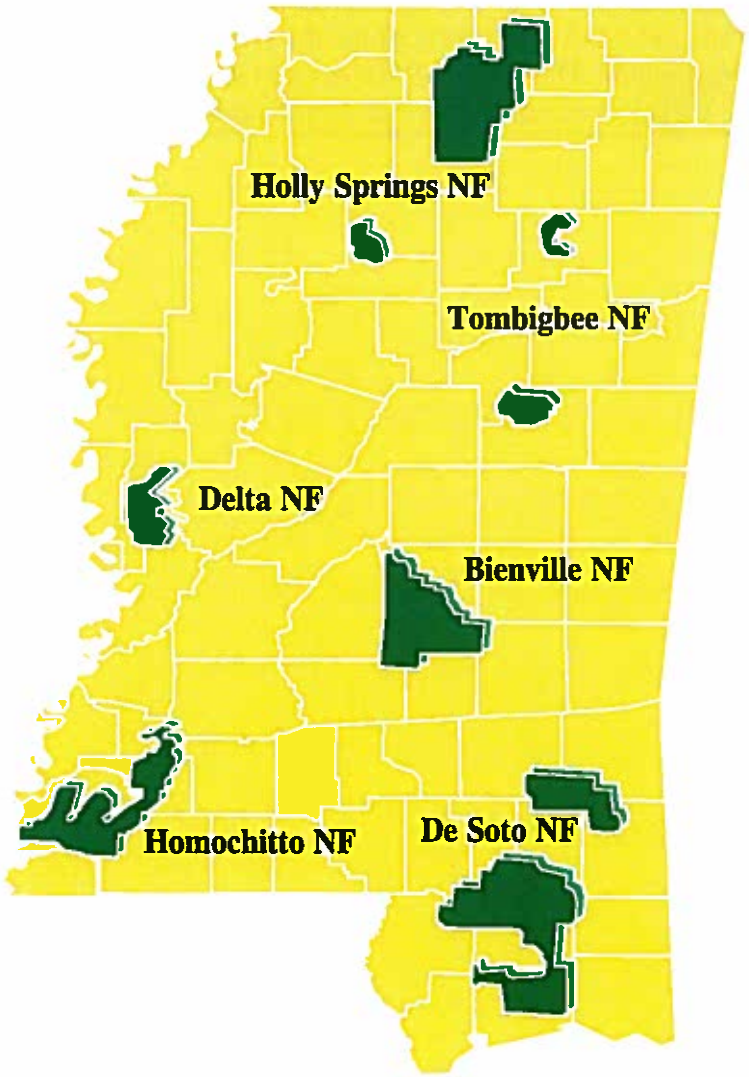
U. S. Department of Agriculture
Forest Service
Southern Region

Fiscal Years 2013-2014 Monitoring Questions
National Forests in Mississippi



September 2014

Monitoring and Evaluation Questions and Answers
FY 2013-2014

The National Forests in Mississippi (NFsMS) completed revision for its Forest Land and Resource Management Plan (Forest Plan). A Revised Forest Plan has been made available for review. Monitoring and evaluation of Forest Plan actions is a continuous process that occured throughout the revision process and will continue through implementation.

Since the forest plan revision process was completed and signed off by the Regional Forester on July 3rd 2014, the NFsMS has been operating under the new Forest Plan. The monitoring and evaluation documented for fiscal years (FYs) 2013 and 2014 are being presented in an abbreviated question and answer format.

07 December 2015

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Date

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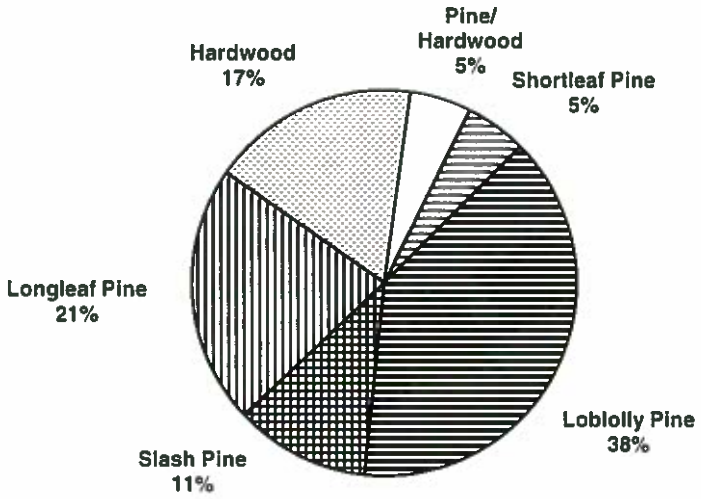
What desired future conditions will be objectives in the Revised Forest Plan?

FY 2011 forest type data from the vegetation database (FSVeg) queries were analyzed to determine acreage by broad forest cover types (working groups) within lands classified as suitable for timber. Those broad forest cover types are illustrated in Figure 1, below.

Figure 1. Forest types of NFsMS, 2011.



The Revised Forest Plan was preceded by Amendment #13 to the 1985 Forest Plan. Amendment #13 introduced and expanded the concept of ecosystem management on the National Forests in Mississippi. For the Revised Forest Plan effort, the various ecological systems that occur on the National Forests in Mississippi were defined using NatureServe's classification system (NatureServe 2004a, 2004b), National Forest System forest types, and Natural Resource Conservation Service soil drainage types. Based on these classifications forest types in the 1985 plan have been broadened into ecological systems as illustrated below in Table 1.

