

Everglades Headwaters National Wildlife Refuge and
Conservation Area
Migratory Bird, Upland Game, and Big Game

Hunt and Sport Fish Plan

2020

U.S. Fish and Wildlife Service

Everglades Headwaters National Wildlife Refuge Complex
4055 Wildlife Way
Vero Beach, FL 32963

Submitted By:
Project Leader

Signature Date

Concurrence:

Refuge
Supervisor

Signature Date

Approved:

Regional Chief,
National Wildlife
Refuge System

Signature Date

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Everglades Headwaters National Wildlife Refuge

Migratory Bird, Upland Game, and Big Game Hunt and Sport Fish Plan

I. INTRODUCTION

National Wildlife Refuges are guided by the mission and goals of the National Wildlife Refuge System (NWRS), the purposes of an individual refuge, Service policy, and laws and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual.

The primary purposes (derived from establishing legislation) of the refuge are:

"... conservation, management, and ... restoration of the fish, wildlife, and plant resources and their habitats ... for the benefit of present and future generations of Americans..." 16 U.S.C. 668dd(a)(2) (National Wildlife Refuge System Administration Act)

"...to conserve (A) fish or wildlife which are listed as endangered species or threatened species...or (B) plants..." 16 U.S.C. 1534 (Endangered Species Act of 1973)

"...the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. 3901(b), 100 Stat. 3583 (Emergency Wetlands Resources Act of 1986)

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

"...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude..." 16 U.S.C. 742f(b)(1) "...for the development, advancement, management, conservation, and protection of fish and wildlife resources...." 16 U.S.C. 742f(a)(4), (Secretarial powers to implement laws related to fish and wildlife) (Fish and Wildlife Act of 1956)

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

The vision for the Everglades Headwaters NWR and Conservation Area is to: conserve, protect, and manage one of the great grassland and savanna landscapes of eastern North America for current and future generations, protecting the important wildlife and habitats of the working rural landscape of central Florida's Kissimmee River Basin that is home to abundant fish and wildlife resources; that is vital to restoration and protection of the water quality and quantity for the Everglades ecosystem; that is resilient to the effects of global climate change; and that offers outdoor recreational opportunities important to the region's economy.

Four overarching goals were developed for the Everglades Headwaters NWR and Conservation Area and identified in the 2012 LPP. The goals are intentionally broad, descriptive statements of the desired future conditions. They embrace the purposes and vision statement. The goals address a functional conservation landscape; habitat for fish and wildlife; water quality, quantity, and storage; and wildlife dependent recreation, as listed (USFWS 2012).

Goal 1. Functional Conservation Landscape. The upper Everglades watershed will become a more connected and functional conservation landscape that will provide effective habitat connections between existing conservation areas and allow habitats and species to shift in response to urban development pressures and global climate change.

Goal 2. Habitat for Fish and Wildlife. The Everglades Headwaters NWR and Conservation Area will provide a wide range of quality Kissimmee River Basin habitats to support migratory birds, federal and state listed species, state designated species of special concern, and native wildlife diversity.

Goal 3. Enhanced Water Quality, Quantity, and Storage. Focusing on restoring or mimicking natural hydrologic processes, the Everglades Headwaters NWR and Conservation Area will contribute to water quality, water quantity, and water storage capacity of the upper Everglades watershed to support Everglades restoration goals and objectives and water quality and supply for central and south Florida.

Goal 4. Wildlife-dependent Recreation and Education. Refuge visitors of all abilities will enjoy opportunities for hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation, while increasing knowledge of and support for conservation of the important grassland and savanna landscape of the headwaters of the Everglades.

The mission of the NWRS, as outlined by the National Wildlife Refuge System Administration Act (NWRSA), as amended by the National Wildlife Refuge System Improvement Act (16 U.S.C. 668dd et seq.), is to:

“... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

The NWRSA mandates the Secretary of the Interior in administering the System to (16 U.S.C. 668dd(a)(4):

- Provide for the conservation of fish, wildlife, and plants, and their habitats within the NWRS;
- Ensure that the biological integrity, diversity, and environmental health of the NWRS are maintained for the benefit of present and future generations of Americans;
- Ensure that the mission of the NWRS described at 16 U.S.C. 668dd(a)(2) and the purposes of each refuge are carried out;
- Ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the States in which the units of the NWRS are located;
- Assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the NWRS and the purposes of each refuge;
- Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the NWRS through which the American public can develop an appreciation for fish and wildlife;
- Ensure that opportunities are provided within the NWRS for compatible wildlife-dependent recreational uses; and
- Monitor the status and trends of fish, wildlife, and plants in each refuge.

Therefore, it is a priority of the Service to provide for wildlife-dependent recreation opportunities, including hunting and fishing, when those opportunities are compatible with the purposes for which the refuge was established and the mission of the National Wildlife Refuge System.

Hunting and fishing are an integral part of south-central Florida’s culture. As part of the establishment of the Refuge, the public, along with local and state governments expressed their desire for the Service to provide opportunities for hunting and fishing on Refuge lands (USFWS 2012). Per agreement with the Florida Fish and Wildlife Conservation Commission (FWC) when the refuge was established, lands acquired in fee title for the refuge would be managed for hunting and fishing following State Wildlife Management Area (WMA) regulations. To date, two units totaling approximately 2,000 acres have been added to the WMA program, and hunting/fishing has been conducted since 2016.

II. STATEMENT OF OBJECTIVES

The objectives of a hunting and fishing program on the Refuge including the Arbuckle, Hatchineha, Okeechobee, and future fee-title Units are to:

- Provide the public with a recreational experience on more Refuge lands and increase opportunities for hunters.
- Enhance biological diversity by preserving the natural diversity and variety of biotic communities occurring on Refuge lands and aid in reducing invasive hog populations.
- Educate the public and neighboring landowners about the effects of feral hogs on native wildlife and habitats.
- To allow sport fishing within the framework of FWC regulations, subject to additional regulation by the Service if needed to provide protection for sensitive wildlife species within the Refuge.
- To provide Refuge lands to all forms of traditional hunting through coordination with the FWC WMA program.
- To provide Refuge lands to all forms of traditional recreational fishing through coordination with FWC-enforced state fishing laws.
- To assure through FWC coordination, either spatially or chronologically, that hunting, fishing, and general public use Refuge lands do not conflict or encroach upon each other.

Hunting is consistent with the refuge's Conceptual Management Plans larger goals as listed above.

