

**SANDHILL LAKES MITIGATION BANK  
(FITZHUGH CARTER TRACT) OF  
ECONFINA CREEK WILDLIFE  
MANAGEMENT AREA**

**ANNUAL REPORT 2007-2008**



**Prepared by Kelly Bunting, Wildlife Biologist**  
Florida Fish and Wildlife Conservation Commission



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## INTRODUCTION

The Sand Hill Lakes Mitigation Bank property (referred to herein as the Carter Tract) is a 2,155 acre parcel located in south-central Washington County, approximately 5 miles north of State Road 20 and 1 mile west of State Road 77. The Carter Tract was purchased by the Northwest Florida Water Management District (NFWFMD or the District) in October 2003, and established by the Florida Fish and Wildlife Conservation Commission (FWC) as a tract of Econfina Creek Wildlife Management Area (WMA). A mitigation bank permit from the Florida Department of Environmental Protection (DEP) was issued to the District in August 2005 to manage the property. Management objectives identified by the District include wetlands restoration, preservation and management, aquatic habitat preservation, erosion control and uplands restoration and management. In June 2005, FWC entered into a cost-share agreement with the District to develop and implement a comprehensive fisheries and wildlife management program for Carter Tract. After three years of successful partnership, in July of 2007 this agreement was renewed for another three years.

## HABITAT

### *Ecological and Land Cover Classification*

The Carter Tract contains several distinct ecological communities. It contains a significant percentage of upland sandhill (approx. 1,150 acres) (Figure 1), historically logged for longleaf pine and re-planted as pine plantation or left to regenerate with pine (*Pinus* spp.), live oaks and scrub oaks (*Quercus* spp.). Interspersed within the uplands are approximately 850 acres of wetlands including cypress (*Taxodium* spp.) with emergent vegetation, degraded hydric pine flatwoods, bayhead wetlands, isolated depression marshes, seepage slopes, and other ecotonal wetland types. Approximately 150 acres are natural solution ponds (isolated, steep-sided karst ponds and shallow, gently-sloping lakes connected by streams and ditches).

Historic communities have been disturbed by timber operations and suppression of natural fire regimes. Restoration efforts by the District, including oak removal, timber removal and prescribed burning, have been largely completed on the area, moving land cover classifications closer to their targeted goals; an expanded summary of the targeted land cover classifications is shown in Table 1. A schedule for periodic prescribed fire, along with planting of longleaf pine and wiregrass, has been instituted by the District.



Figure 1. Longleaf pine/wiregrass restoration on sandhills at the Carter Tract of Econfina Creek Wildlife Management Area has included oak removal and periodic prescribed burning.



Table 1. Targeted Land Cover Classifications on the Fitzhugh Carter Tract of Econfina Creek WMA, given by the Florida Land Use, Cover and Forms Classification System (FLUCCS).

Level II FLUCCS	Description	Acres	Level III FLUCCS/Notes	Acres
410	Upland Coniferous Forest	643.568	412 - Longleaf Pine/Xeric Oak dominated by longleaf pine/wiregrass	643.568
420	Upland Hardwood Forest	497.709	421 - Xeric Oak	266.045
			427 - Live Oak	231.664
520	Lake	145.905	Undifferentiated 520	145.905
610	Wetland Hardwood Forest	152.839	611 - Bay Swamp	41.795
			615 - Stream and Lake Swamp	3.153
			616 - Inland Ponds and Sloughs	32.58
			617 - Mixed Wetland Hardwoods	75.311
620	Wetland Coniferous Forest	617.359	621 - Cypress Swamp	454.66
			625 - Hydric Pine Flatwoods	158.212
			626 - Hydric Pine Savannah	4.487
630	Wetland Forested Mixed	5.213	Undifferentiated 630	5.213
640	Vegetated Non-Forested Wetland	92.658	Undifferentiated 640	2.847
			641 - Freshwater Marsh	31.006
			643 - Wet Prairie	1.692
			644 - Emergent Aquatic Vegetation	57.113
830	Transportation/Utilities	18.638	832 - Power Line Right-of-Way to be maintained as prairie and/or shrub	18.638

\*\*Includes 18.6 acres of power-line right of way which transects, but is not included in, the bank itself which is ~2155 acres

### Drought

Water levels on the Carter Tract lakes and creeks have historically fluctuated in cycles lasting several years. Water gauges were installed on the Carter Tract by the District in 2005, and readings were recorded monthly by FWC field staff beginning in January 2006. Low water levels continued from 2007 to 2008 in most area ponds. Interconnectedness between waterways has diminished, and several ponds and creeks have dried completely (Figure 2). Management activities altered due to low water conditions include: electrofishing surveys limited, and public fishing angler quotas lowered.



Figure 2. A comparison of Warmouth pond in April 2007 and April 2008 shows drought conditions continuing on the Carter Tract of Econfina Creek WMA.

### Wildfire

In October 2007, a wildfire occurred on the Carter Tract. Investigation by the Florida Division of Forestry (DOF) concluded that lightning striking a cypress tree on the edge of Dry Pond caused the fire, which smoldered under duff for several days before the fire was discovered. With the assistance of DOF (and some rain), the District was finally able to extinguish the fire two weeks later. A total of 74 acres of cypress swamp were burned (Figure 3). Although some cypress trees were lost, it is expected that most will have survived the fire.



Figure 3. Wildfire claimed cypress trees in a swamp between Dry and Green Ponds on the Carter Tract of Econfina Creek WMA in October 2007. Photo courtesy of Tyler MacMillan, Northwest Florida Water Management District.

### **Photo Plots**

Photo plots are photographs taken at established locations, facing a preset direction. They are used to provide visual documentation of changes to a natural area through time. Sixty-three photo plots now exist on the Carter Tract, and continue to document restoration efforts such as prescribed burning and tree removal, management activities such as infrastructure improvements, and natural events such as drought (Figures 4 and 5). The photographs will continue to be taken annually, documenting all habitat types, water bodies and infrastructure on the area.



Figure 4. Photo plots taken in April 2007 and April 2008 document the removal of sand and slash pine plantations on the Carter Tract of Econfina Creek WMA.



Figure 5. Photo plots taken during April 2007 and April 2008 document the effects of prescribed burning on the sandhills of the Carter Tract of Econfina Creek WMA.

## FISH AND WILDLIFE POPULATIONS

Working in cooperation with the District, the responsibilities of the FWC-Division of Habitat and Species Conservation on the Carter Tract are generally to conduct fish and wildlife population surveys/assessments, collect/analyze biological data, evaluate results, administer public fishing and hunting programs, provide recommendations for adjustments in harvest designed to optimize fish and wildlife

populations and maximize recreational opportunities for the public. The following are monitoring and management programs developed to address targeted species and public opportunities.

## Freshwater Fish

### Fish Population Assessment

Fish population assessments in fall 2007 and spring 2008 revealed no new fish species; the 25 species so far identified on the area are listed in Table 2. Due to low water levels caused by drought conditions, sportfish surveys were limited during fall 2007 and spring 2008. Shoreline electrofishing was conducted on Dry Pond in spring 2008. Sportfish abundance calculated from the electrofishing data is presented as the amount of fish sampled per minute (Table 3). Largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), warmouth (*Lepomis gulosus*), and black crappie (*Pomoxis nigromaculatus*) were the sportfish species sampled (Figure 6).



Figure 6. Black Crappie and bluegill were two species sampled during shoreline electrofishing surveys on the Carter Tract of Econfina Creek WMA, April 2008.

Wegener Rings were also utilized at three different depths to sample the littoral zone for young-of-the-year (y-o-y) sportfish (Wegener et al. 1974) (Figure 7). The percent occurrence of all species sampled via Wegener Rings was determined for Black and Dry Ponds in November 2007 and again in April – May 2008 (Appendix I). Sampling via shoreline electrofishing and Wegener ring sampling is scheduled to be repeated each spring and fall. Fish survey data will be analyzed on intervals of five survey years to evaluate fish population status and provide management recommendations.



Figure 7. Wegener rings were placed at three different depths, such as this one meter depth, along shorelines of Black and Dry Ponds on the Carter Tract of Econfina Creek WMA, in November 2007 and April 2008.

Table 2. Fish species identified from electrofishing and Wegner ring surveys conducted on major waterways within the Carter Tract of Econfina Creek WMA, 2006 – 2007.

Common name	Scientific name
Eastern starhead topminnow	<i>Fundulus escambiae</i>
Mosquitofish	<i>Gambusia holbrooki</i>
Lake chubsucker	<i>Erimyzon sucetta</i>
Pygmy sunfish	<i>Elassoma</i> sp.
Pygmy killifish	<i>Leptolucania ommata</i>
Warmouth	<i>Lepomis gulosus</i>
Bluespotted sunfish	<i>Eneacanthus gloriosus</i>
Tadpole madtom	<i>Noturus gyrinus</i>
Chain pickerel	<i>Esox niger</i>
Swamp darter	<i>Etheostoma fusiforme</i>
Bluegill	<i>Lepomis macrochirus</i>
Brook silverside	<i>Labidesthes sicculus</i>
Largemouth bass	<i>Micropterus salmoides</i>
Yellow bullhead	<i>Ameiurus natalis</i>
Dollar sunfish	<i>Lepomis marginatus</i>
Banded topminnow	<i>Fundulus cingulatus</i>
Pirate perch	<i>Aphredoderus sayanus</i>
Spotted gar	<i>Lepisosteus oculatus</i>
Bowfin	<i>Amia calva</i>
Bluefin killifish	<i>Lucania goodei</i>
Grass pickerel	<i>Esox americanus</i>
Flier	<i>Centrarchus macropterus</i>
Spotted sunfish	<i>Lepomis punctatus</i>
Black crappie	<i>Pomoxis nigromaculatus</i>
Channel catfish	<i>Ictalurus punctatus</i>

Table 3. Electrofishing results for sportfish sampled on Dry Pond, Carter Tract of Econfina Creek WMA, April 2008.

Species	N <sup>a</sup>	CPUE <sup>b</sup>
Largemouth bass	20	0.15
Bluegill	46	0.33
Black crappie	3	0.02
Warmouth	4	0.02
<b>Total</b>	<b>73</b>	<b>0.53</b>

<sup>a</sup> Number of fish sampled.

<sup>b</sup> Catch per unit effort (CPUE) is measured in fish per minute

### Public Fishing

The Special Opportunity Public Fishing Program on the Carter Tract of Econfina Creek WMA continues to be highly successful. Angler participation was high during the first three months the fishing program was open, but dropped throughout the fall and winter of 2007 (Figure 8). Angler participation remained slow in early 2008, but has improved for the spring and early summer months (May-July) (Figure 8). It is important to note that during the fall and winter months from October to January, as well as several weekends in the spring, the Carter Tract is not open to fishing on days coinciding with area hunting seasons; therefore, these months offer fewer days for fishing than the rest of the year. The fishing program on the Carter Tract has also been hindered by local drought conditions, which forced the closing of several ponds on the area as well as lowering the daily angler quota from 20 to 16. Fishing pressure was calculated based on the total number of possible fishing hours from May 18, 2007 (opening day) through June 30, 2008. Based on a possible 40,832 fishing hours, anglers fished 3,937 hours, for a 9.64% usage.

A total of 1,193 anglers have fished on the Carter Tract from May 2007 to May 2008. Anglers coming from as far away as Miami-Dade county in Florida, and states such as Minnesota and Illinois, have enjoyed the Special Opportunity Fishing Program on the Carter Tract. Figure 9 compares the number of anglers from counties closest in proximity (Bay and Washington Counties) to the Carter Tract, with anglers from all other locations. Figure 10 further summarizes the origins of anglers from other locations.

As of June 30, 2008, 719 bass have been caught from Black, Dry and Deep Edge Ponds, with 1,776 panfish harvested (Figure 11) and 2,036 released. Black crappie and channel catfish have also been caught. Total number of anglers and angler-reported total catch by water body are given in Table 4. Fishing success rate, defined as the number of fish caught per hour, was calculated for all species on all water bodies combined, based on angler-reported creel data. Fishing success rate was 1.17 fish/hour. Big catches so far have been: 26 inches for largemouth bass, 12 inches for bluegill, and 14 inches for black crappie; all from Dry Pond.



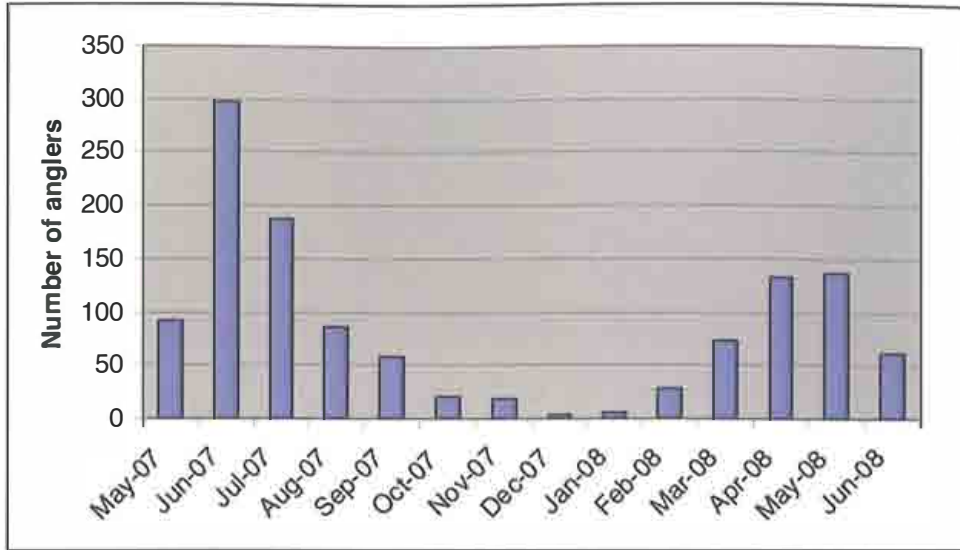


Figure 8. Number of anglers by month utilizing the Special Opportunity Fishing Program on the Carter Tract of Econfina Creek WMA, May 18, 2007 – June 30, 2008.