Table 1 identifies the 24 ecological systems and their general distribution across the units that make up the National Forests in Mississippi. Due to the unique character and distance between the two units that make up the Holly Springs National Forest (Holly Springs and Yalobusha) and the two units that make up the Tombigbee National Forest (Ackerman and Trace), data for these national forests are broken out by unit for ecological conditions discussions. Systems with asterisks are considered rare ecological systems within the Revised Forest Plan. These (embedded) systems either require special management or are naturally small in scale or distribution relative to the broader systems they occur within. Maps of the various ecological systems on each unit are available on the National Forests in Mississippi website at the following internet address: http://www.fs.fed.us/r8/mississippi/forest_plan/forest revision/index.htm.

Table 1. Distribution of ecological systems on the National Forests in Mississippi

Ecological System	Unit Name								
	Bienville	Chickasawhay	De Soto	Homochitto	Delta	Holly Springs	Yalobusha	Ackerman	Trace
Upland Longleaf Pine Forest and Woodland	■	■	■	■					
Shortleaf Pine-Oak Forest and Woodland	■					■	■	■	■
Loblolly Pine Forest	■	■	■	■		■	■	■	■
Southern Loblolly-Hardwood Flatwoods	■								
Slash Pine Forest		■	■				■	■	■
Northern Dry Upland Hardwood Forest						■	■	■	■
Southern Dry Upland Hardwood Forest	■	■	■	■					
Southern Loess Bluff Forest				■					
Southern Mesic Slope Forest	■	■	■	■					
Northern Mesic Hardwood Forest						■	■	■	■
Floodplain Forest	■	■	■	■		■	■	■	■
Lower Mississippi River Bottomland and Floodplain Forest					■				
Near-Coast Pine Flatwoods			■						
Xeric Sandhills*		■	■						
Rock Outcrops*	■	■	■	■		■	■	■	■
Black Belt Calcareous Prairie and Woodland*									■
Jackson Prairie and Woodland*	■								
Ephemeral Ponds and Emergent Wetlands*	■	■	■	■	■	■	■	■	■
Cypress Dominated Wetlands*				■	■	■			
Wet Pine Savanna*			■						
Seeps, Springs, and Seepage Swamps*	■	■	■	■		■	■	■	■
Herbaceous Seepage Bog and Flats*		■	■						

* Rare ecological systems within the forest plan

With these ecological systems in mind, current forest type conditions were evaluated and compared to the desired future conditions identified in the analysis. That comparision is illustrated in Table 2, below.

Table 2 displays the approximate current and desired percentage of each ecological system for the various units of the National Forests in Mississippi. The desired condition

for abundance of each system is indicated as a range of ecologically optimum percentages for each geographic area.

Table 2. Desired Future Conditions by unit on the National Forests in Mississippi

Ecological System		Current and Desired Percent of Ecological System by Unit								
		Bienville	Chickasawhay	De Soto	Homochitto	Delta	Holly Springs	Yalobusha	Ackerman	Trace
Upland Longleaf Pine Forest and Woodland	C	3	40	45						
	D	20-30	65-73	64-74	69-78					
Shortleaf Pine-Oak Forest and Woodland	C	3					28	4	12	14
	D	5-15					34-52	34-52	30-47	28-43
Loblolly Pine Forest	C	31	16	13	76		38	65	53	51
	D	0-5	0-5	0-5	0-5		0-5	0-5	0-5	0-5
Southern Loblolly-Hardwood Flatwoods	C	38								
	D	35-45								
Slash Pine Forest	C		26	21				2		
	D		0-5	1-7				0		
Northern Dry Upland Hardwood Forest	C						21	18	20	16
	D						34-51	34-52	30-46	28-43
Southern Dry Upland Hardwood Forest	C	2	1	1	3					
	D	0-5	0-5	0-5	3-12					
Southern Loess Bluff Forest	C				2					
	D				3-10					
Southern Mesic Slope Forest	C	11	2	2	4					
	D	5-15	0-5	1-8	2-10					
Northern Mesic Hardwood Forest	C						10	10	12	15
	D						6-13	1-8	6-12	18-24
Floodplain Forest	C	12	15	6	6		2	2	3	2
	D	10-20	23-32	12-20	9-16		6-13	11-18	16-22	7-13
Lower Mississippi River Bottomland and Floodplain Forest	C					100				
	D					100				
Near-Coast Pine Flatwoods	C			4						
	D			3-9						
Wet Pine Savanna	C									
	D			0.6-7						

C-Current, D-Desired

What were the harvest accomplishment trends for the last 13 years in terms of volume and acres?

Recent harvest accomplishment trends are summarized in Table 3. Note the harvest increase in FY 2006 represents the salvage timber resulting from Hurricane Katrina. In most cases the salvage timber was harvested utilizing a moderate to heavy thinning.

Table 3. NFsMS timber harvest volume and acres 2002 – 2014.

Fiscal Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Volume - MMBF	33	42	89	77	308	62	68	72	75	63	72	60	76
Volume - MMCF	6	8	18	15	62	12	14	15	16	13	15	12	15
Intermediate Acres (x 1,000)	3	2	7	6	112	6	8	7	6	4	6.5	4	5.6
Regeneration Acres (x 1,000)	3	1	3	2	2	0.3	1	1	1	0.7	1.4	2	0

What progress was made in the control of non-native invasive species in FY 2013-2014?