III. DESCRIPTION OF HUNTING AND FISHING PROGRAMS

A. Areas to be opened to hunting and fishing.

The entire 395-acre Arbuckle, 1,460-acre Hatchineha, 1,999-acre Okeechobee (renamed to Kissimmee Bend since release of the Draft VSP) Units, and future units are available for hunting and fishing through the interim compatibility provided in the 2012 CMP. It is anticipated that future lands acquired in fee title by the Refuge will be open to hunting through the process outlined in the introduction. Though the entire properties will be considered open for hunting, through the collaborative and concurrent approach identified in the USFWS/FWC MOU, FWC will evaluate the timing and locations of these activities consistent with the MOU through the state's WMA program. See maps below for hunt units (Figures 1 – 7).

B. Species to be taken, hunting periods, hunting access

Table 1. Species to be taken, hunting seasons, hunting access for the Arbuckle, Hatchineha, and Okeechobee Units

Species To Be Taken	Seasons	Access
White-Tailed Deer	Coordinated and Conducted by FWC through WMA Hunting Program and Permit	Access Coordinated by FWC through WMA Hunting Program and Permit
Feral (Wild) Hog		
Wild Turkey		
Small (Upland) Game		
Migratory Game Birds	Coordinated and Conducted by FWC through State Hunting Program and Permit	Access Coordinated by FWC through State hunting permit
Alligator		
Fishing & Frogging	Year Round	Year round when WMA is open

C. Justification for the permit, if one is required

FWC requires hunting permits and recreational fishing licenses in order to hunt and/or fish on WMAs. Instructions for applying for hunting permits can be found at <http://myfwc.com/license/recreational/how-to-order/>. Instructions for applying for a recreational fishing license can be found at <http://myfwc.com/license/recreational/how-to-order/>.

D. Consultation and Coordination with the State

Hunting and fishing at the Arbuckle, Hatchineha, and Okeechobee Units will be administered by FWC through an existing MOU under the WMA program. The 2012 MOU between the Service and FWC states that the Service and FWC collectively have complementary responsibilities and shall cooperate on the management of hunting and fishing programs in concert with other resource objectives (USFWS/FWC 2012). This memorandum also covers any new units added to the Refuge. Fishing will be allowed year-round on the Arbuckle, Hatchineha, and Okeechobee Units in accordance with FWC-enforced state laws. The Service and FWC will post alerts on unit-specific websites and signage at WMAs when a unit is closed for hunting. The Service recognizes that the State of Florida will have the lead on any disease which affects resident wildlife and Everglades Headwaters NWR will support the State in its prevention and surveillance efforts as appropriate. Everglades Headwaters NWR and the State agree to follow the guidance in the Association of Fish and Wildlife Agencies Technical Report on Best Management Practices for the Prevention, Surveillance, and

Management of Chronic Wasting Disease and work jointly to implement the response plan for CWD or any other wildlife disease that surfaces in the State of Florida.

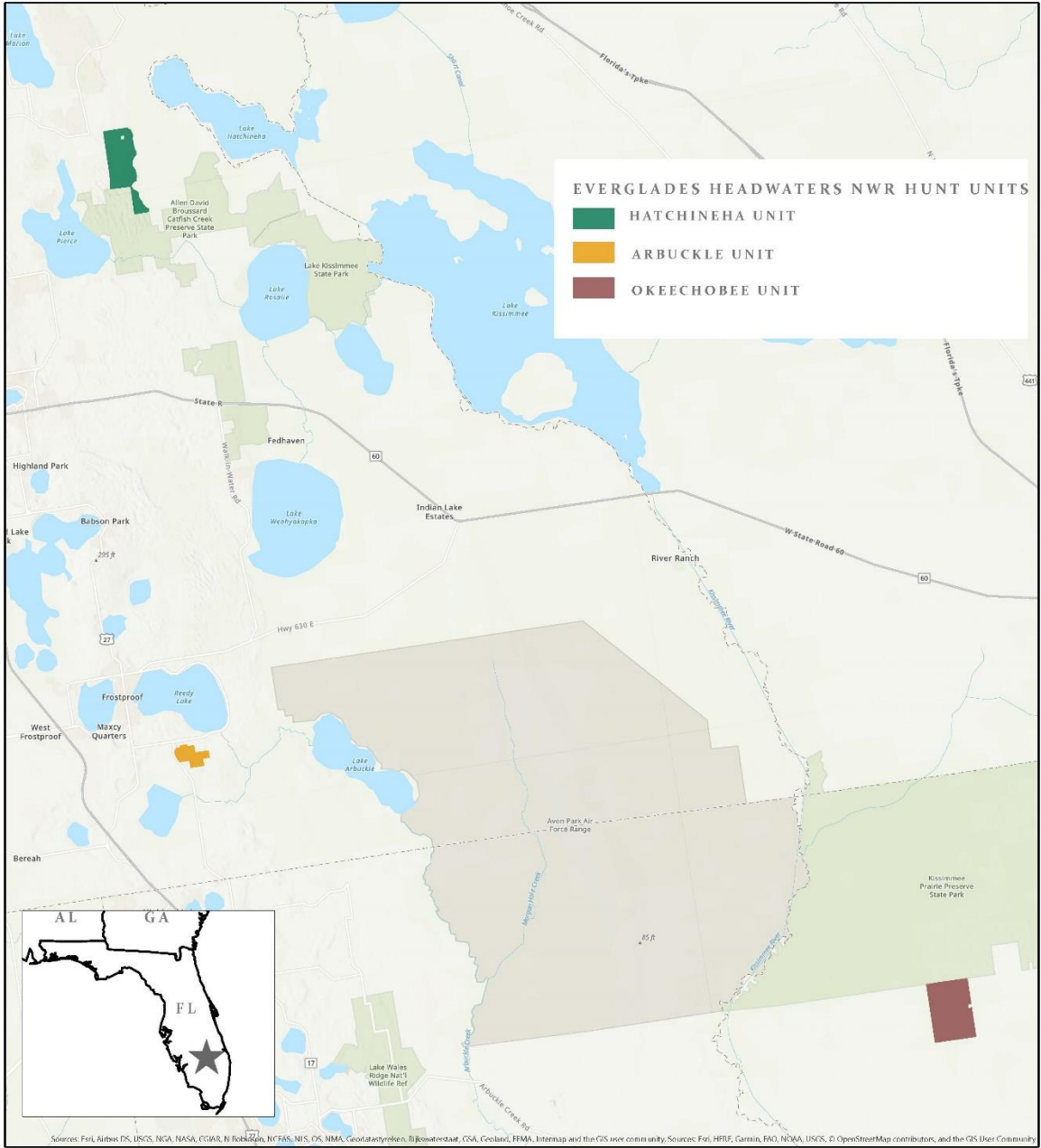
E. Law Enforcement

The current Refuge units are adequately posted as would be any future units, and any trespass or other violations will be addressed by Refuge law enforcement, in cooperation with FWC game wardens and law enforcement, where applicable. This approach would be consistently conducted across all newly acquired units.

