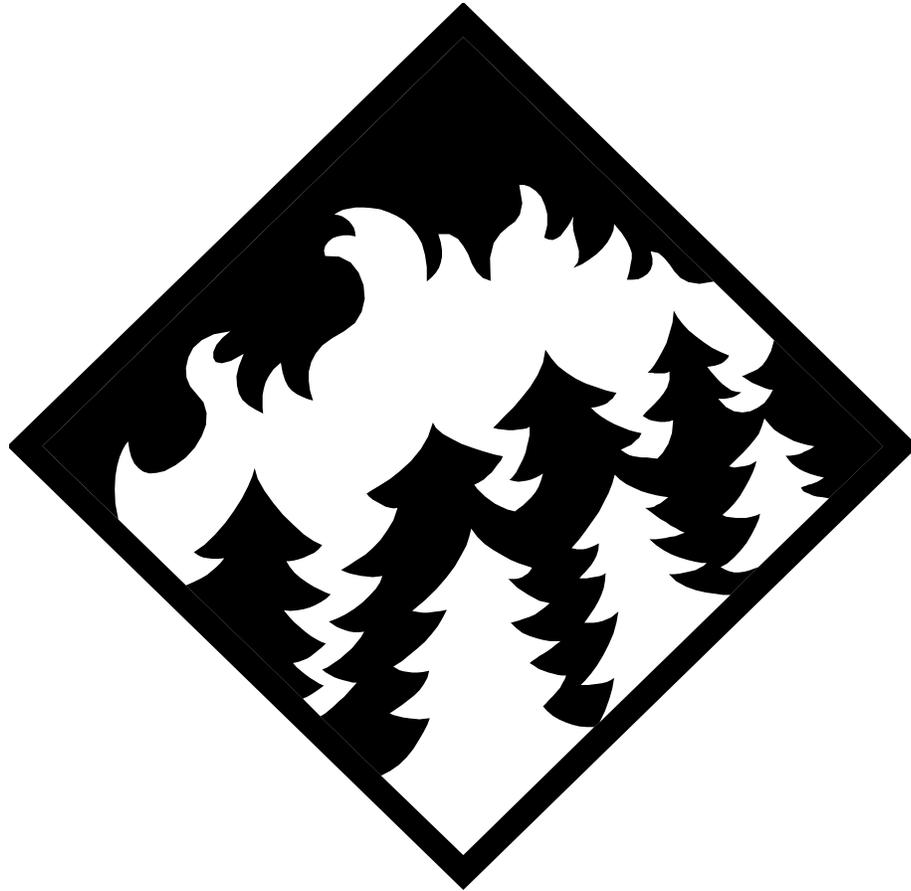


2010 Annual Monitoring and Evaluation Report  
National Forests  
In Florida



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# 2010 ANNUAL MONITORING AND EVALUATION REPORT for the National Forests in Florida

## Abstract

Monitoring, evaluation, and research are the heart of adaptive management and are the quality control mechanisms for the Revised Land and Resource Management Plan for the National Forests in Florida (Forest Plan). The National Forest Management Act planning regulations specify that “at intervals established in the Forest Plan, implementation shall be evaluated on a sample basis to determine how well objectives have been met and how closely management standards have been applied. Based on this evaluation, the interdisciplinary team shall recommend to the Forest Supervisor such changes in management direction, revisions, or amendments to the Forest Plan as are deemed necessary.” Monitoring elements covered in this report are listed in Chapter 5 of the Forest Plan. Monitoring Tasks are listed under Appendix E of the Forest Plan.

This past fiscal year, 2010, marks the eleventh year of the Revised Land and Resource Management Plan for the National Forests in Florida. Each year, we examine trends in monitoring data and outputs to see if we are achieving the goals and objectives laid out in the LRMP. These trends will indicate if there is a need to adjust our management strategies or amend the Plan to achieve the goals, objectives, standards and guidelines to achieve the desired future conditions for the forests. Based on the findings of this report, there is not an immediate need to revise the Forest Plan.

The Planning Rule which provides procedural guidance for Forest Plan revisions underwent a public review and comment period in early 2011 at the National level, with a decision expected December of 2011. It is estimated that the NFs in Florida will begin the Forest Plan revision process in 2014 after the new Planning Rule is finalized.

## Certification Statement

I have evaluated the monitoring results and recommendations in this Report. I have directed that the Action Plans developed to respond to these recommendations be implemented, unless new information or changed resource conditions warrant otherwise. I have considered funding requirements in the budget necessary to implement these actions.

With these completed changes, the Forest Plan is sufficient to guide forest management for the next fiscal year, unless ongoing monitoring and evaluation identify further need for change. Any amendments or revisions to the Forest Plan will be made using the appropriate NEPA procedures.

This report is approved:

/s/ Susan Jeheber-Matthews  
SUSAN JEHEBER-MATTHEWS  
Forest Supervisor

10-6-11  
Date

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## Summary

Implementation of the Revised Land and Resource Management Plan for the National Forests in Florida (Forest Plan) began in June 1999. This report documents the results of monitoring how well goals and objectives of the Forest Plan have been met and how closely management standards have been applied in FY 2010 (October 2009-September 2010), the eleventh full year of implementation.

Monitoring elements covered in this report are listed in Chapter 5 of the Forest Plan. Specific monitoring questions are identified and directly linked to Forest Plan goals, desired future conditions, objectives, standards, guidelines and specific regulatory requirements. Every goal, objective, standard and guideline cannot be monitored. Relevancy to issues, compliance with legal and agency policy, scientific credibility, administrative feasibility, budget considerations, and impact on work force all influence monitoring priorities. The following table summarizes the information for the last fiscal year.

Table 1. Monitoring Summary

Monitoring Question	Meeting or Anticipated to Meet Forest Plan Objective	Recommendations
1.1 Health of natural forest communities		
Plants	Yes	There is a need to change strategies for monitoring MIS plant species and distributions. The proposed amendment to the NFs in Florida MIS list and recently initiated inventory contracts with FNAI are expected to greatly enhance our evaluation of plant species on the forest.
Wildlife and Fish	Yes	The MIS list for the NFs in Florida will soon be revised which will enhance our ability to efficiently describe trends and impacts from management activities.
1.2 Habitat conditions of the major habitat associations?	Yes	Continue to implement efficiencies to achieve habitat conditions within the major habitat associations.
1.3 RCW populations	Yes	Increase thinning and burning efforts for Wakulla population; increase use of artificial cavities and recruitment clusters in Sandhill region of Wakulla.
1.4 Effects of the reduced foraging standards on the Apalachicola National Forest	N/A	Removed from the LRMP through Amendment #3.
1.5 Population trends of scrub jay, management effects on scrub jay, acres suitable for scrub jay?	Yes	Continue to implement scrub habitat projects based on Landscape Scale Assessment strategies. Pursue research needs 2 & 3 identified in this report.
1.6 Viable populations of PETS animal species and habitats to support them?	Yes	Continue to monitor and implement management guidance in the 1999 Revised LRMP.
1.7 Viable populations of PETS plant species and habitats to support them	Yes	Continue on-going contract with FNAI to collect rare plant data.

Monitoring Question	Meeting or Anticipated to Meet Forest Plan Objective	Recommendations
1.8 Burning interval of upland pine acres	Yes	Continue to emphasize reducing burn intervals in longleaf communities to a 2-3 year interval where possible. Continue to treat acres mechanically to enhance burning opportunities in areas with high fuel concentrations.
1.9 Miles of firelines plowed for prescribed fire and wildfires and fireline restored	Yes	Increase restoration efforts of plowed firelines and minimize number of plowed firelines constructed.
1.10 Off-site slash pine restoration	No	Continue to identify opportunities to increase efficiencies of conversion of off-site slash pine and sand pine scrub to native species.
1.11 Data on understory structure	Yes	Identify opportunities to include collection of basic understory information concurrently with timber inventory efforts.
1.12 Thinning	No	Continue to identify opportunities to increase efficiencies for thinning longleaf stands. This should include the use of environmental assessments based on adaptive management.
1.13 Off-site sand pine restoration	Yes	This objective has been met. Restoration of off-site sand pine should continue where opportunities exist.
1.14 Uneven-aged management harvest, effects of group selection method, longleaf desired conditions, and effects of group selection harvest in longleaf pine	No	Increase emphasis on evaluating opportunities to initiate unevenaged harvest during project development. This item is primarily limited by RCW Recovery requirements for tree diameter classes.
1.15 Irregular shelterwood harvest	No	Identify opportunities to test the irregular shelterwood method during project planning activities.
1.16 Sand pine regeneration	No	Continue to identify opportunities to increase efficiencies for Increase regeneration of sand pine for early successional scrub habitat. This should include the use of environmental assessments based on adaptive management..
1.17 Size and distribution of openings in sand pine?	Yes	Continue to place regeneration harvest adjacent to current habitat to increase opening size.
1.18 Old-growth designation	Anticipated to meet	The Ocala and Osceola NFs need to complete old-growth designations
1.19 Land purchases and exchanges	Yes	Continue efforts to acquire lands within Pinhook purchase unit, Florida National Scenic Trail, and within National Forest boundaries.
1.20 Acid deposition in aquatic and terrestrial ecosystems and water quality	Yes	Continue to implement 1999 LRMP standards until Florida DEP study of algae in springs is completed and re-evaluate.
1.21 Air quality	Yes	Continue implementing the 1999 Revised LRMP.

Monitoring Question	Meeting or Anticipated to Meet Forest Plan Objective	Recommendations
1.22 Water bodies fertilized	N/A	Continue implementation while re-evaluating the role of pond fertilization.
1.23 Soil disturbance minimized in preparing longleaf and slash pine sites	Yes	Continue to minimize soil disturbance especially where intact herbaceous ground cover is present.
1.24 Effects of cattle grazing on vegetation?	Yes	Due to decreasing levels of grazing on the forest, there are no recommendations for change.
2.1 Recreation site accessibility	Yes	Continue efforts to meet accessibility levels on the remaining developed campgrounds.
2.2 Recreation facilities providing Meaningful Measures	Yes	Remove from the Fee Demo program areas showing very low use through closure or curtailment of services.
2.3 Trail system designation	Yes	Relocating some sections of trails off of wetland soils and the use of footbridges and boardwalks will help the Forest achieve 100% attainment of Meaningful Measures standards. Additional horse trails should be established in appropriate areas to reduce impacts on user created non-system horse trails.
2.4 Florida National Scenic Trail certified	Yes	Continue efforts to identify the trail corridor through Florida.
2.5 Wild and scenic river designation	Unknown	Continue to manage Recommended Wild and Scenic Rivers to maintain on-going proposed status.
2.6 Wilderness opportunities, and Clear Lake recommendation	Unknown	Track legislative efforts of Florida's congressional delegation on wilderness legislation for Florida.
2.7 Wilderness character	Yes	Establish vegetation plots in wilderness areas. This effort should be coordinated with the Forest-wide vegetation protocol.
2.8 Natural Area wilderness recommendation	Unknown	Track legislative efforts of Florida's congressional delegation on wilderness legislation for Florida.
2.9 Effect of access policy	Yes	Continue to monitor effects of access policy with increased efforts on effects from full size vehicles on non-designated roads.
2.10 Heritage resource sites evaluation and protection	Yes	Increase the number of sites evaluated.
2.11 Scenic resource protection	Yes	Implement the Scenery Management System at the earliest opportunity.
2.12 Forest visitors understanding of Forest Service practices	N/A	Question removed by Amendment #2. Need to emphasize public education of Forest Service management practices and forest restoration activities.
2.13 Contributing to the socioeconomic well-being	Yes	Continue to implement the 1999 Revised LRMP.
2.14 Special forest	Yes	Develop improved tracking methods for locations

Monitoring Question	Meeting or Anticipated to Meet Forest Plan Objective	Recommendations
products		of product removal.
2.15 Timber offered for sale	N/A	Continue to focus on treatment of high priority areas for ecosystem objectives which should ensure outputs do not exceed the ASQ by the end of the 10 year planning period.
2.16 Special-use permit compliance	Yes	Increase efforts to complete permit inspections as funding becomes available.
2.17 Miles of roads converted to another use or closed?	Yes	Continue evaluating non-designated routes during site specific project analyses to identify decommissioning needs.
3.1 People satisfaction with service	NA	Removed by Forest Plan Amendment #2.
3.2 Public participation and partnerships	NA	Removed by Forest Plan Amendment #2
3.3 Implementation of planned actions	Yes	Continue to monitor site-specific projects for compliance with associated NEPA documentation.

## Major Findings:

Based on the expected annual average of outcomes for the planning period, most of the monitoring items reflect expected outcomes and are progressing at the rate necessary to achieve the desired conditions, goals, and objectives of the Plan within the 10-15 year planning period. There are some areas where monitoring indicates follow-up action is needed.

### *Vegetation Management*

Based on the expected annual average of outcomes for the planning period, the vegetation management program through timber harvests needs some follow-up action. The table below summarizes the situation concerning timber harvest objectives and accomplishments through fiscal year 2010.

It is expected that some of the vegetation management objectives cannot be attained under current and anticipated budgets as well as workload conflicts with other forest priorities. These short-falls are tied directly to funding allocated to the NFs in Florida. Costs for carrying out projects are increasing and allocated funding is generally reduced. In addition, responding to wildfires and other management objectives can hinder meeting objectives. However, the NFs in Florida have consistently accomplished required annual targets based on funding allocations.

The NFs in Florida have initiated a variety of actions to increase efficiencies and overall acres treated.

Ecological Condition and Prioritization models have been completed on the Osceola and Ocala NFs and will be developed for the Apalachicola NF. These models will help the forests evaluate and prioritize the effectiveness of treatments by identifying needs, treating areas in such a manner that good quality habitat conditions are maintained and areas that are in transition stage can be treated to ensure habitat conditions do not diminish.

On the Ocala NF, Forest Plan Amendment #8 increased the maximum opening size to 800 acres for sandhills/scrub habitat. This change will increase layout efficiencies and effectiveness of habitats for the scrub species.

Detailed discussion can be found under monitoring questions 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, and 2.15.

Table 2. Cumulative Objectives and Accomplishments, FY 2010

Clearcutting Sand Pine for Scrub Jay Habitat	
2010 Objective (Acres)	4,000
Accomplishment (Acres)	2750
Difference (Acres)	-1250
Thinning Over-stocked Pine Stands	
2010 Objective (Acres)	5200
Accomplishment (Acres)	1959
Difference (Acres)	-3241
Uneven-aged Group Selection Regeneration Harvest	
2010 Objective (Acres)	3250
Accomplishment (Acres)	80
Difference (Acres)	-3170
Irregular Shelterwood Regeneration Harvest	
2010 Objective (Acres)	188
Accomplishment (Acres)	0
Difference (Acres)	-188
Longleaf Restoration removing off-site slash pine	

2010 Objective (Acres)	1180
Accomplishment (Acres)	186
Difference (Acres)	-994
Removing Slash Pine from Longleaf Stands	
2010 Objective (Acres)	800
Accomplishment (Acres)	202
Difference (Acres)	-598
Allowable Sale Quantity	
2010 Objective (Million Cubic Feet)	10.3
Accomplishment (Million Cubic Feet)	4.35
Difference (Million Cubic Feet)	-5.95

### *Prescribed Burning and Integrated Fuels Management*

When the Land and Resource Management Plan for the National Forests in Florida was approved in 1999, large emphasis was placed on seasonality of burns. At the time, few land managers were conducting growing-season burns and one of the goals of the Plan was to increase growing-season burning. Eleven years of Plan implementation has showed that given staffing and resource levels, it is too difficult to burn every area of the forest in the right season. Emphasis is now placed more on burn frequency; burning areas more frequently appears to be more important for maintaining native ecosystems. However, a 5-year interval is believed to be too long an interval in longleaf habitats and we should strive for a 2-3 year frequency wherever possible.

Forest Plan Amendment #9 was completed in FY10 and is expected to help increase burning accomplishments on the forests. This amendment updated Forest-wide Objective 4 describing prescribed burning frequency to clarify that while early to mid-growing season burning is critical, if growing season burns cannot be achieved, the overall fire frequency is the highest priority. It also updated wildland fire response terminology to incorporate current direction for Federal Wildland Fire Policy on all National Forest System lands to allow management of wildland fires for other management objectives in areas outside Wilderness.

Based on the upland pine Management Area 7.1 of 507,740 acres, 105% of this type was burned in the last 3 years (2008, 2009, 2010) for a total of 533,175 acres burned, a yearly average of 177,725 acres, well above the average objective of 168,000 acres. Of the FY 2010 acres, 57% were burned in the winter months (October to February) and 36% were burned in the summer months (March to September). Of those summer burns, 25% of the acres were burned between May 1 and July 31.

Use of fire in the longleaf pine wiregrass ecosystem continues to be integral to the restoration of these systems and to recovery of the red-cockaded woodpecker. Both winter and growing season burns are being used in these recovery efforts. Internal and external dialogue continues on the application and use of fire for these objectives.

There is a need to treat more acres mechanically to enhance burning opportunities on the Osceola National Forest in areas with high fuel concentrations. This can be accomplished through the use of specialized equipment to create defensible fire lines especially near private property. In addition, a greater emphasis on integrated fuels treatment is called for. An example is the utilization of woody biomass to achieve Forest Plan objectives.

Detailed discussion can be found under monitoring questions 1.8.

### *Management Indicator and Proposed, Endangered, Threatened and Sensitive Species*

Management Indicator Species (MIS) are selected during Forest Planning to indicate effects of management activities. In general, most populations of MIS for which we have adequate monitoring data are either stable or increasing. Three exceptions to this are the northern bobwhite quail, the Bachmann's sparrow and the sand skink. In the case of the bobwhite, population decline is a problem throughout the southeast related to the loss of grassland ecosystems. The Upland Ecosystem Restoration Project, a multi-agency partnership is working to restore these ecosystems. The Bachmann's sparrow decline on three of the five Districts could be due to the lack of prescribe burning and other timber management activities that generate or improve their desired habitat to a level greater than nature is setting those desired conditions back within the Forests at large. In the case of the sand skink, the difficulty of monitoring the species keeps us from accurately assessing the health of the population. Our best course of action is to protect all known and potential habitat, which is what we attempt to do.

All Monitoring Reports since 2001 have indicated that there was a need to re-evaluate the list of MIS. Some of the current MIS are difficult to monitor and may have limited utility to indicate effects of management activities. With limited funds and personnel available for monitoring, the Forest needs to be able to develop a cause and effect relationship between major management activities and species that can be efficiently monitored. The 2008 Planning Rule has removed the requirement to include MIS species, however was overturned on June 30, 2009, thus these species will continue to be reported until the Forest Plan is revised or we implement a Forest Plan Amendment (Proposed early 2012).

Proposed, Endangered and Threatened (PET) species are listed by the US Fish and Wildlife Service. The Endangered Species Act requires us to consider the impacts of all federal actions on these species, and to conserve all populations to the extent possible. Sensitive (S) species are designated by the Forest Service, and receive this designation because of their local and/or global rarity. They receive additional consideration during all Forest Service actions, and we are committed to maintaining viable populations of all these species. This monitoring report shows that all PETS species for which we, or a partner organization, are capable of collecting population or occurrence data continue to maintain viable populations.

Detailed discussion can be found under monitoring questions 1.1, 1.2, 1.3, 1.5, and 1.6.

### *Route Designation Process*

During FY 2010, monitoring of designated OHV trails on the Ocala, Osceola and Apalachicola National Forests indicates generally good compliance and shows a reduction in user-created trails. Evidence to date indicates that most non-compliance is occurring during hunting season.

Detailed discussion can be found under monitoring question 2.9.

### *Wilderness and Wild and Scenic Rivers*

Recommendations for the four rivers studied in the Revised Forest Plan, as well as the recommendation for Clear Lake Wilderness Study Area to be designated as wilderness, were not carried forward in FY2010. There has been no interest expressed by Florida's congressional delegation to carry these recommendations forward.

Detailed discussion can be found under monitoring questions 2.6 and 2.7.

## Introduction

Monitoring is the quality control mechanism for the Forest Plan. Monitoring elements covered in this report are listed in Chapter 5 of the Forest Plan. The report contains results and findings structured under three major headings: (I) Ecosystem Condition, Health, and Sustainability; (II) Sustainable Multiple Forest and Range Benefits; and (III) Organizational Effectiveness. Under each of these headings, Forest Plan goals, objectives, or standards and guidelines that apply are listed along with the monitoring questions, items to measures, and results.

This report also presents a Monitoring and Evaluation “Action Plan” that outlines actions to be taken in response to the results of monitoring and trend data. No single monitoring item or parameter automatically triggers a change in Forest Plan direction. An interdisciplinary, holistic approach is used to evaluate information and decide what changes are needed.

# Detailed Monitoring and Evaluation Results and Findings

## Ecosystem Condition, Health, and Sustainability

### Forest Plan Goals:

- Maintain or, where necessary, restore ecosystem composition, structure, and function within the natural range of variability in all ecosystems, with emphasis on longleaf pine-wiregrass, sand pine-oak scrub, pine flatwoods, hardwood/cypress, oak hammock ecosystems, and other imperiled specialized communities.
- Manage floodplains, groundwater, lakes, riparian areas, springs, streams, and wetlands to protect or enhance their individual values and ecological functions.
- Conserve and protect important elements of diversity such as endangered and threatened species habitat, declining natural communities, and uncommon biological, ecological, or geological sites.
- Manage for habitat conditions to recover and sustain viable populations of all native species, with special emphasis on rare species.

1.1 Monitoring Question: Is the health of natural forest communities being maintained or improved?

Item to Measure: Management indicators (Refer to Tables 5-2 and 5.3 in Forest Plan)

### Plants

The monitoring strategy in the Forest Plan prescribes that this item be reported on a five-year frequency to discern significant trends in Management Indicator Species (MIS) response to forest management activities. The following report is divided into two primary sections: *T&E Species Accounts* and *Other MIS Species Accounts*.

The NFs in Florida is revising the Management Indicator Species list to more effectively evaluate management outcomes. In addition, the NFs in Florida has contracted with the Florida Natural Areas Inventory to complete rare plant surveys.

### Wildlife and Fish

#### **Southern Bald Eagle** (*Haliaeetus l. leucocephalus*)

**Results:** Bald eagles currently nest along the St. John's River on and near the Ocala National Forest and in several locations on the Apalachicola National Forest and serve as an indicator of bottomland forest, floodplain swamp, and lake/pond habitat.

**Table 3.**  
**Number of Bald Eagle Pairs**  
**National Forests in Florida**

Year	Apalachicola. NF	Osceola NF	Ocala NF
1992	1	0	20
1993	0	0	31
1994	0	0	37
1995	0	0	40
1996	0	0	32
1997	2	0	23
1998	2	0	54
1999	0	0	47
2000	0	0	48
2001	1	0	54
2002	1	0	49
2003	2	0	55
2004-05	5	0	49
2005-06	6	0	50
2006-07	5	1	49
2007-08	5	1	53
2008-09	6	1	83
2009-10	6	1	75

In 2009-2010, bald eagles on the Ocala National Forest produced 81 fledglings. The bald eagle population on the Ocala National Forest has been stable to increasing for more than 10 years, and the Apalachicola population is beginning to increase.

**Table 4.**  
**Active Nests/Fledglings**  
**National Forests in Florida**

Year	Apalachicola NF	Osceola NF	Lake George RD	Seminole RD
1992	0/0	0/0	19/22	1/1
1993	0/0	0/0	28/19	3/3
1994	0/0	0/0	35/38	2/5
1995	0/0	0/0	36/32	4/3
1996	0/0	0/0	30/32	2/1
1997	0/0	0/0	22/18	1/2
1998	0/0	0/0	47/41	7/3
1999	0/0	0/0	44/52	3/2
2000	0/0	0/0	43/49	5/5
2001	1/1	0/0	47/50	7/7

Year	Apalachicola NF	Osceola NF	Lake George RD	Seminole RD
2002	1/2	0/0	44/47	7/8
2003	2/4	0/0	69/58	5/3
2004	2/3	0/0	47/31	6/5
2005	5/5	0/0	44/45	5/8
2006	6/3	0/0	50/33**	
2007	5/no data	1/no data	50/61**	
2008	No data	1/no data	53/57	
2009	6/no data	1/no data	83/90	
2010	6/no data	1/no data	75/81	

\*\*Due to an administrative consolidation, the data will now be reported for the Ocala National Forest instead of separately for the Lake George and Seminole Ranger Districts. In past years, data for nests within 6 miles of the National Forest boundary has been reported. This will no longer be done.

**Evaluation:** The desired outcome is a stable to increasing number of fledglings produced each year. Prior to 2005-2006, the trend was showing an increase. Number of fledglings is stable for the 2009-10 reporting period. The Ocala trend is confounded by the change in the reporting area. We will have to examine future year's counts to reestablish a trend, but we have no reason to think there is a problem with the Ocala bald eagle population. There were 35 documented new nests within the Ocala NF from the fall of 2008 to the spring of 2009 and the number of nests seems to be stable in 2010. Because of recovery of bald eagle populations throughout the lower 48 United States, the species has recently been removed from the federally endangered species list by the US Fish and Wildlife Service. The National Forests in Florida is currently tracking the species as an MIS and as a Regional Forester's Sensitive Species.

Based on the reliable nesting and reproduction of eagles on the Apalachicola and Ocala National Forests, and the protection of hardwoods and cypress stands provided by forest-wide standard VG-8, viable populations of the eagle are expected to persist on the National Forests in Florida into the future.