Non-native invasive species (NNIS) are an ever-increasing problem on the Nationals Forests in Mississippi. These species threaten forest health and ecosystems by reducing natural diversity and habitat for fish, wildlife and native plants, as well as affecting soil stability. Effective treatment and control is compounded by the intermingled ownership pattern of federal, state, county, and private land throughout the state. The accelerated spread of noxious weeds has led to increased public awareness of the environmental problems associated with weeds. The National Forests in Mississippi is a major partner in the Mississippi Cooperative Weed Management Area along with USDA Natural Resources Conservation Service (NRCS), Mississippi Department of Transportation (MDOT), Federal Highway Administration, Mississippi Forestry Commission (MFC), and others.

Each year, the National Forests in Mississippi use the noxious weed control strategy to manage NNIS. This strategy outlines five emphasis areas which include: (1) cooperation, (2) education and prevention, (3) inventory, (4) control, and (5) monitoring. Kudzu and cogongrass are the priority species of concern although other pest plants of interest include water hyacinth, Nepalese browntop, tropical soda apple, Non-native bamboos,

non-native wisterias and Chinese silvergrass. Table 4 shows the number of acres treated for NNIS by district for FY 2013-2014.

Table 4. Acres treated for non-native invasive species by year on National Forests in Mississippi lands.

District	2013	2014
Bienville	9.6	3.1
DeSoto	0	438.8
Homochitto	0	0
Chickasawhay	22.2	52.9
Delta	0	0
Holly Springs	171	182
Tombigbee	0	0
Total	202.8	676.8

Cogongrass is aggressively spreading on roadsides within the DeSoto, Chickasawhay, Bienville, and Tombigbee Ranger Districts and has recently been discovered on the Homochitto Ranger District. The National Forests in Mississippi is a member of the Mississippi Cogongrass Task Force, assisting partner agencies in training and educational events. The Task Force has taken the lead role in developing a regional coordination strategy that includes all invasive species. Treatment is planned and accomplished annually. Districts have also partnered with landowners, MDOT, our armed forces, and others who contribute labor to treat cogongrass infestations.

Kudzu is an invasive species on the Holly Springs and Tombigbee Ranger Districts impacting an estimated 20,000 and 7,000 acres respectively. It also occurs on the Bienville, DeSoto, and Homochitto Ranger Districts, but to a much lesser extent. Statewide, the estimated loss in timber related revenues due to kudzu infestations is 54 million dollars per annum. The National Forests in Mississippi has completed a National Environmental Policy Act (NEPA) analysis for a systematic program to control and reduce kudzu infestations on the Holly Springs, Tombigbee, and Bienville Ranger Districts. The majority of the infested areas are within 150 to 200 feet of roads. The program emphasizes treatment of current and prevention of future infestations of kudzu on all three districts, with the goal of eventual elimination of this invasive species. The control strategy for this NNIS is: I) locate and eradicate small isolated infestations of kudzu, preventing establishment of new patches; 2) control and slop the spread of well-established kudzu populations by reducing the vigor and health of these patches with repeated treatments over time until eradication has occurred; 3) continue to monitor treated patches to ensure that kudzu is eradicated.

Previously, the control of kudzu in north Mississippi had been considered too complex to address due to the expansive coverage and growth rate of kudzu combined with the mixed land ownership. The Holly Springs Ranger District has formed a Kudzu Coalition (The Coalition), which consists of local, state, and federal agencies along with conservation groups and academia, to address these challenges. A baseline survey of

Mississippi's 82 counties was completed during July-August 2004 and found kudzu in 72 counties. This survey identified approximately 546,000 acres of privately-owned forest land impacted with kudzu, and 17 counties with kudzu infestation of more than 10,000 acres. Since then, The Coalition has applied for several state and federal grants and has created a Memorandum of Understanding (MOU) amongst its partners to better leverage funds and share expertise in the treatment of kudzu. These funds have allowed The Coalition to educate the public about kudzu and control methods to combat this invasive weed. As a result, private landowners, utility companies, conservation organizations and local, state, and federal officials are collaborating to control kudzu across the landscape.

The highest profile exotic animal found on the National Forests in Mississippi is feral hogs. Feral hogs disrupt plant life, decimate ecosystems, and have been known to decimate hardwood seedling plantings. Aside from the potential economic loss from timber volume, many wildlife and fish species are dependent on the ecosystems affected by these invasive animals.

The Delta Ranger District removed approximately 380 feral hogs in FY 13 and approximately 175 feral hogs in FY 14 through trapping efforts. These animals were targeted for removal from the Forest interior in conjunction with other trapping efforts. Efforts will continue when and where possible. Monitoring is difficult due to the transient nature of feral hogs as well as the density of forest cover. Feral hog damage continues to be found district wide; however, at least anecdotally, damage is reduced periodically.

What prescribed burning accomplishments were completed in FY 2014?

Table 5 below illustrates the prescribed burning accomplishments on the National Forests in Mississippi during fiscal year 2014.

Table 5. Prescribed burning accomplishments for FY 2014 by Ranger District on NFsMS.

District	Dormant Season Accomplishment (Acres)	Growing Season Accomplishment (Acres)	District FY14 Accomplishment (Total Acres)
Bienville	24,359	3,500	29,359
Chickasawhay	8,554	20,454	29,008
De Soto	51,688	32,786	84,474
Delta	0	0	0
Holly Springs	18,040	2,828	20,868
Homochitto	9,632	18,072	27,704
Tombigbee	181	3,371	3,552
Total Acres	112,454	81,011	194,965

How did the current prescribed burning accomplishments compare to previous years?