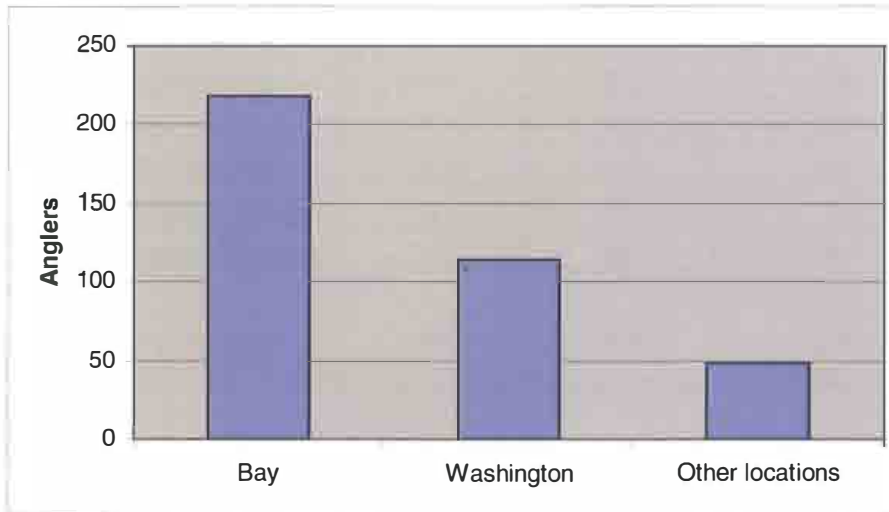


Figure 9. Comparison of anglers from Bay and Washington Counties with all other locations utilizing the Special Opportunity Fishing Program on the Carter Tract of Econfina Creek WMA.

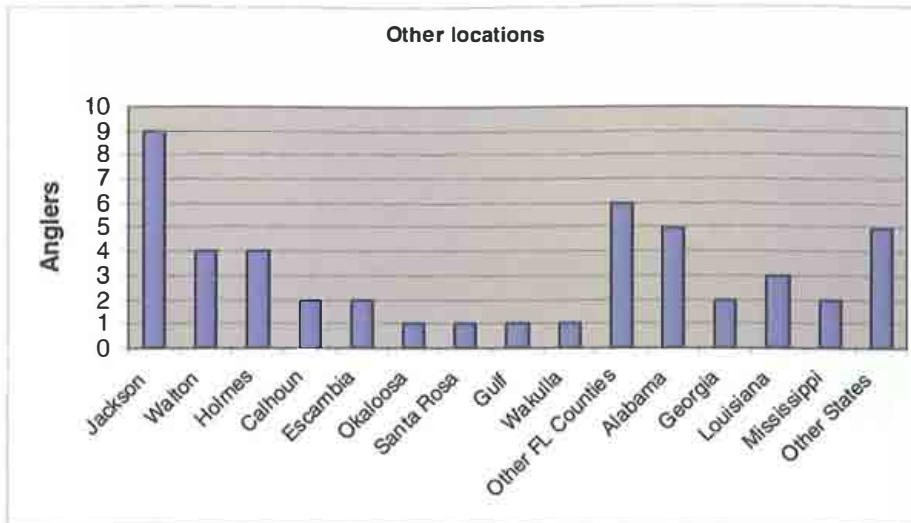


Figure 10. Origins of anglers utilizing the Special Opportunity Fishing Program on the Carter Tract of Econfina Creek WMA, other than those from Bay and Washington Counties.

Table 4. Total number of anglers and angler-reported total catch by water body on the Carter Tract of Econfina Creek WMA, May 2007 – June 2008.

	Dry Pond	Black Pond	Deep Edge Pond	Total
<b>Largemouth bass</b>	<b>291</b>	<b>325</b>	<b>103</b>	<b>719</b>
<b>Bluegill - kept</b>	<b>1036</b>	<b>523</b>	<b>217</b>	<b>1776</b>
<b>Bluegill - released</b>	<b>1498</b>	<b>348</b>	<b>190</b>	<b>2036</b>
<b>Black crappie - kept</b>	<b>3</b>	<b>9</b>	<b>0</b>	<b>12</b>
<b>Black crappie - released</b>	<b>19</b>	<b>16</b>	<b>1</b>	<b>36</b>
<b>Number of anglers</b>	<b>678</b>	<b>413</b>	<b>111</b>	<b>1202*</b>

\* Number of anglers per pond is higher than total number of anglers due to anglers switching ponds during a day of fishing.



Figure 11. A local angler caught this “bunch of bluegill” on Dry Pond at the Carter Tract of Econfina Creek WMA in April 2008.

## Wildlife Populations

### White-tailed Deer

#### Management objectives

The primary white-tailed deer (*Odocoileus virginianus*) management objective for the Carter Tract is to provide quality hunting opportunities while managing optimal herd health. Specific objectives are to attain a herd density of 16-26 deer/mi<sup>2</sup> (25-40 acres/deer). With limited hunting dates and a very conservative hunt format, our goal is to attain a harvest consisting of antlered deer predominantly in 3.5+ year classes. Besides

offering quality buck harvest, we plan to bolster and maintain a high degree of hunter participation with the implementation of limited antlerless deer harvest in the future, dependent upon herd expansion. Achieving these objectives requires active monitoring and management of the population, as well as the habitat. Appendix II provides the 2007-08 Fitzhugh Carter Tract Hunting Regulations Summary. This brochure was created separately from the Econfina Creek WMA Hunting Regulations Summary starting with the 2007-08 season, as an aid to hunters in clarifying regulations specific to the Carter Tract. It is currently available on the FWC website at:

[http://myfwc.com/hunting/wma/2008-09/Northwest/FITZHUGH\\_CARTER\\_TRACT\\_ECONFINA\\_CREEK.pdf](http://myfwc.com/hunting/wma/2008-09/Northwest/FITZHUGH_CARTER_TRACT_ECONFINA_CREEK.pdf).

### *Population trends*

Reliable annual indices of population size are fundamental to deer population management. Indices provide an estimate of relative abundance, rather than true population size. Thus the real value of the population surveys is to evaluate trends through time, since the specific relationship between the index and population density is not known.

Beginning in fall 2007 standard spotlight count surveys replaced track count surveys for deer on the Carter Tract. This decision was made due to the fact that several sand roads used for track count surveys were improved with rock, and much of the habitat was opened through improvements such as timber stand and oak removal, thus allowing for improved visibility of deer. Standard spotlight count surveys are conducted beginning approximately 45 minutes after dark. Preselected routes are traversed by truck with two spotters in the bed, each with spotlights. Deer are detected by eye shine and recorded. Visibility readings are taken at .1 mile increments along the surveys routes, and are used to calculate the total acreage surveyed, which is incorporated into the calculation of our deer population density. As with track count surveys, data obtained are used to ascertain population trends through time.

Spotlight counts on the Carter Tract were conducted along two transects, one 2.5 miles long and the other 3 miles long (Figure 12). Counts were replicated 6 times in September 2007. Preseason deer density for 2007 was estimated at 15 deer/mi<sup>2</sup> (95% C.L. 9.51 – 21.26 deer/mi<sup>2</sup>). The index is slightly below our population goal objective

for deer on the area (Figure 13). Direct comparisons between track count surveys and spotlight surveys should be made with caution, due to biases inherent in different survey methods. Several more years of data will be required to produce a clearer relative abundance, from which any assumption of trends in population size can be drawn.

In September 2007, the Carter Tract was one of 11 WMAs to participate in a statewide “*Distance Sampling Pilot Study*”, to evaluate the feasibility of line transect methodology for estimating deer population abundance on the WMAs. Line transect surveys are a type of distance sampling method, which utilize modeling to account for detectability of deer. Protocols are similar for both survey methods, but line transect surveys involve collecting data not only on the number of deer seen, but also the distance and direction the deer lies from the survey vehicle when spotted. Line transect surveys were conducted simultaneously to standard spotlight surveys, thus allowing for comparison and preventing interruption of annual surveys. Results of the first year comparison revealed that line transect estimates appeared to be slightly lower but more precise than standard spotlight density estimates (Table 5). Analyses of the feasibility of this survey method are ongoing, and line transect surveys will be conducted in conjunction with standard spotlight surveys again in fall 2008. Figure 14 shows the locations of deer detected during surveys on the Carter Tract in September 2007. A sample datasheet used in line transect surveys is provided in Appendix III.

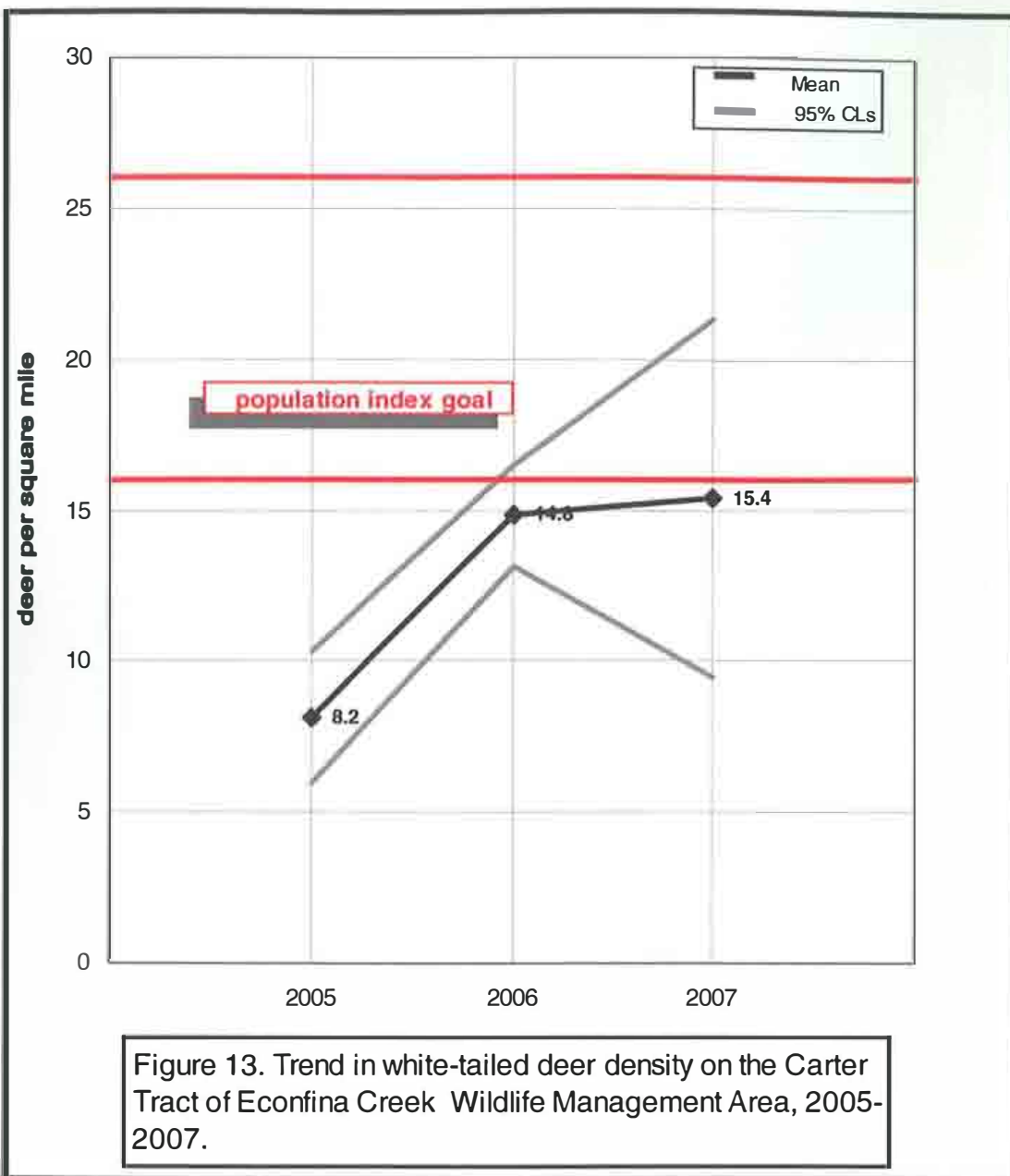
Table 5. Comparison of density estimates derived from traditional spotlight methodology with line transect distance sampling on the Carter Tract of Econfina WMA, September 2007.

Survey Type	Density deer/mi <sup>2</sup>	95 % Confidence Intervals		Coefficient of Variation
		lower	upper	
Line Transect,	8.1	4.8	10.3	20.8%
Line Transect (Left Truncated)	11.0	5.9	18.4	25.8%
Standard Spotlight	15.4	9.5	21.3	39.8%

Carter Tract of Econfina Creek WMA  
Spotlight Count Routes 2007



Figure 12. Distribution of spotlight count survey routes established on the Carter Tract of Econfina Creek WMA, September 2007.