F. Funding and Staffing Requirements

It is expected that costs to help post and advertise hunts and maintain accessible for hunting and fishing programs would total no more than \$5,000 annually per Refuge unit.

Figure 1. Everglades Headwaters NWR Hunt/Fish Unit locations



Produced by Kimberly Sykes
 Produced December 26, 2019
 Basemap: ESRI World Topographic
 File: ANSI C-Size_Portrait_HuntUnit.aprx



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#This map template is intended as a general guide for the creation of U.S. Fish and Wildlife maps at a small scale. This section of the Map Bibliography should be used to describe the purpose of the map, the data used to create it, and any special procedures used to process the data. #

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Date: NAD 83

Figure 2. Arbuckle Unit location

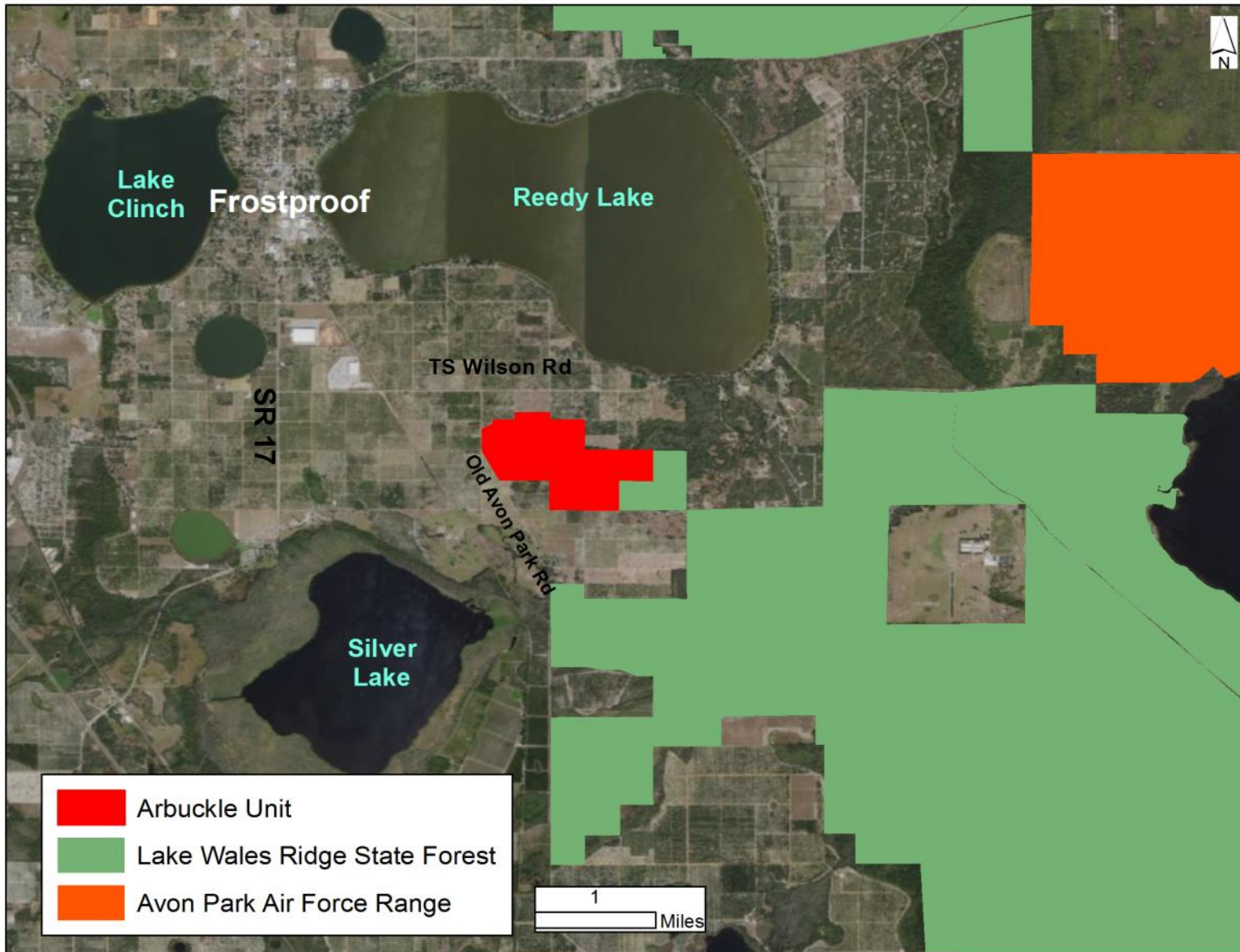


Figure 3. Arbuckle Unit entrance, parking and trails

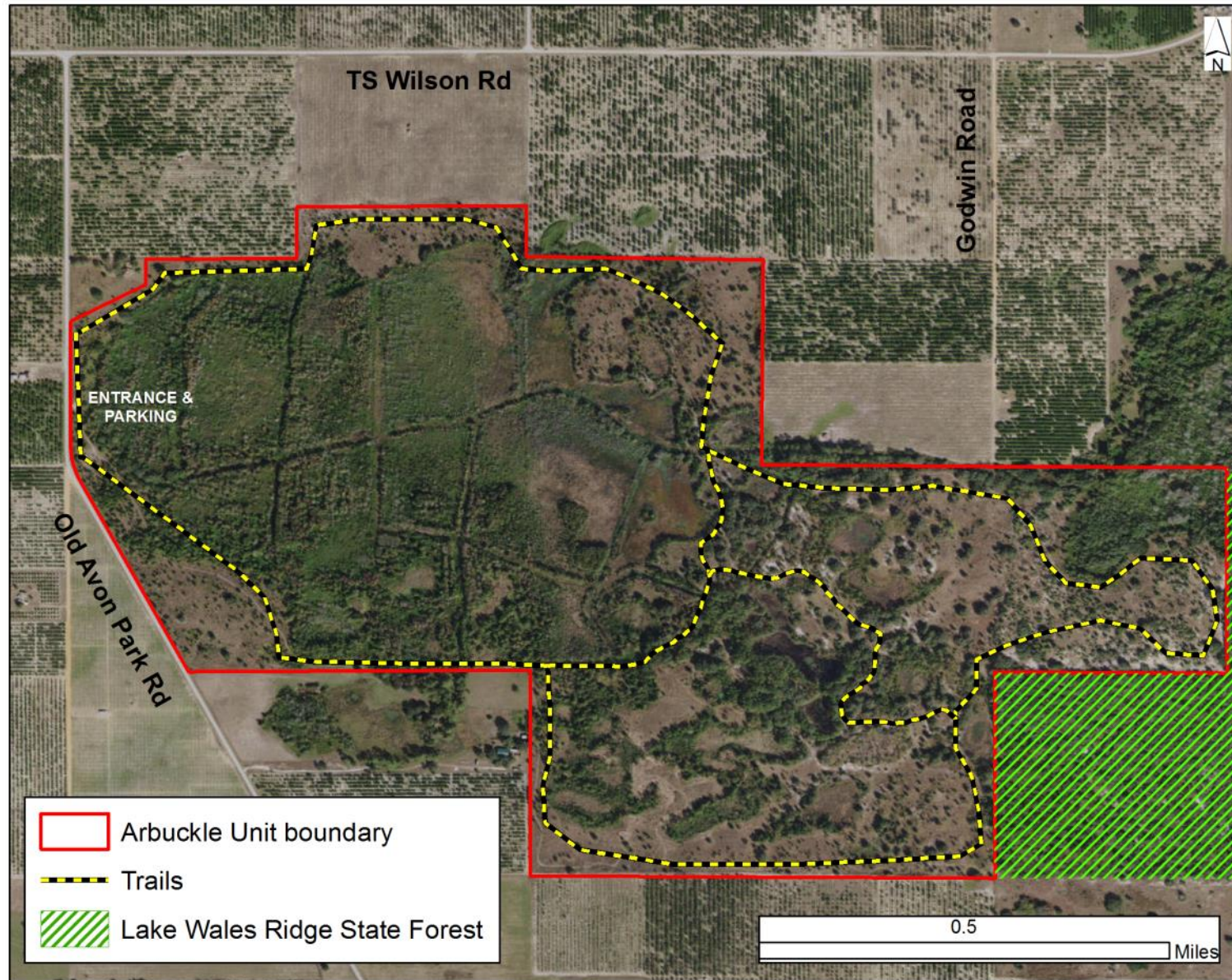


Figure 4. Hatchineha Unit location

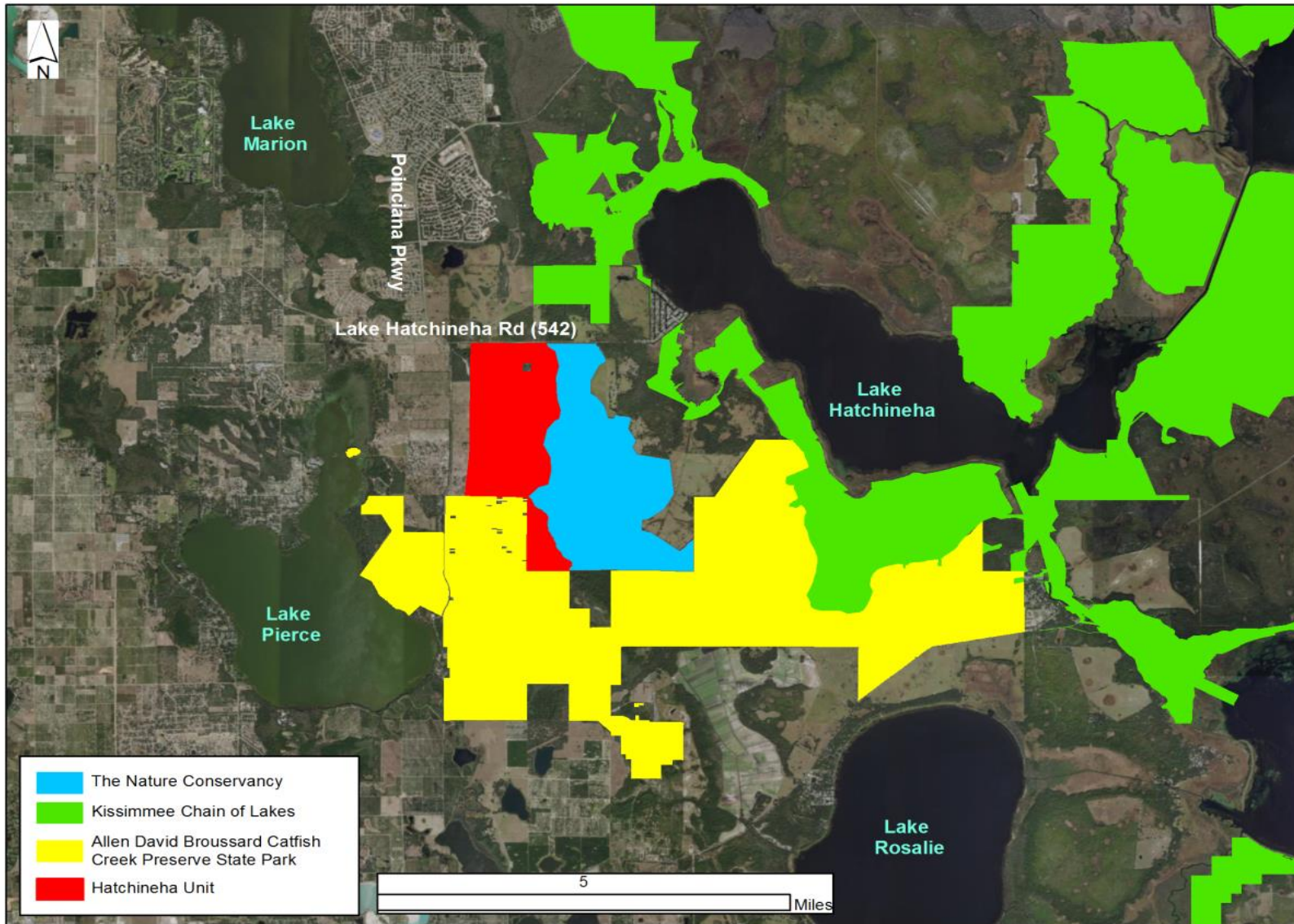


Figure 5. Hatchineha Unit entrance, parking, and trails