The following table illustrates accomplishments by Ranger District for FY2008 through FY2013.

Table 6. Prescribed burning accomplishments for FY2008-2013 by Ranger District on NFsMS

District	2008	2009	2010	2011	2012	2013
Bienville	20,818	36,426	27,184	21,590	18,493	21,793
Chickasawhay	20,703	33,190	29,530	9190	25,780	30,170
De Soto	92,929	110,346	101,384	31,810	52,024	82,929
Delta	34	99	0	0	0	0
Holly Springs	14,481	21,036	23,354	15,788	16,489	18,747
Homochitto	31,009	32,066	29,668	25,609	27,368	17,687
Tombigbee	17,681	18,002	17,043	4072	14,274	11,797
Total	197,655	251,165	228,163	108,059	154,428	189,937

How is the Forest Service monitoring surface water quality?

Rain or spring water that can be accessed in flowing drains, creeks or rivers is surface water. According to the Mississippi Department of Environmental Quality (MDEQ) ... "over 93% of drinking water supply in Mississippi originates from the eighteen major aquifers in the state. Only three public surface water systems presently operate in the state: (1) the city of Jackson uses a combination of ground water and surface water from the Ross Barnett Reservoir/Pearl River; (2) the cities of Tupelo and Fulton receive their drinking water from the Tombigbee River; and (3) Short-Coleman Water Association diverts water from Pickwick Lake" (MSDEQ website).

In monitoring surface waters, the Forest Service tests for fecal coliform and e-coli at swim areas at Clear Springs and Okhissa Lake on the Homochitto Ranger District and in other recreational areas across the state. Watersheds (creeks with active flow) above and below active oil and gas fields have been monitored by the Homochitto Ranger District since the early 1970's. An increase of sodium chloride in the sample is a good indicator of a saltwater spill, leak or some other undesirable event in a field. Originally, sodium chloride was the only substance tested for but as affordable testing equipment has become available the parameters of the testing have grown. Today the National Forests in Mississippi monitor conductivity, salinity, pH, temperature and total dissolved solids (TDS). These monitoring efforts continue through FY 14.

How is the Forest Service monitoring for subsurface water quality?

Subsurface water consists of ground water or capillary water. Groundwater exists in the zone of saturation, and may be fresh or saline. Most private freshwater or drinking water wells in Mississippi are from 100 to 400 feet deep. According to MDEQ, the average well depth for public water systems in Mississippi is approximately 780 feet.

Contaminated subsurface water can show up in the surface water. If an aquifer feeding a spring becomes contaminated, the presence of a pollutant will be detected and indicated by a change in TDS with our current monitoring system. Currently the Forest Service does not require subsurface testing/monitoring for oil/gas operations. Monitoring for subsurface water quality is primarily controlled by the state of Mississippi through the Mississippi Oil and Gas Board (MSOGB) and MDEQ through statewide rules and regulations. The Mississippi Oil and Gas Board is charged with the regulations concerning the drilling, casing and plugging of wells lo prevent: 1) the escape of oil or gas out of one stratum to another; 2) the intrusion of water into an oil or gas stratum from a separate stratum; 3) the pollution of freshwater supplies by oil, gas or saltwater. Mississippi code of 1972, as amended, SEC. 17-17-47 gives exclusive authority to MSOGB for regulation of oil field waste products (#53-l-l 7 Powers of Board). Mississippi Department of Environmental Quality regulates all ground-water issues other than those associated with oil and gas and conducts research into environmental issues (MS Commission on Environmental Quality, Regulation LW-2, "Surface Water and Groundwater Use and Protection"). In addition, the Bureau of Land Management (BLM) and United States Geological Survey (USGS) assist the state of Mississippi in monitoring subsurface water. These monitoring efforts continue through FY 14.

Mississippi Surface Water Assessments site link:
http://deq.ms.gov/MDEQ.nsf/page/FS_SurfaceWaterQualityAssessments

Groundwater Protection Council site link:
http://www.gwpc.org

Mississippi USGS info:
http://ms.water.usgs.gov

What progress has been made in gopher tortoise management in FY 2013-2014?

Generally, all prescribed burns improve gopher tortoise habitat. Although the focus is on growing season burns to restore gopher tortoise habitat, it is not always possible due to funding, smoke management regulations, and environmental factors such as weather conditions. Dormant season fire can be a beneficial tool to maintain habitat and reduce fuel content to allow for a growing season fire at a later date. As a general strategy, the

NFsMS plan to first conduct dormant season burns to reduce the fuel load before implementing growing season burns. Table 7 illustrates seven years of burning history on the De Soto and Chickasawhay Ranger Districts. In 2011, growing season burning was not implemented due to smoke management issues and drought. Growing season prescribed fire resumed in 2012.

Table 7. Recent Prescribed Burning Accomplishments, De Soto and Chickasawhay Ranger Districts.