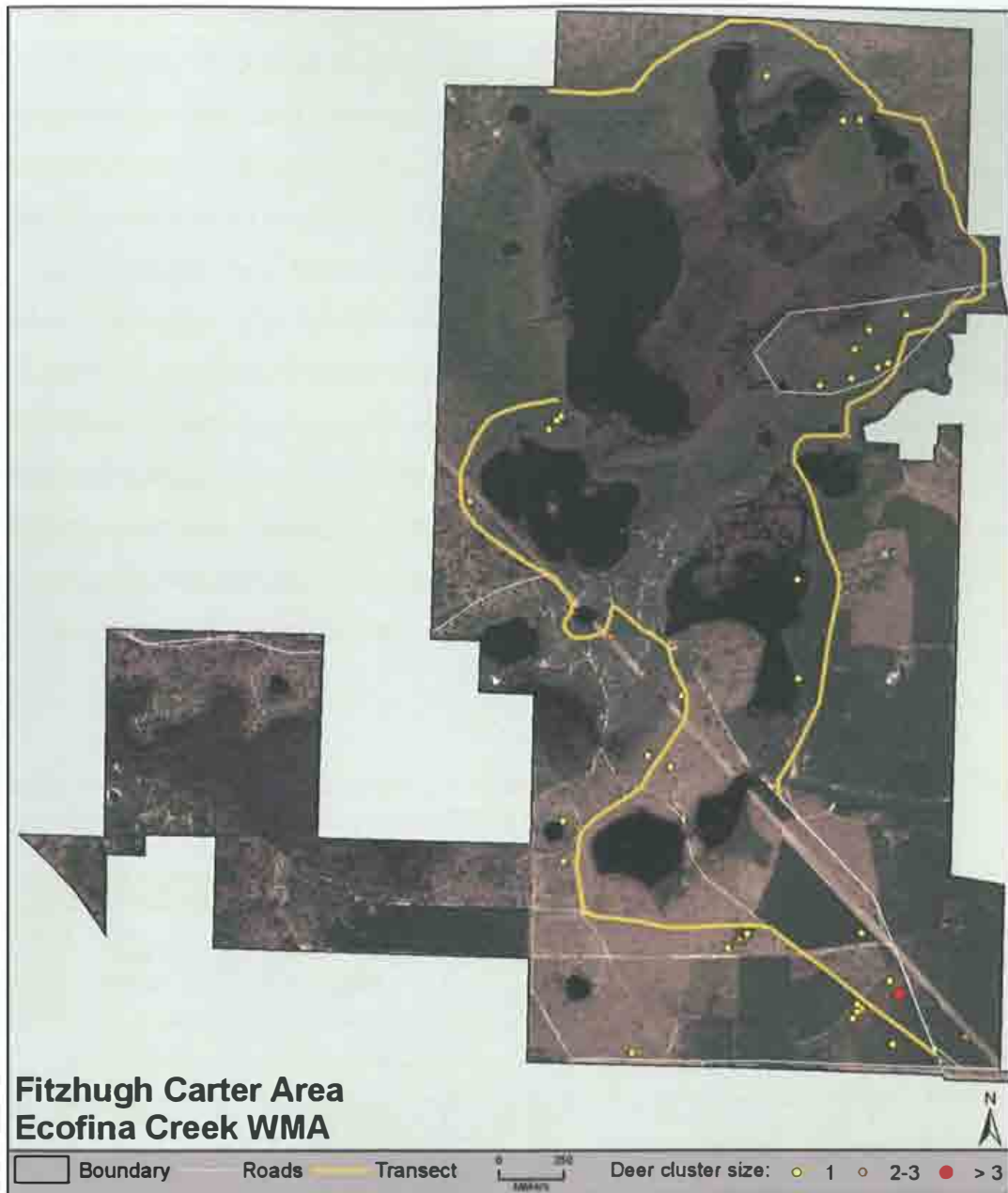


Figure 14. Distribution of deer detections during spotlight/line transect surveys on the Carter Tract of Ecofina Creek WMA, September 2007.



**Harvest and Hunting Pressure**

Mandatory check stations were used to monitor hunter pressure and collect biological data from harvested deer. Deer harvest on the area this past year was relatively light. Morphometric characteristics of bucks harvested are presented in Table 6. The heaviest deer checked was a 132 pound-2.5 year old (Figure 15).

Hunt success (buck harvest per man-days of hunting pressure) was estimated at 1 deer/15 man-days. The low harvest is most likely a result of the abbreviated hunt format (Table 7), as well as low hunter pressure during the different deer hunt seasons (Table 7). Man-days of hunting pressure have declined each year since 2005 for both archery and muzzle-loading gun seasons, while pressure has increased slightly then dropped slightly during general gun seasons from 2005 – 2007 (Figure 16). Obviously at present our full potential for deer hunting opportunities on the Carter Tract has not been realized (Table 7). It is expected that hunter participation will improve over the next few years.

Table 6. Morphometric parameters of white-tailed deer harvested on the Carter Tract of Econfina Creek WMA during the 2007-08 hunt season.

	Mean physical parameters						
	Age class	N	Live weight (lbs)	Beam circum. (cm)	Beam length (cm)	Inside spread (cm)	Number of antler points
<b>bucks</b>	0.5	0					
	1.5	0					
	2.5	2	116.5	5.95	19.25	21.7	5
	3.5	2	126	6.87	26.87	26.75	3
	4.5+	0					
<b>does</b>	0.5	0					
	1.5	0					
	2.5	0					
	3.5	0					
	4.5+	0					



Figure 15. This 2.5 year-old buck, weighing 132 pounds, was harvested from the Carter Tract of Econfina Creek WMA, January 21, 2008.

Table 7. Harvest summary for the deer hunting seasons on the Carter Tract of Econfina Creek WMA, 2007-2008.

Hunt Season	Season Dates	Season Length (days)	Hunt Quota Per day	Potential Max. Hunt Man-Days	Hunt Man-Days	Deer Harvest		
						M	F	total
Archery	Oct. 13-19	7	15	105	7			0
Archery	Oct. 20-28	9	15	135	2			0
Muzzleloading Gun	Nov. 16-18	3	15	45	1			0
General Gun	Nov. 22-25	4	15	60	20			0
General Gun	Jan. 19-22	4	15	60	15	3		3
General Gun	Jan. 23-27	5	15	75	22	1		1

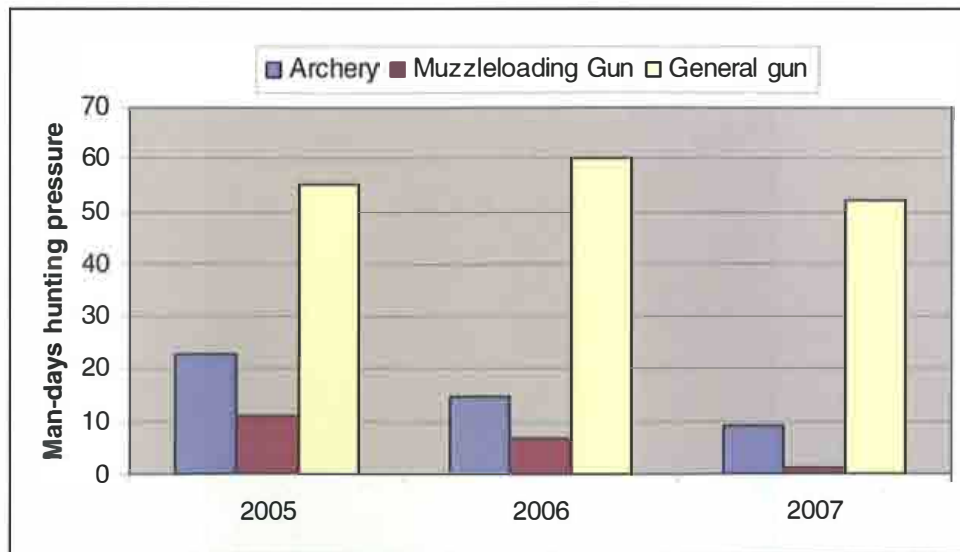


Figure 16. Trend in man-days of hunting pressure per season by year on the Carter Tract of Econfina Creek WMA, 2005 – 2007.

## Wild Turkey

### Management objectives

1. Encourage and maintain a population of wild turkeys (*Meleagris gallopavo*) that will provide a high quality hunting experience to the public.
2. Continue to provide high quality habitat for wild turkeys (i.e. burning, and maintain forested openings).

### Harvest

Spring turkey season on the area constituted three quota hunts, each three days in length plus one day prior to each hunt for scouting (March 14 – 17, March 27 – March 30, April 10 - 13). The 2007 - 2008 season yielded a total of 27 man-days, with 2 gobblers harvested (15½ pounds with 11 inch beard, and 16½ pounds with 10½ inch beard) (Figure 17), for an estimated hunt success rate of 1 gobbler/4.5 man-days. This is an increase from 2006, which had 14 man-days of hunting pressure and no gobblers harvested.



Figure 17. This gobbler, weighing 15½ pounds and having an 11 inch beard, was harvested from the Carter Tract of Econfina Creek WMA on March 28, 2008.

## Small Game

The public's interest in utilizing small game resources on the area during the 16 day December season (December 1 - 16) increased in 2007. Hunters were encouraged to utilize this non-quota hunt period for taking wild hogs, which are known to frequent much of the area; however, little interest was shown. The season yielded a harvest of 58 gray squirrels (*Sciurus carolinensis*) with 16 man-days of hunting pressure, an increase from no harvest and 2 man-days of hunting pressure in 2006.

## Waterfowl

### Harvest

Harvest of waterfowl on the area continues to be minimal. The Carter Tract provided a special early duck season September 22 - 26, which yielded a total of 3 man-days and a harvest of 1 wood duck (*Aix sponsa*) drake and 1 blue-winged teal (*Anas discors*) drake. The 2007-08 regular waterfowl season coincides with portions of the muzzleloading, general gun and small game seasons on the Carter Tract (November 17 – 18 and 22 - 25, December 8 – 16, and January 19 – 27). Waterfowl hunting during this time yielded a total of 12 man-days and a harvest of 11 wood ducks (8 drakes: 3 hens) and 2 ring-necked duck (*Aythya collaris*) drakes for a hunting index of 0.9 hunter-days/duck.

### Wood Duck Nest Boxes

Efforts to monitor and facilitate local breeding populations of wood ducks continue with quarterly monitoring efforts on the 50 nest boxes erected on the Carter Tract in 2005. In January of each year, boxes are cleaned and repairs are made as needed. Boxes are checked three times throughout the breeding season (March – September) to determine use and nest fate (Figure 18). Drought conditions continued on the area, leaving most of the 50 boxes on the area out of water. In 2007, eight confirmed wood duck nests were found (Figure 19); one box was used twice during the season. This is an increase from the six confirmed wood duck nests found in 2006. It is also evident that other species are benefiting from the presence of the nest boxes. Six boxes were used by great crested flycatchers (indicated by the presence of snake skins in the box), and other

boxes were used by both mammals and birds for nesting and/or shelter (Figure 20). Locations of nest boxes used in 2007 are shown in Figure 21.



Figure 18. Wood Duck nest boxes were checked quarterly in 2007-2008 to clean and repair boxes and determine nest use and fate.



Figure 19. Wood duck nest in a box on the Carter Tract of Econfina Creek WMA, April 2007.



Figure 20. Several other species utilize wood duck boxes for shelter and/or nesting, such as these chimney swift (*Chaetura pelagica*) chicks and this southern flying squirrel (*Glaucomys volans*).

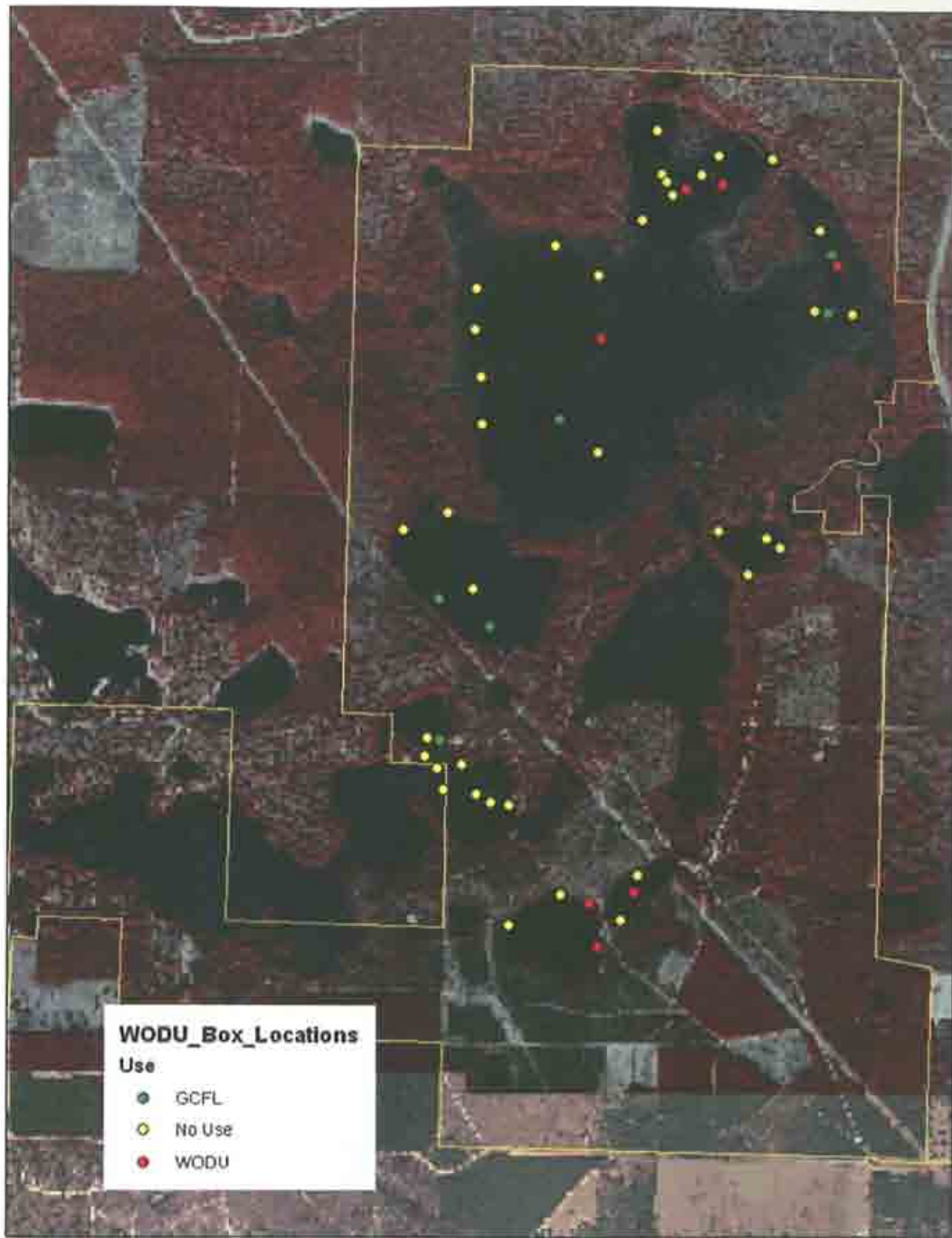


Figure 21. Use of wood duck nest boxes across the Carter Tract of Econfina Creek WMA, 2007. Red boxes indicate a confirmed Wood Duck nest; green boxes indicate probable use by great crested flycatchers (suspected due to presence of snake skin in box); yellow boxes indicate no use or use by another species.



## Avifauna

As of June 2008, 108 species of birds have been documented as occurring on the Carter Tract. An updated species list for the area is given in Appendix IV. A public bird checklist brochure is available to the public at the Carter check station and FWC's Northwest regional office in Panama City. One notable sighting in the past year was in October 2007, when two sandhill cranes (*Grus canadensis*) were observed foraging in an area of the Carter Tract affected by wildfire, northeast of Dry Pond (Figure 22).