#### Other bird species

Birds, with the exception of the bald eagle, are monitored primarily by the Breeding Bird Survey (BBS) routes and by the R8Bird (off-road) point counts. Each BBS route is 25 miles long; typically along a minor paved road or a natural-surface forest road. Each route consists of 50 "stops", or sampling points ½ mile apart. One useful aspect of the BBS data is that it provides casual (or expert) birders a relative index of how likely it is they will see a particular species of bird along a typical forest roadside, since that's where these data are collected. Additionally, the National Forests in Florida are participating, along with other National Forests in the southeastern region, in the land bird conservation, monitoring, and inventory strategy nicknamed "R8 Bird". The R8Bird point counts began on the Ocala districts with 80 sampling points in 1997, on the Wakulla District with 30 points in 2001, and on the Apalachicola District (30 points) and Osceola in 2002 (30 points). In 2004, the Osceola added 5 points in the northern (Pinhook) portion of the Forest to represent that unique habitat type and 5 additional points are planned on the Wakulla side in 2011. Each point samples approximately 2 acres of habitat and points are at least 250 meters (820 feet) apart. Point locations were established based on the protocol outlined in *"The Southern National Forest's Migratory and Resident Landbird Conservation Strategy"* (USDA Forest Service, R-8, Fisheries, Wildlife, and Range Unit, June, 1996).

In 2005 the Forest Service Regional Office contracted with Dr. Frank Thompson (North Central Forest Research Station) to analyze the R8Bird data collected to date. Preliminary results from that analysis will be reported for all bird species included in this Monitoring Report. Additionally, with the advent of designated Upland Ecosystem Restoration Project Areas (UERP) on National Forest Lands, surveys for both the Northern bobwhite quail and other non-game bird species will be taken. Plans to use a

combination of flush transects and spring bird point counts will be utilized to maximize the amount of data gathered for bird species within the UERP. The data collected will then be stored, analyzed and interpreted at Tall Timbers Research Lab. This data in concert with data taken from R8Bird point counts and the BBS should provide the National Forests in Florida with a strong baseline of data and trend data into the future to monitor our land management decisions and to ensure viable, if not, increasing populations of PETS bird species.

**Northern Bobwhite (*Colinus virginianus*)**

**Results:** The bobwhite quail currently serves as an indicator species for sandhill and flatwoods communities on the National Forests in Florida. Quail covey call counts were conducted on the Upland Ecosystem Restoration Project (UERP) area on the Apalachicola National Forest, Wakulla District and on the Ocala National Forest, Church Lake UERP. Call counts were also implemented on the Osceola National Forest. Quail will continue to be inventoried, along with all other bird species, on BBS routes and at the R8 Bird Point Count locations on all three National Forests.

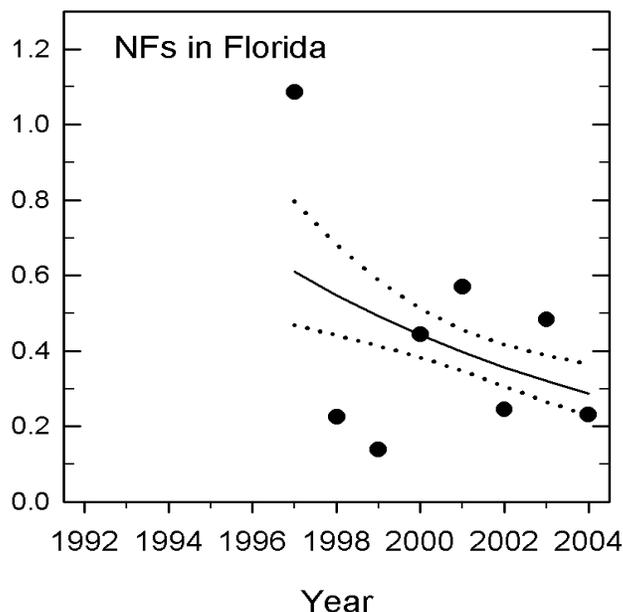
Quail counts from all methods are generally very low but appear to be fundamentally stable on all forests (Table 12). The low densities appear to be in accord with the distribution maps for the area published by the BBS.

**Table 5 National Forests in Florida Bobwhite Quail Counts Birds per Station**

Year	Apalachicola RD: Call routes, R8Bbird,BBS	Wakulla RD: Call routes, R8Bird, BBS	Osceola RD: Call routes, R8 Bird, BBS	Lake George RD: Call routes, Riverside (R8Bird), Ocala BBS	Seminole RD: Church Lake, Tomahawk, Paisley (R8Bird only)
1992	0.28, 0.08	0.54	No data, 0.02	0.2, 0.14	0.6, 2.4
1993	0.19, no data	0.19	0.24, 0	0.6, 0.1	0.9, <0.1
1994	0.18, no data	0.75	0.15, 0.10	<0.1, 0.1	0.7, 0.5
1995	0.23, 0.04	1.01	1.03, 0.08	0.9, 0.18	0.2, 0.3
1996	0.22, 0.12	0.21	0.46, no data	0.1, 0.14	1.0, 0.5
1997	0.33, 0.04	0.26	0.71, 0.08	0.1, 0.12, 0.25	0.8, 0.1, 0.8
1998	No data, 0.12	No data	0.98, 0.08	0.2, 0.06, 0.05	0.3, 0.5, 0.28
1999	No data, 0.22	No data	0.41, 0.18	0.5, 0.04, 0.13	0.9, 0.3, 0.08
2000	No data, 0.04	No data	0.08, no data	0.1, 0.14, 0.1	1.2, 1.1, 0.58
2001	No data, 0.01	No data, 0.97, 0.1	0.02, no data	No data, 0.38, 0.15	0.5, 0.9, 0.25
2002	No data, 0.08	No data, 0.1,0.1	0.0, 0.1,0.12	No data, 0.06, 0.05	0.45
2003	ND,0.47,0.06	ND,0.13,0.2	0.08,0.2,0.09	ND,0.0,0.11	0.0
2004	ND,0.03,0.1	ND,0,0.14	0.18,0,0.1	ND,0.3,0.1	0.2
2005	ND,0.07,0.09	ND,0.13,0.04	0.8,0.09,0.02	ND,0.4,0.1	0.6
2006	ND,0.2,0.05	ND,0.26,0.09	0.9,0.09,0.10	ND,0.33,0.10	0.35
2007	ND,0.2,0.06	ND,0.2,0.09	0.6,0.2,0.10	ND,0.8,0.10	1.0
2008	ND,0.03, 0.27	UERP: 2.22,0 , 0.27	0.87,0.06, 0.11	ND,0.45, 0.10	UERP:ND, 0.55
2009	ND, 0.03,0.0	UERP:1.14, 0, 0.0	0.30, 0.057, ND	ND, 0.45, 0.14	UERP: ND, 0.55

Year	Apalachicola RD: Call routes, R8Bird, BBS	Wakulla RD: Call routes, R8Bird, BBS	Osceola RD: Call routes, R8 Bird, BBS	Lake George RD: Call routes, Riverside (R8Bird), Ocala BBS	Seminole RD: Church Lake, Tomahawk, Paisley (R8Bird only)
2010	ND, 0.067, 0.04	UERP:0.58, 0.033, 0.0	0.26, 0.029, 0.04	ND, 0.15, 0.22	0.275

In 2005 the Regional Office contracted with Dr. Frank Thompson (North Central Forest Research Station) to analyze the R8Bird data collected to date. The graphic below summarizes the Mean Abundance (per point) of Northern Bobwhite from 1997 through 2004 from Thompson's analysis (LaSorte, et al. 2007):



**Figure 1.** Northern bobwhite quail censused per R8 Bird sampling point (vertical axis), 1997 through 2004 on the National Forests in Florida. The 2010 data is very similar to the 1998 total of approximately 0.11 average for the NFs in Florida.

**Evaluation:** The desired outcome is 7 or more coveys (groups of 6 – 20 birds) per 100 acres of suitable habitat with stable to increasing trend. This target was set in: *Hunter, C. et al. 2001. Partners in Flight Bird Conservation Plan for the South Atlantic Coastal Plain. American Bird Conservancy. 166pp.* Assuming 2 acres per point, and assuming that there is at least one non-calling bird for every call recorded, the counts range from 0 to 120 birds per 100 acres for all data collected from 1991-2007 (Table 3). Although it is not possible to directly extrapolate from numbers of individual birds seen or heard to numbers of coveys, it is safe to assume that in some areas, the Forests have good quail populations, and in others the population is low to non-existent. Low quail densities on the National Forests are a reflection of low densities statewide.

The National Forests are an active partner in the Upland Ecosystem Restoration Project, a state-wide initiative that was established in 2006. This initiative coordinates and promotes habitat management for quail and other early successional species on private and public land and will hopefully reverse the downward population trend for quail and several other species. Through this partnership, the Forests have planned and funded quail management projects on two of the three Forests. The UERP on the

Wakulla District consists of 4,365 acres to which annual quail covey call counts are performed by FWC biologist. Our data sources do not reflect consistent trends on the forests. BBS maps show a slight downward trend in those portions of the State that encompass the forest, but forest specific data does not appear to reflect any trends with any real certainty. Additional years of data collection at the R8 Bird sample points will give an improved idea of population trend in the future, and project area-specific monitoring projects will help to determine the efficacy of the land management treatments. The data analysis of LaSorte, et al. (2007) shown above as Figure 1 reflects a 10.2% annual decline in the species. The 2010 data collected shows both a positive and negative trend depending on location and thus will need more time to confidently show any degree of reversal in the decline documented from 1997-2004.

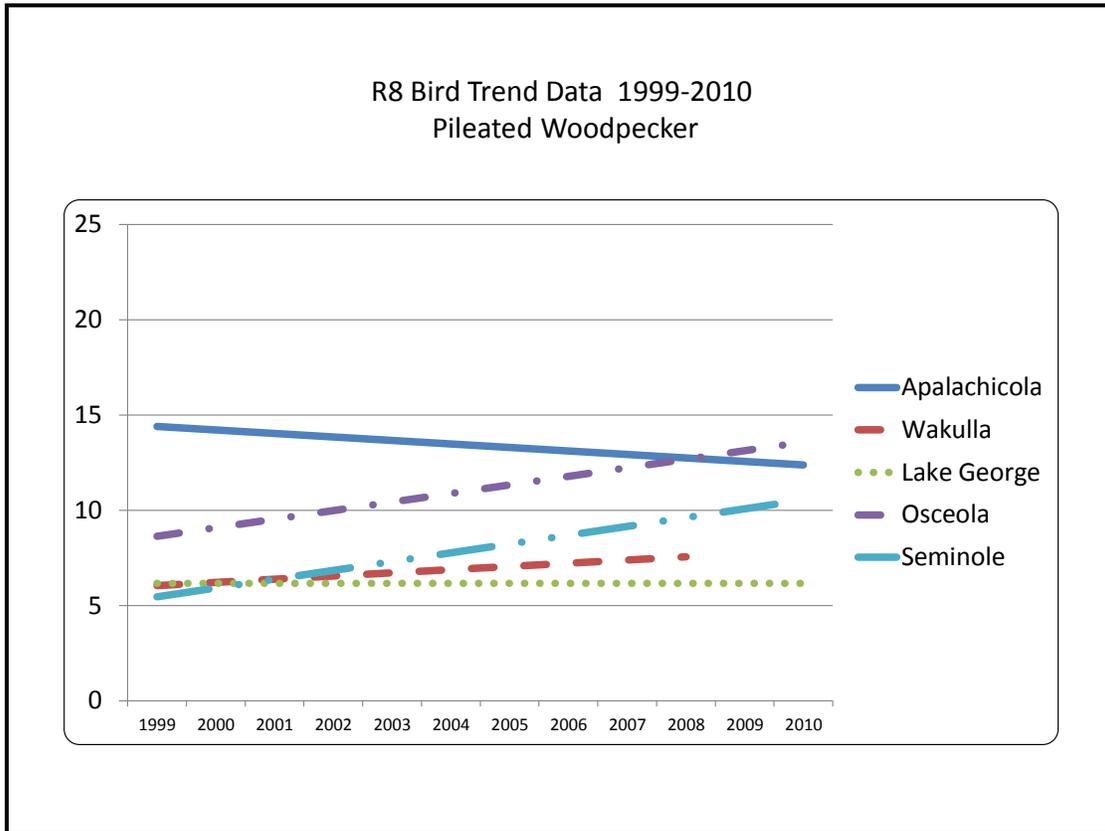
**Pileated woodpecker (*Dryocopus pileatus*), PIWO**

**Results:** This species is sampled using the BBS routes and the R8 Land bird survey. The pileated is found in all seasons in Florida with primary habitats being mature and extensive forests. It occurs in both deep woods and swamps as well as in rather open and upland forests. It seems most numerous in river-bottom hardwoods. Consequently, this species was chosen as an MIS in the Forest Plan for swamp communities including bottomland forest and strand and dome swamps. On the Ocala, the species also occurs in the longleaf pine and sand pine scrub communities.

**Table 6.  
National Forests in Florida BBS Routes  
Pileated Woodpeckers Counted per Station**

Year	Apalachicola	Osceola	Ocala
1992	0.08	0.14	0.04
1993	No data	0.14	0.04
1994	No data	0.14	0.04
1995	0.18	0.08	0.02
1996	0.08	No data	0
1997	0.32	0.12	0.06
1998	0.12	0.12	0
1999	0.12	0.12	0.02
2000	0.14	0.10	0.04
2001	0.22	No data	0.02
2002	0.13	0.11	0.04
2003	0.10	0.15	0.03
2004	0.12	0.14	0.03
2005	0.05	0.14	0.02
2006	0.07	0.14	0.03
2007	0.07	0.14	0.03
2008	0.06	0.14	0.02
2009	0.14	No data	0.02
2010	0.13	0.25	0.0

Additional pileated woodpecker monitoring has been developed from points established as part of the R8 Landbird Monitoring strategy (Figure 14-1). From 1997 through 2001, 40 points each on the Ocala Districts (Lake George and Seminole) were monitored. In 2001, 30 points on the Wakulla District were added. In 2002, 30 points were added on the Apalachicola Ranger District and 30 were added on the Osceola NF, for a total of 170 points on the National Forests in Florida. Five more were added to the Osceola in 2004, for a grand total of 175 sampling points monitored by Steven P. Christman in 2009.



**Figure 2**

**Evaluation:** The desired outcome is a stable to increasing trend. BBS trend data for the state indicate that this species has been stable to slightly increasing in Florida since 1966. Considered as a separate group, the National Forest BBS routes show a slightly declining trend. Data from the R8 Bird routes for the past ten years indicate an upward trend on all National Forests in Florida except the Apalachicola District. Figure 14-1 was compiled by taking all data points and developing a trendline for each district.

Forest plan standards and guides (VG-8, VG10, VG-11, VG-12) exclude hardwood stands from management for timber production and will retain large pine trees across the landscape that will eventually become the large snags necessary for pileated woodpecker nesting habitat. Adherence to these standards is expected to retain viable and increasing populations of this woodpecker across the National Forests in Florida.

**Prothonotary Warbler (*Protonotaria citrea*), PROW**

**Results:** Like the pileated woodpecker, this warbler’s key habitat requirements include swamps or bottomlands. Standing water and cavities in stumps, stub branches, or dead trees are necessary for nesting. The species is a secondary cavity nester; dependent on other species to excavate the cavities it uses for nesting. Because it is much smaller than the pileated woodpecker discussed above, it can nest in cavities in smaller trees; it will accept trees with a DBH as small as 6 inches (*P. Hamel, The Land Manager’s Guide to Birds of the South. The Nature Conservancy, 1992*). This species is a neotropical migrant, wintering south of the United States. It is one of the small number of warblers that breeds in Florida. It arrives in late March to mid-April and departs in mid-August to mid-September. Detections of this species are variable on the BBS routes for the National Forests in Florida. BBS trend maps show a downward trend in Florida, but trends on only the National Forest routes show more stability.

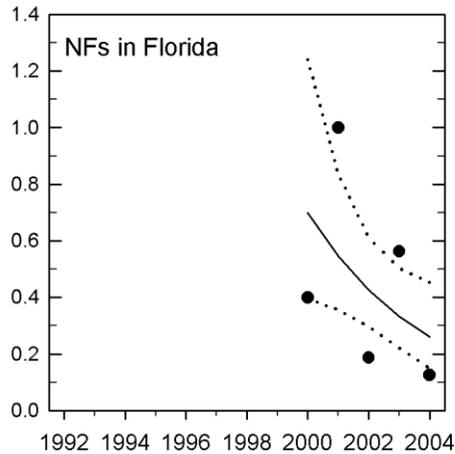
**Table 7.  
National Forests in Florida BBS Routes  
Prothonotary Warblers Counted per Station**

Year	Apalachicola	Osceola	Ocala
1992	0.46	0	No habitat on route
1993	No data	0.08	“ “
1994	No data	0.06	“ “
1995	0.58	0.04	“ “
1996	0.56	No data	“ “
1997	0.40	.04	“ “
1998	0	0	“ “
1999	0.56	0.04	“ “
2000	0.46	0	“ “
2001	0.34	No data	“ “
2002	0.25	0.05	“ “
2003	0.3	0.06	“ “
2004	0.4	0.05	“ “
2005	0.2	0.04	“ “
2006	0.25	0.05	“ “
2007	0.25	0.05	“ “
2008	0.15	0.04	“ “
2009	0.34	No data	“ “
2010	0.17	0.02	“ “

**Table 8.  
National Forests in Florida R8 Bird Counts  
Prothonotary Warblers Counted per Station**

Year	Apalachicola Wakulla/Apalachicola	Osceola	Ocala
2008	0.10/0.83	0.057	No habitat on route
2009	0.10/0.83	0.057	No habitat on route
2010	0.10/0.60	0.059	No habitat on route

Analysis of the R8 Bird data by LaSorte, et al. (2007), however, shows a 21.9% annual decline (Figure 3). Continued monitoring of R8 Bird points in addition to the BBS routes should produce a better picture over time.



**Figure 3.** Numbers of Prothonotary warblers detected per R8 Bird sampling point (vertical axis), 2000 through 2004 on the National Forests in Florida. 2010 data indicate similar numbers to the 2000 inventory.

**Evaluation:** The desired outcome is 15 or more pairs per 100 acres of suitable habitat with stable to increasing trend. This target is from: *Hunter, C. et al. 2001. Partners in Flight Bird Conservation Plan for the South Atlantic Coastal Plain. American Bird Conservancy. 166pp.* Data is highly variable, ranging from 0-29 pairs/100 acres (assuming 2 acres per point). The trend for the Prothonotary warbler from 2004 to present is flat on the Osceola, increasing on the ANF, and not present on the Ocala NF.

**Southeastern Kestrel (*Falco sparverius*), AMKE**

**Results:** The kestrel was selected as an MIS to monitor the health of early seral stage sandhill and scrubby flatwoods. Breeding bird survey route and R8 Bird point detections were limited to the Ocala National Forest until 1997.

**Table 9.  
Southeastern Kestrels Counted per Point**

Year	Ocala BBS	Lake George R8Bird	Seminole R8Bird
1992	0.04	0	0
1993	0.02	0	0
1994	0.04	0	0
1995	0.02	0	0
1996	0	0	0
1997	0	0.08	0.13
1998	0.02	0.03	0.13
1999	0.02	0.03	0.13
2000	0.10	0.10	0.08
2001	0.04	0.10	0
2002	0.04	0	0
2003	0.02	0.03	0.08
2004	0.03	0.1	0.05
2005	0.12	0.08	0.03
2006	0.03	0.17	0.1
2007	0.03	0.05	0.03
2008	1.47	0.025	0.075
2009	0.02	0.025	0.075
2010	0.03	0.025	0.025

**Table 10.  
Kestrel Nest Box Checks  
Lake George RD**

Year	Boxes Checked/ Used by Kestrel
1992	127/23
1993	118/16
1994	201/31
1995	154/36
1996	147/31
1997	0/No data
1998	72/33
1999	6/2
2000	77/30
2001	34/14
2002	1/1
2003	Not Checked
2004	" "
2005	" "
2006	" "
2007	" "
2008	" "
2009	" "
2010	" "

**Evaluation:** The desired outcome is a stable to increasing trend. The BBS trend maps show a decline for Florida, and that also appears to include the Ocala National Forest. Analysis of the R8 Bird data by La Sorte, et al. (2007) indicates a 9.7% annual decline. Present data supports the decline, however the degree of decline relative to 2007 is difficult to ascertain. Besides being cavity nesters, kestrels are open area hunters, so the emphasis on sand pine regeneration and placement of nest boxes should enable the southeastern kestrel to persist as a viable species on the Ocala National Forest.

**Wild Turkey (*Meleagris gallopavo*), WITU**

**Results:** This species is found on the National Forests in Florida during all seasons of the year. It is rare over much of the coastal plain, but common in bottomland habitats. It is also found in a variety of other habitats including upland hardwoods, mixed forests, and pine forests.

The BBS routes on the Apalachicola National Forest have not been recording significant numbers of turkeys. Turkeys are too wary of humans to be counted accurately using a point count method. Due to limited resources, track count transects conducted in cooperation with the FWC have not been implemented on the ANF for the past five years. However, FWC biologists feel the populations of turkeys on the Forests may be at low densities, but are stable enough to support an annual hunting season.

**Table 11.  
Wild Turkey Tracks/mile - Apalachicola National Forest**

<b>Year</b>	<b>Wakulla RD</b>	<b>Apalachicola RD</b>
<b>1993</b>	0.17	0
<b>1994</b>	0.02	0
<b>1995</b>	0.10	0.30
<b>1996</b>	0.40	0.20
<b>1997</b>	0.30	0.30
<b>1998</b>	0.20	0.30
<b>1999</b>	0.36	0.25
<b>2000</b>	0.60	0.83
<b>2001</b>	0.17	0.17
<b>2002</b>	0.26	0.0
<b>2003</b>	0.57	0.09
<b>2004</b>	0.63	0.31
<b>2005</b>	No data	No data
<b>2006</b>	"	"
<b>2007</b>	"	"
<b>2008</b>	"	"
<b>2009</b>	"	"
<b>2010</b>	"	"

The BBS route on the Osceola National Forest has not been recording any significant numbers of wild turkeys. As mentioned for the Apalachicola BBS, point counts are not a good method for sampling turkey populations. Thirty-five permanent plots for implementation of the R8 landbird monitoring strategy have been installed on the forest, but it is unlikely these samples will yield any good population information for the same reasons the BBS points do not yield good wild turkey population data. There are no track count indices for the Osceola available from the FWC, although they are comfortable enough with the population that spring turkey hunting has been permitted since 1980. Forest Service personnel routinely report incidental sightings of both adult and juvenile birds but there is not yet any consistent data on this species for the Osceola National Forest.

The Ocala National Forest has also been cooperating with the FWC in determining trends from track counts of wild turkeys. Commission biologists have determined a notable upward trend in wild turkeys on the forest. This trend is reflected by the Commission's decision in 1997 to institute a limited area spring hunt on the Ocala National Forest for the first time. The Commission opened spring hunting across the entire forest in 2000.

**Table 12.**  
**Ocala National Forest - Turkey Monitoring Sites**

Year	FFWCC Transects with Tracks	Lake George Bait Stations - % Active, birds seen per station
1991-92	24	
1992-93	23	
1993-94	31	55, 0.4
1994-95	84	38, 0.2
1995-96	59	56, 0.2
1996-97	105	43, 0.4
1997-98	142	74, 1.5
1998-99	132	72, 0.4
1999-00	129	54, 0.6
2000-01	134	44, 0.2
2001-02	108	46, 1.0
2002-03	98	67, 3.2
2003-04	68	ND
2004-05	144	ND
2005-06	128	33, 0.3
2006-07	198	ND
2007-08	119/627	ND
2008-09	216/627	ND
2009-10	203/627	ND

The FWC turkey track counts have represented a generally upward trend in the number of turkeys on the Ocala National Forest. The permitted hunting trend in the following table shows Commission confidence in an increasing population trend sufficient to support sport hunting.

**Table 13.**  
**Ocala National Forest - Turkey Permits and Harvest**

Year	Permits Issued/Harvest
1997-98	400/unknown
1998-99	400/unknown
1999-00	400/unknown
2000-01	1460/35
2001-02	1460/36
2002-03	1460/46
2003-04	1186/34
2004-05	1460/48
2005-06	1460/33
2006-07	1460/38
2007-08	1460/28
2008-09	1460/2*
2009-10	1460/18

\*Harvest numbers only include checked turkeys during fall archery season. The spring turkey season will be reported for the 2010 calendar year.

**Evaluation:** The desired outcome is a stable to increasing trend. The wild turkey is present and populations appear to be stable at low densities on both the Apalachicola and Osceola National Forests. Trends are upward on the Ocala National Forest, with population increases such that the FWC instituted sport hunting on the Ocala National Forest for the first time in 1997. State biologists have not expressed any reservations about viable populations of the turkey on any of the three National Forests in Florida.

**Florida black bear** (*Ursus americanus floridanus*)

**Results:** The black bear once ranged across the state, but is now reduced to 6 core areas (Eglin, Apalachicola, Osceola, Ocala, St. Johns, and Big Cypress) and 2 remnant areas (Chassahowitzka and Glades/Highlands). There are approximately 2,000 bears inhabiting the National Forests in Florida, with the Juniper Wilderness on the Ocala National Forest, having the highest concentration of bears in the state.

Black bear monitoring has been ongoing on the Ocala National Forest in cooperation with Commission biologists for many years. Track count monitoring is being accomplished annually with the results shown in the following table.

**Table 14.**  
**Black Bear Track Count Indices**  
**Ocala National Forest**

<b>Year</b>	<b>Tracks/100 miles</b>
1991-92	24
1992-93	26
1993-94	21
1994-95	39
1995-96	27
1996-96	33
1997-98	44
1998-99	31
1999-00	56
2000-01	67
2001-02	55
2002-03	50
2003-04	73
2004-05	96
2005-06	78
2006-07	87
2007-08	90
2008-09	95
2009-10	79

Track counts are not accomplished on the Osceola, however much good information on the bear population is found in the US Fish and Wildlife Service report "Population Ecology of Black Bears in the Okefenokee-Osceola Ecosystem" (USFWS 2002). This cooperative (US Fish and Wildlife Service/Osceola National Forest/FWC/Georgia Department of Natural Resources) study encompassed two study areas, one each in Georgia and Florida. The Florida portion (approximately 100,000 ac) included the southwest portion of Pinhook Swamp, the western portion of Impassable Bay, and adjacent private timber company lands. Private lands predominated. Study personnel captured 79 individual bears in Florida from 1996-1999 and estimated a bear population of 90 – 114 animals at that time.