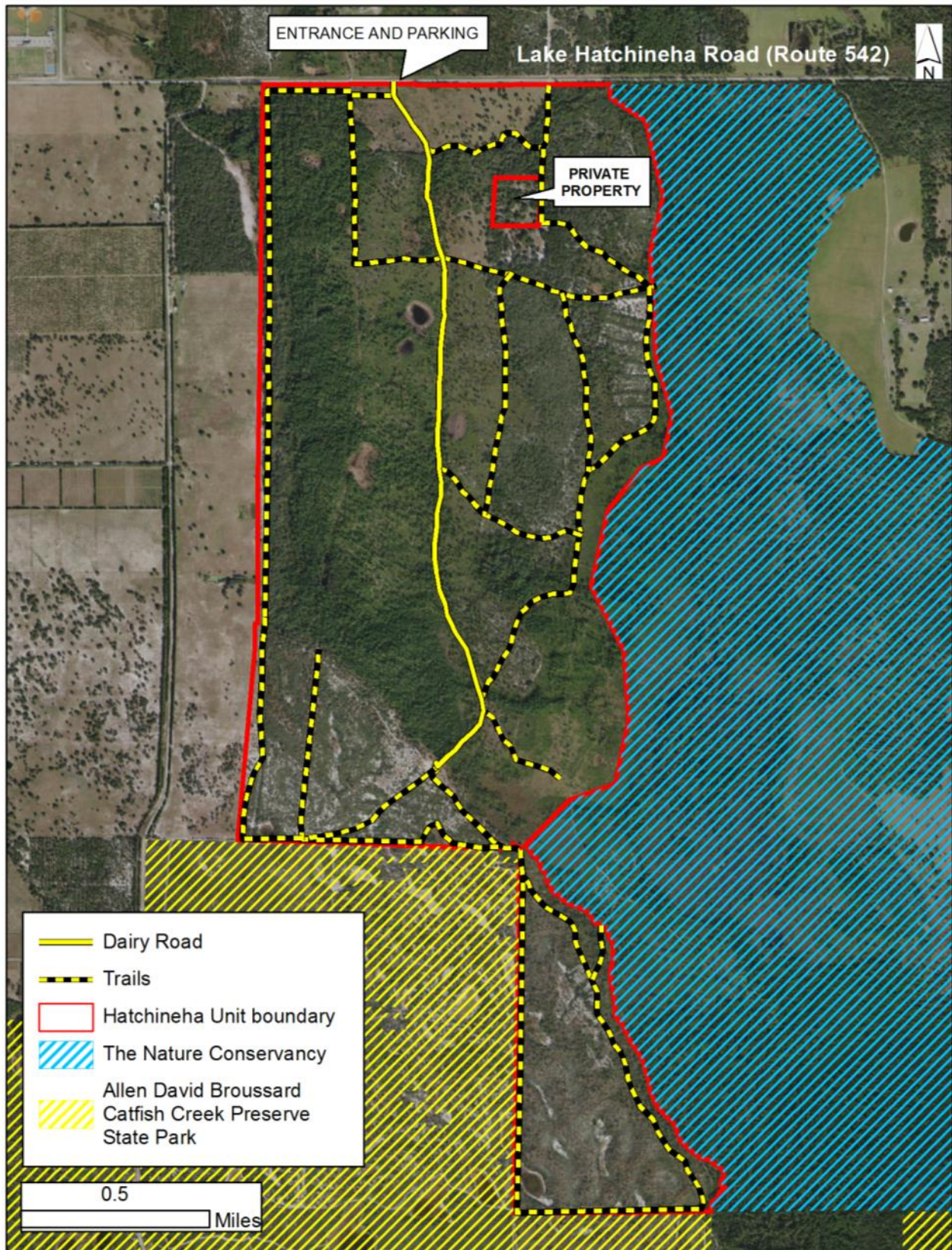


Figure 6: Okeechobee Unit location

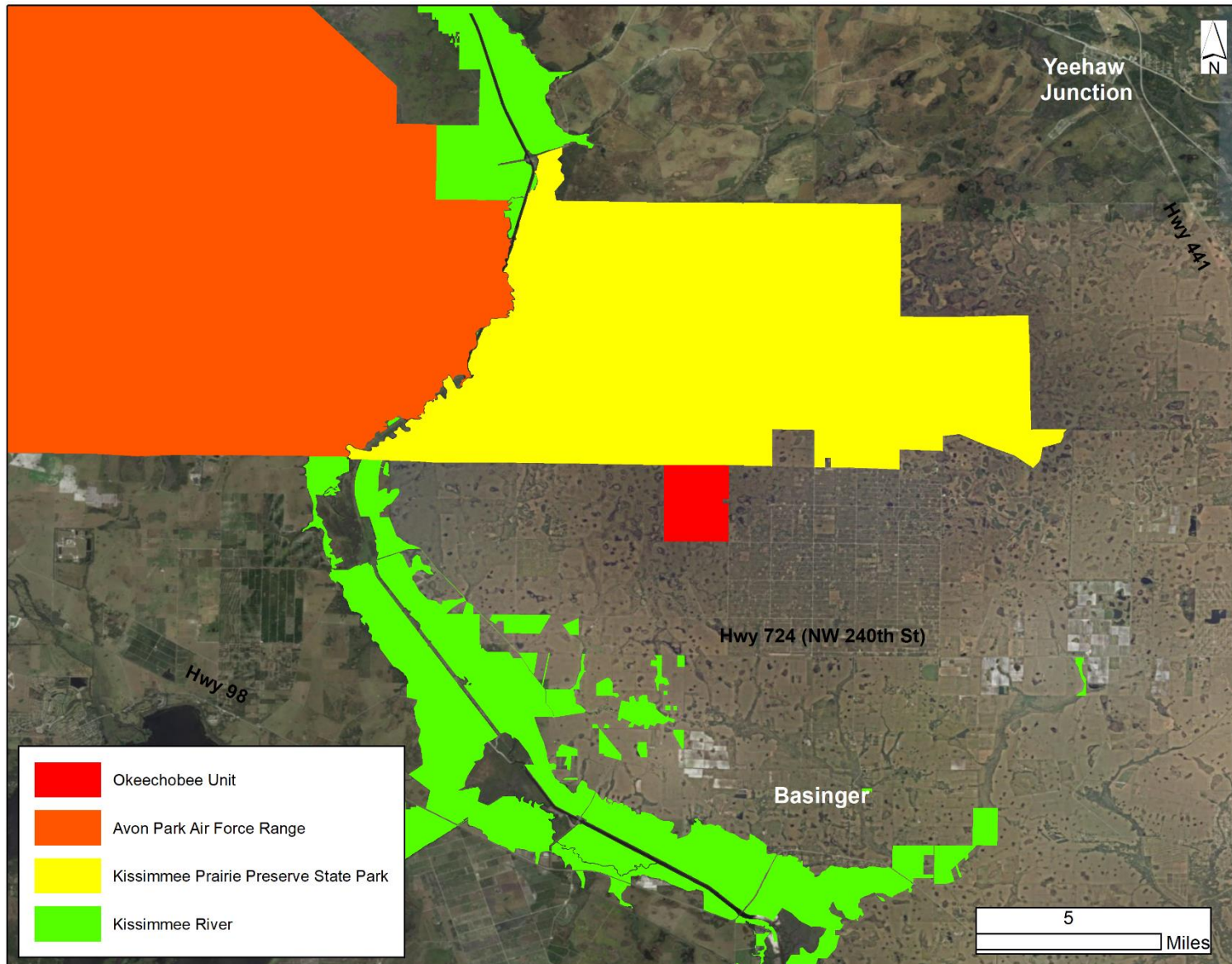
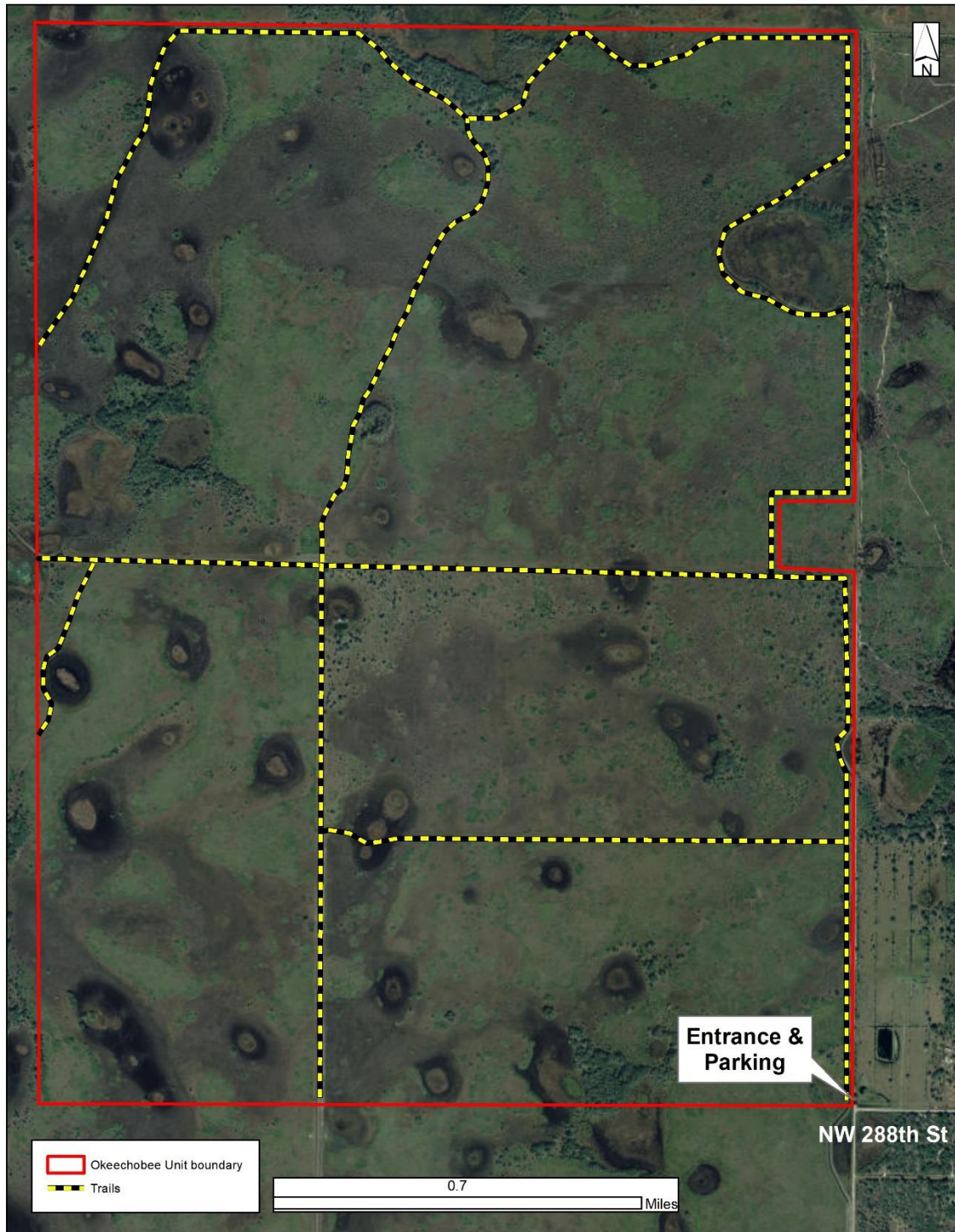


Figure 7: Okeechobee Unit entrance, parking, and trails



IV. CONDUCT OF THE HUNTING PROGRAM

A. Hunter Permit Application, Selection, and/or Registration Procedures (if applicable)

At the time of this Plan, instructions for applying for hunting permits can be found at <http://myfwc.com/license/recreational/how-to-order/> . Instructions for applying for a recreational fishing license can be found at <http://myfwc.com/license/recreational/how-to-order/> .

The Refuge does not have any general requirements for the program. Specific FWC requirements for each WMA can be found at <http://myfwc.com/hunting/wma-brochures/>.

Florida residents and visitors need a Florida hunting, freshwater fishing or saltwater fishing license unless they are a member of one of the "exempted" groups of people listed at: <https://myfwc.com/license/recreational/do-i-need-one/> . Your license is required to be with you when you are engaged the licensed activity. A fishing license is