Figure 22. These two sandhill cranes were observed foraging on the Carter Tract of Econfina Creek WMA, October 2007.

### Wading Birds

Monitoring of the colonial-nesting wading bird rookery located in Little Deep Edge Pond on the Carter Tract continued in spring and summer 2008. This pond was dry in 2007, and no bird activity was recorded on the rookery. However, late winter rain brought water back to the pond surrounding the rookery (Figure 23). As in previous years, survey protocol included weekly shoreline monitoring during the nesting season (April – July) using a spotting scope at the closest distance possible without causing bird disturbance. Bird use of the rookery returned in 2008, when 55 adults of 6 species were observed, including two species of special concern in the state of Florida, the tricolored

heron (*Egretta tricolor*) (Figure 24) and the little blue heron (*Egretta caerulea*) (Table 8). Thirty-four of these birds were confirmed to be on nests, and 10 chicks (all great egrets) were observed (Figure 25).

Table 8. Observations of wading bird rookery at Little Deep Edge Pond, Carter Tract of Econfina Creek WMA, May – June 2008.

Species	Number of Adults	Number on nest	Number of chicks
Cattle Egret ( <i>Bubulcus ibis</i> )	25	18	0
Great Egret ( <i>Ardea alba</i> )	13	10	10
Little Blue Heron ( <i>Egretta caerulea</i> )	8	3	0
Tricolored Heron ( <i>Egretta tricolor</i> )	2	couldn't determine	0
Green Heron ( <i>Butorides virescens</i> )	1	0	1 (juvenile)
Anhinga ( <i>Anhinga anhinga</i> )	6	3	0



Figure 23. The rookery located on Little Deep Edge Pond at the Carter Tract of Econfina Creek WMA was once again partially surrounded by water in 2008, and was again utilized by breeding wading birds.



Figure 24. This tricolored heron was photographed on the rookery at Little Deep Edge Pond, Carter Tract of Econfina Creek WMA, May 2008.



Figure 25. This great egret watches over its chicks on the rookery at Little Deep Edge Pond, Carter Tract, May 2008.

## Passerines

In a continuing effort to monitor bird species present on the Carter Tract, point count surveys were conducted on the area in May and June 2007. The point count method of bird surveys has come to be widely used for counting songbirds in North America (Bibby et al. 1992). Point counts can be used for simple tasks such as assembling a list of species present in an area, as well as more complex tasks such as looking at relative abundances between habitat types (Bibby et al. 1992). Point count surveys are most often used during the breeding season, when calling activity is at its highest (Hamel et al. 1996).

Point count surveys were conducted in May 2008 on the Carter Tract. In an effort to compare species composition across habitats, point count locations in 2008 were distributed among different habitat types throughout the area. Three point counts were conducted in sandhill areas (points 2, 6 and 7), one in a wetland/wading bird rookery area (point 1), one on a lake edge (point 8), one in a wet prairie (point 4), one in a mixed-hardwood area (point 3), and one in a recently logged area (point 5) (Figure 26). All but one of these locations (mixed-hardwood) has undergone restoration efforts, which in some cases significantly altered habitat structure and height. These locations will be revisited each year to identify changes in species composition due to habitat changes.

Protocols followed were the same as those used in 2007, and closely follow those recommended by Hamel et al. (1996). Counts were conducted on four days during mid-May. Surveys were conducted early in the morning, when bird activity is noted to be highest (Hostetler and Martin 2001). Counts started at dawn and ended by 0930. The order in which each count location was visited was alternated during the four survey days per month, to ensure counts were conducted at each location in earlier, mid- and later morning periods. This was to prevent any bias from birds calling more frequently at certain hours of the count period (Hostetler and Martin 2001). Once in place at each count location, observers remained still for two minutes prior to the start of the count. Counts lasted for ten minutes. During this period, all birds seen and/or heard within a 75 meter radius were marked on a datasheet. Only birds positively identified were listed by species; other birds seen and/or heard were marked as “unknown”, with any distinct

plumage characteristics or call patterns being noted for possible later identification.

The sandhill habitats chosen were located throughout the area, and were similar in composition (number of trees in vicinity). Prescribed burns had been conducted on all the sites within the past year. The most common species identified here were the eastern towhee (*Pipilo erythrophthalmus*), mourning dove (*Zenaida macroura*), blue jay (*Cyanocitta cristata*) and northern cardinal (*Cardinalis cardinalis*) (Figure 27). Two neotropical migrant species were noted on sandhill counts, including the northern parula (*Parula americana*) and the summer tanager (*Piranga rubra*) (Figure 27).

The wetland habitat chosen contains a mixture of open water and freshwater marsh, with a transition zone of emergent aquatic vegetation leading to a sandhill upland. Due to the wading bird rookery located within proximity of this count, great egrets and little blue herons were two of the most common species recorded (Figure 28). Red-winged blackbird (*Agelaius phoeniceus*) and common grackle (*Quiscalus quiscula*) were also common at this location (Figure 28). Northern bobwhite (*Colinus virginianus*) was heard in the sandhill upland adjacent to the wetland.

The lake edge habitat contains both aquatic and upland species due to its proximity to both a large body of open water, and a shrubby transition zone leading to hydric pine on one side and mixed wetland hardwoods on the other. The most common species identified was the red-winged blackbird, followed by the great crested flycatcher (*Myiarchus crinitus*) and mourning dove. A timely observation of a wood duck hen, her nine ducklings and two drakes on the lake, accounted for the large percentage of detections for this species. Two breeding summer residents noted at this location were the orchard oriole (*Icterus spurius*) and the barn swallow (*Hirundo rustica*) (Figure 29).

The wet prairie habitat chosen is located adjacent to a cypress swamp. The most common species identified were the eastern towhee, northern cardinal, great crested flycatcher, and blue-gray gnatcatcher (*Polioptila caerulea*). White eyed vireos (*Vireo griseus*) and pileated woodpeckers (*Dryocopus pileatus*) were also often noted at this location (Figure 30).

The mixed hardwoods site contains a mostly closed canopy, and is dominated by live oak and other oak trees. The red-eyed vireo (*Vireo olivaceus*) and the yellow-billed cuckoo (*Coccyzus americanus*), breeding neotropical migrant species, were identified in

this habitat on the Carter Tract. The most common species present at this location were the northern parula, northern cardinal, great crested flycatcher and red-eyed vireo (Figure 31).

The former pine plantation location was logged within the past year. Logging slash still remains on the area, and restoration work has not yet begun on this site. Few birds were counted at this location, but the most common species were the northern mockingbird (*Mimus polyglottos*) and the mourning dove (Figure 32). It is expected that the bird community on these former plantation areas will grow as native groundcover returns through prescribed burning, and longleaf pine emerges.

Overall, our point counts concluded that generalist species appear to dominate most habitat types on the Carter Tract. Eastern towhees, great crested flycatchers, northern cardinals and mourning doves appear commonly in all areas. However, the area contains several habitats important to breeding neotropical migrant species, including mixed hardwoods, sandhill and wet prairie. As restoration efforts continue, it is expected that more species specializing in sandhill habitats will be detected in future point count surveys.



Figure 26. Locations of point count surveys on the Carter Tract of Econfina Creek WMA, May 2008.

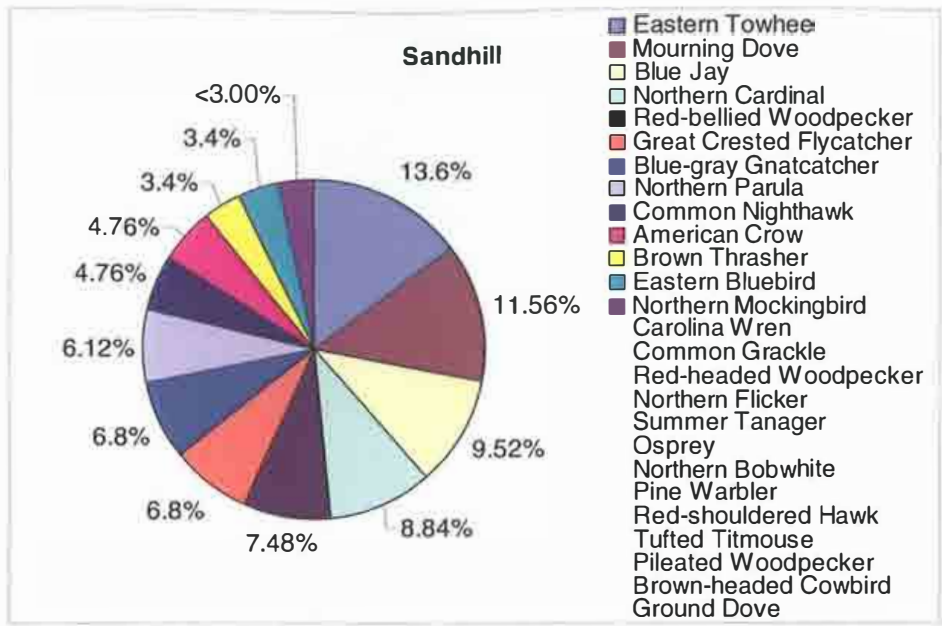


Figure 27. Percent of total detections for bird species identified in sandhill habitats during point counts on the Carter Tract of Econfina Creek WMA, May 2008.

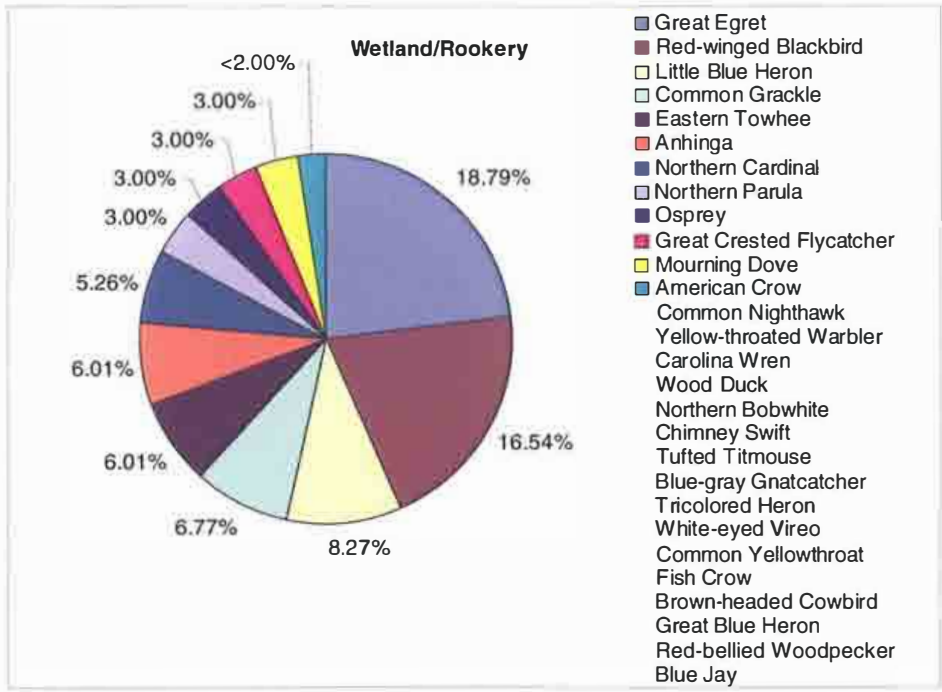


Figure 28. Percent of total detections for bird species identified in wetland habitat during point counts on the Carter Tract of Econfina Creek WMA, May 2008.



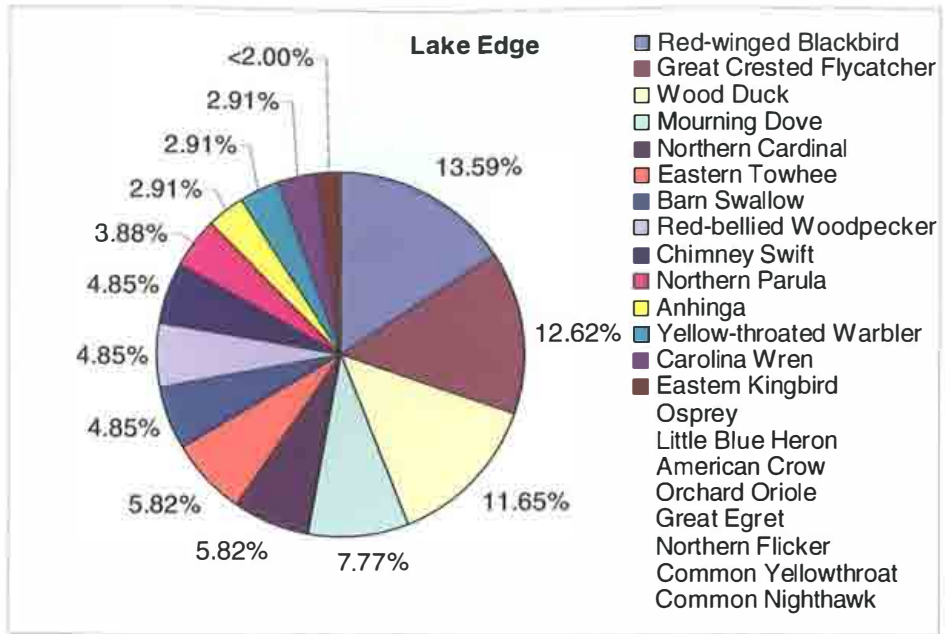


Figure 29. Percent of total detections for bird species identified in lake edge habitat during point counts on the Carter Tract of Econfina Creek WMA, May 2008.

