, and for the date(s) and location imprinted on the permit.

6. Each permit is valid for one person and non-transferable. One youth hunter (under the age of 16), may hunt under the supervision of a permit holding adult (21 or older). State regulations for youth hunters must be followed. Bag limit is shared.

EXECUTED this ____ day of _____, 2009

By _____ and By _____

James Burnett, Refuge Manager
North Florida Refuges Complex

Susan Weaver, Office of Licensing and
Permitting, Florida Fish and Wildlife
Conservation Commission

Telephone Number: (850) 925-6121

Telephone Number (850) 488-3641

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Appendix 4: Response to Public Comments

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