required to attempt to take fish. If you cast your line, catch nothing, catch and release, or catch and keep and you are not a member of one the groups listed below; you need a license.

Licenses and permits are required to help or assist in the take. Someone who is passively participating (setting decoys, calling birds or baiting hooks), whether actively fishing or hunting or not, must have a license.

A Management Area Permit or daily use permit is not required for recreational use other than hunting on most WMAs. A recreational fishing license is required to fish on WMAs unless you are exempt.

A Management Area Permit is required to hunt on most of the lands owned, leased or managed by FWC. A hunting license is required unless you are exempt. Limited entry/quota permits may also be required to hunt during certain seasons.

Additional permits may be required on areas owned by the U.S. Department of Defense. Cooperating landowners and lead agencies may require additional permits during non-hunting seasons.

Access may be limited during special-opportunity hunts. A recreational use permit is required for some areas. Refer to the WMA brochure for area specific access information. Areas may also be closed by executive order due to weather conditions, drought, flooding, etc.

Each year, alligator management units are established with appropriate harvest quotas to provide recreational opportunities for Floridians and non-residents who are at least 18 years old to take up to 2 alligators per permit. Applicants who are awarded a permit must pay for two CITES tags and an Alligator Trapping License or provide proof of possession of an Alligator Trapping License valid through the end of the alligator harvest season. A Florida hunting license is not required to participate in the statewide alligator hunt.

Hunter Safety License Requirement

Persons born on or after June 1, 1975 may not be issued a license to hunt in Florida with the use of a firearm, gun (including a muzzle loading gun), bow or crossbow without first having successfully completed a hunter safety course. Anyone who meets the above description must present a valid hunter safety certification card prior to being issued a hunting license (excluding lifetime licenses).