The FWC views the northern portion of the Osceola as a desirable area for translocation of "problem" bears from other parts of the state. According to David Telesco, bear biologist for the FWC, the northern

portion of the Osceola remains a designated translocation area for “problem bears”. However, no bears were relocated to that area in 2010.

Track counts are conducted on the Apalachicola National Forest in cooperation with Commission biologists (Table 22). As previously noted, the Apalachicola National Forest is one of the six major black bear population sites in the state. Due to personnel constraints, the FWC has been unable to collect track data on the ANF since 2004.

**Table 15.**  
**Black Bear Track Counts - Apalachicola National Forest**  
**Tracks/100 miles**

Year	Apalachicola RD	Wakulla RD
1993	2	3
1994	1	1
1995	1	1
1996	0	4
1997	12	4
1998	16	11
1999	14	19
2000	3	10
2001	2	15
2002	2	10
2003	2	35
2004	16	75
2005	No data	No data
2006	“	“
2007	“	“
2008	“	“
2009	“	“
2010	“	“

**Evaluation:** The desired outcome is a stable or slightly increasing population trend, and a decrease in nuisance bear complaints. Track counts ranged from 0 to 4 per 100 miles on Apalachicola in 1991-96, and increased to 19 in 1999. Since then, they have fluctuated between 15 and 10 tracks per 100 miles. Track counts averaged 31 per 100 miles on Ocala in 1991-98, and increased to 56 and 67 in 1999 and 2000, respectively. For 2002-2003, the Ocala track count dropped off to 50 per 100 miles. The bear population on the Ocala NF was influenced by relocation of 44 nuisance bears from other areas in 1999-2001. From 1978 through 2004, the FWC received about 8,300 “complaint” calls about black bears. Fifty-seven percent (4,700) of these calls involved bears from the Ocala population. In 2006, the latest year for which FWC data is available, there were a total of 2,149 bear complaint calls statewide, so it is likely that about 1,200 of them were about Ocala bears. In 2009, there were 17 bears captured in the Ocala NF and 12 bears relocated to the Ocala NF. Bear captures and location data for 2010 was not available at time of print for inclusion in this document. Bear tracks were also recorded during annual deer track counts on the Ocala. The number of bear tracks counted has decreased from last year by 16% (593 tracks in 2009 to 496 tracks in 2010).

The Ocala National Forest is actively working with the FWC and with local citizens groups to educate the public about living with black bears. Educational materials have been produced and workshops and seminars are held on a regular basis. The Forest also participates in the annual Umatilla Bear Festival, a

day-long event featuring educational booths, entertainment, crafts, and music, all with the purpose of educating the public about living with black bears. The NFs in Florida plans to release a new “Be Bear Aware Video” for use at campgrounds and other recreation hot spots across the forests in mid to late 2011.

Commission biologists and National Forests in Florida personnel expect the black bear to maintain viable populations on all three National Forests. Total black bear numbers across the state, however, are likely to decline as development pressures erode the habitat base for this species on private lands. The National Forests in Florida will become even more important refuges for bear populations in the future.

**White-tailed Deer** (*Odocoileus virginianus*)

**Results:** Commission and Forest Service biologists have been cooperatively monitoring this species for many years on all three forests. Track count transects are being used routinely to obtain indications of trends. Due to personnel constraints, the FWC has been unable to collect track data on the Apalachicola National Forest since 2004.

**Table 16.**  
**Track Count Monitoring – White-tailed Deer**  
**Tracks/mile**

Year	Apalachicola RD	Wakulla RD	Ocala NF	Osceola NF
1992	3.81	7.63	13.6	5.5
1993	2.80	5.72	13.5	4.5
1994	3.11	3.98	14.8	ND
1995	3.10	5.23	13.8	4.1
1996	3.84	4.91	15.4	4.4
1997	6.11	5.08	12.8	6.0
1998	4.90	8.80	10.8	2.5
1999	4.20	8.50	10.5	2.3
2000	3.6	7.4	11.7	4.4
2001	3.6	7.6	10.8	2.9
2002	2.7	9.0	9.6	9.4
2003	2.2	13.2	9.5	7.2
2004	2.2	7.8	ND	6.4
2005	NA	NA	11.1	8.3/3.1**
2006	ND	ND	10.5	12.5/6.2**
2007	ND	ND	NA	7.6/3.8**
2008	ND	ND	10.21	14.5/7.5**
2009	ND	ND	10.8	14.5/7.5**
2010	ND	ND	10.8	11.1/5.0

NA = Not Available

ND = No Data

\*\* = Still/Dog Hunt Areas

Although track densities are low, twelve years of data show a relatively stable trend for the Apalachicola and the Wakulla, Ocala, and an erratic, but generally increasing trend on the Osceola. Commission data show a drop in hunter harvest on the Ocala that appears to parallel the decline in the track count index. Reasons for these declines are unknown at this time.

**Evaluation:** The desired outcome is a stable to slightly increasing trend. Deer have remained on the landscape across the decades at varying levels, and a viable population is assured on all three national forests.

**Sand Skink** (*Neoseps reynoldsi*)

The sand skink occurs only on the Ocala National Forest and adjacent central Florida scrub habitats with loose, sandy soils.

**Results:** Sand skink monitoring using cover boards or at the permanent study sites (Tables 16 and 17, below) has not been done since 2003 because of personnel constraints. Information reported here is based on data collections from previous years. Little is known about this species due to its fossorial habits. It is a difficult species to monitor, but there has been some success with detection using the cover board technique. Additionally, the forest biologist has maintained a database of incidental sightings of animals or sign since 1969. As a result of the Ocala NF's new access management planning, an intensive monitoring event was conducted on the Seminole RD in April, 2007. Approximately 10 biologists from the Forest Service, the US Fish and Wildlife Service and the Florida Wildlife Commission gathered to survey a large area of the District that has in the past and is expected to continue to receive significant OHV use (the area around Big Scrub Campground). No sand skinks were seen, but several of the "sine wave" tracks, characteristic of sand skinks, were noted, and we concluded that sand skinks were probably present in the area, but at very low densities.

**Table 17.  
Sand Skink Cover Board Detections - Ocala National Forest  
Active Boards or Buckets/Total Boards or Buckets**

Year	Lake George RD	Seminole RD
1992	0/302	0/0
1993	0/0	0/300
1994	0/0	0/0
1995	35/567	0/0
1996	38/461	9/40
1997	5/256	2/200
1998	30/344	0/0
1999	0/0	0/0
2000	20/40	19/20
2001	17/40	16/20
2002	0/0	6/20
2003	1/20	0/0
2004	ND	ND
2005	ND	ND
2006	ND	ND
2007	ND	ND
2008-10	ND	ND

**Table 18.  
Sand Skink Densities at Study Sites - Ocala National Forest**

Year	Lake George RD	Seminole RD
<b>1995</b>	29/acre	No count
<b>1996</b>	14-24/acre	16/acre
<b>1997</b>	3/acre	No count
<b>1998</b>	31-111/acre	No count
<b>2000</b>	25-43/acre	68/acre
<b>2001</b>	No count	No count
<b>2002</b>	No count	No count
<b>2003</b>	No count	No count
<b>2004</b>	“ “	“ “
<b>2005</b>	“ “	“ “
<b>2006</b>	“ “	“ “
<b>2007</b>	“ “	“ “
<b>2008-10</b>	“ “	“ “

**Evaluation:** The current monitoring program for sand skink has shown presence of the species in a variety of scrub habitats, but there does not seem to be any conclusive correlation of sand skink population trends and management practices. They require loose, sandy soils on partially open sites. Intuitively, any activities which compact the soil or allow the vegetation to become too thick (both above ground and below ground) would be detrimental to sand skinks. Due to the difficulty of monitoring and an even greater difficulty in making any solid conclusions based on what little data the District has gathered, this species should be removed as a Management Indicator species at the next Forest Plan revision.

**Largemouth Bass (*Micropterus salmoides*)**

**Results:** The majority of largemouth bass habitats of these National Forests are natural lakes, most of which are seepage lakes formed by solution depressions. Since these lakes have no significant surface inflow or discharge, water quality is influenced by precipitation and soil characteristics of the immediate watershed. These lakes are therefore very acid, poorly buffered, and low in nutrient concentrations and productivity. Excavated ponds, most of which were created to provide fill for highways, are managed for sport fishing on the Osceola and Apalachicola National Forests. If left unmanaged, these ponds would also be acidic, poorly buffered, and low in nutrient concentrations and productivity.

A largemouth bass monitoring program has been established on both types of water bodies to determine population trends and management effectiveness. These monitoring activities were designed to compare current conditions with a variety of available data. Lakes and ponds of the National Forests in Florida have been sampled with electrofishing equipment since the early 1980's. Data collected from these samples are summarized and analyzed to document trends in relative abundance and occurrence of largemouth bass size-classes.

**Evaluation:** Trends indicated by these data suggest an acceptable level of harvestable and YOY largemouth bass occurrence and an increase in relative abundance in managed excavated ponds on the Apalachicola National Forest. There are no indications of significant adverse changes in the largemouth bass population characteristics of these ponds.

On the Osceola National Forest, the number of samples without largemouth bass is the area of greatest concern. Two lakes on the Osceola, North Deerhole and Warmouth, did not support largemouth bass population before 2007. Warmouth Lake was enlarged and enhanced by deepening and since that time largemouth bass have been observed.

The number of samples without largemouth bass is also the greatest concern on the Ocala National Forest. Largemouth bass populations have never been observed in two of these lakes, Gobbler and Lawbreaker. The two lakes are often the most acid lakes sampled on the Ocala National Forest. Both have recorded pH measurement of 3.9. During periods of low water levels, several lakes were observed to have no YOY largemouth bass, but samples during higher water did indicate largemouth bass reproduction.

High acidity is thought to have always been a characteristic of these water bodies, and the largemouth bass has, out of necessity, adapted to these conditions. These lakes are among the most acidic in the United States, and although it has generally been accepted that fisheries are severely impacted below pH 5.0 and are nearly destroyed below pH 4.8, there has never been a documented fisheries loss to a Florida acidic lake. Fish populations of these acid lakes may be more tolerant to acid conditions than the northern fish communities.

Trends observed in these data and concerns for future impacts of acidic precipitation must therefore be given serious consideration. Guidelines in the Forest Plan may not offer an opportunity to engage in proactive management necessary to protect the viability of largemouth bass in the natural lakes of these forests. As to whether or not the largemouth bass continues to serve as a viable MIS species should be considered at the next Forest Plan revision.

**Forest Plan Objective:**

Provide the following habitat conditions in the next 10 years:

Habitat Association	Apalachicola NF	Osceola NF	Ocala NF
Sandhill and Scrubby Flatwoods			
0-10 age class	8,152	0	2,947
11-30 age class	7,820	0	9,090
31-80 age class	7,034	0	8,786
81+ age class	7,059	0	25,485
Mesic Flatwoods and Wet Flatwoods			
0-10 age class	1,500	1,000	78
11-30 age class	60,413	27,598	10,537
31-80 age class	158,813	76,541	22,975
81+ age class	63,630	15,346	4,557
Xeric Hammock, Upland Hardwood Forest, and Slope Forest			
0-20 age class	400	0	834
21-60 age class	1,717	53	5,449
61-100 age class	4,231	158	4,251
101+ age class	542	0	530

Scrub			
0-10 age class	0	0	40,000
11-30 age class	0	0	91,919
31-50 age class	0	0	53,435
51+ age class	0	0	20,789
Bottomland Forest, Floodplain Swamp, Hydric Hammock, Baygall, Basin Swamp, Strand Forest, and Dome Swamp			
0-20 age class	1,145	380	326
21-60 age class	1,995	1,280	1,642
61-100 age class	88,541	43,835	27,886
101+ age class	7,454	207	1,580
Bog, Seepage Slope, Depression Marsh, Wet Prairie/Savannahs	6,043	980	101
Titi/Brush	133,573	10,005	0
Aquatic (Lakes, Rivers, Streams, Ponds)	4,936	2,129	18,263

### 1.2 Monitoring Question: What are the habitat conditions of the major habitat associations?

Item to Measure: Acres of each habitat association by major forest type age class.

Results: This monitoring item is to be reported at five-year intervals according to the Forest Plan monitoring strategy. This information was first reported in the 2004 Five-Year Forest Plan Monitoring Report. It was last reported in the 2009 Monitoring and Evaluation Report.

#### Forest Plan Objective:

Provide habitat capability to support an increasing population of red-cockaded woodpeckers (RCWs). The ten-year population objectives are 500 active clusters on the Apalachicola habitat management areas (HMA), 250 active clusters on the Wakulla HMA, 151 active clusters on the Osceola HMA, 32 active clusters on the Island HMA (Ocala NF), and 12 active clusters on the Paisley HMA (Ocala NF). The long-term objectives are 500 active clusters on the Apalachicola HMA, 506 active clusters on the Wakulla HMA, 457 active clusters on the Osceola HMA, 67 active clusters on the Island HMA, and 81 active clusters on the Paisley HMA. The objectives for the designated recovery populations (Wakulla Ranger District and Osceola NF) is to have at least 250 breeding pairs fledging young annually. In unrecovered populations, recruitment clusters should equal approximately 10 percent of active clusters, depending on population demographics.

### 1.3 Monitoring Question: Are we maintaining RCW populations on the National Forests in Florida?

Item to Measure: Number of effective groups' number of active clusters; compartment group survey.

Results: All three forests are continuing their long-standing monitoring of red-cockaded woodpeckers.

**Table 19.**  
**Red-cockaded Woodpeckers – National Forests in Florida**  
**Active Clusters**

Year	Apalachicola RD	Wakulla RD	Osceola NF	Ocala NF
1991	503	186	44	12
1992	503	182	43	11
1993	494	150	43	13
1994	500	Incomplete	45	10
1995	504	150	51	15
1996	504	154	53	10
1997	505	157	51	10
1998	505	125	Incomplete	13
1999	486	125	66	18
2000	486	138	Incomplete	22
2001	488	140	Incomplete	30
2002	486	140	Incomplete	29
2003	485	134	77	37
2004	473	137	84	44
2005	473	104	88	53
2006	489	120	91	53
2007	494	130	100	55
2008	513*	140	112	65
2009	533*	146	124	65
2010	546	147	139	68

\* The Apalachicola District's number of active clusters (513) is comprised of a 40% survey of the population annually, with 1/3 of the remaining population surveyed annually. Thus 60% of the District's population is surveyed annually with the remaining 40% survey data being less than 3 years old.

**Evaluation:** The population goal by HMA from the RCW Recovery Plan of 500 for Apalachicola, 250 for Wakulla, 151 for Osceola, 32 for Island (LG), and 12 for Paisley (Seminole) has been met.

The Apalachicola population is relatively stable, the Wakulla has shown a gradual increase although at a slower pace than needed, and the Osceola and Ocala populations are increasing. The steady increase since 1997 on the Ocala is in part due to translocations of young birds from the Apalachicola RD. The number of active clusters on the Ocala has nearly tripled since 1999, but non-paired birds occupy 30% of those clusters.

With the continued emphasis on prescribed burning, aggressive application of artificial nest structures, and our successful translocation program, the viability of the red-cockaded woodpecker is ensured on the National Forests in Florida and the two districts currently not meeting their active cluster goal are progressing towards that at sustainable pace.

**1.4 Monitoring Question: What are the effects of the reduced foraging standards on the Apalachicola National Forest? QUESTION REMOVED BY AMENDMENT #3.**

**Forest Plan Objective:**

Maintain a dynamic system of at least 45,000 to 55,000 acres of habitat capable of supporting scrub jays on the Ocala NF. The 10-year population objective is 742 to 902 groups.

### **1.5 Monitoring Question: What are the population trends of scrub jay? How is management affecting scrub jay? How many acres are suitable for scrub jay?**

Item to Measure: Scrub jay population demographics, reproduction, dispersion, number of acres in 3-12 year age class in **sand pine**.

#### **Results:**

The Florida scrub-jay is federally listed as threatened. It is found only in peninsular Florida, nesting in oak scrub or sand pine-oak scrub habitat. The Ocala is the only National Forest with this habitat type. The jay was selected as an indicator of healthy scrub, since this species nests only in early seral stage scrub. It is quite selective, being limited to open scrub habitats in sandy areas.

Because prescribed fire is so difficult to control in scrub, and because of smoke management issues, timber harvest is the primary management tool for maintaining scrub-jay habitat on the Ocala National Forest. Clear-cutting of mature sand pine regenerates the scrub habitat necessary for the jay. The resulting scrub is generally suitable for nesting for 10 - 12 years. By this time the scrub is typically overtopped by young sand pine, rendering the site unsuitable for the jays. A regular cycle of sand pine regeneration is being employed to maintain the jays across the scrub on the Ocala National Forest. At the end of FY 2000, there were 62,627 acres of sand pine scrub in the 3-15 year old age class. The latest data we have available (Fall, 2008) indicates that we currently have about 41,584 acres of 3-15 year old sand pine scrub on the Ocala, however scrub older than about 12 years does not receive significant FSJ use. The actual acreage of effective FSJ habitat (3 – 12 years old) is more like 31,126 acres.

Forest wide monitoring for numbers of clans (family groups) and individual birds has been done since 1994. In the past, the Ocala National Forest surveyed approximately 25% of suitable habitat per year by playing a scrub jay call tape and recording number of birds seen per site. An experienced observer interprets the number of groups based on the birds' behavior. New records are added to the Active List and formerly recorded sites are moved to historical status based on survey results. Demographic monitoring by Dr. Kay Franzreb of the Forest Service's Southern Research Station began in November 2000 and continued through 2005. It was taken over at that time by personnel from the Ocala National Forest.

In recent years, concerns have risen regarding the accuracy of previous Florida Scrub-Jay (FSJ) surveys which involved playing a recorded scrub-jay call and counting the number of birds per site. Observers have noted that scrub-jays from nearby non-target forest stands often responded to broadcasted calls and occasionally followed observers from one survey point to another. This can cause errors in occupancy data and overestimates in abundance. Another problem with surveying scrub-jays is that the ability to detect a scrub-jay when one is present (referred to as detectability) decreases as habitat gets older. This dynamic nature of FSJ ecology creates difficulties in gathering survey data that are relevant to monitoring questions.

Thus an effort arose to pursue a new Florida Scrub-Jay monitoring protocol whose goal would be to efficiently and accurately assess FSJ occupancy and abundance by taking the above challenges into account and ultimately provide population trend information. In late 2007, the Ocala met with Fred Johnson, a US Geological Survey population statistician with Florida Scrub-Jay survey design experience. Mr. Johnson agreed to assist the US Forest Service by devising a new monitoring plan.

Pilot surveys were conducted in March 2008 (pre-breeding) and July 2008 (post-breeding). Pre-breeding surveys focused on evaluating occupancy rates for stands that were 11-15 years old and greater than 100 meters away from a stand less than ten years old (to avoid accidentally detecting a bird from a nearby stand). Post-breeding surveys were conducted to further refine survey techniques based on pre-breeding surveys.

Evaluation: Pre-breeding surveys were conducted in 76 stands using a variation of the old broadcast survey method. Results showed low occupancy (15%) in 11-15 year-old stands. Jays, when present, were detected about 85% of the time. While jays were previously known to occupy 11-15 year-old

habitat, anecdotal evidence from years prior suggested occupancy rates in such habitat were lower than previous surveys indicated. Based on the low occupancy results, a decision was made to focus the second round of pilot surveys on habitat 0-10 years old in order to more efficiently refine survey technique.

Two hundred post-breeding points were surveyed in 0-10 year-old stands using a survey method in which no calls were played except for a 3-minute period after a series of “silent” survey periods. Rangefinder binoculars were also used to record the distance any observed birds were from observers. Detectability in the younger stands over a survey period (without using a call) was 60%, and occupancy was 33% across all surveyed sites. Occupancy results are relatively low due to the fact that many stands surveyed were younger than the age jays typically begin establishing territories.

Further analysis is underway to apply collected distance data from the rangefinder binoculars to results and to continue refining a survey technique that will be relevant and applicable. Discussions are also underway with partners to potentially explore the relationship between scrub-jay demography and certain habitat attributes such as opening size and sand pine density. While we do not have the resources to replicate the in-depth demographic studies that have been done on other large populations, small-scale examination of certain relationships in conjunction with an effective new survey method will help establish more confident answers to monitoring questions, thus the lack of estimated group and individual numbers for 2010.

**Table 20.**  
**Ocala National Forest Scrub Jays**  
**Groups/birds**

Year	Lake George RD	Seminole RD
1994	454/no count	245/no count
1995	460/1313	247/694
1996	466/1398	249/693
1997	468/1336	259/774
1998	473/893	272/799
1999	333/893	413/1050
2000	351/1020	412/1048
2001	384/1120	401/969
2002	421/1258	394/955
2003	425/1251	355/881
2004	426/1253	354/868
2005	790/2,136**	
2006	786/2,129	
2007	803/2,313	
2008	ND	
2009	ND	
2010	ND	

\*\*Due to an administrative consolidation, the 2 Districts will be reported as a single unit from 2005 forward.

**Evaluation:** In the ten years from 1994 to 2004 the number of groups increased from 707 to 780 (10%). Data from the 2005 and 2006 surveys show that the increase is continuing. Numbers for 2005 through 2007 show a very slight increase. The 10-year population objective in the Forest plan is to maintain a population between 742 to 907 groups. This objective is being met.

The viability of this species on the Ocala National Forest is insured through the application of sand pine regeneration, thereby creating the early seral stage scrub habitat necessary for scrub-jay occupation. The acres of sand pine scrub in the 3-15 year old age class is within the objective; however, there is concern

about potential conflicts between the Forest Plan standard (VG-24) of maintaining 5% of suitable sand pine acres in age class 55-80 and the objective (Objective #9) to maintain 45,000 to 55,000 acres in scrub jay habitat.

An in-depth analysis was conducted on the Seminole Ranger District. Several scenarios were modeled using varying timber harvest rates and including scrub jay habitat in management areas unsuitable for commercial timber production. Given the 5% standard, scrub jay habitat on the Seminole Ranger District levels off at about 19,000 acres. Since the Seminole represents about 43% of the total scrub acres on the Ocala, the District would be expected to provide 43% of the suitable habitat objective, or 19,350 acres – slightly more than the acreage actually available. This scenario is based on the assumption that burning and other disturbances occur as planned in the areas unsuitable for timber production. That said the Ocala NF plans to increase their sand pine harvest upwards to 4,000 acres per year in the next several years. This ramp-up in the program will certainly ensure a stable to increasing population of the Florida scrub-jay; funding provided.

#### **Forest Plan Goal 9:**

**Manage for habitat conditions to recover and sustain viable populations of all native species, with special emphasis on rare species.**

**1.6 Monitoring Question: Are we maintaining viable populations of PETS animal species and habitats to support them?**

**Item to Measure: Number of PETS animals or acres of suitable habitat.**

#### **Results:**

##### **Birds**

##### **Endangered**

***Mycteria americana*/Wood Stork  
*Picoides borealis*/Red-cockaded Woodpecker**

##### **Threatened**

***Aphelocoma coerulescens*/Florida Scrub-Jay  
*Haliaeetus leucocephalus*/Bald Eagle**

##### **Sensitive**

***Aimophila aestivalis*/Bachman's Sparrow  
*Grus canadensis pratensis*/Florida Sandhill Crane**

**Florida Scrub-jay, Bald Eagle and Red-cockaded Woodpecker** are discussed previously in this report as Management Indicator Species.

**Wood Storks** are found predominantly in Florida. They nest north to the Okefenokee Swamp in Georgia and on rare occasions in coastal South Carolina. During the non-breeding warmer months, they are fairly common over much of Florida. Primary nesting habitats are swamps, tall trees along lakeshores or thickets of trees or large shrubs, mainly near fresh water.

A wood stork rookery has been documented in the SW portion of the Osceola NF, south of I-10. The extended drought since 1998, however, has confounded efforts to determine trends for the species on the forest. On 4/15/04, it was found that this rookery had recently been reactivated, with 25 birds in residence. We do not yet have any data on active nests at this site. To our knowledge, this rookery was not active from 2005 - 2010. Nesting has yet to be documented on either the Ocala or Apalachicola NFs, although they show up in low numbers on the Apalachicola BBS routes.

**Bachman's Sparrow** populations have declined range wide in recent decades. It favors open pine stands with grasses and scattered shrubs, oaks, or other hardwoods. Maintenance of old growth longleaf with 20-25 foot spacing between trees, and thinning benefits this species as well as the red-cockaded woodpecker. Nesting requirements include dense herbaceous cover interspersed with, or bordered by, shrubs and trees. Forested areas burned between the months of April and August will benefit this bird, by stimulating an increase in herbaceous vegetation. Habitat management done under the auspices of the Upland Ecosystem Restoration Project (UERP), as discussed in the section on northern bobwhite quail will be a great benefit to Bachman's sparrow and other grassland species.

Data from the various BBS routes on the Apalachicola NF; the Ft. Gadsden BBS route, in the southwest corner, the Bloxham route in the north-central portion of the Forest, the Apalachicola route through the central and western portions of the Forest, and the Alligator Point route in the southeastern corner of the Forest all suggest slightly different trend information. Combining of the data shows that while the number of birds seen annually is quite variable, the trend from 1995 through 2005 is declining slightly, with numbers variable up to 2009.

The Osceola BBS route data suggests that this species is found in low numbers with a declining trend along the northern portion of the forest. R8Bird point data collected in 2002 and beyond will provide information to supplement the BBS data and provide a better indication of the status of the Bachman's sparrow on the Osceola National Forest.

Below is a compilation of all BBS route data for the past 16 years graphed and a trendline created. It is apparent that our Bachmann's sparrow numbers are on a slight decline on the ANF, but on a slight increase on the Osceola NF.

Figure 4.