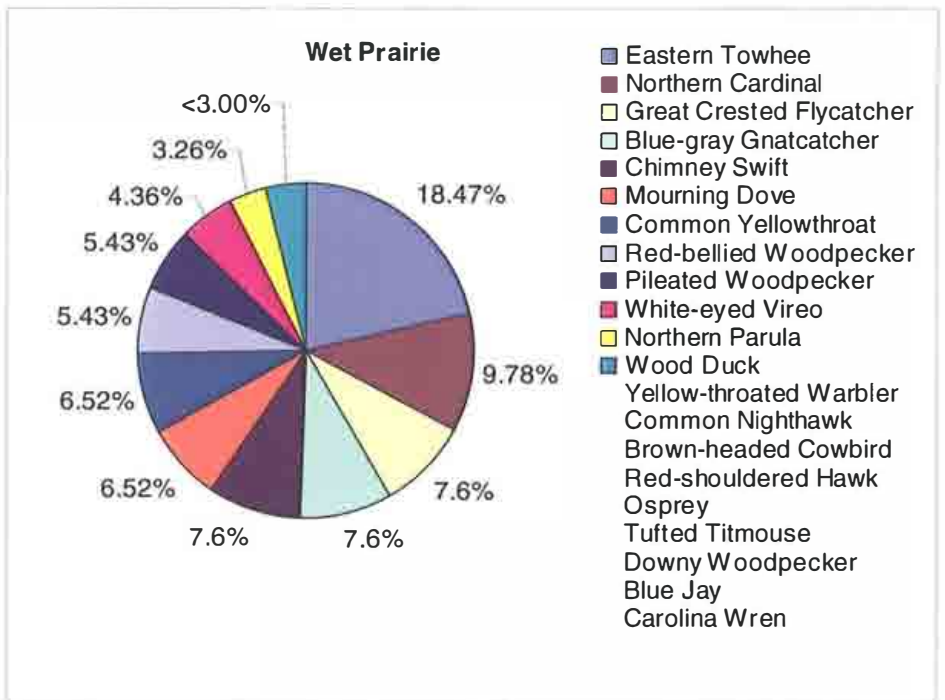


Figure 30. Percent of total detections for bird species identified in wet prairie habitat during point counts on the Carter Tract of Econfina Creek WMA, May 2008.

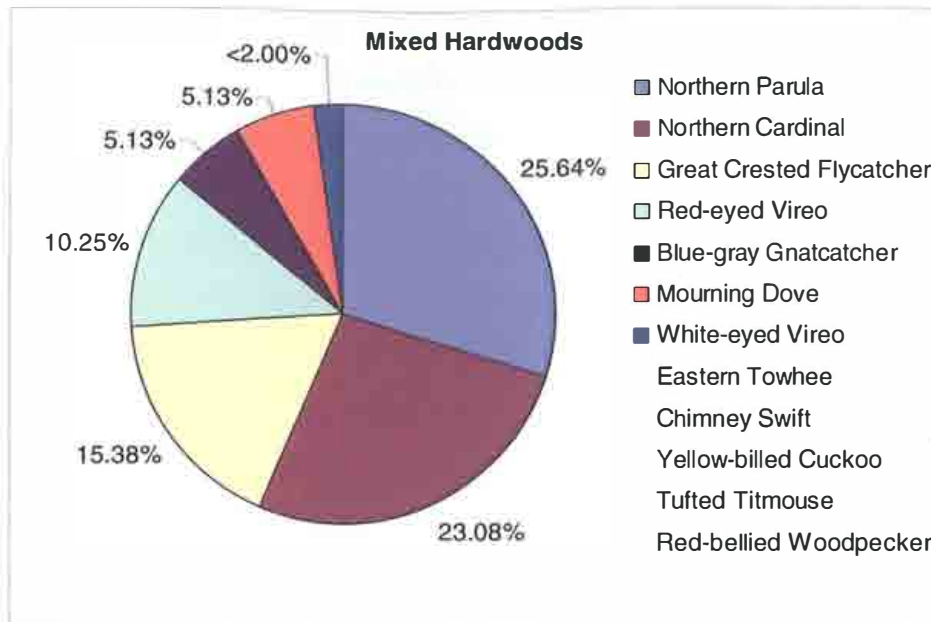


Figure 31. Percent of total detections for bird species identified in mixed hardwoods habitat during point counts on the Carter Tract of Econfina Creek WMA, May 2008.

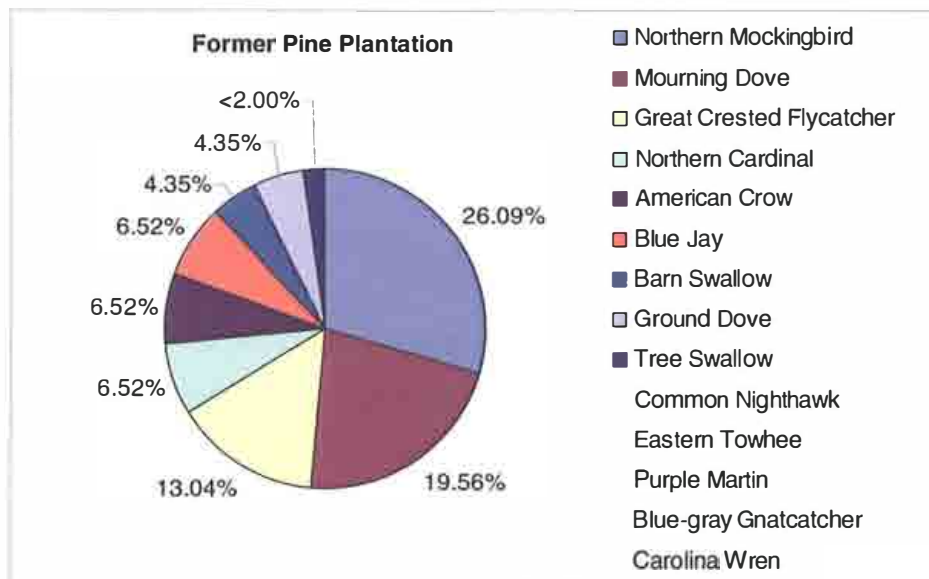


Figure 32. Percent of total detections for bird species identified in recently logged pine plantation during point counts on the Carter Tract of Econfina Creek WMA, May 2008.

### *Mourning Dove Banding*

Contemporary and statistically reliable estimates of harvest rates, survival rates, and geographical distribution and derivation of harvest throughout the United States are necessary to improve science-based harvest management of mourning doves. A 3-year national pilot banding program was initiated in 2003 to produce data for estimation of these demographic parameters. This cooperative effort between state wildlife agencies, the U.S. Fish and Wildlife Service (USFWS), and the U.S. Geological Survey Bird Banding Laboratory (BBL) resulted in much needed information for improvement of dove harvest management. The pilot study represented the only source of contemporary information available on a large-scale basis (26 states), as the last comprehensive banding program occurred from 1965-1975. Goals and objectives of this study included:

- Estimate age-specific harvest rates and band reporting rates in a representative set of subregions in each of the 3 national dove harvest management units.
- Estimate band reporting rates with the same subregions.
- Establish protocols, training, and cost estimates for a future coordinated nationwide banding program designed to monitor harvest and survival rates.
- Provide information on geographical distribution and derivation of harvest.
- Provide initial estimates of annual survival and breeding site fidelity of subregion breeding populations.

The field protocols and sampling designs used and tested by the cooperating state agency field staffs, and the resultant parameter estimates generated from this pilot study, were critical in the design of a cooperative state and federal long-term operational banding program. As part of this national long-term banding program, FWC's Small Game Management Program solicited WMAs throughout the state to participate in this banding work. FWC on the Carter Tract has chosen to participate and contribute to Florida's statewide dove-banding project in cooperation with the USFWS and BBL (Figure 33). These efforts are integral components in the development and implementation of a long term national harvest management strategy for mourning doves. Hunters have an important role in the success of the program. They are encouraged to

report leg bands at 1-800-327-BAND, or online at [www.pwrc.usgs.gov](http://www.pwrc.usgs.gov) (select “Birds”, then “Bird Banding Lab”).



Figure 33. In conjunction with national long-term banding efforts, the Carter Tract of Econfina Creek WMA is one of the sites participating in Florida’s statewide dove banding program.

Two sites on the Carter Tract were selected and prebaiting using white millet seed began June 1, 2007. Beginning July 1, traps were placed on each site (Figure 34) in the early morning and late afternoon. Traps were checked after 1-2 hours, depending on weather conditions. Doves were banded using U.S. Fish and Wildlife Service metal identification bands, and age, sex and molt sequence data were collected on each bird (Figure 35). The initial quota for Carter Tract was 30 birds, which was accomplished within one week of the start of the banding period (July 1 – August 15). Eight additional birds were banded two weeks later, when another wildlife area requested help meeting their quota. In addition to mourning doves, several incidental species were captured and

released: bobwhite quail (Figure 36), common ground dove (Figure 36), brown-headed cowbird (*Molothrus ater*), northern cardinal, common grackle, red-winged blackbird, and indigo bunting (*Passerina cyanea*).



Figure 34. Traps are placed and baited with white millet seed to attract mourning doves at two sites on the Carter Tract of Econfina Creek WMA in June 2007.



Figure 35. Mourning doves were trapped, banded with U.S. Fish and Wildlife identification tags, and age, sex and molt sequence were recorded in July 2007 on the Carter Tract of Econfina Creek WMA.



Figure 36. Incidental species (i.e. bobwhite quail and ground doves) were captured and released during mourning dove banding efforts on the Carter Tract of Econfina Creek WMA in July 2007.

## Herpetofauna

Surveys of herpetofaunal communities on the Carter Tract continued in 2007-2008. Drift fences were used to intercept adult amphibians and reptiles entering and exiting ponds and wetlands. Drift fences remained in the same locations as 2006, parallel to pond margins on breeding sites with a large amount of grassy ecotone and extensive herbaceous ground cover in the upland habitat (Figure 37).

Drift fences were constructed from standard 100ft x 3ft silt fencing. The bottom edge of the fence material was buried 6 inches into the ground to prevent salamanders from tunneling underneath the fences. The drift fences were supported by wooden stakes and staples. Repairs on drift fences were conducted when necessary.

Funnel traps were constructed from window screening and modeled after the size and schematics of Enge (1997). Traps were placed at each end and in the middle of both the inside and the outside of the fence, for a total of 6 funnel traps per fence. Surveys were conducted with respect to local weather. Traps were opened when rainy conditions were forecast and herpetofauna were expected to be moving. Soil ramps were placed in the mouth of the funnel to act as a natural surface leading up to trap entrance. Nearby vegetation was used to shade the funnel traps from direct exposure from the sun and intensive heat, and moistened sponges were placed inside traps. When in use, traps were checked each morning to minimize trap-induced mortality.

Eleven drift fences remain in place around potential herpetofaunal breeding ponds and wetland areas (Figure 38). Eight "fence nights" during January through March yielded 6 different species captured (Figure 39) (Table 9).

Documenting herpetofaunal species on the Carter Tract is an ongoing occurrence; species are often encountered during surveys for other taxa. Table 10 contains a list of all herpetofaunal species identified by biologists on the Carter Tract from 2005 to present.



Figure 37. Drift fence used in herpetofaunal surveys on the Carter Tract of Econfina Creek WMA.





Figure 38. Location of drift fences for herpetofaunal surveys on the Carter Tract of Econfina Creek WMA, January – March 2008.



Figure 39. Eastern spadefoot toad (*Scaphiopus holbrookii holbrookii*), (left) and mole salamander (*Ambystoma tadpoideum*), captured in funnel traps on the Carter Tract of Econfina Creek WMA, February 2008.

Table 9. Herpetofaunal species captured in drift fences on the Carter Tract of Econfina Creek WMA, January - March 2008.

Common name	Scientific Name	Frequency (Number of captures)
Florida cricket frog	<i>Acris gryllus dorsalis</i>	1
Mole salamander	<i>Ambystoma tadpoideum</i>	1
Southeastern slimy salamander	<i>Plethodon grobmani</i>	1
Eastern spadefoot toad	<i>Scaphiopus holbrookii holbrookii</i>	1
Eastern narrowmouth toad	<i>Gastrophryne carolinensis c.</i>	1
Dwarf salamander	<i>Eurycea quadridigitata</i>	1

Table 10. Herpetofaunal species documented on the Carter Tract of Econfina Creek WMA, 2005 – present.

Eastern Lesser siren	<i>Siren intermedia intermedia</i>
Greater siren	<i>Siren lacertina</i>
Central newt	<i>Notophthalmus viridescens louisianensis</i>
Mole salamander	<i>Ambystoma talpoideum</i>
Dwarf salamander	<i>Eurycea quadridigitata</i>
Slimy salamander	<i>Plethodon glutinosus</i>
Eastern Spadefoot toad	<i>Scaphiopus holbrooki</i>
Bullfrog	<i>Rana catesbeiana</i>
Pig frog	<i>Rana grylio</i>
Southern Leopard frog	<i>Rana sphenoccephala</i>
Eastern Narrowmouth toad	<i>Gastrophryne carolinensis</i>
Southern Chorus frog	<i>Pseudacris nigrita nigrita</i>
Southern toad	<i>Bufo terrestris</i>
Florida Cricket frog	<i>Acris gryllus dorsalis</i>
Green treefrog	<i>Hyla cinerea</i>
American alligator	<i>Alligator mississippiensis</i>
Florida cooter	<i>Pseudemys floridana floridana</i>
Eastern Chicken turtle	<i>Deirochelys reticularia reticularia</i>
Three-Toed Box turtle	<i>Terrapene carolina triunguis</i>
Gopher tortoise	<i>Gopherus polyphemus</i>
Florida softshell	<i>Apalone ferox</i>
Green anole	<i>Anolis carolinensis</i>
Southern Fence lizard	<i>Sceloporus undulatus undulatus</i>
Six-lined racerunner	<i>Cnemidophorus sexlineatus sexlineatus</i>
Southeastern Five-lined skink	<i>Eumeces inexpectatus</i>
Ground skink	<i>Scincella lateralis</i>
Southern Black racer	<i>Coluber constrictor priapus</i>
Banded Water snake	<i>Nerodia fasciata fasciata</i>
Rough Green snake	<i>Ophedrys aestivus</i>
Eastern Garter snake	<i>Thamnophis sirtalis sirtalis</i>
Cottonmouth	<i>Agkistrodon piscivorus</i>
Eastern Diamondback Rattlesnake	<i>Crotalus adamanteus</i>
Dusky Pigmy Rattlesnake	<i>Sistrurus miliarius barbouri</i>

## Miscellaneous Management Activities

FWC personnel performed numerous tasks in maintaining and improving the Carter Tract. In an effort to enforce management area regulations and clarify the Carter Tract boundary, existing FWC Wildlife Management Area boundary designation signs were replaced as needed and additional signs erected along all boundary fences. This past year, 106 boundary signs were replaced and/or erected, and all signs were marked using a handheld GPS unit. Figure 40 contains a map of the current locations of boundary signs on the Carter Tract. The work plan for Fiscal Year 2007-08 is contained in Appendix V.