	2007	2008	2009	2010	2011	2012	2013	2014
Desoto								
Dormant	74,017	76,562	81,270	85,103	31,810	27,271	65,521	51,688
Growing	12,430	10,944	30,753	16,281	0	23,341	17,408	32,786
Total	**86,447**	**87,506**	**112,023**	**101,384**	**31,810**	**50,612**	**82,929**	**84,474**
Chickasawhay								
Dormant	8,785	13,595	25,667	18,657	9,100	8,176	11,577	8,554
Growing	24,393	7,108	7,513	10,873	0	18,112	18,613	20,454
Total	**33,178**	**20,703**	**33,180**	**29,530**	**9,100**	**26,288**	**30,190**	**29,008**

The Mason Creek Habitat Restoration Stewardship Project began on the Chickasawhay Ranger District in 2010. This is a 27,000 acre stewardship project designed to address critical habitat needs for both game and non-game species, to control noxious weeds, and to improve gopher tortoise habitat on "suitable soils." In 2013, approximately 316 acres of midstory removal was completed to promote a preferred grassy understory conditions for the tortoise. There were no treatments in 2014.

The De Soto Ranger District signed the Decision Notice for the Gopher Tortoise Habitat Improvement with Herbicide Environmental Assessment (EA) on August 20, 2007. The purpose of this EA was to restore and improve habitat for the federally threatened gopher tortoise. This EA includes the herbicide treatment of all gopher tortoise potential habitat on the District utilizing several different herbicides and methods. In 2012, a contract was awarded which will include 5,471 acres of habitat improvement through mechanical fuels treatment, herbicide treatment, timber thinnings, longleaf restoration, cogongrass control, and cool season wildlife opening management to establishing native warm season grasses.

The "Ecosystem Restoration for Gopher Tortoise and Red Cockaded Woodpecker Habitat" project for the De Soto Ranger District was signed in 2008. This project proposes to improve gopher tortoise and red-cockaded woodpecker (RCW) habitat on pine and pine-hardwood forests through thinning and longleaf restoration (removal of offsite pine species and restoring longleaf pine) outside of the Camp Shelby Special Use Permit area. This authorized fuels reduction project was proposed under the Healthy Forest Restoration Act of 2003 (HFRA) Title 1, Section 102(a) (5)-Threatened and Endangered (T&E) Species Habitat, to provide better protection from catastrophic wildfires for T&E species habitat by reducing hazardous fuels and restoring safer fire-dependent ecosystem conditions.

Under the Camp Shelby Stewardship Project, Forest Service staff and partners identified several areas where gopher tortoise habitat could be improved if woody midstory vegetation was reduced. In FY 2013, De Soto Ranger District awarded a contract to improve 240 acres of gopher tortoise habitat by treating woody midstory vegetation with herbicide. The contract was completed in FY 14. A second contract to treat 300 acres was awarded in FY 2014 and completed in FY 15.

In FY 2013, under the Camp Shelby Special Use Permit, the Nature Conservancy ended monitoring of tortoise hatchlings associated with a headstart trial on Forest Service land. Information collected on this project was used to design another gopher tortoise headstart program that is being tried on DOD land. Also under the Special Use permit, Camp Shelby in partnership with the Nature Conservancy , continued their annual monitoring of gopher tortoise colonies within military use areas in FY13 and FY14. Gopher tortoises burrows are marked and records of status are maintained within a GIS database for management purposes.

In FY 13 and 14, Dr. Jeanne Jones and Nicole Hodges from Mississippi State University continued data collection and analysis on the following research project: "Evaluation of Forage and Soil Nutrient Levels in Habitats of Gopher Tortoises (*Gopherus polyphemus*) in south Mississippi." Results are expected to published in a dissertation in FY15.

Surveying and then periodic resurveying of gopher tortoise burrows helps determine trends in gopher tortoise populations. One of the objectives of the Gopher Tortoise Recovery Plan is to conduct surveys of gopher tortoise at 5-year intervals and this has been accomplished through contracts since 1995. The most recent survey was completed and submitted in 2014 using a new surveying method; line transect distance sampling. This method was used to derive a baseline gopher tortoise population estimate (density and abundance) on the De Soto National Forest (DNF) in Mississippi Surveys were conducted in suitable habitat on the Chickasawhay and De Soto Ranger Districts. This sampling approach provides a standardized method for estimating tortoise densities and for long-term monitoring of the status and trends of populations. Surveys included 2,753 ha (6,803 ac) of habitat across the twenty-five sampling sites on DNF consisting of both burrow counts and habitat evaluations.

The report concluded that the method used during this project is repeatable, meets statistical rigor, and can be used during future surveys to establish population trends for the DNF. The survey found densities of 0.88 tortoises/hectare and 0.35 tortoises/hectare for the De Soto and Chickasawhay districts respectively. These density estimates provide an index of tortoise densities for each district. They also coincide with field observations that the population was higher on De Soto verses Chickasawhay. Approximately the same numbers of juvenile and subadult burrows were observed in both districts indicating that reproduction is occurring in both districts.

The habitat assessment numbers were very similar (De Soto – 3.40, Chickasawhay – 3.45) however there appeared to be more areas of suitable habitat on De Soto Ranger District. Field observations indicated that prescribed burning is being used more

frequently on De Soto, soils are more suited for tortoises and in many areas the canopy is more open resulting in a more suitable herbaceous understory.