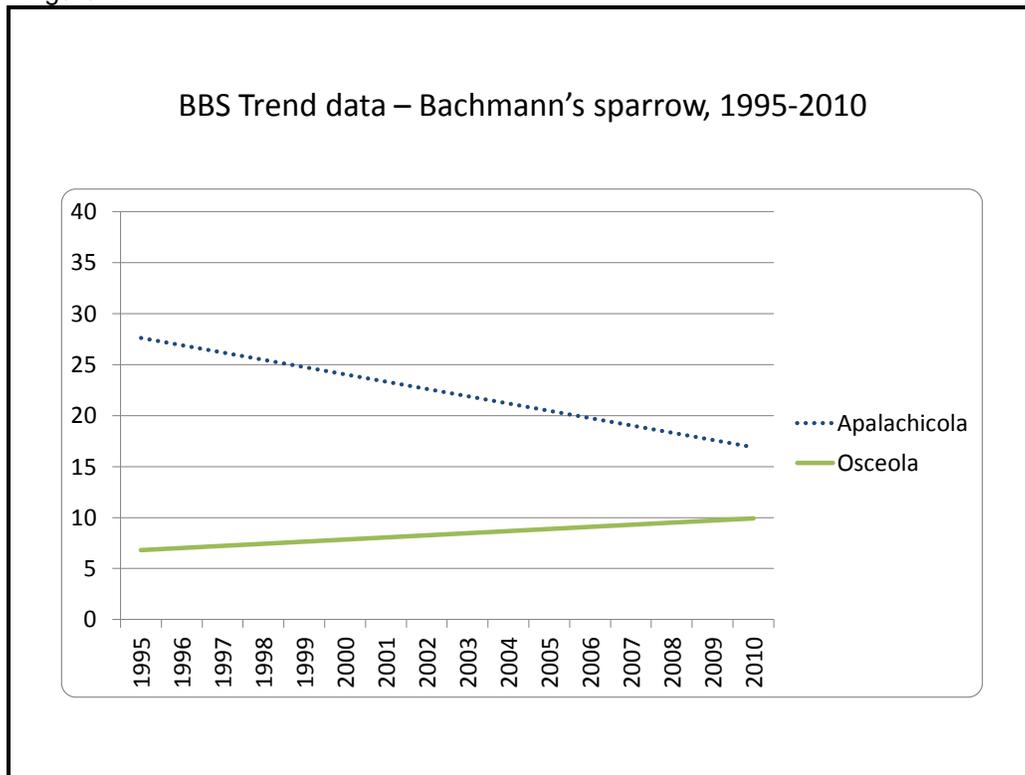
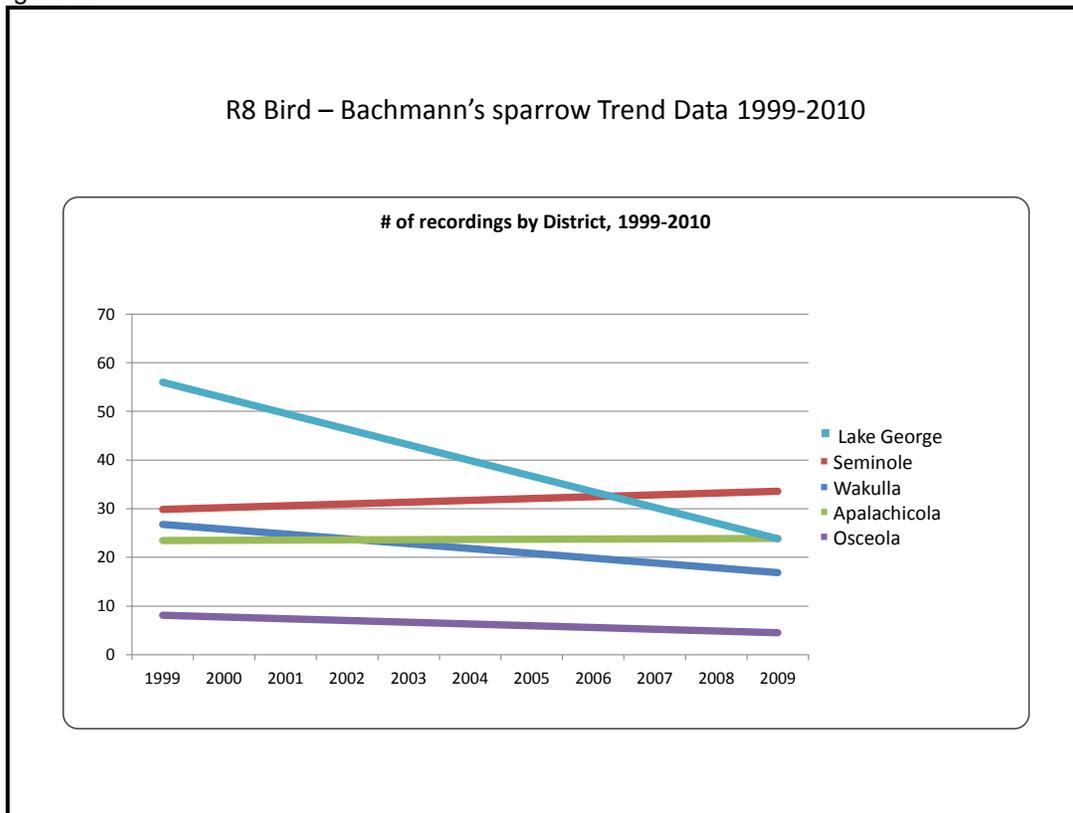


Figure 5.



R8Bird point data show Bachman’s sparrow to be the second most common species in the Ocala National Forest’s longleaf pine sandhills habitat. An average of 1.01 Bachman’s sparrows per point were recorded from the 80 points monitored on the Ocala between 1997 and 2010. Assuming 2 acres per point, and assuming that for every singing male heard or seen there is a non-singing female nearby, the population index averages 118 birds per 100 acres of suitable habitat.

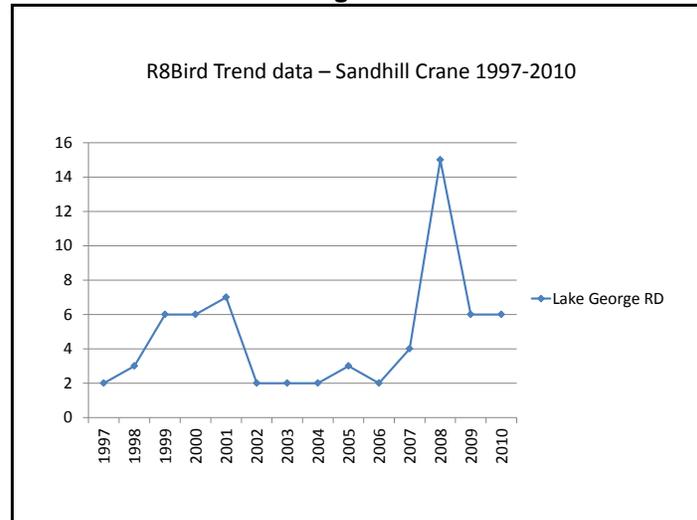
Breeding Bird Surveys throughout the southeast indicate a stable to declining survey-wide trend (-2.0 percent average annual change from 1966-2004; 95% confidence intervals: -4.9 to +1.0 percent). The species is of concern because of a loss of fire-maintained habitats due to fire suppression and land-use conversion.

Population trends for the Bachman’s sparrow were estimated in four physiographic areas and in six National Forests. Based on trend estimates and 90% confidence intervals where zero was excluded, there was evidence that the number of Bachman’s sparrows remained consistent on National Forests in the Southern Region as a whole, increased on National Forests in one physiographic area, and increased in one and decreased in two individual National Forests, one of which was Florida (LaSorte, et al. 2007). Looking to the graph above, the NF’s in Florida’s 10-year trend is increasing on ANF and Seminole, but decreasing slightly to moderately on the other three districts. Only time will tell if we are treating enough acres annually to maintain our increasing trends and slow or turn around our declining populations.

**Florida Sandhill Crane** breeding habitat is found in prairies with marsh areas and small ponds as well as open pine savannas with small pools or ponds. Wintering habitat is similar, but they may also be found in drier areas. They can be seen in cattle pastures and along the margins of fresh water. This crane is found throughout peninsular Florida in low densities during both breeding and wintering seasons and is commonly observed on the Ocala NF.

The BBS routes on the NFs in Florida have not been detecting this species. Potentially suitable habitat is found in the savannas on the western portion of the Apalachicola NF and the prairies on the Ocala NF. The Ocala R8Bird points near Lake Delancy in central Riverside Island record the Florida sandhill cranes every year. The extended drought has affected breeding habitats on National Forest lands resulting in a high degree of variability.

**Figure 6**



## Fish

### Threatened

***Acipenser oxyrinchus desotoi*/Gulf Sturgeon**

### Sensitive

***Acipenser oxyrinchus oxyrinchus*/Atlantic Sturgeon (added to list effective 01/01/2002)**

***Alosa alabamae*/Alabama Shad (added to list effective 01/01/2002)**

***Ameiurus serracanthus*/Spotted bullhead (added to list effective 01/01/2002)**

***Cyprinella leedsii*/Bannerfin Shiner (dropped from list effective 01/01/2002)**

***Micropterus notius*/Suwannee Bass**

The **Gulf Sturgeon** is an anadromous fish which breeds in all the major rivers that empty into the eastern Gulf of Mexico. It is listed as a threatened species because of documented declines in population size in all rivers except the Suwannee River. It is likely that habitat degradation and loss of spawning areas are a major cause of the declines in gulf sturgeon populations. Dams on both the Apalachicola and Ochlockonee river systems prevent sturgeon from reaching historical spawning sites.

Forest Service ownership along the Apalachicola River is limited to approximately 7 miles of the east bank. This amounts to only about 2.9% of the 103 miles of the Apalachicola in the State of Florida. A 1999 survey of the river by USFWS found 321 gulf sturgeon in river reaches just below Jim Woodruff dam; well to the north of National Forest ownership, and no sturgeon as far south on the river as the National Forest ownership. Forest Service ownership on the Ochlockonee River is greater, and amounts to approximately 6 miles on both sides of the river and 25 miles on one side of the river. According to the USFWS, gulf sturgeon is only known from the Ochlockonee from Mack Landing south (to Ochlockonee Bay). That represents about 8 miles of one side Forest Service ownership and about ¼ mile of ownership on both sides. In May 2004, a census found 115 fish in this stretch of the river. Early in 2003, the US

Fish and Wildlife Service designated these rivers, as well as river systems in Louisiana, Alabama, and Mississippi as critical habitat. The Forest Service's relatively minor ownership of the banks and the application of Forest Plan Standards & Guides (VG-8, WA-1 through WA-7), Forest Service management activities are not expected to have any effect on this species. Monitoring and trend information on this subspecies will be obtained periodically from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service.

The **Atlantic Sturgeon** lives in the Atlantic Ocean from Florida to Labrador, Canada. The Atlantic sturgeon makes long migrations, moving south to Florida in the winter. It has been collected from the St. Johns River in Putnam County. It "may have bred in the St. Johns River drainage at one time, although this has never been proven. In any event, reproduction almost certainly does not occur there today" (*Gilbert, C. R. (ed.) 1992. Fishes. Volume II in Ashton, R. (series ed.) Rare and Endangered Biota of Florida. University Presses of Florida. Gainesville, FL 247pp. ).*

The Ocala National Forest has ownership of about a quarter of the length of the western bank of the St. Johns River (including Lake George). Due to limited management activities in the zone of influence for the St. Johns River, and the application of Forest Plan Standards & Guides VG-8, WA-1 through WA-7, Forest Service management activities are not expected to have any effect on this species. Any monitoring and trend information available on this subspecies will be obtained from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service. This subspecies is a candidate for federal listing. Furthermore, this species should be considered to be removed as an MIS at the next Forest Plan revision.

The **Alabama Shad** occurs in the Gulf of Mexico and enters drainages from the Suwannee River to the Mississippi River for spawning. Due to limited management activities in the zone of influence for the Apalachicola, Suwannee, and Ochlockonee Rivers, and the application of Forest Plan Standards & Guides VG-8, WA-1 through WA-7, Forest Service management activities are not expected to have any effect on this species. Any monitoring and trend information available on this species will be obtained from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service. The species is a candidate for federal listing. It was added to the revised Southern Regional Foresters Sensitive Species List effective January 1, 2002, however should be removed as an MIS at the next Forest Plan revision.

The **Spotted Bullhead** occurs in the lower drainages of the Apalachicola, Ochlockonee, and Suwannee River systems. In 1978 this species was listed as Rare by the Florida Committee on Rare and Endangered Plants and Animals, a committee of the Florida Academy of Sciences. In 1992 it was eliminated (*Gilbert, C. R. (ed.) 1992. Fishes. Volume II in Ashton, R. (series ed.) Rare and Endangered Biota of Florida. University Presses of Florida. Gainesville, FL 247pp. ).* Others were not in agreement with this assessment, because ten years later, the species is a candidate for federal listing. It was added to the revised Southern Regional Foresters Sensitive Species List effective January 1, 2002. Due to limited management activities in the zone of influence for the Apalachicola, Suwannee, and Ochlockonee Rivers, and the application of Forest Plan Standards & Guides VG-8, WA-1 through WA-7, Forest Service management activities are not expected to have any effect on this species. Any monitoring and trend information available on this species will be obtained from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service. This species should be removed as an MIS species during the next Plan revision.

The **Suwannee Bass** is restricted to the Suwannee and Ochlockonee Rivers systems of Florida and Georgia. It generally prefers more rapidly flowing water along rocky shoal areas, but is not restricted to these areas. It can be found in large springs and spring runs as evidenced by its presence in the spring fed lower reaches of the Santa Fe and Ichetucknee rivers, which are tributary to the Suwannee.

Reproduction, including nest construction, is similar to largemouth bass. Degradation of water quality or habitat in the Suwannee and Ochlockonee rivers could threaten this species. As with mussels, watershed impacts related to agriculture, urbanization, and water management outside National Forest lands will

have the definitive impacts on this species. No effects are to be expected from Forest Service activities, and should be removed at the next Plan revision.

## Reptiles

### Threatened

*Alligator mississippiensis*/American Alligator  
*Drymarchon corais couperi*/Eastern Indigo Snake  
*Neoseps reynoldsii*/Sand Skink

### Sensitive

*Gopherus polyphemus*/Gopher Tortoise  
*Lampropeltis getulus goini*/Apalachicola King Snake  
*Pituophis melanoleucus mugitus*/Florida Pine Snake  
*Pseudemys concinna suwanniensis*/Suwannee Cooter Turtle  
*Sceloporus woodi*/Florida Scrub Lizard  
*Stilosoma extenuatum*/Short-tailed Snake

**American alligators** can be found in ditches, lakes, marshes, ponds, rivers, streams, and even brackish water. American alligators can occur in any wetland habitat. American alligator habitat exists on the Apalachicola, Ocala, and Osceola NFs. Breeding has been confirmed on the forests.

Historically, alligators were depleted from many parts of their range because of market hunting and loss of habitat, and 30 years ago many people believed this unique reptile would never recover. In 1967, the alligator was listed as an endangered species (under a law that preceded the Endangered Species Act of 1973), meaning it was considered in danger of extinction throughout all or a significant portion of its range. A combined effort by the U.S. Fish and Wildlife Service and state wildlife agencies in the South saved these unique animals. The Endangered Species Act prohibited alligator hunting, allowing the species to rebound in numbers in many areas where it had been depleted. As the alligator began to make a comeback, states established alligator population monitoring programs and used this information to ensure alligator numbers continued to increase. In 1987, the U.S. Fish and Wildlife Service pronounced the American alligator fully recovered and consequently removed it from the list of endangered species. Although the American alligator is secure, some related animals, such as several species of crocodiles and caimans are still in trouble. For this reason, the U.S. Fish and Wildlife Service has listed American alligators as “Threatened because of similarity of appearance”, and still regulates the legal trade in alligator skins, or products made from them, in order to protect endangered species that have skin similar in appearance to alligators. The FWC permits alligator harvest in selected areas around the state, and the Ocala Wildlife Management Area (WMA) is the only area currently permitted on the National Forests in Florida. Records of alligator harvest are available from FWC (Table 34).

**Table 21.**  
**Alligator harvest, Ocala WMA**

Year	Harvest Quota	Harvest
1997	5	4
1998	5	1
1999	5	3
2000	4	4
2001	ND	2
2002	ND	3
2003	ND	3
2004	4	2
2005	ND	2

Year	Harvest Quota	Harvest
2006	ND	3
2007	ND	4
2008	ND	ND
2009	ND	ND
2010	ND	ND

Based upon the alligator's current status, it is assured a continual opportunity for growth in the National Forests in Florida.

The **Eastern Indigo Snake** is a large, docile, nonpoisonous snake growing to a maximum length of about 8 feet, making it the longest native snake species in North America. This species is currently known to occur throughout Florida and in the coastal plain of Georgia. Historically, the range also included southern Alabama, southern Mississippi, and the extreme southeastern portion of South Carolina.

The indigo snake seems to be strongly associated with high, dry, well-drained sandy soils, closely paralleling the sandhill habitat preferred by the gopher tortoise. During warmer months, indigo snakes also frequent streams and swamps, and some occasionally are found in flatwoods. Gopher tortoise burrows and other subterranean cavities are commonly used as dens and for egg laying. Eastern indigo snake habitat exists on the Apalachicola, Ocala, and Osceola NFs. Local herpetologists feel that indigos are still present in low numbers on all three forests, but until 2005, no sign of the species had been found on any of the three Forests since a 1998 sighting on the Osceola. In January, 2005, a snake was observed by a Forest Service employee on a road through the scrub, and in February, 2005, a road killed snake was found in a scrub-longleaf ecotonal habitat. In April of 2007, two indigo snakes were seen in the area of a private home adjacent to the Forest near Lake Kerr. We are aware of no sampling method that would help us detect a species that occurs at such low densities, so we are reliant on incidental sightings reported by employees or other friends of the Forests. The Ocala Forest Biologist maintains a database of indigo snake sightings dating back to 1948. The decline of the species is attributed to a loss of habitat due to land uses such as construction, farming, forestry, pasture and to over collecting for the pet trade. The snake's large size and docile nature have made it much sought after as a pet. The negative effect of "Rattlesnake Roundups" on the indigo snake is unquantifiable, but researchers agree that it is real. Both indigo snakes and rattlesnakes utilize the burrows of gopher tortoises at certain times.

On a positive note, the Apalachicola National Forest was awarded a \$400,000 grant from the National Fish and Wildlife Foundation and Project Orianne Ltd., that will assist the Forest with habitat conservation, land management and restoration, with potential for captive breeding and propagation, and snake inventory and monitoring. Bradwell Game Farm, the Black Creek Tract, and 5,000+ acres in the Munson sandhills have been given priority for the first phase of this project.

The **Sand Skink** is discussed in the Management Indicator Species section of this report.

The **Gopher Tortoise** occurs in every Florida county, but is currently most numerous in southern Georgia and the northern and central portions of peninsular Florida. It has been documented on all three National Forests. This species requires well-drained loose soil for burrow construction, low-growing herbaceous forage, and open sunlit areas for nesting. The tortoise is primarily associated with longleaf pine sandhills, but is also found in sand pine scrub, dry prairies, pine flatwoods and mixed hardwood-pine communities. Old fields and roadside shoulders often support relatively high densities. Tortoises are found in relatively high densities on the Florida Gas pipeline right-of-way and in the Munson sandhills on the Apalachicola NF, the Olustee battlefield site on the Osceola NF and in the sand pine scrub on the Ocala NF. The latter forest probably has the highest numbers due to the greater extent of deep, well-drained sandy soils and the early seral stage habitat created by sand pine clearcuts.

There is currently no forest-wide trend information for any of the forests, but revised Forest Plan Standards and Guidelines provide for tortoise protection. Standards WL-10, 11 & 12 provide for burrow protection and safe movement of individuals away from possible harm from management activities. An

amendment to the LMP has brought the Plan direction in line with the FWC's newly approved Gopher Tortoise Management Plan. The Forests are approved (by the FWC) recipient sites for gopher tortoises translocated from a variety of private land development sites. We have developed a translocation monitoring protocol to which potential applicants must adhere if they want to move tortoises to the forest. The Forests recently signed an MOU with the St. Joe Land Co. under which we will accept relocated tortoises from some St. Joe developments. The MOU also incorporates a research component. The continuation of current management practices, such as, thinning and prescribe burning should ensure population growth aside from extraneous translocations to the recipient sites. Additionally, the grant awarded to the ANF on behalf of the Project Orienne, mandates baseline surveys of Gopher Tortoise occupancy within the project areas. The inventory collected will be reported in the 2011 M&E Report.

The **Apalachicola King Snake** has been confirmed in Franklin and Liberty counties. This snake lives primarily along wetland margins of bayheads, creek swamps, acid bogs, savannahs, roadside ditches, dwarf cypress stands, and evergreen shrub communities. Individuals occasionally wander into adjacent longleaf pine flatwoods. Little is known about the life history and ecology of this snake. Food probably consists of snakes, amphibians, eggs of ground-nesting birds and turtles, and rodents. There is no Forest Service data on population trends.

The Florida Natural Areas Inventory has confirmed **Florida Pine Snake** in counties that encompass portions of all three NFs in Florida. The statewide range of the snake extends from the Florida panhandle east across north Florida and south to Lake Okeechobee. Habitat includes longleaf pine – xerophytic oak woodlands, sand pine scrub, well-drained pine flatwoods and sandhill sites. There is little information on this species, but it has been described as being extremely fossorial. It particularly seeks out the tunnel systems of pocket gophers, and the burrows of gopher tortoises to a lesser extent. Prescribed fire is recommended as a habitat management tool to insure the survival of this species.

Gopher tortoise Standards WL-10, 11 & 12 as well as the Forest-wide objective to burn all burnable acres on a three-year average should enable the pine snake to persist on the forest. There is no forest wide population and trend data on this species.

The **Suwannee Cooter** is a river turtle. In Florida, the river cooters are restricted to rivers, spring runs, and associated backwaters and impoundments that drain into the Gulf of Mexico. They are herbivorous, feeding principally on aquatic vegetation. They rarely venture onto land except to nest -- a behavior that probably takes place within a relatively short distance of the water (hundreds of yards). Most nesting occurs from April through early August. *Pseudemys concinna suwanniensis* is a subspecies found from the Tampa Bay region northwestward to the Apalachicola River, and has been confirmed in Leon, Wakulla, Franklin, and Liberty counties.

Threats to this species include over harvesting for human consumption as well as habitat degradation caused by impoundments, dredging, and pollution. The Florida Fish and Wildlife Conservation Commission has established legal harvest limits for this species, which offers protections from excessive harvest. Current management standards (VG-8) in the forest plan direct that hardwood & cypress stands will not be managed for timber production. This offers habitat protection in those areas encompassed by National Forest ownership. Due to this protection, the cooter is low priority for monitoring and inventory. As with the Barbour's map turtle, we will rely on the latest information available from the Florida Fish and Wildlife Conservation Commission and the Florida Natural Areas Inventory for species trend information.

The **Florida Scrub Lizard** is found on the Ocala NF with a few records adjacent to the northern and southern borders of the Ocala NF. It prefers open sandy areas bordering sand pine scrub and sandhill associations, and could be described as a forest edge species. Habitat loss is the biggest threat to the scrub lizard. Scrub-jay management and sand pine management as prescribed in the Forest Plan will sustain forest edge in sand pine habitats on the Ocala. There is no forest wide population and trend data on this species, though several studies have been done in the Ocala National Forest that determined scrub lizard population densities under varying habitat conditions. Not surprisingly, the highest population densities are found in areas of open sand pine scrub with a high degree of sandy edge habitat.

Little is known of the life history and ecology of the **Short-tailed Snake**. It is a burrower, seldom seen above ground except in the spring and fall (April and October). It is restricted chiefly to long-leaf pine – turkey oak associations, but is occasionally found in sand pine scrub. Its original range appears to include only the Ocala NF, which contains one of the largest remaining blocks of appropriate habitat. The Ocala Forest Biologist maintains records on short-tail snake observations. Her database has records dating from 1974, and the last record she has was April, 2004. Management Objectives and Standards and Guidelines for the red-cockaded woodpecker in the Forest Plan will also provide protection for this species. There is no forest wide population and trend data on this species.

## **Amphibians**

### **Threatened**

***Ambystoma cingulatum*/Flatwoods Salamander**

### **Sensitive**

***Amphiuma pholeter*/One-toed Amphiuma (added to list effective 01/01/2002)**

***Desmognathus apalachicola*/Apalachicola Dusky Salamander (added 01/01/2002)**

***Notophthalmus perstriatus*/Striped Newt**

Adult **Flatwoods Salamanders** spend most of their lives in pine flatwoods-wiregrass uplands. Breeding takes place in isolated ephemeral ponds within the flatwoods-wiregrass matrix, typically open cypress or bay domes with well-established grassy vegetation in the water. The adults migrate to and from the breeding ponds, sometimes traveling over a mile from the pond. Adults have been observed crossing paved highways and dirt roads during migration. By analogy with similar species, the adults can be expected to spend the majority of their time underground, or at least under leaf litter. It is assumed that adults are dependent on the thick ground cover provided by fire maintained wiregrass communities, especially during breeding migrations. Optimum habitat is open, mesic woodlands of pine flatwoods maintained by frequent fires

The flatwoods salamander is found in the Apalachicola National Forest and in one compartment on the Osceola National Forest. The known breeding ponds on the Apalachicola National Forest are in the Apalachicola Savannahs land-type association. The Apalachicola National Forest flatwoods salamander population is being studied in a cooperative project with the Forest, The Nature Conservancy, and the FWC as partners. Even though the principal investigator is hampered by dry weather (see discussion below), she has discovered a number of previously unknown potential breeding ponds. One concentration of flatwoods salamanders has virtually disappeared from the Forest, apparently as the result of heavy site preparation (chopping and bedding) in and around breeding ponds on nearby private land. They may have also suffered from mortality while crossing a highway between the breeding ponds and the Forest. No breeding ponds for the flatwoods salamander have been confirmed on the Ocala NF, which lacks suitable habitat.