Figure 40. Boundary sign locations on the Carter Tract of Econfina Creek Wildlife Management Area, 2007.

## Law Enforcement Activities

Wildlife officers provided 187 hours of patrol in the Carter Tract between July 1, 2007 and June 30, 2008. Officers gave two verbal warnings, both for road blockages, and had sixty-six contacts with the public. In addition, several perimeter and adjacent landowner patrols were conducted, primarily during hunting seasons along adjacent lands.

One wildlife officer's field headquarters is situated within the FWC office complex on the Carter Tract grounds. This law enforcement presence on the area is routine and is not included in the aforementioned patrol hours.

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Appendix I. Percent Occurrence of Fish Species Sampled via Wegener Rings for Black and Dry Ponds on the Carter Tract of Econfina Creek Wildlife Management Area, October 2007 – May 2008.

Percent occurrence of fish species on Dry Pond through Wegener ring sampling, fall 2007.

Fish species	Scientific name	Shoreline	1/2 meter	1 meter	Total
Pygmy Killifish	<i>Leptolucania ommata</i>	66.7	36.5	69.1	57.4
E. Starhead Topminnow	<i>Fundulus escambiae</i>	12.4	1.1	1	5.8
Mosquitofish	<i>Gambusia affinis</i>	15.7	12.1	4.4	11.7
Swamp Darter	<i>Etheostoma fusiforme</i>	2.9	9.8	16.2	8.6
Pygmy Sunfish	<i>Elassoma sp.</i>	2	31.5	5	12.4
Warmouth	<i>Lepomis gulosus</i>	0	0.4	1	0.4
Brook Silverside	<i>Labidesthes sicculus</i>	0	0.4	0	0.1
Tadpole Madtom	<i>Noturus gyrinus</i>	0	0.7	0	0.2
Bluespotted Sunfish	<i>Enneacanthus gloriosus</i>	0	0.7	1.9	0.75
Bluegill	<i>Lepomis macrochirus</i>	0	6.4	1.5	2.5

Percent occurrence of fish species on Black Pond through Wegener ring sampling, fall 2007.

Fish species	Scientific name	Shoreline	1/2 meter	1 meter	Total
Pygmy Killifish	<i>Leptolucania ommata</i>	10	0	0	2.2
Mosquitofish	<i>Gambusia affinis</i>	30	33	0	8.7
Swamp Darter	<i>Etheostoma fusiforme</i>	10	66.7	15.2	17.4
Pygmy Sunfish	<i>Elassoma sp.</i>	20	0	0	4.3
Warmouth	<i>Lepomis gulosus</i>	10	0	0	2.2
Bluegill	<i>Lepomis macrochirus</i>	10	0	84.8	63
Least Killifish	<i>Heterandria formosa</i>	10	0	0	2.2

Percent occurrence of fish species on Dry Pond through Wegener ring sampling, Spring 2008.

Fish species	Scientific name	Shoreline	1/2 meter	1 meter	Total
Pygmy Sunfish	<i>Elassoma sp.</i>	56.2	58.3	39.7	50.9
Swamp Darter	<i>Etheostoma fusiforme</i>	2.9	12.2	12.8	9.2
Pygmy Killifish	<i>Leptolucania ommata</i>	15.3	13	3.5	10.4
Mosquitofish	<i>Gambusia affinis</i>	18.2	13.9	3.5	11.7
Yellow Bullhead	<i>Ameiurus natalis</i>	0.7	0	0	0.25
Chain Pickerel	<i>Exos niger</i>	0.7	0.9	0	0.5
Warmouth	<i>Lepomis gulosus</i>	5.1	0	1.4	2.3
Banded Topminnow	<i>Fundulus cingulatus</i>	0.7	0	0	0.25
E. Starhead Topminnow	<i>Fundulus escambiae</i>	0	0.9	0	0.25
Tadpole Madtom	<i>Noturus gyrinus</i>	0	0.8	0	0.25
Lake Chubsucker	<i>Erimyzon sucetta</i>	0	0	27.6	9.9
Bluespotted Sunfish	<i>Enneacanthus gloriosus</i>	0	0	1.4	0.5
Dollar Sunfish	<i>Lepomis marinatus</i>	0	0	2.8	1
Bluegill	<i>Lepomis macrochirus</i>	0	0	7.1	2.5

Percent occurrence of fish species on Black Pond through Wegener ring sampling, Spring 2008.


Fish species	Scientific name	Shoreline	1/2 meter	1 meter	Total
Swamp Darter	<i>Etheostoma fusiforme</i>	9.5	38.9	100	24.3
Mosquitofish	<i>Gambusia affinis</i>	27.4	50	0	27.8
Banded Topminnow	<i>Fundulus cingulatus</i>	54.8	0	0	40
Topminnow sp.	<i>Fundulus sp.</i>	8.3	0	0	6.1
Bluegill	<i>Lepomis macrochirus</i>	0	11.1	0	1.7




**FITZHUGH  
CARTER AREA  
ECONFINA CREEK  
WILDLIFE  
MANAGEMENT AREA**

**2007-08**

**REGULATIONS SUMMARY  
AND AREA MAP**





**A COOPERATIVE PUBLIC WILDLIFE  
AND RECREATIONAL AREA  
NORTHWEST FLORIDA  
WATER MANAGEMENT DISTRICT  
FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION  
An Equal Opportunity Agency  
MyFWC.com**

This brochure is designed to provide the public with information and a summary of regulations pertaining to hunting and other recreational use on the Fitzhugh Carter Area of Econfina Creek Wildlife Management Area. **Regulations that are new or differ substantially from last year are shown in bold print.** Area users should familiarize themselves with all regulations. For exact wording of the wildlife laws and regulations, see the Florida Fish and Wildlife Conservation Commission's wildlife code, on file with the Secretary of State and state libraries. This brochure, the Florida Hunting Regulations handbook, and quota permit worksheets should provide the information necessary for you to plan your hunting activities. These publications are available from any Commission office, county tax collector and at [MyFWC.com](http://MyFWC.com).

Persons using wildlife management areas are required to have appropriate licenses, permits and stamps. The following persons are exempt from all license and permit requirements (except for quota permits when listed as "no exemptions", recreational use permits and the Migratory Bird Hunting and Conservation Stamp [duck stamp]): Florida residents who are 65 years of age or older; residents who possess a Florida Resident Disabled Person Hunting and Fishing Certificate; residents in the U.S. Armed Forces, not stationed in Florida, while home on leave for 30 days or less, upon submission of orders; and children under 16 years of age. Children under 16 years of age are exempt from the duck stamp.

Hunting, trapping and fishing licenses, and management area, archery, muzzleloading gun, wild turkey and state waterfowl permits may be purchased from county tax collectors, license agents, the Internet at [MyFWC.com/license](http://MyFWC.com/license) or by telephone at 1-888-486-8356. A no-cost Migratory Bird Permit is available when purchasing a hunting license. Any waterfowl hunter 16 years of age or older must possess a duck stamp; available at most post offices or at [duckstamp.com](http://duckstamp.com). Mobility-impaired certificate applications are available from regional offices of the Commission and at [MyFWC.com](http://MyFWC.com).

**QUOTA PERMIT INFORMATION:**

- Archery** (Fitzhugh Carter area) - 15, no-cost, quota permits (no exemptions) for each of 2 hunts.
- Muzzleloading Gun** (Fitzhugh Carter area) - 15, no-cost, quota permits (no exemptions).
- General Gun** (Fitzhugh Carter area) - 15, no-cost, quota permits (no exemptions) for each of 3 hunts.
- Spring Turkey** (Fitzhugh Carter area) - 5, no-cost, quota permits (no exemptions) for each of 3 hunts.

Permit applications: Hunters must submit electronic applications for recreational use, quota and special-opportunity permits at a license agent, county tax collector's office or online at [MyFWC.com](http://MyFWC.com). Most quota and special opportunity permits are issued during a random drawing, which includes all applications submitted during the times and dates listed below. Any remaining permits are issued first-come, first-served.

A worksheet with a list of available permits may be obtained 1 - 2 weeks before each application period from FWC offices, tax collectors, license agents and online at [MyFWC.com](http://MyFWC.com). Application for random drawings begins 10:00 a.m. eastern time on the first day of the application period and ends midnight eastern time on the last day. **Archery/Muzzleloading Gun and General Gun** quota permit applications may be submitted June 1 - 11. **Spring Turkey** quota permit applications may be submitted October 30 - November 8.

Youth exemption: For those seasons listed as "no exemptions", one youth younger than 16 years of age may accompany a person 18 years of age or older who holds a valid quota permit (except special-opportunity) and participate in the hunt, provided that the permittee and youth collectively may take only one daily bag limit.

Transfer of permits: Quota permits are transferable. Quota permits issued to exempt hunters are transferable only to another person with the same type of exemption, except permits marked "exempt senior" may be transferred to a youth younger than 16 years of age. The sale or purchase of any quota hunt permit is prohibited.

**GENERAL AREA REGULATIONS:**

All general laws and regulations relating to wild animal life or freshwater aquatic life shall apply unless specifically exempted for this area. Hunting or the taking of wildlife or fish on this area shall be allowed only during the open seasons, and in accordance with the following regulations:

1. Any person hunting deer or accompanying another person hunting deer shall wear at least 500 square inches of daylight fluorescent-orange material as an outer garment, above the waistline. This is not required during an archery-only season.
2. Taking of spotted fawn, swimming deer or roosted turkey is prohibited. Species legal to take are listed under each season.
3. It is illegal to hunt over bait or place any bait or other food for wildlife on this area.
4. Driving a metal object into any tree, or hunting from a tree into which a metal object has been driven, is prohibited.

5. No person shall cut, damage, or remove any natural, man-made or cultural resource without written authorization of the landowner or primary land manager.
6. Taking or attempting to take any game with the aid of live decoys, recorded game calls or sounds, set guns, artificial light, net, trap, snare, drug or poison is prohibited.
7. The wanton and willful waste of wildlife is prohibited.
8. Hunting, fishing or trapping is prohibited on any portion of the area posted as "CLOSED" to those activities.
9. People, dogs, vehicles and other recreational equipment are prohibited in areas posted as "Closed to Public Access" by FWC administrative action.
10. Taking or herding wildlife from any motorized vehicle, aircraft or boat, which is under power is prohibited until power, and movement from that power, has ceased.
11. Most game may be hunted from one-half hour before sunrise until one-half hour after sunset (see exceptions for each season).
12. The release of any animal is prohibited, without written authorization of the landowner or primary land manager.
13. The head and evidence of sex may not be removed from the carcass of any deer or turkey on the area.
14. The planting or introduction of any non-native plant is prohibited, without written authorization of the landowner or primary land manager.
15. Wild hogs may not be transported alive.
16. It is unlawful for any person to leave any garbage or refuse, or in any way litter in the area.
17. It is unlawful to set fire to any forest, grass or woodlands.
18. A Fish and Wildlife Conservation Commission Law Enforcement Officer may search any camp, vehicle or boat in accordance with law.
19. The possession or consumption of intoxicating beverages is prohibited.
20. The Cat Creek area is located south of State Road 20 and north of County Road 388. The Fitzhugh Carter area is located west of State Road 77 and the mobility-impaired area is located south of County Road 388.

**PUBLIC ACCESS AND VEHICLES:**

1. Open to public access year-round.
2. All persons entering or exiting the Fitzhugh Carter area may do so only at a designated entrance (see map).
3. Parked vehicles may not obstruct a road, gate or firelane.
4. No motor vehicle shall be operated on any part of any wildlife management area that has been designated as closed to vehicular traffic.
5. Vehicles may be operated only on named or numbered roads.
6. The use of all-terrain vehicles (ATVs) is prohibited.
7. Horses are prohibited in the Fitzhugh Carter area.

**HUNTERS AND CHECK STATIONS:**

1. Hunters and anglers shall check in and out at the check station when entering and exiting the Fitzhugh Carter area and shall check all game and fish taken.
2. Hunting equipment and dogs may be taken onto the WMA after 8 a.m. the day before the opening of a season and shall be removed by 6 p.m. one day after the end of the season.

**GUNS:**

1. Possession of a gun is allowed only during periods when hunting with a gun is permitted, except a person in possession of a valid Concealed Weapon or Firearm License may carry concealed handguns.
2. Hunting with a gun and light is prohibited.
3. Muzzleloading guns used for taking deer must be .40 caliber or larger if firing a single bullet, or be 20 gauge or larger if firing two or more balls.
4. Possession of a loaded, capped or primed firearm, or discharge of a firearm on, from or across any campsite or check station is prohibited.
5. Children under the age of 16 may not be in possession of a firearm unless in the presence of a supervising adult.

6. No person shall have a gun under his control while under the influence of alcohol or drugs.
7. For taking non-migratory game, only shotguns, rifles, pistols, longbows (including compound and recurve bows), crossbows (during the general gun season or by permit only) or falconry may be used.
8. For taking migratory game, only shotguns, bow and arrow (not crossbows), and falconry may be used. Shotguns shall not be larger than 10 gauge and shall be incapable of holding more than three shells in the magazine and chamber combined.
9. Firearms using rimfire or non-expanding, full metal jacket (military ball) ammunition are prohibited for taking deer.
10. Fully automatic or silencer-equipped firearms, centerfire semi-automatic rifles having a magazine capable of holding more than five rounds, explosive or drug-injecting devices and setguns are prohibited.

**DOGS:**

1. Hunting with dogs, other than bird dogs or retrievers, is prohibited.
2. No person shall allow any dog to pursue or molest any wildlife during any period in which the taking of wildlife by the use of dogs is prohibited.
3. Dogs on leashes may be used for trailing wounded game.
4. For purposes other than hunting, dogs are allowed, but must be kept under physical restraint at all times.