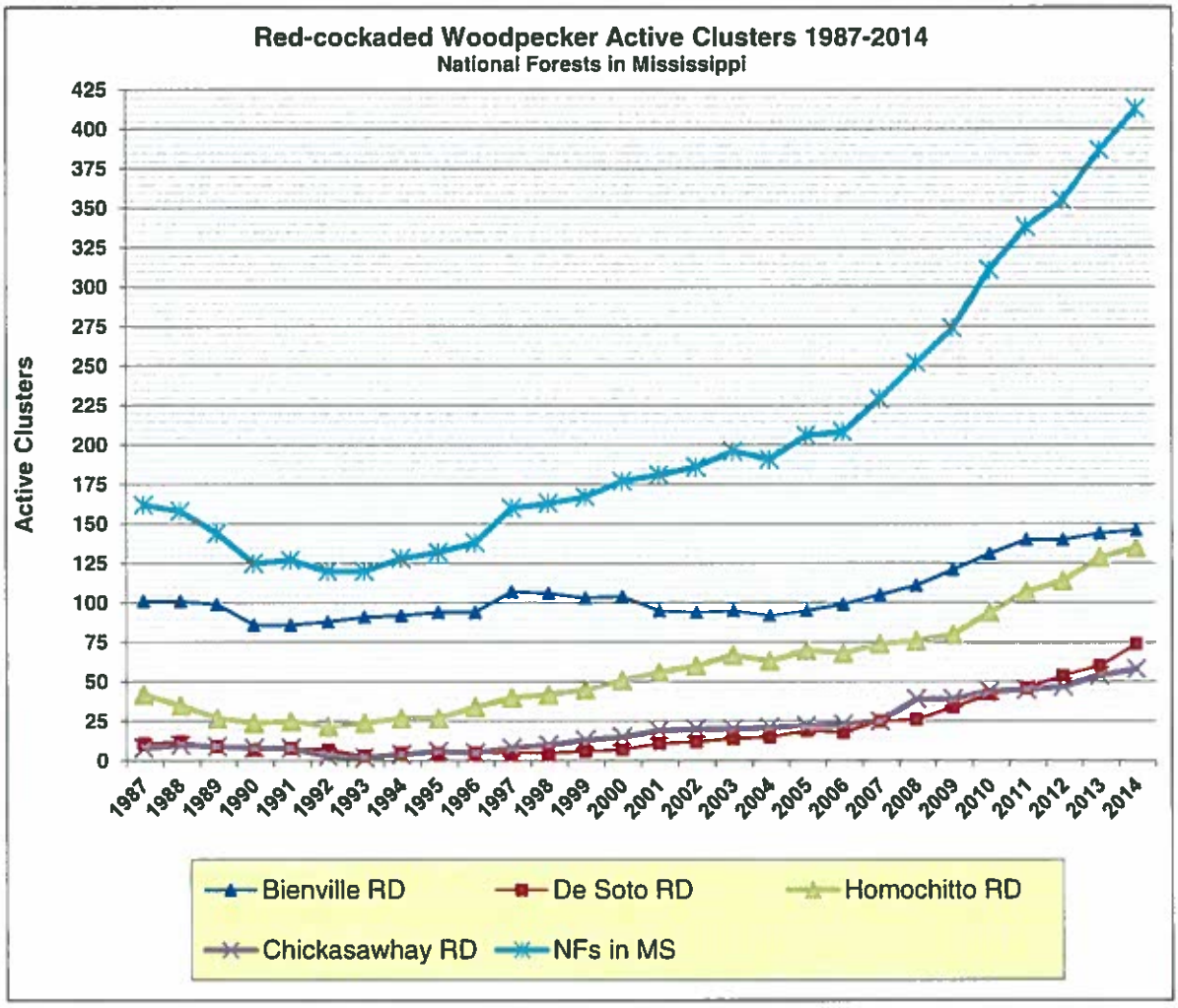
In addition to these formal surveys, Forest Service employees document gopher tortoise burrows observed during a variety of field activities, including focused surveys designed to locate burrows for protection prior to implementation of ground disturbing activities. These surveys determine population numbers and provide a valuable "baseline" against which to judge recovery. This 'baseline" enables biologists to determine the effectiveness of recovery activities by comparing data from the subsequent 5-year interval surveys.

What progress toward reaching red-cockaded woodpecker population goals was made in FY 2013-2014?

The Revised Recovery Plan for the RCW (2003) lists three key management actions as essential to the success of the recovery of this species: 1) development of large old pines to serve as cavity trees, 2) restoration and maintenance of appropriate habitat structure, and 3) protection of existing cavity trees. The National Forests in Mississippi continue to improve and maintain favorable habitat conditions for RCW using different strategies tailored to individual populations and habitat conditions. It is the implementation of these strategies, carefully designed to meet the conditions of each of four very different populations and habitat, which will continue to enhance RCW recovery on the NFsMS.