There is some concern that prescribed burning may have a lower tendency to burn through temporary ponds than does natural wildfire. It is possible that failure to reduce the duff layer in ponds may slowly reduce reproductive habitat for flatwoods salamanders. Extensive surveys for the flatwoods salamander have only been possible occasionally since Florida's extended drought began in 1998, because most breeding ponds have been dry. Because the species has only been found in a single location on the Osceola NF there are viability concerns for that population. The metapopulation on the Apalachicola is secure, however. The US Fish and Wildlife Service finalized the Critical Habitat designation for this species on the ANF and the Osceola NF. Furthermore, the USFWS made a new species determination differentiating the Frosted flatwoods salamander from the Reticulated flatwoods salamander and designated critical habitat for both species. There is however no critical habitat for the reticulated flatwoods salamander on the ANF. A record of this was posted in the Federal Register on February 10, 2009. Although this designation will provide additional protection for the Frosted flatwoods salamanders, it won't require significant change in National Forest management, other than the placement of log landing and other timber related activities.

The **One-toed Amphiuma** inhabits mucky soils in alluvial swamps and floodplain streams in the Florida and Alabama panhandles and the northern Gulf coast of Florida. Only 30 occurrences are known. This species was added to the Sensitive list effective 01/01/2002.

The **Apalachicola Dusky Salamander** inhabits forested ravines and mucky floodplain and bottomland forests. They occur in Florida, Alabama, and Georgia. This species has been confirmed in Bradwell Bay Wilderness Area in the Apalachicola National Forest.

The **Striped Newt** is rare and localized in occurrence. They breed in isolated ponds in flatwoods, longleaf pine sandhills, and sand pine scrub habitats. Recent surveys have located only 32 breeding ponds in the entire geographic range of the striped newt - 17 of which are on the Apalachicola National Forest. All of the known breeding ponds on the Apalachicola National Forest are in the Munson Sandhills. Temporary ponds were being degraded by mud bogging throughout the urban interface zone, which includes all of the Munson Sandhills. A large area was closed to vehicular traffic in 2003 because of the damage being caused by mud bogging. The adult (eft stage) newts travel into the uplands surrounding the breeding ponds. Almost nothing is known about their biology in the uplands except they may travel considerable distances (at least half a mile and perhaps up to a mile and a quarter). A striped newt survey of 132 ponds in the Ocala National Forest in 1993 confirmed the striped newt in only one pond near Lake Delancy. The newts were neotenic (adults remained aquatic instead of metamorphosing to the terrestrial form). However, a 13-year study of 8 ponds in Norwalk and Salt Springs Islands by Dr. Katie Greenberg of the Southeastern Research Station confirmed newts in all 8 ponds. This study showed that newts may occur in any isolated pond in suitable habitat, but that several years of monitoring may be needed to catch the cyclical and eruptive pattern of newt reproduction (Table 35). This study confirmed the presence of terrestrial efts in the Ocala National Forest population, which was previously assumed entirely neotenic.

**Table 22.**  
**Ocala NF Pond Monitoring**  
**Number of ponds with records, Total number captured**

<b>Year</b>	<b>Striped Newts</b>	<b>Gopher Frogs</b>	<b>Round-tailed Muskrat</b>	<b>Scrub Lizard</b>
1994	4, 15	7, 46	4, 6	ND
1995	4, 4	8, 441	2, 4	ND
1996	4, 10	8, 240	0, 0	ND
1997	6, 94	7, 58	3, 3	ND
1998	7, 777	8, 655	0, 0	ND
1999	8, 876	4, 8	3, 3	ND
2000	7, 264	5, 7	1, 1	ND
2001	6, 101	7, 33	1, 1	ND
2002	8,37	8,89	1,1	5,9
2003	1,13	8,107	0,0	ND
2004	3,33	6,72	3,4	3,5
2005	1,3	5,216	0	1,1
2006	NA,88	NA,187	NA,1	NA,4
2007	NA,62	NA,12	NA,0	NA,5
2008	2, 27	NA	NA	NA
2009	14, 96	NA	NA	NA
2010	8, NA	20, NA	NA	NA

## Mammals

### Endangered

*Felis concolor coryi*/Florida Panther

*Myotis grisescens*/Gray Bat

*Trichechus manatus latirostris*/Florida Manatee or West Indian Manatee

### Sensitive

*Corynorhinus rafinesquii*/Rafinesque's Big-eared Bat (added to list effective 01/01/2002)

*Neofiber alleni*/Round-tailed Muskrat

*Podomys floridanus*/Florida Mouse

*Sciurus niger shermani*/Sherman's Fox Squirrel

*Ursus americanus floridanus*/Florida Black Bear

The **Florida Panther** is a large, long-tailed felid with a great deal of color variation: pale brown or rusty upper parts; dull white or buffy under parts; and tail tip, back of ears, and sides of nose are dark brown or blackish. The only known self-sustaining population occurs in south Florida, generally within the Big Cypress Swamp physiographic region and centered in Collier and Hendry Counties. Currently, the wild population is estimated at 100 adult animals.

In general, panther population centers are in large remote tracts with adequate prey, cover, and reduced levels of disturbance. There are currently no known Florida panthers using National Forest lands. The Apalachicola and Osceola NFs are potential reintroduction sites (Thatcher et al. 2006). The Osceola was used in the mid-1990's as a reintroduction test site when sterile western cougars were released to test the possibility of future releases of Florida panthers. The Florida panther should be removed as an MIS at the next Plan revision.

Populations of **Gray Bats** are found mainly in Alabama, northern Arkansas, Kentucky, Missouri, and Tennessee, but a few occur in northwestern Florida, western Georgia, southwestern Kansas, southern Indiana, southern and southwestern Illinois, northeastern Mississippi, northeastern Oklahoma, western Virginia, and possibly western North Carolina. Distribution within the range is always patchy, but fragmentation and isolation of populations has been a problem during the past three decades. The gray bat population was estimated to be about 2.25 million in 1970; however, in 1976 a census of 22 important colonies in Alabama and Tennessee revealed an average decline of more than 50 percent. Due to protective measures taken at high-priority colony sites in the late 1970s and throughout the 1980s, the declines have been arrested at some major sites. Despite those measures, a recent discovery of White-nose syndrome among the Gray bat has caused alarm among bat biologists as to the severity of the syndrome. It is expected that this syndrome may cause mortality in thousands of Gray bats and could spread to other species. More research is being conducted to try and analyze the source as well as treat and eradicate the syndrome, ultimately protecting the species from further degradation.

Gray bat colonies are restricted entirely to caves or cavelike habitats. Nine known caves are believed to house about 95 percent of the hibernating population. There are no caves on the National Forests in Florida that could provide the conditions required by gray bats for roosting and breeding habitat. Gray bats occasionally may occur over the forests during migration or foraging. This species should be removed as an MIS species at the next plan revision.

The **Florida Manatee**, or West Indian Manatee, is a large gray or brown aquatic mammal. Although primarily herbivorous, they will occasionally feed on fish. Manatees may spend about 5 hours a day feeding and may consume 4 to 9 percent of their body weight a day.

During the winter months, the manatee population in the United States confines itself to the coastal waters of the southern half of peninsular Florida and to springs and warm-water outfalls as far north as southeast Georgia. Manatees also winter in the St. Johns River near Blue Spring State Park. During

summer months, they may migrate as far north as coastal Virginia on the east coast and the Louisiana coast on the Gulf of Mexico. Manatee populations also exist outside the continental United States in coastal areas of the Caribbean and Central and South America.

Silver Glen Springs from its point of origin to its confluence with Lake George and Lake George itself are the only areas of habitat with known use in the forests. The manatee population was probably more abundant in the 18th or 19th century than today. Initial population decreases probably resulted from over harvesting for meat, oil, and leather. Today, hunting is prohibited and is not considered a problem; although there is an occasional poaching incidence. However, heavy mortality does occur from accidental collisions with boats and barges and from canal lock operations. Manatee population trends are poorly known, but deaths have increased steadily. The combination of high mortality rates and low reproductive rates has led to serious doubts about the species' ability to survive in the United States. Another closely related factor in the decline has been the loss of suitable habitat through incompatible coastal development, particularly destruction of sea grass beds by boating facilities. Silver Glen Springs provide essential warm water the manatees need to over-winter within that spring. The Forest Service is actively pursuing ways to improve the Silver Glen Springs by regulating the amount of boater traffic thru seasonal restrictions and other strategies, however these are not likely to materialize until the 2010 calendar year.

The **Rafinesque's Big-eared Bat** inhabits forests throughout the southeast. They use caves in mountainous areas and hollow trees in the southern coastal plain. This species has been confirmed in the Ocala National Forest in the Little Lake George Wilderness Area. A big-eared bat monitoring protocol has yet to be developed for the National Forests in Florida.

The **Round-tailed Muskrat** is restricted to Florida and southeastern Georgia. Shallow marshes with emergent vegetation constitute preferred habitat. The best habitat on the NFs in Florida likely occurs in the wet prairies on the Ocala NF. The muskrat has been confirmed in Franklin, Leon, Marion and Wakulla counties (encompassing portions of the Apalachicola and Ocala NFs); and is likely in Baker, Columbia, Lake, and Liberty counties (encompassing portions of all three NFs in Florida). The extended drought has dried prairies in the Ocala National Forest that had round-tailed muskrat colonies about 10 years ago. The muskrat has persisted in creeks and streams, such as Juniper Creek, and has been recorded at small isolated ponds in sandhills habitat that are monitored for the striped newt and other amphibians. Muskrats have been recorded at 7 of the 8 sampled ponds, and in 9 of the 13 years included in the study. Because the muskrats were not trapped regularly, they were probably dispersing individuals or became trap-wise if resident. None of the ponds had the characteristic dome-shaped "muskrat house" that is formed of emergent wetland vegetation. This species should be removed as an MIS at the next Plan revision.

The known range of the **Florida Mouse** includes the northern two-thirds of the Florida peninsula and an isolated area near Carrabelle in Franklin County. This range encompasses portions of the Osceola and Ocala National Forests. There is no estimate of the statewide population, but the statewide trend is likely downwards due to habitat loss.

The mouse is restricted to fire maintained, dry, upland vegetation on deep sandy soils. The major habitats are scrub, including sand pine scrub and scrubby flatwoods, and sandhill. Scrub is the primary habitat. It has been confirmed in Marion and Lake counties (encompassing portions of the Ocala NF) and is likely in Columbia County (encompassing portions of the Osceola NF) (FNAI, 1997). Due to the abundance of preferred habitat, this species most likely occurs in the greatest numbers on the Ocala NF. The Florida mouse has also been captured during K.Greenberg's Ocala Pond Study. Ten were captured in 2005 and 3 were captured in 2006. The deep sandy soils preferred by this species are not found on the Osceola NF. This species should be removed as an MIS at the next Plan revision.

**Sherman's Fox Squirrel** is found on all three NFs in Florida. Total population size is unknown, but this species has declined in proportion to the loss of mature, fire-maintained longleaf pine. Longleaf pine – turkey oak sandhills and flatwoods are the optimum habitat for this squirrel. Home range size averages 100 acres for males and 50 acres for females.

Leaf nests predominate over cavities, and the squirrel may use up to 30 nests per year. More nests occur on the low slopes of sandhills rather than the uplands. The highest quality habitat might be along the edge of longleaf pine savannah and live oak forest, because live oak acorns appear to be a major food source when turkey oak acorn crops fail. This species should be removed as an MIS at the next Plan revision.

The **Florida Black Bear** is discussed in the Management Indicator Species section of this report.

## **Mollusks**

### **Endangered**

***Ambla neislerii*/Fat Three-Ridge Mussel**  
***Lampsilis subangulata*/Shiny-Rayed Pocketbook**  
***Medionidus penicillatus*/Gulf Moccasinshell**  
***Medionidus simpsonianus*/Ochlockonee Moccasinshell**  
***Pleurobema pyriforme*/Oval Pigtoe**

### **Threatened**

***Elliptoideus sloatianus*/Purple Bankclimber Mussel**

### **Sensitive**

***Alasmidonta wrightiana*/Ochlockonee Arcmussel**  
***Anodonta heardii*/Apalachicola Floater (added to sensitive list effective 01/01/2002)**  
***Aphaostracon pycnus*/Dense Hydrobe**  
***Cincinnatia vanhyningii*/Seminole Spring Siltsnail (added effective 01/01/2002)**  
***Utterbackia peggyae*/Florida Floater (added to sensitive list effective 01/01/2002)**

The **Dense Hydrobe** and **Seminole Spring Siltsnail** are endemic to Alexander Creek and its tributaries in the Seminole District, Ocala National Forest.

The other mollusks on the PETS list occur near and within the Apalachicola National Forest in the Apalachicola and/or the Ochlockonee river systems. The **Purple Bankclimber** and the **Fat Three-ridged mussel** have both been collected from the Apalachicola River adjacent to the forest, with the former collected from the Ochlockonee River within the forest boundaries.

The mussels appear to have decreased because of habitat loss associated with reservoir construction, channel construction and maintenance, and erosion. They are intolerant of the still water in the lakes behind the dams. Populations of the shinyrayed pocketbook, Gulf moccasinshell, and purple bankclimber have been isolated due to major impoundments on the Apalachicola, Flint, and Ochlockonee (ACF) rivers. Smaller impoundments on tributary streams in the region have resulted in further population isolation of some of the species. None of these mussels occur in the navigation channels of the Chattahoochee or Flint rivers. The fat threeridge and the purple bankclimber occur in portions of the Apalachicola River that have a navigation channel.

Observations by Forest Service and US Fish and Wildlife Service biologists during a July 20-22, 1993 field review indicated that the lower, unimpounded reaches of these rivers provided suitable refuge for the two mussels. The biologists felt that no Forest Service activities were adversely affecting these species. The revised Land and Resource Management Plan for the NFs in Florida directs that hardwood and cypress stands will not be managed for timber production. Consequently, river bottomland hardwoods will be retained with minimum disturbance. These species should be removed as an MIS at the next Plan revision.

The Florida-Caribbean Science Center of Biological Resources Division of the U.S. Geological Survey (USGS) in Gainesville, Florida surveyed for mussels in both the ACF (324 sites) and Ochlockonee (77 sites) river systems from 1991 to 1993.

The Forest is a source of free flowing, clean water for the Apalachicola and Ochlockonee Rivers. Silvicultural operations could exacerbate sedimentation if no buffer zones were left to avoid erosion and filter runoff. Road construction could cause similar problems. Current silvicultural activities following best management practices are compatible with the continued existence of the species. Forest Service management under the revised LRMP does not constitute a threat to these species. Forest plan Standard and Guide VG-8 (LRMP P.3-19) and WA-1 through WA-7 (LRMP, p.3-24 & 3-25) are expected to protect water draining from National Forest lands. Watershed impacts related to agriculture, urbanization, and water management outside National Forest lands will have the definitive impacts on these species.

## **Crustaceans**

### **Sensitive**

***Crangonyx hobbsii*/Hobb's Cave Amphipod**

***Procambarus attiguus*/Silver Glen Spring Cave Crayfish (added to list effective 01/01/2002)**

***Procambarus delicatus*/Big-cheeked Cave Crayfish**

***Procambarus orcinus*/Woodville Cave Crayfish**

Cave divers from the Woodville Karst Plain Project have documented **Hobb's Cave Amphipod** in the following sites in Leon and Wakulla Counties: Sullivan's Tunnel in Leon and River Sinks, Shepard Blue Springs, Sally Ward Spring, and McBride Slough in Wakulla.

The **Silver Glen Spring Cave Crayfish** is endemic to Silver Glen Spring in Marion County in the Lake George District, Ocala National Forest.

The **Big-cheeked Cave Crayfish** is endemic to Alexander Spring in Lake County in the Seminole District.

The **Woodville Cave Crayfish** is found in limestone sinkholes and caves. It is known from 15 sites and is relatively common in the cave system in and around the eastern side of the Apalachicola National Forest. This system is presently being explored by the Woodville Karst Plain Project, a local group of cave divers and scientists. The divers have documented this species in Leon and Wakulla Counties.

Cave crayfishes forage on detritus that enters through the open mouth(s) of the cave system. It is presumed that water quality in the cave system is important to their survival. Protection of natural detritus flow and prevention of chemical contamination are often cited as the most important protective measures. Based on observations of divers, the part of the cave systems originating under the National Forests appears to be relatively clean. Water flows originating on private lands apparently are sometimes contaminated by surface water runoff that flows directly into open sink holes.

## **Insects**

### **Sensitive**

***Atrytone arogos arogos*/Arogos skipper (added to sensitive list effective 01/01/2002)**

***Cordulegaster sayi*/Say's Dragonfly**

***Progomphus bellei*/Belle's Sand Clubtail**

***Somatochlora calverti*/Calvert's Emerald**

The **Arogos skipper** occurs in much of the eastern US. It lives in a variety of grassland habitats with local distribution defined by the availability of food plants. The Arogos skipper is known from a sandhills site west of Lake Delancy in the Ocala National Forest, where the larval food plant is lopsided indiagrass (*Sorghastrum secundum*). This is the only xeric sandhill site known to be inhabited by the skipper, which occupies moist grasslands in other areas. The skipper has not been seen at the site for about 5 years. The species has not been confirmed in the Apalachicola or Osceola National Forests, but may occupy sandhills or flatwoods habitats there.

**Say's Spiketail Dragonfly** is associated with silt-bottomed spring seepages in hardwood forests, with nearby weedy clearings for foraging. It is known from 8 localities in northern Florida and 1 in central Georgia.

**Belle's sand clubtail** uses two habitat types, sand bottomed lakes and small sandy spring-fed trickles in the open. Their larvae burrow in the sand. Their range is apparently relatively small, including a few counties in the Florida panhandle.

**Calvert's emerald**, a metallic brown and green dragonfly is known only from the Florida Panhandle and a few specimens taken in South Carolina. Their habitat requirements are unknown. By analogy with similar species, it is assumed that the larvae probably live in boggy seepage trickles in hardwood forests.

#### **Forest Plan Goal 9:**

**Manage for habitat conditions to recover and sustain viable populations of all native species, with special emphasis on rare species.**

**1.7 Monitoring Question: Are we maintaining viable populations of PETS plant species and habitats to support them?**

**Item to Measure: Locations and numbers of PETS plant populations.**

#### **Results:**

The Florida Natural Areas Inventory (FNAI) have begun collecting data on rare plants on the forest using a revised monitoring protocol that is expected to result in more meaningful evaluations of plant populations on the forest.

#### **Forest Plan Goal:**

- Apply prescribed burning technology as a primary tool for restoring fire's historic role in ecosystems.

#### **Forest Plan Objective:**

- Prescribe burn on average every 3 years with varied intervals on any given site to restore natural processes in all sites where the natural-fire-return interval was less than 10 years. Strive to burn 50 percent of those acres between March 15 and September 30 and 20 percent between May 1 and July 31. This includes wilderness, wilderness study areas, and the Savannah research natural area.

**1.8 Monitoring Question: What is the burn interval of upland pine acres? In what months have upland pine been burned?**

**Items to Measure: Acres of upland pine burned. Acres by month.**

**Results:** Total Acres burned on the National Forests in Florida in the last 3 years are shown in Table 23 and broken down by individual forest in Table 24.

**Table 23.  
Acres Burned**

Year	Acres
2008	177,269
2009	160,180
2010	195,726
<b>Total</b>	<b>533,175</b>

Based on the upland pine Management Area 7.1 of 507,740 acres, 105% of the upland pine type was burned in the last 3 years.

**Table 24. 2009 Total acres burned for the National Forests in Florida by individual Forest**

Forest	Acres burned	Total Acres of Upland Pine Habitat (MA 7.1)
Apalachicola	100244	375,311
Osceola	40287	93,480
Ocala	55195	35,792
<b>Total</b>	<b>195726</b>	<b>504,583</b>

Table xx provides the breakdown of acres burned by month in FY2010.

**Table 25. Upland Pine Percent Burned by Month**

Month	Percent
October	3
November	5
December	4
January	21
February	24
March	10
April	3
May	7
June	7
July	11
August	4
September	1
Total	100

**Evaluation:** An average of 150,000 acres every 3 years should be burned to maintain the upland pines. The Forest should strive to burn 50% of those acres (75,000 acres) between March 15 and September 30, and 20% (30,000 acres) between May 1 and July 31.

Based on the upland pine Management Area 7.1 acres of 507,740, 105% of this type, or 533,175 acres, were burned in the last 3 years (2008, 2009, 2010). For 2010, 25% of the total burned between May 1 and July 31. The Forest burned 36% of total acres in the period from March 15 to September with 57% during the dormant season between October and February. Average yearly acreage burned over the past three years is 177,725.

Weather patterns over the winter months were favorable for burning in many areas that traditionally have been difficult to burn allowing the Forest to accomplish acres in several areas that had not been burned in 5 or more years. This high accomplishment during the winter months reduced the percentage during the

growing season. Growing season burns are critical to habitat enhancement, but if growing season burns cannot be achieved, the overall fire frequency is the highest priority.

**Forest Plan Standards and Guidelines for Fire are found on pages 3-3 and 3-4 of the Forest Plan and include standards FI-1 through FI-14.**

**Forest Plan Standards and Guideline FI-7 – Minimize the use of plowed firelines for prescribed burns. Favor the use of alternatives such as disked firelines, foam, water, existing roads, or natural barriers.**

**1.9 Monitoring Question: How many miles of firelines were plowed for prescribed fire and wildfires? How many miles were restored?**

**Item to Measure: Miles of plowed firelines for each purpose. Miles of plowed firelines restored.**

**Results:** For prescribed fire a total of 0.46 miles of plowed firelines were installed during FY2010. All miles were restored. Wildfire generated 12.6 miles of firelines, all but 0.24 miles were restored.

**Evaluation:** In FY 2010 the Forest did minimize the use of plowed firelines and also optimized the use of alternative firelines to the extent possible. Alternative firelines were used, such as existing roads, trails and wet lines. During prescribed burning alternative firelines (swamp, foam, water, existing roads, disked lines) are used to the greatest extent possible, with the majority of prescribed burns bordering on roads, swamps or the Forest boundary.

**Forest Plan Objective:**

Restore between 10,000 and 15,000 acres of off-site slash pine to the appropriate native vegetation in the next 10 years. Remove slash pine from 8,000 acres of mixed longleaf/slash pine stands on the Osceola NF. The long-term objective is to restore all of the off-site slash pine to the appropriate native vegetation.

**1.10 Monitoring Question: How much off-site slash pine has been restored to other types?**

**Item to Measure:** Acres type-converted from slash pine to other species.

**Results:** Through FY 2010, 5,335 acres have been restored to longleaf pine from off-site slash pine, 1,625 acres of longleaf stands on the Osceola had slash pine removals and 202 acres were converted from slash pine to Longleaf ecosystems.

**Evaluation:** In order to meet the 10-year objective, efforts should be made to increase the acreage of restoration in future years. More effort should be made to schedule removal of slash pine from mixed stands on the Osceola National Forest.

Future biomass and stewardship contract may provide opportunities to treat more off-site slash pine. CFLRP will also accelerate the rate of conversion on the Osceola.

**1.11 Monitoring Question: Are we collecting data on understory structure?**

**Item to Measure:** CISC report data on understory field

**Results:** The CISC database has been replaced by the FSVeg database, which allows for collection of detailed understory vegetation information. At this time no additional understory species information has been collected. This is primarily due to the additional cost to collect this information and training required to complete it during routine silvicultural examinations. While species specific information would be useful, it has been identified that at a minimum, the distinction between saw palmetto/woody and herbaceous groundcover would be adequate for most site-specific project management needs.

**Evaluation:** At this time no additional understory species information has been collected.

**Forest Plan Objective:**

- Thin 45,000 to 55,000 acres of longleaf and slash pine stands to release overcrowded live crowns, favor appropriate pine species for regeneration, increase stand growth, allow more sunlight onto the forest floor, and increase suitable habitat for red-cockaded woodpeckers.

**1.12 Monitoring Question: How many acres have been offered for thinning?**

**Item to Measure:** Number of acres of thinning harvest offered.

**Results:** Through FY2010, 1959 acres were offered for thinning purposes. This is under 38 percent of the annual objective of 5200 acres.

**Evaluation:** The forests have been consistently below the level needed to meet this objective. The primary reason for not meeting the objective has been decreasing budgets, and personnel vacancies, A variety of efforts have been initiated to increase the acres treated in areas within Forest Service control. These include development of ecological condition and prioritization models, and more efficient project planning. However, limited funding is expected to continue to hamper the ability to meet objectives.

**Forest Plan Objective:**

- Replace between 500 and 1,000 acres of the off-site sand pine to the appropriate native vegetation in the next 10 years. The long-term objective is to restore the off-site sand pine to the appropriate native vegetation.

**1.13 Monitoring Question: How much off-site sand pine has been restored, and to what other types?**

**Item to Measure:** Acres type-converted from off-site sand pine to other species.

**Results:** The Ocala NF planted 131 acres in FY 2010 of Longleaf pine on previously off-site sand pine. A total of **1149 acres** of off-site sand pine have been restored to longleaf pine through FY 2010.

**Evaluation:** The results from the first six years of plan implementation indicate that the objective for the plan period has been met.

**Forest Plan Objective:**

- Initiate uneven-aged management with group selection harvests on 30,000 to 33,000 acres principally in longleaf pine forests with some in slash pine forests.

**1.14 Monitoring Question: On how many acres have we initiated uneven-aged management harvests? Is the group selection method producing the anticipated desired conditions in the longleaf pine ecosystem and what are the effects of group selection harvest in longleaf pine?**

**Item to Measure:** Number of acres offered with uneven-aged harvest. Tree stem diameter and frequency, frequency of seed crops, longleaf pine regeneration establishment and survival, growth, and development of seedlings, pine midstory development and distribution, costs and return of implementation of harvesting, costs and effects of burning within harvest units, plant species frequency and distribution, PETS species population trends/habitat conditions, MIS plant/animal population trends/habitat conditions.