Individuals exempted from having a hunting license but born on or after June 1, 1975 are exempted from the hunter safety requirement. The exemption does not apply to persons with a Florida Resident Disabled Person Hunting and Fishing License or anyone hunting on military bases. Completion of a hunter safety course is required by the federal government to hunt on military bases.

Lifetime license holders born on or after June 1, 1975 whose licenses do not indicate that they have completed a hunter safety course must have the hunter safety certification card in their possession while hunting.

Out-of-state Hunters

A hunter safety card or certificate issued for a course completed in another state is accepted in Florida.

Hunter Safety Requirement Deferral

Anyone 16 years or older and born after May 31, 1975 may hunt under the supervision of a qualified hunter without having to complete the state's hunter safety certification.

Hunters using this Hunter Safety Mentoring Exemption need to be under the supervision of an adult, 21 years old or older, who has a valid hunting license or is exempt from the hunting license requirement and who has met the hunter safety requirement or is exempt from the hunter safety requirement.

Hunters who pass a hunter safety course before their mentoring exemption license expires and carry their license and certification card can hunt without supervision.

B. Refuge-Specific and State Hunting and Fishing Regulations

Listed below are regulations that pertain to the Refuge as of the date of this plan. The regulations are a compilation for the various units, as there are different rules for each WMA. These regulations may be modified as conditions change or as warranted on new

refuge lands. All visitors are encouraged to familiarize themselves with the specific WMA rules (available online) for each unit.

The existing Refuge units fall within the Southwest and Southern FWC administrative region (FWC 2018), and additional units could fall within the Northeast, Southwest, or South administrative regions. Regulations often vary across WMAs. Hence, before going afield, it is recommended that the public access the state's WMA website for useful information when planning a visit and review the latest brochure for each WMA of interest for regulations. Additionally, the Refuge Manager or FWC WMA manager can be contacted directly for questions.

Quota Permits

Pursuant to the 2012 MOU between the Service and FWC, FWC conducts hunting and fishing programs across Refuge units through the WMA program. Quota hunts may be offered during an entire hunt or on specific days of the week. Hunters must submit electronic applications for quota and special-opportunity permits through FWC's online permit site at <https://gooutdoorsflorida.com/>. Worksheets listing hunts, application periods, deadlines and instructions are available at county tax collector's offices, FWC offices or MyFWC.com. Quota application periods occur throughout the year beginning April 1; please refer to the hunting handbook or MyFWC.com for specific dates. Worksheets will be available about 2 weeks prior to each application period.

Types of hunts potentially available

- Archery
- Muzzleloading Gun
- Family Hunt
- General Gun
- Small Game
- Youth Turkey
- Spring Turkey
- Migratory Bird
- Waterfowl
- Big Game
- Alligator
- Wild-hog Still
- Non-native Wildlife

General Area Regulations

All general laws and regulations relating to wildlife and fish shall apply unless specifically exempted for an area. Hunting or the taking of wildlife or fish on a Refuge unit shall be allowed only during the open seasons and in accordance with the regulations outlined for the specific WMA.

Public Access and Vehicles

Each WMA unit has unique rules regarding access and what types of vehicles are allowed. Some WMA units allow licensed vehicles and/or unlicensed ORVs on designated roads, while others do not allow any vehicular access.

Fishing and Frogging

Fishing and frogging are activities allowed year-round in Florida. See the most current General Statewide Freshwater Fishing Regulations for details on methods of take, restricted species, bag limits, etc.

V. PUBLIC ENGAGEMENT

A. Outreach for Announcing and Publicizing the Hunting Program

The Refuge maintains a mailing list, for news release purposes, to local newspapers, radio, and websites. Special announcements and articles may be released in conjunction with hunting seasons. In addition, information about a proposed hunt will be available at Everglades Headwaters NWR Complex office and website at https://www.fws.gov/refuge/everglades_headwaters/. Furthermore, FWC's WMA website will have brochures available for each Refuge unit that part of their program.

B. Anticipated Public Reaction to the Hunting Program

Based on the comments received during the development of the Land Protection Plan in 2011, little negative public reaction is expected with regards to hunting on the Arbuckle, Hatchineha, and Okeechobee Units. Similarly, future hunting on new Refuge lands is not likely to create any substantial controversy, since most rural lands in Florida have historically been hunted and/or are currently being hunted at some level. Hunting and fishing are an important historic, economic, and recreational use of Florida's natural resources, and still play an important role in the cultural identity of the Kissimmee River Basin.

C. How Hunters Will Be Informed of Relevant Rules and Regulations

All fee title units designated for hunting and fishing will be part of the FWC's WMA program. Florida has one of the largest wildlife management area (WMA) systems in the country at nearly 6 million acres. FWC is the lead manager or landowner on over 1.4 million acres and works in partnership with other governmental or private landowners on another 4.5 million acres. Florida's WMAs offer a wide range of hunting opportunities including quota/limited entry hunts, special opportunity hunts, and public hunting areas where people can walk on to hunt.

To hunt on a WMA, a hunter must possess a management area permit and a hunting license, (and often other permits depending on species and season), unless exempt. WMA regulations brochures are only available at MyFWC.com and the Fish/Hunt FL app. Before heading afield, print, hunters need to take a screenshot or download the WMA regulations brochure and map to a mobile device so they can access them without an internet connection. Before going afield, we recommend that hunters review the open/closed status of WMAs of interest. FWC continues to update their website with

information about WMA openings/closures, including details about roads, entrances and more.

VI. COMPATIBILITY DETERMINATIONS

Hunting and all associated hunt program activities proposed in this plan have been to be found compatible with purposes of the Refuge, and can be found in the VSP. Likewise, all proposed sport fishing and associated program activities have been also been found to be compatible.

VII. ASSESSMENT

This section provides a summary assessment on the viability of species populations and other conditions under which the hunt and fish program is designed. For a more detailed analysis of the potential impacts of take on game species refer to the Environmental Assessment (EA) (USFWS 2012) conducted as part of the refuge establishment (USFWS 2012) and the EA associated with this VSP.

A. Are wildlife populations present in numbers sufficient to sustain optimum population levels for priority Refuge objectives other than hunting and fishing?

Big Game

White-tailed Deer (Odocoileus virginianus)

Yes, priority, biological objectives can be met and optimal populations can be sustained with a Refuge sport hunting program. On existing Refuge lands, deer hunting is currently being coordinated with FWC to ensure that the hunts meet the goals and objectives of the “Strategic Plan for Deer Management in Florida 2008-2018.” In the FWC plan, the deer population goal is to, “Ensure the existence of robust deer populations that meet the public’s desires for recreational opportunities and protection of property while ensuring the long-term welfare of the species” (FWC 2007a). Deer hunting opportunities on any future Refuge lands that are added to the WMA program would be aimed toward supporting FWC’s deer management plan.