**CAMPING:** Prohibited.

**BAG AND POSSESSION LIMITS:**

1. Deer – Daily limit 2, possession limit 4 (see legal to take for each season).
2. Wild hog – No size or bag limit.
3. Turkey – Daily limit 1, season limit 2, possession limit 2.
4. Gray squirrel, quail and rabbit – Daily limit 12, possession limit 24 for each game species.
5. Raccoon, opossum, armadillo, beaver, coyote, skunk and nutria – No bag limits.
6. Bobcat and otter – Possession limit 1 unless in possession of a Trapping License.
7. Migratory birds – See Migratory Bird Hunting Regulations pamphlet.

**ARCHERY:**

October 13 – 19 and 20 – 28.

Permit, Stamp and License Requirements – Quota permit, hunting license, management area permit, archery permit, wild turkey permit (if hunting wild turkey), and migratory bird permit (if hunting migratory birds).

Legal to Take – Any deer (except spotted fawn), wild hog, turkey of either sex, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, beaver, coyote, skunk, nutria and migratory birds in season.

Regulations Unique to the Archery Season – In addition to these regulations, all General Area Regulations shall apply. Possession of firearms or crossbows is prohibited, except that centerfire shotguns are permitted for hunting migratory birds when one or more species are legal to take (see Migratory Bird section and the current Migratory Bird Hunting Regulations pamphlet).

**SMALL GAME:**

December 1 – 16.

Permit, Stamp and License Requirements – Hunting license, management area permit, migratory bird permit (if hunting migratory birds), and state waterfowl permit and duck stamp (if hunting waterfowl).

Legal to Take – Wild hog, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, beaver, coyote, skunk, nutria and migratory birds in season. Bobcat and otter beginning December 1.

Regulations Unique to the Small Game Season – In addition to these regulations, all General Area Regulations shall apply. Possession of centerfire rifles is prohibited.

#### **MUZZLELOADING GUN:**

**November 16 - 18.**

**Permit, Stamp and License Requirements** - Quota permit, hunting license, management area permit, muzzleloading gun permit, migratory bird permit (if hunting migratory birds) and state waterfowl permit and duck stamp (if hunting waterfowl).

**Legal to Take** - Deer with at least one antler 5 inches or more in length, wild hog, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, beaver, coyote, skunk, nutria and migratory birds in season.

**Regulations Unique to the Muzzleloading Gun Season** - In addition to these regulations, all General Area Regulations shall apply. Only muzzleloading guns are allowed, except that centerfire shotguns are allowed for hunting migratory birds when one or more species are legal to take (see Migratory Bird section and the current Migratory Bird Hunting Regulations pamphlet).

#### **GENERAL GUN:**

**November 22 - 25, January 19 - 22 and 23 - 27.**

**Permit, Stamp and License Requirements** - Quota permit, hunting license, management area permit, migratory bird permit (if hunting migratory birds), and state waterfowl permit and duck stamp (if hunting waterfowl).

**Legal to Take** - Deer with at least one antler 5 inches or more in length, wild hog, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, beaver, coyote, skunk, nutria and migratory birds in season. Bobcat and otter beginning December 1.

**Regulations Unique to the General Gun Season** - In addition to these regulations, all General Area Regulations shall apply.

#### **SPRING TURKEY:**

**March 15 - 17, 28 - 30 and April 11 - 13.**

**Permit, Stamp and License Requirements** - Quota permit, hunting license, management area permit and wild turkey permit.

**Legal to Take** - Bearded turkeys or gobblers.

**Regulations Unique to the Spring Turkey Season** - In addition to these regulations, all General Area Regulations shall apply.

1. Legal shooting hours are one-half hour before sunrise until 1 p.m.
2. The taking of any other animal is prohibited.

**TRAPPING:** Prohibited.

#### **MIGRATORY BIRDS:**

Rails, common moorhens, mourning doves, white-winged doves, snipe, ducks, geese, coots, woodcock and crows may be taken only during seasons that coincide with the archery, muzzleloading gun, general gun or small game season. Waterfowl may be taken on the Fitzhugh Carter area during the special September waterfowl duck season.

**Permit, Stamp and License Requirements** - Quota permit (if hunting during any quota period), hunting license, management area permit, migratory bird permit, and state waterfowl permit and duck stamp (if hunting waterfowl).

**Legal to Take** - See Migratory Bird Hunting Regulations pamphlet.

**Regulations Unique to Migratory Birds** - In addition to these regulations, all General Area Regulations shall apply.

1. The use of lead shot for taking ducks, geese and coots is prohibited.
2. Centerfire shotguns are allowed during established area seasons when one or more migratory birds are legal to take.

#### **FISHING AND FROGGING:**

**Allowed by permit only.**

**Permit, Stamp and License Requirements** - Fishing quota permit and fishing license (not required when frogging).

**Legal to Take** - See Florida Freshwater Fishing Regulations Summary.

**Regulations Unique to Fishing and Frogging** - All General Area Regulations and General Freshwater Fishing Regulations shall apply.

1. Anglers shall check in and out at the check station when entering and exiting the Fitzhugh Carter area and shall check all fish taken
2. On all Fitzhugh Carter area lakes and water bodies fishing is allowed only by permit issued by the Commission. Days and hours of

operation, fish bag and size limits, angler quotas and other related rules shall be as designated by the Commission and posted at the area headquarters (check station).

#### **GENERAL INFORMATION:**

1. Anyone born on or after June 1, 1975 must have passed a Commission-approved hunter-safety course prior to being issued a hunting license.
2. If you have any questions about this material, please call the Fish and Wildlife Conservation Commission at (850) 265-3676 (TDD 800-955-8771).

#### **COOPERATION REQUESTED:**

*If you see law violators or suspicious activities, contact your nearest Commission regional office or call 1-888-404-FWCC. You may qualify for a cash reward from the Wildlife Alert Reward Association.*

*The U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex or handicap. If you believe that you have been discriminated against in any program, activity or facility as described above, or if you desire further information, please write to: The Office for Human Resources, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. The project described in this publication is part of a program funded by federal dollars under the Wildlife Restoration Act. Federal funds pay or 20 percent of the cost of the program.*



**When you spot law violators or suspicious activities,  
contact your nearest Commission regional office or  
call**

**1-888-404-FWCC**

**You may qualify for a cash reward from the  
Wildlife Alert Reward Association.**

**Order Your Hunting and Fishing License  
by Phone...**

**Use Your Credit Card and Call**

**1-888-HUNT-FLORIDA (486-8356) OR  
1-888-FISH-FLORIDA (347-4356)**

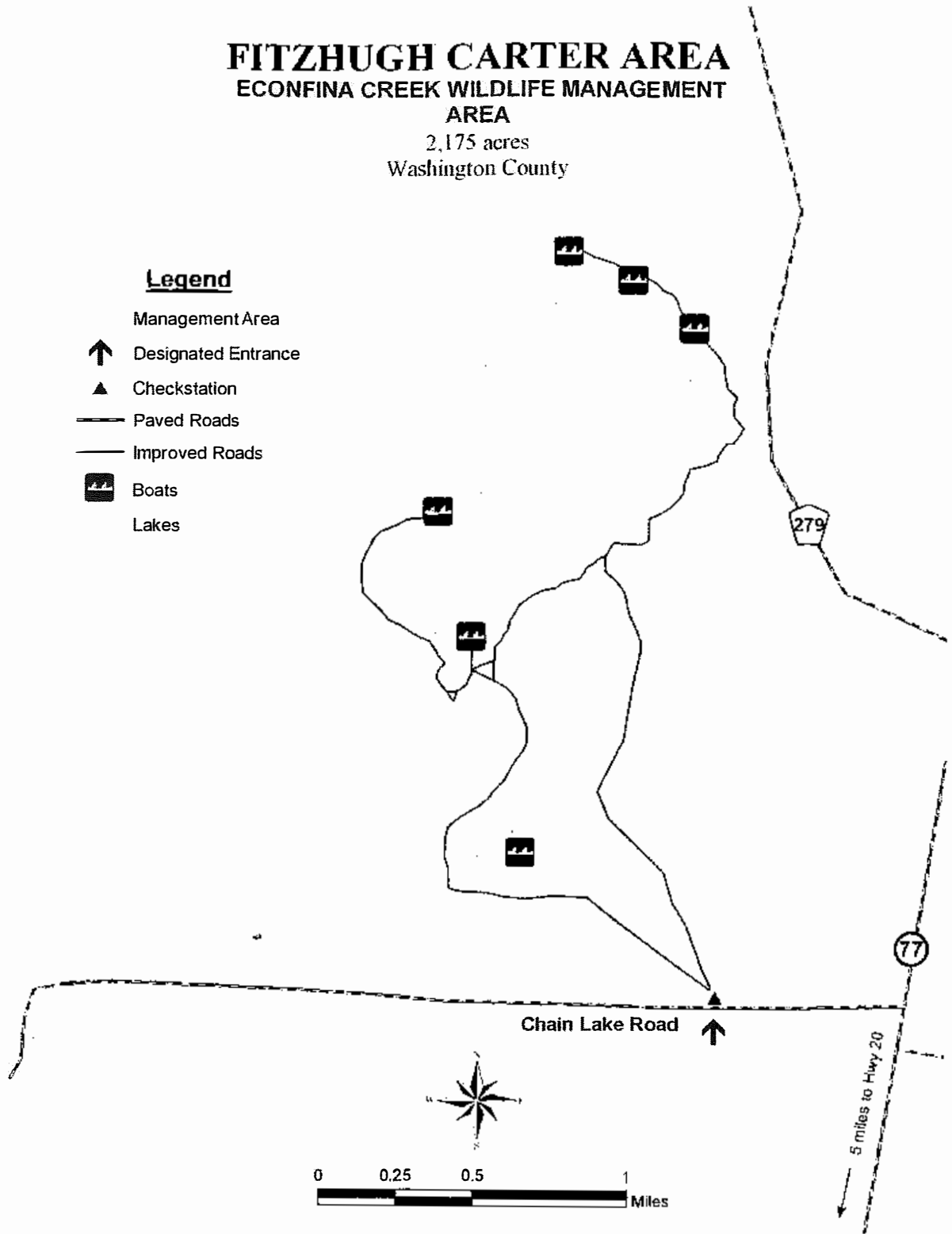
**(There is a vendor fee of \$3.95 per license.)**

# FITZHUGH CARTER AREA ECONFINA CREEK WILDLIFE MANAGEMENT AREA

2,175 acres  
Washington County

## Legend

- Management Area
- ↑ Designated Entrance
- ▲ Checkstation
- Paved Roads
- Improved Roads
- Boats
- Lakes



Appendix III. Sample datasheet for deer spotlight/line transect surveys on the Carter Tract of Econfina Creek WMA.

White-tailed Deer Spotlight/Line Transect Survey

Study area: \_\_\_\_\_ Date: \_\_\_\_\_ Transect/Direction: \_\_\_\_\_  
 Observer 1: \_\_\_\_\_ Observer 2: \_\_\_\_\_ Driver/Recorder: \_\_\_\_\_  
 Su set: \_\_\_\_\_ Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_  
 Temperature: \_\_\_\_\_ Humidity: \_\_\_\_\_ Wind speed: \_\_\_\_\_ Cloud cover: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Data Point	Observer*	Distance Data					Number of Deer					Group Size	Understory Visibility Low visibility (thick understory): 75% or more cover Medium visibility (patchy): 26% to 74% cover High visibility (open): 25% or less cover
		Direction (degrees)	Distance (meters)	Waypoint Number	UTM E	UTM N	Bucks	Does	Fawns	Unknown			
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													

Observer\* - Observer 1 is always the person on the driver's side of the pickup bed, Observer 2 is always the person on the passenger's side of the pickup bed  
 Understory Visibility refers to the area the deer or group of deer were first spotted.

Appendix IV. List of bird species identified on the Carter Tract of Econfina Creek WMA, as of July 2008.