**Results:** In FY 2010, 80 acres of uneven-aged harvest were completed, bringing the total to 3,250 acres that have been offered with uneven-aged management harvest methods. There were not any studies initiated in FY 2010; however, the requirements for this are known and recognized. Areas that may be suitable for this work are being surveyed, examined, and assessed for inclusion in future years work scheduling.

**Evaluation:** While there is a need to provide regeneration of mature stands, the backlog of thinning needs as well as conflicts to provide an adequate number of large trees for RCWs has limited its use. In order to meet the objectives of the Forest Plan, efforts should be made to increase the acreage offered for uneven-aged harvest.

**Forest Plan Objective:**

- Initiate irregular shelterwood harvests on between 1,800 and 2,000 acres of slash pine forests.

**1.15 Monitoring Question: How many acres have we initiated irregular shelterwood harvest? Is the irregular shelterwood method producing the anticipated desired conditions in the slash pine forest?**

**Item to Measure:** Number of acres offered with uneven-aged harvest. Growth and development of seedlings, costs and returns of implementation of harvesting, costs and effects of burning within harvest units, plant species frequency and distribution, PETS species effects/population trends.

**Results:** There were no acres of irregular shelterwood offered for harvest in FY 2010.

**Evaluation:** Since approval of the 1999 LRMP, there have been no identified opportunities or proposals to implement irregular shelterwood harvest during site-specific project development. Use of irregular shelterwood remains a viable silvicultural tool, however it may not be an appropriate Forest Plan objective.

**Forest Plan Objective:**

- Regenerate between 39,000 and 41,000 acres of sand pine on the Ocala NF.

**1.16 Monitoring Question: How many acres of sand pine have had a regeneration harvest?**

**Item to Measure:** Number of acres offered with sand pine regeneration harvest.

**Results:** There were 2,750 acres of sand pine were offered for regeneration harvest in FY 2010.

**Evaluation:** The forest has consistently been below this objective. This shortfall has been primarily the result of reduced budgets and personnel limitations. A variety of efforts have been initiated to increase the acreage treated. A Landscape Scale Assessment was completed for scrub habitat in 2009 and included a programmatic effort to subdivide scrub habitat into manageable blocks to facilitate a more practical scheduling process. In addition, variety of sale preparation procedures including use of weight scaling and combining sawtimber and pulpwood products are being explored to streamline the sale process.

**Table 26. Annual sand pine regeneration harvest.**

Year	Acres
2005	5,601
2006	2,645
2007	1,341
2008	2,494
2009	2,369
2010	2,750

**Forest Plan Standards and Guidelines for size and distribution of sand pine openings are found on pages 4-45, 4-47, and 4-48 and includes standards and guidelines 8.1-3, 8.2-3, and 8.4-3.**

**1.17 Monitoring Question: What is the size and distribution of openings in sand pine?**

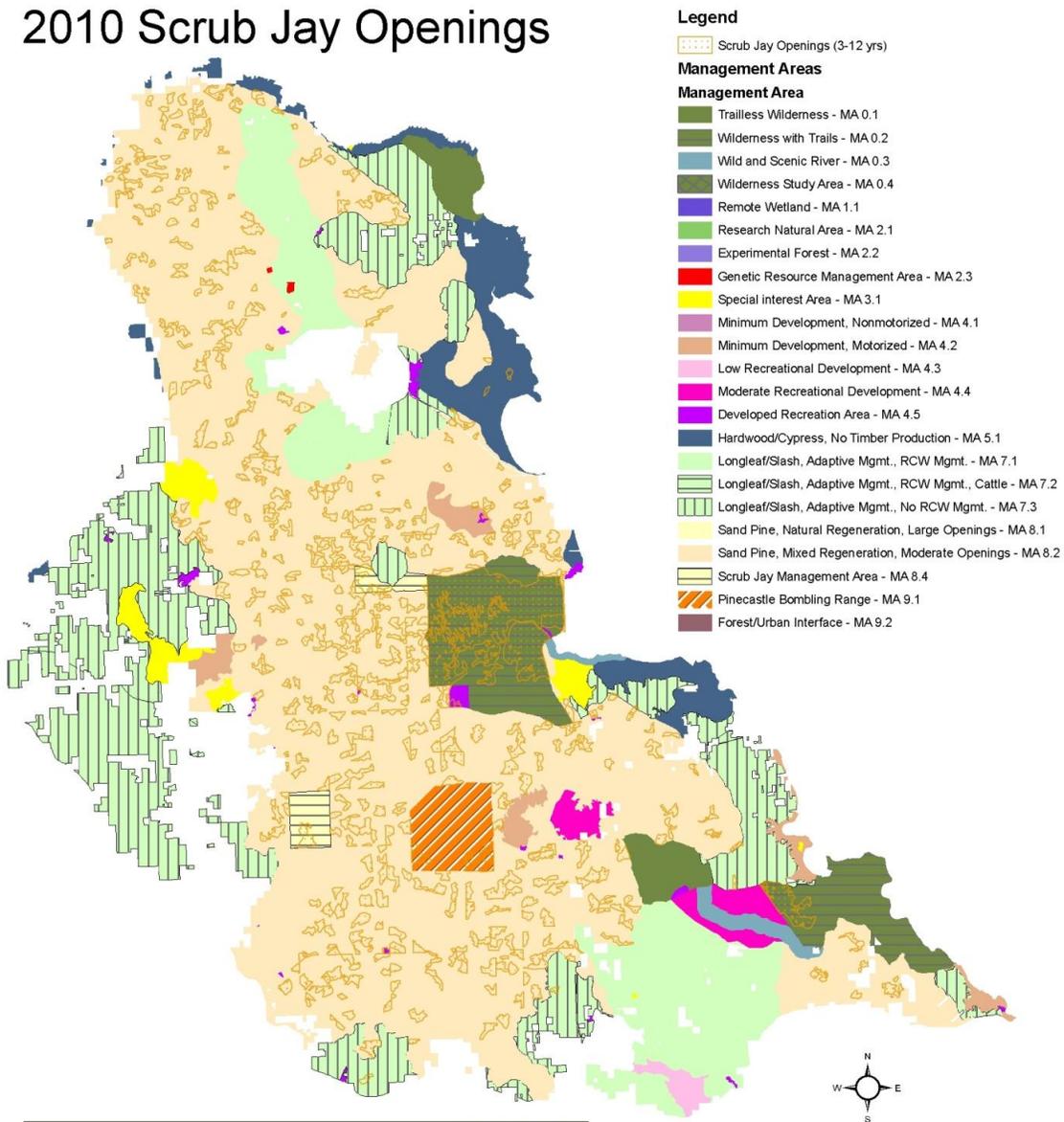
**Item to Measure:** Size of openings.

**Results:** The average size of sand pine openings created by timber harvest from 2000-2009 is 70 acres. The average size of openings created by timber harvest in 2009 was 86 acres, this was increased to 138 acres in 2010. There were 10 openings greater than 100 acres created in 2010.

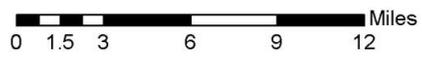
**Evaluation:** The Forest Plan desired condition of sand pine scrub openings is to have large openings up to 160 acres in most of the forest and up to 320 acres in portions of the forest. Opening size has consistently been smaller than desired due to a variety of limiting factors. In 2009, Forest Plan Amendment #8 modified the maximum opening size to 800 acres to facilitate limitations which occur when adjacent stands combine to exceed the maximum opening size. The purpose of increasing the size of opening is to maximize scrub-jay occupancy. The following figure shows the distribution of scrub-jay habitat on the Ocala National Forest.

Figure 7.

# 2010 Scrub Jay Openings



Management Area	Acres of Scrub Jay Openings
Trailless Wilderness - MA 0.1	1
Wilderness with Trails - MA 0.2	9,906
Minimum Development, Motorized - MA 4.2	24
Developed Recreation Area - MA 4.5	76
Hardwood/Cypress, No Timber Production - MA 5.1	63
Longleaf/Slash, Adaptive Mgmt., RCW Mgmt. - MA 7.1	37
Longleaf/Slash, Adaptive Mgmt., No RCW Mgmt. - MA 7.3	140
Sand Pine, Mixed Regeneration, Moderate Openings - MA 8.2	28,133
Scrub Jay Management Area - MA 8.4	413
Pincastle Bombing Range - MA 9.1	585
<b>Total</b>	<b>39,379</b>



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**Forest Plan Objective:**

- Designate the following acres of future old growth by community type.

**Table 27. Old-Growth Community Objectives**

<b>Old-Growth Community</b>	<b>Acres</b>
Upland Longleaf Pine Forest	10,200
Southern Wet Pine Forest, Woodland, and Savannah	11,000
Cypress/Tupelo Swamp Forest	17,700
River Floodplain Hardwood Forest	2,900
Hardwood Wetland Forest	24,200
Dry and Dry Mesic Oak/Pine Forest	2,200
Coastal Plain Upland Mesic Hardwood Forest	1,700
Dry and Xeric Oak Forest, Woodland, and Savannah	2,100
<b>Total</b>	<b>72,000</b>

**1.18 Monitoring Question: Have old-growth stands been designated in each community type?**

**Item to Measure:** Acres of old growth by community type designated in CISC.

**Results:** Old growth has only been designated on the Apalachicola NF and the table below shows the acres of each community designated.

**Table 28. Old-Growth Designations on the Apalachicola NF**

<b>Old-Growth Community</b>	<b>Acres</b>
Upland Longleaf Pine Forest	6,836
Southern Wet Pine Forest, Woodland, and Savannah	9,944
Cypress/Tupelo Swamp Forest	6,120
River Floodplain Hardwood Forest	1,548
Hardwood Wetland Forest	8,423
Dry and Dry Mesic Oak/Pine Forest	1,686
Coastal Plain Upland Mesic Hardwood Forest	315
Dry and Xeric Oak Forest, Woodland, and Savannah	410
<b>Total</b>	<b>35,282</b>
Upland Longleaf Pine Forest	6,836

**Evaluation:** Old growth should be designated on the Ocala and Osceola NF. A review of acres available suitable for old growth designation on the Osceola and Ocala NF in management areas where there is no scheduled timber harvest to provide for sustained yield timber production are listed below by community type. This shows the potential for old growth in these management areas as an example.

**Table 29. Acres available for old growth designation in management areas classed as unsuitable for timber production on the Osceola and Ocala NF.**

<b>Old-Growth Community</b>	<b>Acres</b>	<b>Osceola</b>	<b>Ocala</b>
Upland Longleaf Pine Forest	932	1,175	2,107
Southern Wet Pine Forest, Woodland, and Savannah	1,490	9,171	10,661
Cypress/Tupelo Swamp Forest	9,469	848	10,317
River Floodplain Hardwood Forest	269	841	1,110
Hardwood Wetland Forest	2,056	11,163	13,219
Dry and Dry Mesic Oak/Pine Forest	0	32	32
Coastal Plain Upland Mesic Hardwood Forest	0	354	354
Dry and Xeric Oak Forest, Woodland, and Savannah	0	1,308	1,308
<b>Total</b>	<b>14,216</b>	<b>24,892</b>	<b>39,108</b>

Forest Plan Goals:

- Obtain a national forest ownership pattern that reduces management costs and helps meet ecosystem management objectives. Acquire land to connect large tracts of public ownership to maintain biologic and hydrologic linkages in partnerships with other public agencies. Locate and maintain national forest boundaries that are visible to forest users and neighbors.

Forest Plan Objectives:

- Evaluate Choctawhatchee lands that no longer exhibit national forest character and consider for exchange for lands adjacent to or within the Apalachicola, Ocala, and Osceola National Forests. Exchange national forest land along the Ocklawaha River for State-owned land within national forest boundaries. Exchange Forest Service-owned minerals under Withlatchoochee and Blackwater State Forests for land within Pinhook purchase unit.
- Acquire land within the 170,600-acre Pinhook purchase unit. Within the Apalachicola, Ocala, and Osceola National Forests, annually acquire a minimum of 200 acres of forest inholdings. Acquire 6,500 acres adjacent to the Ocala NF.

**1.19 Monitoring Question: Have land purchases and exchanges met the objectives established in the Forest Plan?**

**Item to Measure:** Itemized by map what has been gained and what has been exchanged; miles of landlines maintained.

**Results:** There were over 96 miles of boundary lines marked/maintained of National Forest System lands in Florida in FY 2010. The majority of this work was funded pursuant to the American Recovery and Reinvestment Act.

In FY 2010, the National Forests in Florida acquired a total of 21.4 acres through completion of three land adjustment cases. Much of the work completed in FY 2010 involved preparing for upcoming land acquisitions scheduled to take place in FY 2011.

**Evaluation:** These newly acquired lands, particularly those pertaining to the Florida National Scenic Trail, present a challenge to the Forest in regards to landline location and maintenance. In addition, constraints on acquisition funding continue to impede our ability to fully meet our potential and expectations within the overall Land Adjustment Program. That being said, the National Forests in Florida made great progress over the previous 5 years with completion of 61 land adjustment cases allowing a net gain of over 27,000 acres to the National Forest System in Florida.

A challenge associated with the success of the Forest's Land Adjustment Program is management of these newly acquired lands; particularly those in connection with the Florida National Scenic Trail. These challenges are being addressed and will continue to be a priority over the next 5 years.

The land adjustment program will continue to add lands to the National Forest System in Florida through purchase, exchange, and donation. With the influx of properties being put on the market by private landowners coupled with the decline in real estate prices, the Forest will have opportunity over the next 5 years to bring numerous properties into federal ownership through purchase, exchange, and donation.

#### **1.20 Monitoring Question: Are aquatic and terrestrial ecosystems being impaired by acid deposition? Is water quality being maintained?**

**Item to Measure:** Change in water chemistry regarding acid neutralization. Fecal-coliform in swim sites, drinking water, recreation areas, and administrative sites; chemistry of water in State well sites.

**Results:** Districts monitored water quality at developed swim sites and drinking water sites. For FY2010, there were no swim sites or drinking water sites which exceeded state water quality standards.

#### **1.21 Monitoring Question: Is air quality being maintained?**

**Item to Measure:** Particulate matter; Ozone

**Results:** Air quality information has been updated for all monitoring sites on or near the Forest. Ozone and fine particulate (PM<sub>2.5</sub>) levels continue to remain below the national ambient air quality standards (NAAQS).

**Ambient Air monitoring Information:** The two criteria pollutants of most interest to Forest managers are ozone and fine particulate matter. The Florida Department of Environmental Protection (FDEP) operates a network of air quality monitors state-wide, both for fine particulate matter (PM<sub>2.5</sub>) and ozone. Air quality monitoring for particulate matter includes both fine and coarse particulates, although from a human health stand-point, fine particulates are of the most concern.

The state-wide monitoring network is not distributed uniformly across the State; most monitors are concentrated near urban areas. The Forest operates one ozone monitor (Site 12-003-0002) at the Osceola Work Center; this monitor is part of the statewide network for ozone compliance monitoring. The two particulate monitors located at the Wakulla (Site 12-073-0005) and Ocala (Site 12-069-0003) Work Centers are operated in cooperation with the FDEP, Division of Air Resource Management. Acid deposition is monitored by EPA at a site on the Apalachicola National Forest. The US Fish and Wildlife Service operates an ozone monitor and an aerosol monitor (as part of the national visibility monitoring network, IMPROVE) at nearby St. Marks National Wildlife Refuge. Data collected by IMPROVE provides information on the constituents of particulates in the atmosphere, as well as a measure of visibility.

National Ambient Air Quality Standards (NAAQS): There are NAAQS for six air pollutants, but in the eastern US, ozone and fine particulate cause the most concern. Each state maintains a monitoring network designed to track attainment of the ozone and fine particulate standards. At the end of the 2010 monitoring year, there were no nonattainment areas in Florida. However, it is important to note that the NAAQS for 8-hour average ozone level was decreased from 0.08 parts per billion to 0.075 parts per billion (ppb) in March of 2008. In 2009, EPA determined it necessary to review the ozone standard again to determine whether the primary standard should be reduced below 0.075 and what the secondary standard should be set at. Until EPA completes that review and publishes the final NAAQS for ozone (expected in summer 2011), the work identifying non-attainment areas was put on hold. More information is available at "[http://www.dep.state.fl.us/Air/new\\_ozone\\_standard.htm](http://www.dep.state.fl.us/Air/new_ozone_standard.htm)." For the purposes of this forest plan monitoring report, the reported averages are compared to the 0.075 ppb NAAQS for ozone.

Fine Particulate Matter: Fine particulate matter is defined as airborne particles with diameters less than or equal to 2.5 microns, hence the acronym PM<sub>2.5</sub>. These very small particles remain suspended in the air much longer (on average) than the larger (PM<sub>10</sub>) particles and behave more like a regional pollutant. Examination of 2003 aerosol monitoring data from St. Marks National Wildlife Refuge, located very near the Apalachicola National Forest and Bradwell Bay Wilderness, shows that ammonium sulfate and organic carbon account for about 85% of the fine particulate mass.

Data source: <http://vista.cira.colostate.edu/views/Web/AnnualSummary/Composition.aspx>

The PM<sub>2.5</sub> particulate standard has two parts; the 24-hour or daily standard and the annual standard. The 24-hour standard is 35 ug/m<sup>3</sup>; the annual standard is 15 ug/m<sup>3</sup>. In order to attain these standards monitoring data must show that:

1. the 98th percentile of the distribution of the 24-hour concentrations for a period of 1 year, averaged over 3 years, does not exceed 35 ug/m<sup>3</sup> and
2. the three-year average of the annual arithmetic mean of the 24-hour concentrations does not exceed 15 ug/m<sup>3</sup>.

Monitoring results from sites near the Forest show the annual arithmetic mean fine particulate concentrations increased compared to the levels in 2009 by an average of 7%. Short term (24-hour) concentrations decreased from the previous year by 5% on average. The 3-year averages (2008 – 2010) remain well below the 24-hour fine particulate standard of 35 micrograms/cubic meter and the annual standard of 15 micrograms per cubic meter.

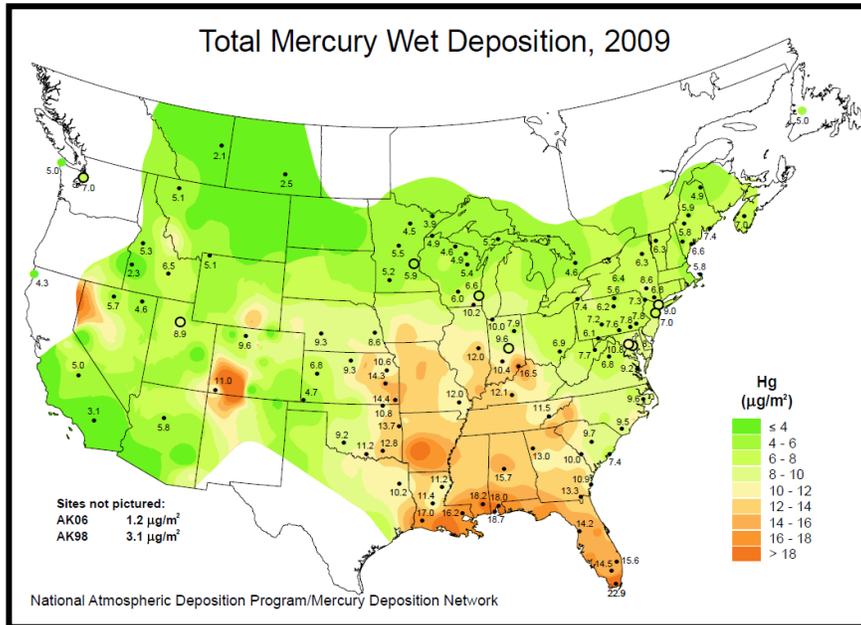
Ozone: In addition to the ozone monitor operated by the FDEP and located at the Osceola Work Center in Baker County, another ozone monitor is located near Sumatra on the Apalachicola National Forest. The Sumatra monitor is part of EPA's Clean Air Status and Trends Network (CASTNET). The purpose of this network is to assess the effectiveness of emission control strategies implemented nationwide. Ozone data from the Sumatra site is not used for determining attainment, but the results from the most recent year of available data (2005) are similar to other ozone monitors in the area. All monitors located on, or near, the Forest show compliance with the 2008 ozone NAAQS of 0.075 ppb. On average, for the 11 sites included in this monitoring, the 3-year average for 2008 – 2010 was 3% lower than for the 2009 three-year average (2007 – 2009).

Acid Deposition: CASTNET operates two sites in Florida that measure dry deposition of sulfur and nitrogen. One site is located on the Apalachicola National Forest near Sumatra. Wet deposition is also measured at the same site by the National Atmospheric Deposition Program (NADP). Co-location of CASTNET and NADP sites allows these programs to estimate ratios of wet/dry deposition and wet/total deposition (<http://www.epa.gov/castnet/>). There are no additional data summaries for these sites since the 2005 Monitoring and Evaluation Report, so the following information has not changed. Dry deposition accounts for about 18 percent of total sulfur and 23 percent of total nitrogen deposition near the Forest. A review of the available NADP data (1991 to 2004 from the Sumatra site) indicates that total sulfur deposition fluctuated from a high of 7.8 kilograms/hectare/year (kg/ha/yr) to the level of 4.3 kg/ha/yr. Nitrogen deposition decreased from a high of 5.6 kg/ha/yr to 3.8 kg/ha/yr. It is believed that acid deposition rates are decreasing due to the final implementation of pollution controls by electric generation utilities, as required by the 1990 Clean Air Act Amendments Title IV (Acid Rain) program.

**Mercury Deposition:** The mercury deposition monitoring site closest to the Forests is located on the Chassahowitzka National Wildlife Refuge. For the years 2007 – 2009, the Chassahowitzka site averaged just over 14 micrograms per square meter of deposition. Data from the National Atmospheric Deposition Program website (<http://nadp.sws.uiuc.edu/maps/Default.aspx>) shows the range of mercury deposition in 2009 (latest year of available data) was from 12 to 18 micrograms per square meter in the areas where the national forest lands are located (refer to map below).

**Evaluation:** Air quality in the vicinity of the Forests remains within National and State standards; mercury deposition appears to continue increasing.

Figure 8.



**1.22 Monitoring Question: Which water bodies were fertilized?**

**Item to measure:** Report which water bodies were fertilized.

**Results:** Selected excavated ponds on the Apalachicola and Osceola National Forest have been fertilized to enhanced fish production. Ten excavated ponds on the Apalachicola NF and nine excavated ponds on the Osceola NF were routinely fertilized when water levels were above normal stage. Fish populations are monitored annually with electro-fishing gear.

**Table 30. Pond Locations Fertilized in 2010.**

Apalachicola National Forest	Osceola National Forest
○ Buttermilk	○ Still Road Pond
○ Sumatra west	○ Boy Scout Pond
○ Sumatra east	○ Work Center Pond
○ 120 north	○ Big Curve Pond
○ 120 south	○ Blackman Pond
○ Bloxham	○ Battleground Pond
○ Derby Pond	○ White Egret Pond
○ 267 Pond	○ Catfish Pond
○ 348 Pond	○ Dip Site Pond

Apalachicola National Forest	Osceola National Forest
o Sopchoppy	

**Evaluation:**

The 10 ponds on the Apalachicola NF were fertilized and sampled with electro-fishing gear. Because of excessive aquatic vegetation, none of the ponds on the Osceola NF were fertilized.

Forest Plan Standard VG-18 – Minimize soil disturbing site preparation in longleaf and slash pine sites. When disturbance is necessary to achieve the desired future conditions, use methods that displace no more than 10 percent of the soil surface in the treated areas. The objective should be to maintain the integrity of the native herbaceous vegetation (especially wiregrass) over time.

**1.23 Monitoring Question: Has soil disturbance been minimized in preparing longleaf and slash pine sites for tree regeneration?**

**Item to Measure: Percent of the area treated with soil displacement**

**Results:**

**Evaluation:** Mechanical site preparation occurred on 123 acres on the Osceola NF and 124 acres on the Apalachicola NF. No measurable soil displacement was reported.

# Sustainable Multiple Forest and Range Benefits

## Forest Plan Goal:

- Provide a wide range of accessible recreation opportunities to accommodate the varied ability levels of forest visitors.

## Forest Plan Objective:

- Make at least 20 percent of the developed site (Level 3 and above) recreation opportunities universally accessible. Provide fully accessible opportunities on at least one swimming area, one hiking trail, and one fishing pier/boating site per forest. The long-term objective is to make all developed sites universally acceptable.

### 2.1 Monitoring Question: What percent of each type of recreation site (at least 1 swimming, 1 hiking, 1 fishing) is accessible? (Level 3 and above)

#### Item to Measure: Percent of accessible site by type of recreation site.

**Results:** Table 31 shows the percent of areas meeting ADA standards. Approximately 33 developed sites level 3 and above. This table shows the sites that meet some level of accessibility standards.

**Table 31. Recreation Sites Meeting ADA Standards.**

Location	Recreation Site
Apalachicola National Forest	Leon Sinks Trail Head – 100%
	Silver Lake Day Use (picnic and swim) – 80%
	Wright Lake Campground – 50%
	Hickory Landing Campground – 25%
	Whitehead Landing Campground – 25%
	Fort Gadsden Historic Site – 25%
	Camel Lake Day Use Area – 75%
Ocala National Forest	Juniper Springs Recreation Area – 50%
	Salt Springs Recreation Area – 75%
	Silver Glen Springs Day Use – 25%
	Fore Lake Recreation Area – 25%
	Mill Dam Day Use (picnic and swim) – 25%
	Alexander Springs Recreation Area – 35%
	Doe Lake Group Camp – 50%
	Lake Dorr Cabin – 100%
	Wildcat Lake Day Use – 25%
	Lake Delancy East Campground – 100%
	Lake Delancy West Campground – 35%
	Hopkins Prairie Campground – 25%
	Juniper Wayside Day-use – 50%
	Clearwater Lake Campground – 25%
	Big Scrub Campground – 100%
	Big Bass Campground – 100%
River Forest Group Campground – 100%	
Lake Shore Group Camp – 0%	
Sweetwater Cabin – 50%	
Lake Eaton Campground – 25%	

Location	Recreation Site
Osceola National Forest	Lake Dorr Campground – 25%
	Olustee Beach Day Use (picnic and swim) – 75%
	Ocean Pond Campground – 50%
	Olustee Depot VIC – 100%
	The Landing Group Camp – 100%
	Olustee Battlefield – Niswander Hiking Trail – 0%

**Evaluation:** Efforts are underway to achieve 100% accessibility at all recreation areas and trailhead, within the next five years depending of funding availability.