Feral Hogs (Sus scrofa)

Feral (wild) hogs are an invasive, non-native species. Complete eradication of feral hogs on Refuge lands is desirable, but currently is not feasible. Hunting of feral hogs, which is an activity widely enjoyed by local hunters, provides the Refuge with another management tool for reducing this detrimental species.

Wild Turkey (Meleagris gallopavo)

Yes, priority, biological objectives can be met and optimal populations can be sustained with a Refuge sport hunting program. Wild turkey in Florida are managed under the guidance of the FWC 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” (FWC 2008). On existing Refuge lands, wild turkey hunting is currently being coordinated with FWC to ensure that the hunts meet the goals and objectives of their 10-year plan. Wild turkey hunting opportunities on any future Refuge lands that are added to the WMA program would be aimed toward supporting FWC’s management of this game species.

Alligator (Alligator mississippiensis)

Yes, priority, biological objectives can be met and optimal populations can be sustained with a Refuge sport hunting program. Historically, alligators were depleted due to market-hunting and habitat loss, resulting in their federally protected status in 1967. By 1987, through the combined efforts by the Service and state wildlife agencies, the species was recovered and removed from the endangered species list. Since 1988, Florida's statewide alligator harvest has been nationally and internationally recognized as a model program for the sustainable use of a natural resource. Each year, alligator management units are established with appropriate harvest quotas to provide recreational opportunities for Floridians and non-residents. It is estimated that there are approximately 1.3 million alligators in Florida (FWC 2019).

Migratory Game Birds

For the purposes of this plan, migratory game birds fall into the following two categories:

1. Waterfowl

Waterfowl that are hunted in Florida include various ducks (e.g. mallards, canvasback, wood ducks), geese (e.g. Canada, snow, blue), teal and merganser.

2 Non-waterfowl

Examples of migratory game birds in this category include rails, moorhen, snipe, coot, doves, crows, and woodcock.

Yes, priority, biological objectives can be met and optimal populations can be sustained with a Refuge sport hunting program. The Service annually prescribes a framework, or outer limits, for dates and times when hunting may occur and the number of migratory game 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.

Small Game (Upland Game)

For the purposes of this plan and for consistency and alignment with State of Florida regulations, small game includes several small to medium sized mammals, (e.g. squirrel, raccoon, rabbit, bobcat, coyote, opossum, otter, skunk) and bobwhite quail, a non-migratory bird species.

Yes, priority, biological objectives can be met and optimal populations can be sustained with a Refuge sport hunting program. Small game have consistently shown that eastern cottontail rabbit, marsh rabbit, raccoon, and grey squirrel populations are not significantly affected by hunting. These species are generally common, utilizing a range of habitats. Additionally, they reproduce rapidly and their populations are governed by density-dependent processes. This means that as the population declines (i.e. due to hunting), reproductive rates increase, compensating for the losses. Anticipated bobcat and coyote take would be negligible compared to state-wide population levels.

Range-wide, the bobwhite quail population has declined since the 1950s (Dimmick et al. 2002), and FWC is actively working with state and federal agencies, landowners, and other partners to reverse that trend (FWC 2007b). During the 2018-2019 season, bobwhite quail were only legally hunted on WMAs where take was allowed or via a release permit on select WMAs and Wildlife and Environmental Areas. Refuge lands currently within the WMA program do not offer quail hunts. However, there is the potential that current lands or new Refuge lands added to the WMA may provide this opportunity in the future.

Fishing

Fishery populations present on Refuge lands are considered sufficiently healthy to support recreational fishing. In Florida, fishing regulations include the taking of most frog species, while imperiled species are specifically excluded.

B. Is there competition for habitat between target species and other wildlife?

No, there is not any competition for habitat between white-tailed deer, Eastern wild turkey, alligator, the above listed small game species, and other wildlife. All species are observed in good numbers in habitats across the Refuge. All are observed in similar habitat types. The Refuge has not directly studied habitat competition between the target species and other wildlife.

Feral hogs compete with native wildlife for food, cover, water, and space. They are highly adaptable, have high reproductive capabilities, and can be found in a wide range of habitat types. Rooting and digging activities negatively impact vegetative communities, soil properties and plant successional patterns (Stevens 2010). Feral hogs are opportunistic omnivores and compete with game and non-game wildlife species for available food resources. Wood and Roark (1980) found oak mast to be one of the more important seasonal food items of feral hogs. Tate (1984) found that feral hogs compete with deer, turkey, squirrels, waterfowl and other wildlife species for this food resource. Feral hogs can impact ground-nesting species, particularly quail and turkey, through nest destruction and predation. Beach (1993) also found that feral hogs

can prey on fawns and ground nesting birds. Hunting hogs is expected to reduce this interspecies competition within available habitat.

C. Are there unacceptable levels of predation by target species on other wildlife?

Yes, there is likely unacceptable predation by feral hogs, which are opportunistic feeders that prey on many other species. Direct prey includes small mammals, deer fawns and ground-dwelling reptiles and amphibians. They also prey on ground-nesting bird species such as wild turkey by ingesting their eggs. Indirectly, they can harbor several infectious diseases, some of which can be transmissible to humans and some of which can be fatal to other wildlife. Therefore, the reduction or eradication of feral hogs would benefit many native species. Raccoons also have unacceptable levels of predation on birds, bird eggs, and ground-dwelling and nesting reptiles and amphibians.

VIII. MEASURES TAKEN TO AVOID CONFLICTS WITH OTHER MANAGEMENT OBJECTIVES

A. Biological Conflicts

Biological conflicts are expected to be minimal. Hunts would generally consist of groups of less than 10 people. Access to the interior of the sites would be on foot or established roads and trails, thus reducing any impacts to listed plants, sand skinks, or other species potentially adversely affected by vehicle traffic. Removal of feral hog would benefit the site, by reducing the numbers of an invasive species that destroys plants and feeds upon native wildlife.

Prescribed fires needed to maintain the site's biological diversity would be scheduled around any hunts. The prescribed fire program would not be impacted by this public use opportunity. Treatments of non-native invasive plants would also be scheduled around any hunts.

B. Public Use Conflicts

The Service coordinates with FWC to develop hunting and fishing regulations for each unit. Minimizing public use conflicts is an important consideration for FWC's rule-making process, and each WMA has unique resources, as well as different public uses and associated challenges. As an example, Arbuckle falls under the Arbuckle WMA, which presently prohibits equestrian use during hunts. It is expected that new Refuge lands will be analyzed for potential user conflicts, with proposed rules made accordingly.

C. Administrative Conflicts

No administrative conflicts are expected with hunting and fishing activities.

IX. REFERENCES

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