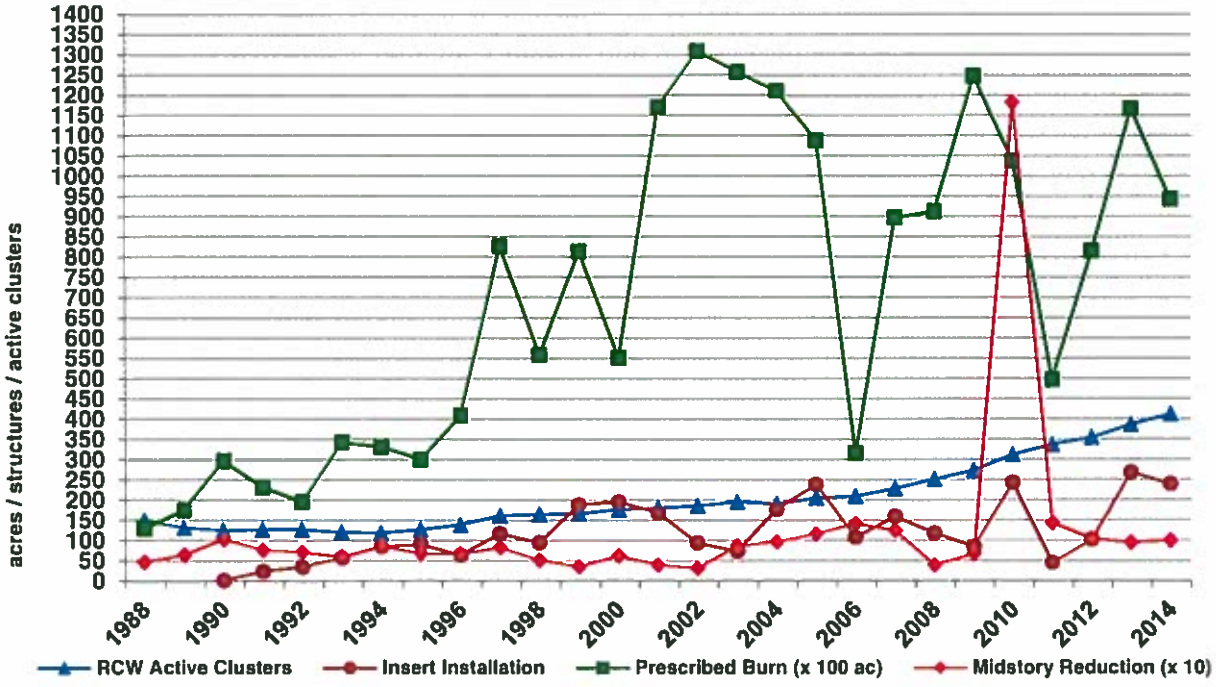
Currently there are 413 total active RCW clusters on the NFsMS, an increase from the 355 active clusters listed in the FY2012 Monitoring and Evaluation report. Although still far short of population goals of 1,595 active clusters, the numbers of active clusters have increased during the past 20 years (Figure 2).

Figure 2. History of active RCW clusters on NFsMS.



Although total acres of mature yellow pine forest has declined since 1981, the condition of the remaining pine forest habitat is much improved due to an aggressive prescribed fire program, application of midstory control, and installation of artificial cavities. Aggressive application of prescribed fire has been critical to maintaining open habitat conditions on the four districts where RCW occur. Installation and maintenance of inserts and management of natural cavities have corresponded with increases in both the number of individuals in family groups (increased group size), and in numbers of clusters (population expansion) on the Bienville, Chickasawhay, De Soto and Homochitto Ranger Districts. Maintenance of cavities on all units is critical to RCW occupation and population expansion. Off-site pine continues to be restored to longleaf pine in areas where longleaf pine historically occurred. As these young longleaf stands are released from competition and grow into mature stands, increased acreage in this forest type will enhance habitat conditions for RCW. Figure 3 summarizes RCW habitat improvements and population trends on the NFsMS since 1988.

Figure 3. RCW habitat improvement on the NFsMS.



In addition to habitat improvement efforts on the NFsMS, RCW populations have been augmented in recent years by translocating birds from larger populations. These translocations have increased overall populations and enhanced genetic integrity on districts with smaller populations (Chickasawhay and De Soto Ranger Districts). On the Chickasawhay, augmentation has been critical to the survival of the species. In 1992, only three single males remained on the district. With the augmentation of females to these males, and continued augmentation of both singles and pairs, this population now contains 58 active groups. The De Soto population reached 74 active clusters in 2014. Further growth is expected with current management, natural recruitment, and future translocations.

What is the status of forest bird inventories?

Conservationists have long been concerned about apparent range-wide population declines of many forest and grassland birds, especially those that migrate to Central and South America (neotropical migrants). A coordinated program for monitoring land bird populations has been developed to provide information about population status and trends of breeding birds on national forests in the Southern Region. It involves several thousand permanent monitoring stations on national forests across the South, covering all major physiographic regions and habitat types. Each point is visited yearly using standard procedures to record all birds present. The resulting data resides and is analyzed in a Regional database (R8 Bird). Regional analysis has recently been completed from 35,486 counts at 4,945 point-count stations on 14 national forests in the Southern Region for the period from 1992 to 2004. In this analysis, there was evidence that population increased for 42 species and decreased for 38 species on national forests in the Southern Region as a whole.

Annual bird point counts for the NFsMS were begun in 1994 and are now conducted annually on each district. From 1994 to July 2014, 169,242 individual birds of 162 species from 12,935 bird point counts have been recorded (Table 8). Of the 29 priority species outlined in the Landbird Conservation Strategy, 23 were detected on the NFsMS during the sample period. Species not detected during the point counts were American swallow-tailed kite, American woodcock, cerulean warbler, Henslow's sparrow, loggerhead shrike, and Mississippi sandhill crane.

Table 8. Number of birds and species reported on point counts from 1994 to 2014.