**Forest Plan Goal:**

- Provide safe and enjoyable visitor opportunities at developed recreation areas by maintaining, retrofitting, or replacing recreation facilities or upgrading amenities.

**Forest Plan Objective:**

- Upgrade, refurbish, or replace four recreation facilities per year.

**2.2 Monitoring Question: Are developed recreation facilities providing Meaningful Measures (MM) standards for safety, cleanliness, and service? Do they reflect quality and customer service?**

**Item to Measure:** Evaluations of each facility component are defined by MM standards and customer survey forms.

**Results:** MM also describes standards to provide a desired quality experience and customer service. Areas that were being reconstructed in FY 2010 will meet all applicable MM quality standards when completed. Such as Salt Springs, Juniper Springs, River Forest on the Ocala National Forest and several OHV trailheads on the Apalachicola and Ocala National Forests. Recreation areas managed by the Ocala Recreation Complex special use permit (concessionaire) are expected to meet all applicable MM standards for quality of experience and customer service.

During FY 2010, Fee Demo revenues have been used to repair, replace and augment facilities, especially to construct new accessible host sites, accessible parking spaces and replace/repair water systems. Two new host sites were constructed at Leon Sinks, The Landing and Lost Lake Trailhead.

**Forest Plan Goal:**

- Provide a system of marked recreation trails and support facilities that will provide a variety of experiences for both motorized and nonmotorized trail users.

**2.3 Monitoring Question: What system of trails has been designated on the ground, and are they maintained at appropriate levels?**

**Nonmotorized:** Table 32 displays the trail system for the National Forests in Florida by mileage and type. Inspections in 2010 on the Apalachicola NF, Ocala NF, and the Osceola NF estimates that 70% of trails are being maintained at applicable standards in INFRA Trails for quality of experience and customer service.

**Table 32. Miles of Non-motorized & motorized Trail by Type**

Forest	Type of Trail	Mileage
Apalachicola	FNST	70
	Hiking	19
	Bicycle (GF&A)	2.5
	Mtn Bike	19
	OHV	34
	Motorcycle	50
	Mixed Use Road	52
Ocala	FNST	96
	Hiking	23
	Horse	134
	Mtn Bike	22
	OHV	138
	Motorcycle	12
	Mixed Use Road	107
Osceola	FNST	24
	Hiking	5
	Horse Trail	61
	Mixed Use Road	377

**Evaluation:** Budget limitations have greatly limited the ability to maintain trails at desired levels. Non-designated (user created) horse trails have shown continued growth in some areas of the forest. Since these are non-system trails, they are not maintained. Repeated use of these trails has begun to result in a variety of resource impacts to soil and water. Apalachicola NF has undertaken an EA to establish designated horse trails. All trails were GPS'd and updated in INFRA in 2010. Three trails (Eaton Sink, Leon Sinks, and Munson Bike trail received ARRA funds and much needed maintenance and replacement needs were undertaken in 2010. Motorized trails have received grants funds that help with maintenance.

**Motorized:** The Transportation Management Rule has been fully implemented on all forests, with MVUM maps published in 2008. The number of miles of designated OHV routes has fluctuated slightly as the districts continue to fine-tune the system (Table 48). See Monitoring Question 2.9 for a detailed description of the 2010 motorized route monitoring.

**Table 33. Motorized Trails designated on each of the National Forests in Florida**

Forest	Type of Motorized Trail	Mileage
Ocala NF	Motorcycle	13
	ATV & Motorcycle	138
	Mixed-use Roads	107
Osceola NF	Mixed-use Roads	377
Apalachicola NF	Motorcycle	55
	ATV & Motorcycle	34
	Mixed-use Roads	52

**2.4 Monitoring Question: How many miles of the Florida National Scenic Trail have been certified for public use?**

**Item to Measure: Number of miles of the Florida National Scenic Trail certified.**

**Results:** No new miles were added to the existing 956 miles of Florida National Scenic Trail in 2010. While completing the 1,400 mile planned corridor is still of high priority for the Florida National Scenic Trail program, identifying new trail routes and managing existing trail will become more evenly split in their emphasis in coming years.

**Evaluation:** 2010 saw the development of the Florida National Scenic Trail Coalition, a body of land managers who will work to collaboratively manage the Florida National Scenic Trail while helping to set priorities for the myriad of FNST land managers across the state; nearly 30 different public and private agencies. The FNST Coalition will publish a Strategic Implementation Plan in 2011 which will guide priorities for trail management, acquisition.

**2.5 Monitoring Question: Have rivers been recommended as wild and scenic, and what is their status?**

**Item to Measure: Status of Record of Decision/Legislative EIS.**

**Results:** Management of the river corridors continues to be based on their ongoing status as recommended wild and scenic rivers. There have been no statewide or regional initiatives to move forward with a recommendation for the studied rivers in 2010.

**Evaluation:** Direction from the Washington Office and Region Offices continues to be on ensuring there is strong local support for river designation, and that forests should not move forward with a Legislative EIS for river or wilderness recommendation unless there is support for it from the state's congressional delegation and a commitment to introduce a bill into Congress. Over the past eleven years of the existing Forest Plan, there has been no interest expressed by the State of Florida to initiate a bill for Wild and Scenic designation for these four rivers. Rivers will continue to be managed as study rivers to protect their wild and scenic qualities.

**Forest Plan Goal:**

- Increase public awareness of wilderness values. Protect and enhance resources, quality, and wilderness character of designated wilderness areas.

**2.6 Monitoring Question: Have wilderness opportunities been increased and has Clear Lake been recommended for wilderness status?**

**Item to Measure: Status of Record of Decision/Legislative EIS.**

**Results:** Clear Lake has not yet been recommended for wilderness designation and no Legislative EIS has gone forward. The area continues to be managed as a Wilderness Study Area to protect wilderness values.

**Evaluation:** Similar to the Wild and Scenic River recommendations, Legislative EISs for wilderness designation will not proceed unless there is support for it from the state's congressional delegation and a commitment to introduce a bill into Congress. Over the past eleven years of the Plan, there has been no interest expressed by the State of Florida to initiate a bill for Wilderness designation.

## **2.7 Monitoring Question: Has wilderness character been protected?**

**Item to Measure:** Percent of land in primitive and semi-primitive Recreation Opportunity Spectrum classes, trail-use data; Ecosystem plots.

**Results:** Despite continuing threats to wilderness from off-road vehicle incursions, wilderness character remains high, with remote wilderness areas experiencing little change over the last five years. District personnel note that use remains low in most wilderness areas.

**Evaluation:** Ecosystem plots need to be re-established in wilderness areas and a monitoring schedule is needed to make sure these plots are sampled on a 3-year rotation.

## **2.8 Monitoring Question: Has Natural Area wilderness study area been recommended for release?**

**Item to Measure:** Status of Record of Decision/Legislative EIS.

**Results:** Natural Area Wilderness Study Area has not been recommended for release.

**Evaluation:** Action on this would normally be combined with legislative actions on other wilderness and wild and scenic rivers designations, since only Congress can release an area from Wilderness Study Area status. As with other congressionally designated areas, over the last five years there has been no expression of support to move forward on a legislative EIS that would release this area. Natural Area WSA continues to be managed as a Wilderness Study Area.

### **Forest Plan Objective (Amendment #5):**

- Designate a system of roads, trails and areas for motor vehicle access. This process will incorporate existing travelways as much as possible and include public participation and collaboration with local user groups.

## **2.9 Monitoring Question: Is the access process having the desired effect of protecting the resources?**

**Item to Measure:** Photo points at areas of resource concern.

**Results:** Photo Monitoring has occurred now for 5 years on the Osceola's Phase 1 OHV routes, with FY2010 being the second year for photo point monitoring of the Phase 2 trails. The Ocala NF now has 4 years of photo monitoring (with FY2010 being the third year of photo monitoring on the Ocala's Phase 2 trails). Photo monitoring for the Apalachicola is also ongoing.

**Evaluation:** Monitoring continues to show good user compliance with the designated OHV trail system, with the forests keeping pace with trail maintenance needs. Nondesignated roads continue the recovery process, with those on the Ocala NF averaging around 60% ground cover and 80% live ground cover. Non-designated roads on the Osceola NF average about 50% ground cover recovery and 70% live

ground cover. Results from Apalachicola NF OHV monitoring are much less apparent due to the wet nature of the forest and some designated trails being closed and re-located because of the water level.

### 2010 Evaluation:

#### Ocala NF

*Implementation:* All OHV trails are marked on the ground, typically with carsonite posts every quarter mile. Each trail has a number of signs in addition to carsonite posts, and the district is in the process of making sure signage is clear and consistent. The number of signs missing or vandalized has decreased from previous years. The Ocala NF continues to support a strong OHV volunteer program, logging in 15,133 volunteer hours in FY 2010 in patrolling, maintenance, signing, and compliance checking.

*Compliance:* The number of unauthorized roads on the Ocala is decreasing, with more than 65% of unauthorized roads showing no use over the past year (no vehicle tracks or vegetation disturbance). The Hog Valley trail had the best compliance, with 84% of the unauthorized roads intersecting this trail showing no use at all. On two of the most popular trails, the Longleaf Trail and Delancy Loops, photo monitoring indicates that riders are staying off of 74% of unauthorized roads intersecting the Longleaf Trail and 75% of those intersecting Delancy Loops. Forestwide, the percentage of unauthorized roads showing no vehicle use averages 65% across all OHV trails. Compared to 2007, when only 39.6% of unauthorized roads showed no use, compliance has nearly doubled.

Undoubtedly, it will take more than 5 years to eliminate illegal use of the unauthorized roads on the Ocala. Photo point monitoring continued to track how many of these unauthorized roads are still being used by vehicles. The trail having the lowest percentage of unauthorized roads still showing motorized access is Hog Valley, with less than 1% of these roads being ridden. The next lowest is the Longleaf trail, with 21% of unauthorized roads still showing use. The Centennial trail, with 61% of unauthorized roads showing use, has the highest non-compliance, but it is the newer, Phase 2 trail.

The district has added more barrier fences and posts at areas of concern. In addition, in late 2009 the district initiated restoration work at some of these areas, planting tree seedlings behind the barrier fences to aid re-vegetation. District personnel continue to block unauthorized roads with felled trees and brush as well as fences, posts, and signs and continues daily trail maintenance and patrolling.



Figure aa: Point 9 on Longleaf Trail, 2007.



Figure bb: Point 9 on Longleaf Trail, 2010.



Figure cc: Point 5 on Longleaf Trail, 2007.



Figure dd: Point 5 on Longleaf Trail, 2010.

*Recovery:* After five years of implementation (2006, 2007, 2008, 2009 and 2010), photo points indicate that the average percent of ground cover on the non-designated routes range from 48% on the Centennial Trail (a newer trail established in 2008) to 86% on the Hog Valley Trail, with most unauthorized routes showing about 60% ground cover. In addition, live ground cover constituted an average of 20% of the ground cover on these old roads, indicating that recovery is progressing. Ground cover on unauthorized roads intersecting two heavily used OHV routes, the Longleaf Trail and Delancy Loops Trail, in particular, showed improvements in ground cover and average live ground cover: old roads intersecting the Longleaf trail had a average of 74% ground cover and 37% live ground cover, a marked improvement from 2008, when average ground cover percent was 45% and average live ground cover was 13% on these old roads. The Delancy Loops Trail improved from 41% ground cover on old roads in 2008 to 72% in 2010, and from 6% live ground cover in 2008 to 62% in 2010. Some non-designated roads are recovering to the point where it is difficult to see them. Other non-designated roads are still apparent on the landscape, especially those used to access private property.

*Trail Conditions:* On the Ocala, designated trails are visited weekly by OHV volunteers to identify problem areas and maintain the trails. A variety of methods have been used including fences, posts, and other barriers to re-direct use in these areas. The volunteer workforce permits the trails to be maintained to trail standards. Signage is being updated to be clearer and more consistent.



Figure ee. Hog Valley Point 17 in 2007. An unauthorized road no longer being used; no tracks and light ground cover



Figure ff. Hog Valley Point 17 in 2008. With no use, the road is becoming overgrown.



Figure gg. Hog Valley Point 17 in 2010. Now difficult to find without GPS coordinates.



Figure hh. Longleaf Trail Photo Point 43 in 2007 widened by OHV use.



Figure ii. Longleaf Trail Photo Point 43 in 2008. Barrier fences installed in 2008.



Figure jj. Longleaf Trail Photo Point 43 in 2010. With site restoration and barrier posts, users are staying off this area.

## Osceola NF

*Implementation:* Photo points were taken in 2006, 2007, 2008, 2009 and 2010. The photo points indicate that non-designated routes are recovering and becoming overgrown with vegetation faster than those OHV routes in Ocala NF ecosystems. The wetter, flat pinewoods re-grows quickly, and the low amount of OHV use on the Osceola, although increasing in recent years, has permitted closed roads to revegetate. Virtually all unauthorized roads have good ground cover; those that still show signs of vehicle use are those closed roads used by forest personnel in resource management activities.

*Compliance:* Photo monitoring indicates that in the Ocean Pond area the unauthorized roads that intersect OHV routes have an average of 81.5% ground cover and an average of 69.7% live ground cover, with several old roads showing 100% ground cover. In the Cobb Camp area, where OHV use is higher, unauthorized roads intersecting the OHV routes have a higher average of 87.2% ground cover, with a majority of the old roads in this area showing 100% cover. The average live ground cover on unauthorized roads here is 65.5%.

*Recovery:* Photo monitoring indicated that for 2010, roughly 50% of closed roads indicated use, and 50% showing no indications of use. OHV use has been traditionally low on the Osceola NF but is now increasing; however most of the closed roads that indicated use were related to resource management activities, such as access to RCW colonies, maintaining plow lines around plantations, and controlling wildfires.



Figure kk. Ocean Pond Photo Point 9 in 2010. A plow line maintained around a plantation.



Figure ll. Ocean Pond Photo Point 22 in 2010. Forest personnel access to an RCW colony, but no evidence of use by the public.



Figure mm. Cobb Camp Photo Point 16 in 2010 after a wildfire control.

Former problem areas, such as an ephemeral pond area once used as a “play area” by OHVs, are recovering well with a thick ground cover of needle cast. This area, formerly sporting deep ruts and ATV tracks, now exhibits no vehicle tracks at all. Neither does the range strip nearby.



Figure nn. Cobb Camp Trail (207i) Point 10 in 2006 on shows an ephemeral wet area with tracks and ruts typical of OHV play.



Figure oo. The same area 5 years later. It still stays wet most of the year, precluding vegetative growth; but OHV users are staying off the area.



*Trail Conditions:* The Osceola does not have an OHV volunteer program like the Ocala, but since all OHV routes are multiple-use roads, the Osceola does not have OHV-specific trails to maintain. However, the wetness of the Osceola can complicate road maintenance issues, and “go-arounds” tend to crop up on OHV routes near swampy spots and users are still tempted to find shortcuts to Cobb Campground. Otherwise, the level of OHV use is not yet causing major OHV route damage.



Figure rr. A go-around created at Photo Point 17 on 207i near Cobb Camp.



Figure ss. OHV use on a closed road used to access Cobb Campground.

**Evaluation:** Photo monitoring of OHV trails on the Osceola indicates good user compliance and users staying on the multi-use roads designated for OHVs. Indication of OHV use on closed roads is rare, but it does happen, especially near Cobb Campground. Non-designated routes are recovering and averaging around 84% ground cover and roughly 67.6% live ground cover on closed roads of the Osceola NF.

## Apalachicola NF

*Implementation:* All OHV routes were monitored with photo points in 2008 and 2009, and in 2010 only certain points were monitored. The District has been working to re-route some trails that have continued to stay wet. Trail #2 especially, is frequently too wet for OHV-ers to use, or users continue to make “go-arounds” of wet spots. Figures 16a provides an indication of what these trails on the western side of the Wakulla district (near the old Vinzant trailhead) look like during most of the year. The District has developed a new trail, #15-C (Figure 16), in anticipation of closing down Trail #1. Significant project work is continuing at both Lost Lake and Dog Lake, so trail managers have decided not to eliminate the short

trail from Dog Lake parking lot to the Motorcycle Trail (Figure 17), or the road that goes around Lost Lake, until both projects are completed.



Figure 16a. ATV Trail 1, Photo Point 7 in 2008.



Figure 16b. new ATV Trail #15-C, Point 1 in 2010).



Figure 17. Motorcycle Trail Point 1 in 2010. The berm has not discouraged use of this unauthorized road.

*Compliance:* The Apalachicola had a rough start with compliance in 2008 and 2009, including users continuing to use closed roads, tearing down signs, and continuing to mud bog in intermittent ponds. In FY 2010 the numerous unauthorized roads are clearly showing a difference, with many showing improved compliance. Of the trails monitored in FY 2010, ground cover averaged 95% and live ground cover averaged 66.2%. Users are getting familiar with the new rules and are sharing information among themselves about OHV trails and conditions.

*Recovery:* Closed roads are starting to recover on the Apalachicola. The old tram road that runs next to Springhill Road, previously sliced up with user-created trails that could be easily seen while driving Springhill Road, has re-vegetated now that access is closed and few signs of OHV use can be seen. Closed roads show few signs of use, and now have intact ground cover of pine needles and a litter layer, with few showing any evidence of vehicle tracks (Figures 18 and 19).



Figure 18. A closed road intersecting Trail #3-B in FY 2010 (Photo Point 2). Although truck tracks are still evident, there is a heavy layer of needle cast ground cover.



Figure 19. Good ground cover and no vehicle tracks on this closed road off of ATV Trail #2.

*Trail Conditions:* The Apalachicola now has a small group of OHV volunteers that help patrol the trail, watch for signs of damage, and assist in trail maintenance. Maintaining the 55 miles of ATV trails and 34 miles of Motorcycle trails, as well as 52 miles of mixed use roads is still a challenge to the small recreation staff and budget issues force the district to be selective in which trails get attention in any given year. Notable problem areas still include trucks mud bogging around Lost Lake (Figure 20) and users going around the locked gate at the Silver Lake pit in order to access the pit (Figure 21). Fortunately, users are riding on the new road into the pit, and the old road is now disappearing (Figure 22).



Figure 20. Trucks continue to access the area encircling Lost Lake (Motorcycle Trail Photo Point 2 in FY 2010).



Figure 21. OHV users go around the locked gate to access Silver Lake pit (ATV Trail Photo Point 11 in FY 2010).



Figure 22. The old road into Silver Lake pit is all but gone now.

**Evaluation:** For the Apalachicola OHV trails, a positive trend in user compliance is emerging. The District has plans to close those trails too wet for motorized use and replace those trail miles with Trail 15-C. When project work is completed at Lost Lake and Dog Lake, further refinements to the OHV trails will be made. There is a need to increase the budget for motorized trail maintenance, but given that this is not in the foreseeable future, the District hopes that the OHV volunteer force will grow to help manage these trails.

#### **Forest Plan Goal:**

- Preserve significant heritage resources as remnants of our cultural heritage by locating, evaluating, and protecting heritage resource sites.

#### **Forest Plan Objective:**

- Evaluate for significance five archeological sites each year.

#### **2.10 Monitoring Question: Are heritage resource sites being evaluated and protected?**

**Item to Measure: Number of sites evaluated. Annual report on protection efforts.**

**Results:** The objective to evaluate five cultural resource sites in FY 2010 was met and exceeded by forty-one additional evaluations. Site protection measures were within the Forest Plan objective. By the end of FY 2010, 3141 sites and 1706 events were entered into INFRA. Most were compliance-related projects associated with fire hazardous fuel reduction and fire suppression, timber sales, special uses, and recreation developments.

*Apalachicola NF:* Eighteen archeological sites were evaluated in FY2010. None were eligible for NRHP listing. Three were in timber sale areas, three adjacent to borrow pits, two in mechanical fuel reduction areas and ten within fire line locations. Three Special Use Permits under the authority of the Archaeological Resources Protection Act (ARPA Permits) were administered for proposed linear projects: Hwy 12 construction on the Apalach and electrical line maintenance for the City of Tallahassee on the Wakulla District (ACI Inc.) and a survey of the Progress Energy line from near Ft. Gadsden to Crawfordville (PBS&J). Several other areas were surveyed for special use permits including apiaries, ponds for biological research, and a phone line. Two ARRA-funded projects submitted required archeological survey, the Munson Hills Bicycle Trail and Leon Sinks Hiking Trail.

*Ocala NF*: Nine archeological sites were evaluated in FY 2010. Seven sites evaluated in association with timber sale surveys were determined not eligible for NRHP listing and two in a developed recreation area were determined eligible. An historic structure (Sweetwater Cabin) was also determined eligible as well. Site protection efforts included a condition assessment and restoration plan for the CCC-era Sweetwater Cabin, stabilization and maintenance of the historic Carr Cabin and repair of the fence around Tishler burial mound. Incidents of illegal digging at archeological sites were reported at Salt Springs and Rodman Reservoir. The State of Florida was notified of erosion at archeological sites along Rodman Reservoir due to elevated water levels, but the situation remained unresolved at the end of FY2010.

*Osceola NF*: Eighteen archeological sites were evaluated in FY 2010 including fifteen in timber sale areas and three in a wildfire protection corridor. Ten of the evaluated sites were determined eligible for NRHP listing and eight not eligible. Resource protection efforts included excavations at Hogpen Landing to mitigate data loss from an ARRA-funded project, placement of road fill material to cap an archeological site recorded as an unanticipated discovery in a road to a timber sale area and documentation of adverse effects at Olustee Battlefield during a battle re-enactment authorized by a recreational special use permit.

**Forest Plan Goal:**

- . Protect, enhance, and where necessary, restore the forests' scenery resource values.

**Forest Plan Objective:**

- . Complete the inventory of existing scenic conditions and proposed scenic classes and implement the updated Scenery Management System within 3 years of the adoption of this plan.

**2.11 Monitoring Question: Are the scenic resources being protected, enhanced, and where necessary, restored?**

**Item to Measure: Implementation of the Scenery Management System (SMS) and management of scenery according to the recommendations of the SMS.**

**Results:** This objective was to be accomplished by June 2002. Currently, the 2380 section of the Forest Service Manual continues to be revised to provide direction for implementation of the SMS, and modules are being developed to provide orientation level, working level, and technical level knowledge. However, until forest personnel have received training in SMS, the visual management system (VMS) is still in place.

**Evaluation:** Although there are significant differences between the new SMS and the old VMS, there are also many aspects of the two systems that are similar and consistent. For instance, some new mapping and field ground-truthing will be necessary, but much of the mapping and other inventorying done previously for the VMS will be able to be verified and used within the SMS with only minor modifications. Likewise, many of the mitigation measures described for the VMS are also valid for the SMS. Appropriate and adequate use of the previous VMS direction for coordination with other resources will continue within the LMP until the SMS is fully implemented. Recommend deleting this Monitoring Question from the Plan.

**Forest Plan Goal:**

- Contribute to the social and economic well-being of local communities by promoting sustainable use of renewable natural resources and participating in efforts to devise creative solutions for economic health.

**2.12 Monitoring Question: Do forest visitors understand Forest Service practices and do they value and respect the resource being interpreted? QUESTION REMOVED BY AMENDMENT #2**

**2.13 Monitoring Question: How are we contributing to the socioeconomic well-being?**

**Item to Measure: Returns to counties, indirect benefits through timber, recreation, range allotments, status report on rural development programs.**

**Results:** The following tables show the gross receipts by source for the National Forests in Florida, and the payments to counties containing national forest system land in FY2010.

**Table 34. Gross Receipts by Source.**

Source	Apalachicola 121	Ocala 123	Osceola 124	Choctawhatchee 122	Total
Recreation User Fees					
Timber Products Cut	317,619	64,015	57,634		439,268
Grazing Fees					
Land Use Fees	44,556	157,235	13,913		215,704
Mineral Fees					
Power	65,243				65,243
Special use Fees		194,528	53,749		248,277
Fee Demo	*	*	*		475,454
<b>Total</b>					<b>1,443,946</b>

**Table 35. Secure Rural Schools and Community Self-Determination Act Receipts by County.**

Apalachicola	Ocala	Osceola	Choctawhatchee
Franklin \$ 42,014.00	Lake \$ 203,286.00	Baker \$319,463.00	Okaloosa \$ 102.00*
Leon \$127,757.00	Marion \$ 623,689.00	Columbia \$299,810.00	Walton \$ 102.00*
Liberty \$655,980.00	Putnam \$ 85,720.00		Santa Rosa \$ 21.00*
Wakulla \$341,939.00			
<b>Total</b> <b>\$1,167,690.00</b>	<b>\$ 912,695.00</b>	<b>\$619,273.00</b>	<b>\$225.00</b>

\*These counties opted to receive payments under the 25% Fund Act.

\*\*The Forest Service has purchased lands outside proclaimed National Forest boundaries for the Florida National Scenic Trail (FNST) corridor. These counties received payments under Secure Rural Schools Act for Forest Service/FNST lands within their boundaries: Bay \$298.00, Hamilton \$1,533.00, and Seminole \$279.00 and Bradford County received \$14.00 under the 25% Fund Act.