Pied-billed Grebe <i>Podilymbus podiceps</i>	Eastern Kingbird <i>Tyrannus tyrannus</i>
Double-crested Cormorant <i>Phalacrocorax auritus</i>	Loggerhead Shrike <i>Lanius ludovicianus</i>
Anhinga <i>Anhinga anhinga</i>	White-eyed Vireo <i>Vireo griseus</i>
Great Blue Heron <i>Ardea herodias</i>	Red-eyed Vireo <i>Vireo olivaceus</i>
Great Egret <i>Ardea alba</i>	Blue Jay <i>Cyanocitta cristata</i>
Snowy Egret <i>Egretta thula</i>	American Crow <i>Corvus brachyrhynchos</i>
Little Blue Heron <i>Egretta caerulea</i>	Fish Crow <i>Corvus ossifragus</i>
Tricolored Heron <i>Egretta tricolor</i>	Barn Swallow <i>Hirundo rustica</i>
Cattle Egret <i>Bubulcus ibis</i>	Northern Rough-winged Swallow <i>Stelgidopteryx serripennis</i>
Green Heron <i>Butorides virescens</i>	Tree Swallow <i>Tachycineta bicolor</i>
White Ibis <i>Eudocimus albus</i>	Purple Martin <i>Progne subis</i>
Roseate Spoonbill <i>Platalea ajaja</i>	Carolina Chickadee <i>Poecile carolinensis</i>
Wood Stork <i>Mycteria americana</i>	Tufted Titmouse <i>Baeolophus bicolor</i>
Black Vulture <i>Coragyps atratus</i>	Carolina Wren <i>Thryothorus ludovicianus</i>
Turkey Vulture <i>Cathartes aura</i>	Marsh Wren <i>Cistothorus palustris</i>
Wood Duck <i>Aix sponsa</i>	Ruby-crowned Kinglet <i>Regulus calendula</i>
Blue-winged Teal <i>Anas discors</i>	Golden-crowned Kinglet <i>Regulus satrapa</i>
Ring-necked Duck <i>Aythya collaris</i>	Blue-gray Gnatcatcher <i>Poliptila caerulea</i>
Bufflehead <i>Bucephala albeola</i>	Eastern Bluebird <i>Sialia sialis</i>
Osprey <i>Pandion haliaetus</i>	Hermit Thrush <i>Catharus guttatus</i>
Cooper's Hawk <i>Accipiter cooperii</i>	American Robin <i>Turdus migratorius</i>
Sharp-shinned Hawk <i>Accipiter striatus</i>	Gray Catbird <i>Dumetella carolinensis</i>
Northern Harrier <i>Circus cyaneus</i>	Northern Mockingbird <i>Mimus polyglottos</i>
Red-shouldered Hawk <i>Buteo lineatus</i>	Brown Thrasher <i>Toxostoma rufum</i>
Red-tailed Hawk <i>Buteo jamaicensis</i>	Cedar Waxwing <i>Bombycilla cedrorum</i>
Bald Eagle <i>Haliaeetus leucocephalus</i>	Northern Parula <i>Parula Americana</i>
American Kestrel <i>Falco sparverius</i>	Orange-crowned Warbler <i>Vermivora celata</i>
Wild Turkey <i>Meleagris gallopavo</i>	Yellow-rumped Warbler <i>Dendroica coronata</i>
Northern Bobwhite <i>Colinus virginianus</i>	Palm Warbler <i>Dendroica palmarum</i>
Common Moorhen <i>Gallinula chloropus</i>	Pine Warbler <i>Dendroica pinus</i>
American Coot <i>Fulica Americana</i>	Yellow-throated Warbler <i>Dendroica dominica</i>
Sandhill Crane <i>Grus Canadensis</i>	Black and White Warbler <i>Mniotilta varia</i>
Killdeer <i>Charadrius vociferous</i>	Prothonotary Warbler <i>Protonotaria citrea</i>
Greater Yellowlegs <i>Tringa melanoleuca</i>	Common Yellowthroat <i>Geothlypis trichas</i>
Lesser Yellowlegs <i>Tringa flavipes</i>	Hooded Warbler <i>Wilsonia citrine</i>
Common Snipe <i>Gallinago gallinago</i>	Scarlet Tanager <i>Piranga olivacea</i>
Least Tern <i>Sterna antillarum</i>	Summer Tanager <i>Piranga rubra</i>
Mourning Dove <i>Zenaida macroura</i>	Blue Grosbeak <i>Passerina caerulea</i>
Common Ground Dove <i>Columbina passerina</i>	Indigo Bunting <i>Passerina cyanea</i>
Yellow-billed Cuckoo <i>Coccyzus americanus</i>	Northern Cardinal <i>Cardinalis cardinalis</i>
Barred Owl <i>Strix varia</i>	Eastern Towhee <i>Pipilo erythrophthalmus</i>
Eastern Screech Owl <i>Otus asio</i>	Chipping Sparrow <i>Spizella passerine</i>
Great Horned Owl <i>Bubo virginianus</i>	Field Sparrow <i>Spizella pusilla</i>
Common Nighthawk <i>Chordeiles minor</i>	White-crowned Sparrow <i>Zonotrichia leucophrys</i>
Chuck-will's-widow <i>Caprimulgus carolinensis</i>	White-throated Sparrow <i>Zonotrichia albicollis</i>
Chimney Swift <i>Chaetura pelagica</i>	Dark-eyed Junco <i>Junco hyemalis</i>
Ruby-throated Hummingbird <i>Archilochus colubris</i>	Orchard Oriole <i>Icterus spurius</i>
Belted Kingfisher <i>Ceryle alcyon</i>	Eastern Meadowlark <i>Sturnella magna</i>
Yellow-bellied Sapsucker <i>Sphyrapicus varius</i>	Red-winged Blackbird <i>Agelaius phoeniceus</i>
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i>	Common Grackle <i>Quiscalus quiscula</i>
Red-bellied Woodpecker <i>Melanerpes carolinus</i>	Brown-headed Cowbird <i>Molothrus ater</i>
Downy Woodpecker <i>Picoides pubescens</i>	
Hairy Woodpecker <i>Picoides villosus</i>	
Northern Flicker <i>Colaptes auratus</i>	
Pileated Woodpecker <i>Dryocopus pileatus</i>	
Eastern Phoebe <i>Sayornis phoebe</i>	
Great Crested Flycatcher <i>Myiarchus crinitus</i>	
	Total July 2008: 108

Appendix V. 2007-2008 Annual Work Plan for the Carter Tract of Econfina Creek Wildlife Management Area.

**FY 2007-08**

**Project 7281 - NW FLORIDA WATER MANAGEMENT DISTRICT LANDS**

	<b>Man Days</b>	<b>Salary</b>	<b>FuelCost</b>	<b>Other</b>	<b>Total</b>	<b>Units Accomplishments</b>
Species 9100 - All freshwater fish						
Activity - 140	Report writing/editing/manuscript preparation					
	3.00	\$579.30	\$39.72	\$0.00	\$619.02	0 Prepare fisheries reports and proposals as needed. NFA.
Activity - 221	Animal surveys					
	12.00	\$2,317.20	\$158.88	\$900.00	\$3,376.08	0 Conduct sampling of fish populations via electroshocking, gill netting, block netting, and/or using rotenone as needed to assess population demographics (101920/19 = \$400 for supplies and equipment) (100340/29 = \$500 for supplies and equipment). NFA.
Activity - 250	Monitoring and assessments					
	10.00	\$1,931.00	\$132.40	\$200.00	\$2,263.40	0 Population monitoring and assessment of aquatic resources. Comprehensive sportfish population assessment (101920/19 = \$200 misc. materials and supplies). NFA.
Activity - 287	Stocking enhancements/population augmentation					
	2.00	\$386.20	\$26.48	\$0.00	\$412.68	0 Restocking of native fish into selected water bodies as needed. NFA.
Activity - 320	Outreach and education					
	2.00	\$386.20	\$26.48	\$0.00	\$412.68	0 Coordinate and/or administer special fishing events such as kids fishing days.

	Man Days	Salary	FuelCost	Other	Total	Units	Accomplishments	
Activity - 342	Public use administration (non-hunting)							NFA.
	3.00	\$579.30	\$39.72	\$14,312.00	\$14,931.02	0	Conduct creel surveys at check stations. Administer public fishing events (101920/19 = \$13,812 for OPS check station operators) (100340/29 = \$500 misc. materials and supplies). NFA.	
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Species 9100 Total	32.00	\$6,179.20	\$423.68	\$15,412.00	\$22,014.88			
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Species 9200 - All wildlife								
Activity - 100	Administration							
	3.00	\$579.30	\$39.72	\$0.00	\$619.02	0	General supervisory, clerical and administrative duties.	
Activity - 101	Project inspection							
	9.00	\$1,737.90	\$119.16	\$0.00	\$1,857.06	0	Inspect area projects and activities. Field orientation of land boundaries, features and habitats.	
Activity - 103	Meetings							
	10.00	\$1,931.00	\$132.40	\$1,000.00	\$3,063.40	0	Attend landowner, cooperator, scientific and agency meetings (101920/19 = \$1,000 misc. materials and supplies).	
Activity - 128	New Vehicle and Equipment Purchases							
	0.00	\$0.00	\$0.00	\$17,700.00	\$17,700.00	0	Purchase 14' Jon boat, trailer and 25 hp motor (100340/29 = \$9,700 for boat rig). Purchase ATV and trailer (100340/29 = \$8,000).	
Activity - 140	Report writing/editing/manuscript preparation							
	7.00	\$1,351.70	\$92.68	\$1,000.00	\$2,444.38	0	Prepare annual and wildlife management reports and proposals	



	Man Days	Salary	FuelCost	Other	Total	Units	Accomplishments
							as needed (100340/29 = \$1,000 for copies and binding).
Activity - 150	Personnel management						
	5.00	\$965.50	\$66.20	\$27,374.00	\$28,405.70	0	Supervise volunteer activities. Recruit, hire and supervise OPS. (101920/19 = \$26,874 for OPS Field Technician) (100340/29 = \$500 misc. materials and supplies).
Activity - 182	Data management						
	6.00	\$1,158.60	\$79.44	\$2,000.00	\$3,238.04	0	Digitize habitat features for use in GIS database. Incorporate all data into GIS database. Analyze and summarize WMA databases and pertinent information (100340/29 = \$2,000 misc. materials, equipment and supplies).
Activity - 200	Resource Management						
	5.00	\$965.50	\$66.20	\$1,000.00	\$2,031.70	0	Routine planning, paperwork, purchases and correspondences dealing with daily operations of the WMA (100340/29 = \$1,000 misc. materials and supplies).
Activity - 204	Resource planning						
	10.00	\$1,931.00	\$132.40	\$1,000.00	\$3,063.40	0	Coordination of work projects related to management activities. Prepare written work plans and proposals (100340/29 = \$1,000 misc. materials and supplies).
Activity - 276	Commission rule development and review						
	1.00	\$193.10	\$13.24	\$0.00	\$206.34	0	Develop and submit

	Man Days	Salary	FuelCost	Other	Total	Units	Accomplishments
							area rule changes, includes preparation, review, advertisement, promulgation and publishing. NFA.
Activity - 281	Technical assistance						
	5.00	\$965.50	\$66.20	\$0.00	\$1,031.70	0	Provide technical information and assistance to cooperators or other state agencies regarding wildlife management and habitat.
Activity - 294	Program coordination and implimentation						
	5.00	\$965.50	\$66.20	\$0.00	\$1,031.70	0	Intra and interagency coordination.
Activity - 312	Informational signs						
	3.00	\$579.30	\$39.72	\$500.00	\$1,119.02	0	Erect and maintain informational signs and kiosks as needed (100340/29 = \$500 for materials and supplies).
Activity - 320	Outreach and education						
	5.00	\$965.50	\$66.20	\$500.00	\$1,531.70	0	Make wildlife management presentations to elementary schools and general public (100340/29 = \$500 misc. materials and supplies).
Activity - 350	Customer service support						
	5.00	\$965.50	\$66.20	\$0.00	\$1,031.70	0	Provide information to callers regarding fish and wildlife-based recreation opportunities and area regulations.
Activity - 920	FEM -- buildings/structures						
	5.00	\$965.50	\$66.20	\$2,000.00	\$3,031.70	1	Maintain and repair area office as needed (100340/29 = \$2,000 misc. materials and supplies)
Activity - 923	FEM -- vehicles/equipment						

	<b>Man Days</b>	<b>Salary</b>	<b>FuelCost</b>	<b>Other</b>	<b>Total Units</b>	<b>Accomplishments</b>
	3.00	\$579.30	\$39.72	\$3,500.00	\$4,119.02	0 Repair and maintain vehicles, boats, ATVs and associated equipment (100340/29 = \$3,500 misc. materials and supplies).
Activity - 926	FEM -- roads/bridges					
	2.00	\$386.20	\$26.48	\$0.00	\$412.68	0 Make minor repairs to access roads as needed.
Activity - 928	FEM -- fences					
	1.00	\$193.10	\$13.24	\$0.00	\$206.34	0 Maintain and erect gates and fences as needed on access roads and boundaries.
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Species 9200 Total	90.00	\$17,379.00	\$1,191.60	\$57,574.00	\$76,144.60	
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Species 9210 - Game wildlife						
Activity - 140	Report writing/editing/manuscript preparation					
	3.00	\$579.30	\$39.72	\$0.00	\$619.02	0 Prepare deer and game management recommendations and harvest reports as needed.
Activity - 182	Data management					
	5.00	\$965.50	\$66.20	\$0.00	\$1,031.70	0 Analyze data collected from biological samples from harvested game, surveys and inventories.
Activity - 221	Animal surveys					
	11.00	\$2,124.10	\$145.64	\$1,500.00	\$3,769.74	0 Conduct deer surveys and other game surveys as needed (101920/19 = \$1,500 misc. materials and supplies).
Activity - 285	Nest structures					
	10.00	\$1,931.00	\$132.40	\$500.00	\$2,563.40	0 Install and maintain wood duck nest boxes (100340/29 = \$500 misc. materials

	Man Days	Salary	FuelCost	Other	Total Units	Accomplishments and supplies).	
Activity - 295	Biological data collection, analysis, and reporting						
	10.00	\$1,931.00	\$132.40	\$900.00	\$2,963.40	0 Collect biological data and samples from harvested game at check station (101920/19 = \$400 for supplies/equipment) (100340/29 = \$500 misc. materials and supplies).	
Activity - 341	Public use administration (hunting)						
	12.00	\$2,317.20	\$158.88	\$8,100.00	\$10,576.08	0 Review area hunt maps and brochures. Compile weekly harvest reports and hunter pressure. Administer public hunts (101920/19 = \$8,100 for OPS check station operators).	
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Species 9210 Total	51.00	\$9,848.10	\$675.24	\$11,000.00	\$21,523.34		
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Species 9240 - Nongame wildlife							
Activity - 140	Report writing/editing/manuscript preparation						
	2.00	\$386.20	\$26.48	\$0.00	\$412.68	0 Prepare herpetofauna survey progress reports. NFA.	
Activity - 221	Animal surveys						
	18.00	\$3,475.80	\$238.32	\$1,000.00	\$4,714.12	0 Conduct wading bird surveys and monitoring. Conduct herpetofauna surveys and monitoring. Install and monitor drift fence arrays (101920/19 = \$500 misc. materials and supplies) (100340/29 = \$500 for supplies and equipment). NFA.	
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Species 9240 Total	20.00	\$3,862.00	\$264.80	\$1,000.00	\$5,126.80		
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Species 9280 - All threatened and endangered wildlife							

	Man Days	Salary	FuelCost	Other	Total	Units	Accomplishments	
Activity - 140	Report writing/editing/manuscript preparation							
	2.00	\$386.20	\$26.48	\$0.00	\$412.68	0	Prepare gopher tortoise survey and monitoring progress report. NFA.	
Activity - 182	Data management							
	2.00	\$386.20	\$26.48	\$0.00	\$412.68	0	Analyze and summarize gopher tortoise survey data. NFA.	
Activity - 221	Animal surveys							
	13.00	\$2,510.30	\$172.12	\$1,500.00	\$4,182.42	0	Coordinate and conduct gopher tortoise survey and monitoring (101920/19 = \$1,000 misc. materials and supplies) (100340/29 = \$500 for supplies and equipment). NFA.	

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Species 9280 Total	17.00	\$3,282.70	\$225.08	\$1,500.00	\$5,007.78		
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Project 7281 Total	210.00	\$40,551.00	\$2,780.40	\$86,486.00	\$129,817.40		
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### ORG - Category Breakdown

ORG	EO	Category	Total
77352030100	19	101920	\$53,786.00
77352030100	29	100340	\$32,700.00

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