**Table 36. Payment in Lieu of Taxes**

<b>Apalachicola</b>	<b>Ocala</b>	<b>Osceola</b>	<b>Choctawhatchee</b>
Franklin \$ 29,470.00	Lake \$ 75,682	Baker \$ 102,530	Okaloosa \$8,574.00
Leon \$ 169,161.00	Marion \$285,392.00	Columbia \$ 56,288	Santa Rosa \$3,531.00
Liberty \$ 237,859.00	Putnam \$7,787.00		Walton \$1,148.00
Wakulla \$ 209,850.00			
<b>Total</b> <b>\$646,340.00</b>	<b>\$368,851.00</b>	<b>\$158m818.00</b>	<b>\$13,253.00</b>

**Evaluation:** In January 2010, more than \$389 million was distributed to 41 states and Puerto Rico for public schools and roads and specific county programs.

"The annual revenue sharing payments are part of the Department of Agriculture's long-standing commitment to rural communities, schools and American youth," said Secretary of Agriculture Tom Vilsack. "Our century-long support of America's public schools and roads is one of many ways in which USDA and the Forest Service, as good neighbors and partners, contribute to rural communities becoming self-sustaining and prosperous."

Federal legislation (Secure Rural Schools and Community Self-Determination Act of 2000, P.L. 106-393) changed the way Forest Service payments to states are calculated. Since 1908 under legislation commonly known as the 25 Percent Fund Act, 25% of any revenues from National Forest lands were returned to states housing National Forests to be used for roads and schools. The state then distributed those funds to their counties with National Forest lands in their boundaries.

The new legislation gives counties containing National Forest lands the option of taking the average high-three 25% payments they received between the years 1986 and 1999 in place of the 25% payment they would receive from Forest revenues from the most recent year. In FY 2006, all counties elected the "full payment" (the law's term used to mean the "average of the high-three"). Total payments to counties increased to \$3,459,966 in FY 2002, and remained at that level until this year. The Secure Rural Schools bill reached its termination date in 2006. A final payment was authorized under continuation legislation in 2007.

In 2008, the Congress extended the program four more years, through 2011. Under the extended Act states and counties will receive another \$1.7 billion to help transition to reduced payment levels. The 2008 Secure Rural Schools Act has some significant changes. To implement the new law, the Forest Service requested states and counties to elect either to receive a share of the 25-percent rolling average payment or to receive a share of the Secure Rural Schools State (formula) payment. A county electing to receive a share of the State payment that is greater than \$100,000 annually was required to allocate 15 to 20-percent of its share for one or more of the following purposes: projects under Title II of the Act; projects under Title III; or return the funds to the Treasury of the United States. Currently Liberty, Marion, Wakulla, Columbia, and Baker counties have elected to allocate funding under Title II of the Act for projects benefiting the National Forests in Florida. The forest, working with the counties involved, organized a Resource Advisory Committee (RAC), as authorized by the law. Although the five counties range from the extreme portions of the state, we opted to create one RAC to review the spending of all Title II funding statewide.

The RAC, consisting of 15 people, first met in August. Their charter is to develop, monitor, and recommend projects that benefit National Forest lands in Florida. Under the law, the 15 committee members are divided into three groups, and each member represents a particular set of interests. Committee members serve four-year terms. An application was submitted to the Department of Agriculture for Florida's proposed committee and approval on the potential RAC members was granted. All committee members are people with energy and commitment to the long-term benefit of our national forests, who also are interested in working with a diverse array of interests that will be represented on the

committee. The committee will develop and recommend projects that benefit national forest land in the affected counties, monitor the projects, and provide advice to the Forest Service.

This RAC allows the Forest Service to work collaboratively with members of the RAC, their constituency as well as other member of the public. It is a mechanism for local community collaboration with federal land managers in recommending Title II projects on federal lands or that will benefit resources on federal lands.

Examples of some of the collaborative projects on other forests include environmental awareness camps, road paving in campgrounds, non-native invasive plant control, reducing hazardous fuel buildup, and purchasing equipment and supplies to support work. Project funding can also be used to leverage grant dollars and collaboration with partners, such as federal and state agencies and non-profit organizations. The RAC will meet as often as necessary to complete their business. Actions of any federal advisory committee must occur in open meetings with maximum opportunity for public involvement. All meetings dates and locations and committee actions are publicized.

**2.14 Monitoring Question: How much of each “special forest product” did we give permits to be collected and in what locations?**

**Item to Measure:** Quantity of each type, ranger district and compartment.

**Results:** The following table summarizes the quantities of special forest products by forest for 2010.

**Table 37. Special Product Summary**

	Apalachicola	Osceola	Ocala	Total
<b>Fire-wood (CCF)</b>	289.5	5	279	573.5
<b>Palmetto Fronds (lbs)</b>	-	-	68,500	68,500
<b>Plants (lbs)</b>	-	4,000	456	4,000
<b>Plants (ea)</b>	-	-	456	456
<b>Boughs (lbs)</b>	-	-	4,740	4,740
<b>Pine Straw (bushel)</b>	7	-		7
<b>Christmas Trees (each)</b>	-	-	133	133
<b>Crooked Wood (lbs)</b>	-	-	58,163	58,163
<b>Poles (each)</b>	-	-	76	76
<b>Deer-Moss (lbs)</b>	.5	-	2600	2,600.5

**Evaluation:** In the context of acres and amounts of the above resources present on each National Forest, the quantities of these special products removed does not appear to be significant except for palmetto berries on the Ocala NF. The Ocala NF has initiated an environmental analysis to determine the specific impacts of harvesting palmetto berries and any needed mitigating measures. Also, minimum permit values may need to be increased to provide more efficiency of management. More detailed information on specific sites should be tracked to help determine cumulative amounts in the same area.

**Forest Plan Standard VG-29,** Sell no more than 103 million cubic feet (MMCF) of chargeable timber from suitable land (Appendix B, “Lands Suitable for Timber Production”) in the 10-year planning period.

**2.15 Monitoring Question: How much timber was offered for sale?**

**Item to Measure:** MMCF (million cubic feet) of timber offered annually by type, product, and forest.

**Results:** 4.331 MMCF was offered for sale in FY 2010: 2.0863 MMCF on the Ocala, 0.833 MMCF on the Osceola, and 1.412 MMCF on the Apalachicola (Table XX). The ten year total of timber offered for sale through FY's 2000-2009 is 54.097 MMCF, which is 53 % of the maximum allowed for the first 10-year period. The following table shows the products offered by National Forest in each year of the Forest Plan. The amount offered in FY 2010 is 42% of the Allowable annual sale quantity.

**Table 38. Timber Offered by Year, Product and National Forest**

Fiscal Year	SAWTIMBER				PULPWOOD & POSTS				Grand
	Apalach	Osceola	Ocala	Total	Apalach	Osceola	Ocala	Total	Total
2000	.292	.010	.011	.313	1.240	.831	3.757	5.828	6.141
2001	.021	.003	.037	.061	.193	.774	2.125	3.092	3.153
2002	.002	.013	.123	.138	.007	.316	4.918	5.241	5.379
2003	.147	.083	.025	.255	.173	.361	4.229	4.763	5.018
2004	.337	1.057	000	1.394	.867	.713	4.039	5.618	7.012
2005	.391	.324	.000	.715	.920	.396	9.754	11.070	11.785
2006	.985	.217	.766	1.968	.357	.579	2.681	3.617	5.585
2007	.391	2.625	.219	3.235	.718	4.520	1.554	6.792	10.027
2008	.382	.343	.480	1.205	1.217	.385	2.368	3.97	5.175
2009	.249	.383	.373	1,005	.856	.407	1.926	3.189	4.194
2010	.480	.405	.211	1.096	.932	.428	1.875	4.331	<b>5.427</b>
<b>Total</b>	2.565	4.332	1.180	8.078	4.475	8.488	33.056	46.019	54.097

**Evaluation:** The standard in the Forest Plan related to timber production places a limit of selling no more than 103 MMCF of timber in the ten-year planning period. The total volumes offered for sale and actually sold are within the standard.

**2.16 Monitoring Question: Are special use permits in compliance and if not, what actions are taken?**

**Item to Measure:** Number of cases of noncompliance actions taken.

**Results:** The National Forests in Florida boasts one of the most efficient and effective special use programs in Region 8 due to the highly skilled District staff that oversee and administer this complex program. In FY 2010, the National Forests in Florida processed/administered approximately 700 special use permits. Compliance monitoring was completed on a sample of special use permits in FY 2010. Based on this information, it is estimated that generally less than 1% of permits are in noncompliance.

Due to the population increase in Florida and ever increasing public demand, the National Forests in Florida finds itself processing new applications rather than completing inspections of current uses. Over the last several years, the Forest has found it to be problematic and not realistic to inform new special use applicants that we are not accepting new applications until all current uses have been inspected and brought up to standard. For this reason, there remains a backlog of needed inspections. In FY2009 and FY2010, the National Forests in Florida began addressing this mounting workload. Additional assistance was also secured through contract to perform general inspections. Substantial progress was made and is expected to continue through FY2011.

**Evaluation:** In spite of the economic downturn, Florida remains one of the fastest growing large states in the Nation. Over the previous 5 years, Florida experienced tremendous growth. With a population of 18

million residents and 80 million tourists a year, the workload associated with our special use program continues to grow. Thousands of tourists and visitors vacation at the Forest's premier recreation areas, many of which are under concession special use permits. The National Forests in Florida recognizes these areas largely influence the opinion forest visitors place on the Forest and its management. Proper administration of these permits is crucial.

In addition, as the population in Florida increases, so does occupancy within and adjacent to the National Forest. This places an increasing workload on our special use administrators and staff to process associated land use proposals.

Although the National Forests in Florida made significant progress in FY2010, efforts will continue over the next few years to be pro-active in addressing these issues as opposed to being re-active, in spite of limited funds and staffing.

**2.17 Monitoring Question: How many miles of roads have been converted to another use or otherwise closed?**

**Item to Measure: Miles of roads closed and deleted in transportation inventory system updates**

**Results\***: 40 miles of maintenance level 5 roads were added to the system in FY 2010.  
39 miles of unauthorized roads were decommissioned.

**Evaluation**: Road condition surveys utilizing electronic road logs (ERL) were accomplished on the assigned random sample of roads. Forests continued the work of signing for implementation of the Road Access Plans and the Motor Vehicle Use Maps (MVUM).

Corrections to the roads database continue with a status change for FH 13 that reflects the additional mileage in ML 5 roads. Other minor differences are attributed to changing road classifications or actual field measurements. No new roads were constructed.

The forest received Recovery Funding on the Apalachicola NF that was used to eliminate deferred maintenance on Forest Service roads. There were three projects involving road maintenance. Bridge 125-6.8 was removed and an all new concrete structure was built in its place. This project was started and completed in FY2010. Another contract was awarded to do some minor repairs on 20 bridges. The work included routine maintenance items like resealing joints on bridge decks, cleaning off debris, repairing lost riprap, tightening and replacing missing hardware on the guard rails and brushing vegetative growth around bridge rails and slopes. Other repairs included replacement of wing walls and associated pilings, and repairing spalls in concrete substructures. The third project involved replacing over 100 pipes that were failing or deteriorating. Both of these projects will be completed in FY2011.

The forest received Legacy Roads funding on the Ocala National Forests which were used for decommissioning user made roads. About 39 miles were decommissioned on the Ocala NF by using dirt berms, piles of vegetative brush and gates with fencing to block road entrances. Roads were physically and visually blocked in order to restore the water shed and prevent further erosion from use.

# Organizational Effectiveness

## **Forest Plan Goals:**

- Ensure a philosophy of service is paramount in our relationship with the public in the management of forest resources.
- Be aggressive and innovative in providing for public participation in planning, managing, and monitoring of the national forests.
- Strengthen partnerships and actively pursue communication, cooperation, and partnerships with other national forests, other agencies, groups, local communities, organizations, and tribal governments to serve the public interest, consistent with the Forest Service Mission.
- Meet regularly and often with county commissioners, congressional staff, tribal governments, and State agency directors to ensure a high level of positive communication needed to maintain national forests for quality public uses and values.

## **Forest Plan Objective:**

- Implement surveys for determining public satisfaction with National Forests in Florida programs.

**3.1 Monitoring Question: Are people satisfied with service from the National Forests in Florida? QUESTION REMOVED BY AMENDMENT #2**

**3.2 Monitoring Questions: How much public participation do we have? Have partnerships been strengthened? QUESTION REMOVED BY AMENDMENT #2**

**3.3 Monitoring Question: Did we do what we said we would?**

**Item to Measure:** Decision documents and field review of implementation.

**Results:** All timber sale activities were monitored by certified timber sale administrators. These reviews identified a variety of minor administrative documentation inconsistencies with no long-term effects or chronic problems.

Monitoring indicates that all five route designations have been implemented as planned. Minor corrections related to signing and correction of route locations has been common on all three forests.

**Evaluation:** No serious deviation in the implementation of planned projects has been identified. Continued review of projects needs to be on-going.

# Evaluation of Outcomes on the Land

## Major Findings and Evaluation:

Based on the expected annual average of outcomes for the planning period, some of the monitoring items reflect that expected outcomes are not progressing within the rate to achieve the desired conditions, goals, and objectives of the Plan. There are areas where monitoring indicates follow-up action is needed.

These short-falls are tied directly to funding allocated to the NFs in Florida. Costs for carrying out projects are increasing and allocated funding is generally reduced. In addition, responding to wildfires and other management objectives can hinder meeting objectives. However, the NFs in Florida have consistently accomplished required annual targets based on funding allocations.

The NFs in Florida have initiated a variety of actions to increase efficiencies and overall acres treated.

Ecological Condition and Prioritization models have been completed on the Osceola and Ocala NFs and will be developed for the Apalachicola NF. These models will help the forests evaluate and prioritize the effectiveness of treatments by identifying needs treating areas in such a manner that good quality habitat conditions are maintained and areas that are in transition stage can be treated to ensure habitat conditions do not diminish.

Implementation of the Collaborative Forest Landscape Restoration Project on the Osceola NF is expected to double timber outputs and triple prescribed fire outputs. In addition, money from the American Recovery and Reinvestment Act (ARRA) provided the ability to mechanically treat 8,500 acres of heavy fuels where prescribed burning was not a practical option.

On the Ocala NF, Forest Plan Amendment #8 increased the maximum opening size to 800 acres for sandhills/scrub habitat. This change will increase layout efficiencies and effectiveness of habitats for the scrub species.

### Forest Plan Objective:

- Restore between 10,000 and 15,000 acres of off-site slash pine to the appropriate native vegetation in the next 10 years. Remove slash pine from 8,000 acres of mixed longleaf/slash pine stands on the Osceola NF. The long-term objective is to restore all the off-site slash pine to the appropriate native vegetation.

186 acres were restored on the ANF in 2010 resulting in a total of 5,521 acres restored to longleaf pine from off-site slash pine through the end of FY 2010.

### Forest Plan Objective:

- Thin 45,000 to 55,000 acres of longleaf and slash pine stands to release overcrowded live crowns, favor appropriate pine species regeneration, increase stand growth, allow more sunlight onto to the forest floor, and increase suitable habitat for red-cockaded woodpeckers (RCW).

1959 acres were offered for commercial thinning in FY 2010. A total of 20,504 acres have been offered through the end of FY 2010.

### Forest Plan Objective:

- Initiate uneven-aged management with group selection on 30,000 to 33,000 acres principally in longleaf pine forests with some in slash pine forests.

In 2010, 80 acres of group selection was conducted. Through FY 2010, 3,525 acres have been offered with uneven-aged management harvest methods. An evaluation of the effects of this harvest method is to be reported in five-year intervals. Areas that may be suitable for this work are being surveyed, examined, and assessed for inclusion in future years work scheduling. Treatments have generally been limited due to RCW habitat requirements.

**Forest Plan Objective:**

- Initiate irregular shelterwood harvests on between 1,800 and 2,000 acres of slash pine forests.

There were no acres of irregular shelterwood offered for harvest through the end of FY 2010. This objective may no longer be applicable as a forest objective, but should still be an available tool. Opportunities for use of this treatment should be considered during site-specific project level development.

**Forest Plan Objective:**

- Regenerate between 39,000 and 41,000 acres of sand pine on the Ocala NF.

Timber harvest is the primary management tool for maintaining scrub jay habitat on the Ocala National Forest. Clear-cutting of mature sand pine regenerates the scrub habitat necessary for the jay. A regular cycle of sand pine regeneration is being employed to maintain the jays across the scrub on the Ocala National Forest. At the end of FY 2010, there were 53,843 acres of sand pine scrub in the 3-15 year old age class. A total of 27695 acres of sand pine have been committed to regeneration harvest through the end of FY 2010. There were 2,750 acres of sand pine offered for regeneration harvest in FY 2010. An amendment to increase the allowable clear cut limit was completed which is expected to result in an increase in patch size and overall acres treated in sand pine/scrub habitat.

**Forest Plan Objective:**

- Designate the following acres of future old growth by community type.

**Table 39. Old growth Community Objectives**

<b>Old-Growth Community</b>	<b>Acres</b>
Upland Longleaf Pine Forest	10,200
Southern Wet Pine Forest, Woodland, and Savannah	11,000
Cypress/Tupelo Swamp Forest	17,700
River Floodplain Hardwood Forest	2,900
Hardwood Wetland Forest	24,200
Dry and Dry Mesic Oak/Pine Forest	2,200
Coastal Plain Upland Mesic Hardwood Forest	1,700
Dry and Xeric Oak Forest, Woodland, and Savannah	2,100
<b>Total</b>	<b>72,000</b>

Old growth has been designated 35,282 acres of the Apalachicola NF. Old growth should be designated on the Ocala and Osceola NF to fulfill the 72,000 acre forest-wide old growth objective.

**Forest Plan Objective:**

- . Meet requirements of the Revised RCW Recovery Plan

The RCW Recovery Plan (Second Revision, 2003) does not modify the recovery goals for the NFF. The ARD remains the only fully-recovered RCW population within NFS lands in the southeast. The Recovery Plan sets the goal for each population to increase by 5% per year. The Wakulla population increased 1% from 2009–2010, the Osceola population increased by 13% from 2009 – 2010, and the Ocala population increased by 5%. The Wakulla District needs to emphasize establishment and maintenance of recruitment clusters and improving cavity integrity.

**Forest Plan Objective:**

- . Designate a system of trails and open, classified roads in areas where motorized vehicles and bicycles are restricted. This process will incorporate existing travelways as much as possible and include public participation and collaboration with local user groups.

All forests have completed the trails designation process for motorized vehicles, and have Motor Vehicle User Maps (MVUM) available to forest visitors. Photo point monitoring over the last 5 years and routine maintenance visits by district personnel indicates generally good compliance except during hunting season. The districts continue to fine-tune the motorized trail system, with the Apalachicola NF re-locating some trails that were perennially under water to drier sites. On the Ocala NF, an independent assessment of the OHV trail system by the consulting firm “Re-Connect” resulted in several recommendations to improve the location and message of trail signs, and district personnel worked during 2010 to ensure that signage is clear, consistent, and positive.

**Forest Plan Goal:**

- . Increase public awareness of wilderness values. Protect and enhance resources, quality, and wilderness character of designated wilderness areas.

The Revised Forest Plan contains recommendations for wilderness (Clear Lake WSA) and for wild and scenic rivers (4 rivers). At this time, there is no indication of support for a wilderness or rivers bill in Florida from the state’s congressional delegation. However, Big Cypress National Preserve in south Florida, a component of the National Park System, will be moving ahead with a recommendation for part of the Preserve to be designated as wilderness and there may be an opportunity to partner with the National Park Service to carry forward recommendations for congressional action within one single piece of legislation. This would provide broad, statewide support and increase the public’s awareness of the value of wilderness.

**Demands of the Public and Emerging Issues**

The Southern Region of the Forest Service is currently undertaking an assessment of current knowledge about the influence of climate change on aquatic and terrestrial resources in the south and identifying assessment tools for monitoring climate change and measuring its effects. This assessment will not only expand our understanding of the effects of climate change on biological and physical resources, it will also help determine how this information is integrated into both long and short term planning efforts.

**Research Needs**

Monitoring efforts during 2010 did not disclose any immediate need for research efforts to support the implementation and monitoring of the National Forests in Florida Forest Plan. However, some research

projects could contribute to understanding forest ecosystem interactions as well as impacts of management and public activities on forest systems. A better understanding of these interactions would allow managers to identify any changes needed in management activities or direction in the Forest Plan. Possible research needs include:

1. Research to determine how long T&E plant species are able to persist between disturbances in sand pine scrub habitat.
2. Research to evaluate the long-term effectiveness of management techniques for site preparation in Florida scrub habitat and potential impacts to rare plants. Primary techniques which should be evaluated are prescribed burning and mechanical roller chopping.
3. Research to determine habitat variables affecting movement of Florida scrub-jay over time. Emphasis may be on spatial constraints as well as potential barriers to movements.
4. Research to determine optimum burning intensities, frequencies and seasons required to return longleaf/palmetto flatwoods ecosystems to conditions existing prior to fire suppression management.
5. Research to determine upland use by adult and juvenile flatwoods salamanders.
6. Research to identify impacts of habitat fragmentation on flatwoods salamanders and striped newts.
7. Research to evaluate pond management strategies to optimize habitat for flatwoods salamanders and striped newts.
8. Research on harvest methods and other options for removal of small diameter wood for hazardous fuel reduction. Research would focus on overcoming barriers that hinder use of biomass and development of markets utilizing biomass for fuel or other purposes.
9. Research current issues related to forest management within the Wildland Urban Interface.
10. Evaluate potential for treating titi encroachment utilizing biomass harvest technology.

On-Going Research on the forest includes:

1. Identification of visitor needs and perspectives along the Florida National Scenic Trail (FNST). This research is in the third year of a five year study being conducted by the University of Florida. Annual reports are on file at the Forest Supervisors office.

## IV. M & E Action Plan

### 1.0 Actions Not requiring Forest Plan Amendment or Revision:

**Action:** Develop and implement a strategy to increase the number of RCW groups monitored annually on the Apalachicola Ranger District from approximately 20% of the population to approximately 40% of the population. On the Wakulla Ranger District, accomplish cluster status checks at all (approximately 140) currently active clusters. Accomplish group composition determinations at 50% of the Wakulla clusters annually.– 100% doing now

**Responsibility:** Apalachicola National Forest Biologist, RCW Biologist, USFWS RCW technician.

**Status:** Tentative strategy developed in cooperation with regional USFWS RCW biologist. This is currently being done.

**Completion Date:** Completed

**Action:** Evaluate the definition of “off-site slash pine” for monitoring question 1.10 to more specifically clarify.

**Responsibility:** GIS Coordinator, Forest Planner, Forest Ecologist

**Status:** Preparing proposal

**Completion Date:** FY 2010

**Action:** Continue to update and utilize 5-year vegetation management plans on all forests. Develop methods of analysis or modeling to better prioritize activities in the 5-year vegetation management plans.

**Responsibility:** Ecosystem Staff Officer, District Rangers, GIS analyst, District TMAs and Silviculturists

**Status:** 5-year vegetation management plans have been prepared on the individual forests. Analysis and modeling techniques need to be developed to improve prioritization efforts to better utilize limited budgets and critical habitat needs.

**Completion Date:** Ongoing, updated annually.

**Action:** Designate old growth on the Ocala and Osceola NF.

**Responsibility:** District Rangers and Silviculturists

**Status:** Delayed due to budget and time constraints.

**Completion Date:** Undetermined

**Action:** Increase public education efforts on forest restoration and forest management activities.

**Responsibility:** Public Affairs, Interpretive Specialist, Ecosystem Staff

**Status:** Not yet initiated

**Completion Date:** On-going

**Action:** Implement improved plant inventory process.

**Responsibility:** Ecologist, Ecosystems Staff Officer

**Status:** A Participating Agreement has been developed with the Florida Natural Areas Inventory. Data collection is underway.

**Completion Date:** On-going

### 2.0 Actions Requiring Amendment or Revision of the Forest Plan:

**Table 55. Completed Amendments to the 1999 LRMP.**

Completed Amendments	Year Completed
#1 Supplement to the FEIS Vegetation Management in the Coastal Plain/Piedmont	2002
#2 Updates of Various Standards and	2004

Completed Amendments	Year Completed
Management Area Allocation on the Osceola NF	
#3 Update of RCW Recovery Plan	2005
#4 Removal of FW Standard VG-24	2006
#5 Update for Consistency with the 2005 Travel Management Rule	2006
#6 Addition of Management Area 4.6 for Management of the FNST	2006
#7 Reallocation of Scrub-jay Management Area 8.2 to 8.4	2007
#8 Miscellaneous Wildlife Amendments	2009
#9 Miscellaneous Vegetation Management Activities	2010

**Action:** Update the Management Indicator Species list to reflect a more focused and effective list of species.

**Responsibility:** Forest Planner, Ecologist and Silviculturist

**Status:** Environmental Assessment has been prepared.

**Completion Date:** FY-11

**Action:** Recommend deleting Monitoring Question 2.11 “**Are the scenic resources being protected, enhanced, and where necessary, restored?**” from the Forest Plan. The item to measure this objective was implementation of the Scenery Management System (SMS), which was to be adopted Forest Service-wide for managing scenic resources. Originally, the SMS was to be in place by June 2002, but still has not been approved for implementation. Chapter 2380 (Scenery Management) of the Forest Service Manual continues to be revised to provide direction for implementation of the SMS, and modules are being developed to provide orientation level, working level, and technical level knowledge. Until forest personnel have received training in SMS, the visual management system (VMS) is still in place. Many of the mitigation measures described for the Visual Management System (VMS) are also valid for SMS. Appropriate and adequate use of the previous VMS direction for coordination with other resources will continue within the LMP until the SMS is fully implemented.

**Responsibility:** Forest Planner, Landscape Architect

**Status:** Amendment needs to be drafted and reviewed.

**Completion Date:** FY-12

**Action:** Amend language of Forest-wide Access standard AC-2(3) to reflect the change that motorized vehicles and bicycles can no longer use unclassified roads. The Motorized Vehicle Transportation Rule requires all motorized vehicles to stay on roads and trails designated for their use.

**Responsibility:** Forest Planner, Recreation Planner

**Status:** Amendment needs to be drafted and reviewed.

**Completion Date:** FY-12