Forest	Total Number of Birds	Number of Species	Number of Point Counts	Number of Years Reported
Bienville NF	21,755	95	2050	16
De Soto NF	10,238	84	953	16
Homochitto NF	56,225	111	4,226	19
Chickasawhay NF	12,290	100	880	16
Delta NF	17,542	95	1010	13
Holly Springs NF	28,501	107	1,674	14
Tombigbee NF	22,691	100	2,142	16
TOTALS	169,242	162**	12,935	

**Number of species that occur on at least one of the individual forest counts.

The five most common species detected for each forest are reported in the following table. Two of the most common species, prothonotary warbler and hooded warbler, are priority species outlined in the Landbird Conservation Strategy for the East Gulf Coastal Plain Forests.

Table 9 . Five most common birds by Ranger District

Five Most Common Birds by Ranger District					
Bienville RD	NOCA (1659)	CARW (1641)	AMCR (1618)	BLJA (1611)	ETTI (1581)
De Soto RD	EATO (934)	NOCA (749)	CARW (683)	YBCH (648)	COYE (625)
Homochitto RD	REVI (5029)	ETTI (3766)	PIWA (3334)	NOCA (3275)	HOWA (3273)
Chickasawhay RD	CARW (837)	REVI (754)	NOCA (727)	HOWA (711)	PIWA (664)
Delta RD	NOCA (1632)	INBU (1290)	PROW (1231)	RBWO (1163)	CARW (1160)
Holly Springs RD	INBU (2245)	PIWA (2102)	REVI (1638)	ETTI (1603)	NOCA (1226)
Tombigbee RD	REVI (2166)	ETTI (1608)	AMCR (1481)	PIWA (1468)	NOCA (1458)
NFsMS	REVI (11,099)	NOCA (10,726)	ETTI (10,177)	PIWA (9,423)	CARW (8,480)

NOCA = Northern Cardinal
EATO = Eastern Towhee
REVI = Red-eyed Vireo
CARW = Carolina Wren
INBU = Indigo Bunting
ETTI = Eastern Tufted Titmouse
PIWA = Pine Warbler
AMCR = American Crow
YBCH = Yellow-breasted Chat
HOWA = Hooded Warbler
PROW = Prothonotary Warbler
BLJA = Blue Jay
COYE = Common Yellowthroat
RBWO = Red-bellied woodpecker
*Number in parentheses () is the bird total count represented by species.

Analysis of bird point count monitoring for species of birds selected as management indicator species (MIS) has been reported upon in the report, "Management Indicator Species Population and Habitat Trends." Evaluation of this data is reported therein and is not repeated in total here, although it is summarized and new findings available since that report was completed are mentioned where applicable.

Monitoring of distribution and abundance of breeding forest birds (including neotropical migrants) is an important aspect of the Forest Service commitment to providing habitats for these important indicators of habitat quality and stability. To that end, breeding bird point counts should continue with suitable adjustments to numbers of point counts as needed for statistical validity and to ensure that point counts are being made in the proper habitats.

What accomplishments in Heritage Resource Program management have been completed for FY 2013-2014?

The National Forests in Mississippi continue to monitor heritage resource sites. Table 10 and 11 lists the sites on the Chickasawhay District evaluated in 2013 and 2014.

Table 10. Heritage resource sites evaluated in FY 2013 on the Chickasawhay Ranger District.

Chickasawhay Ranger District	
The following sites have been checked for boundary integrity, erosional damage, and ground disturbing activity. No damage was found on any site monitored.	
22-WA-642 Tanya's Knoll	22-WA-676 Gopher Farm
22-Wa-622 Camp 8	22Jo753 June's Homeplace

Table 11. Heritage resource sites evaluated in FY 2014 on the Chickasawhay Ranger District.

Chickasawhay Ranger District	
The following sites have been checked for boundary integrity, erosional damage, and ground disturbing activity. No damage was found on any site monitored.	
22-WA-642 Tanya's Knoll	22-WA-676 Gopher Farm
22-Jo-657	

Heritage resource sites evaluated in FY 2012 on the De Soto Ranger District

De Soto Ranger District	
The following sites have been checked for boundary integrity, erosional damage, and ground disturbing activity. No damage was found on any site monitored with the exception of 22Pe2231 (military tank road).	
22Gn847	22Pe697
22Pe801	22Pe1282
22Pe1283	22Pe1827
22Pe2231	22Pe2724

Heritage resource sites evaluated in FY 2013 on the De Soto Ranger District

De Soto Ranger District	
The following sites have been checked for boundary integrity, erosional damage, and ground disturbing activity. No damage was found on any site monitored.	
22Pe826	22Pe827
22Pe828	22Pe837
22Pe1053	22Pe1054
22Pe1138	22Pe1424
22Pe1430	22Pe1792
22Pe1793	22Pe1796
22Pe1798	22Pe1575
22Pe1414	22Pe2090
22Pe2092	22Pe2154
22Pe2320	

Heritage resource sites evaluated in FY 2014 on the De Soto Ranger District

De Soto Ranger District	
The following sites have been checked for boundary integrity, erosional damage, and ground disturbing activity. No damage was found on any site monitored with the exception of 22Pe668 (unscientific excavation).	
Howard Breland Cemetery	22Pe609
22Pe610	22Pe930
22Fo625	22Fo671
22Fo1624	22Fo1625
22Fo832	22Fo1191
22Fo1192	22Pe668
22Pe665	22Fo826
22Fo836	22Pe928
22Pe899	22Pe2815

What important activities occurred in FY 2013-2014 to improve the transportation system and public safety?

The National Forests in Mississippi, working in cooperation with MDOT State Aid, has replaced 21 bridges in and around the national forests under the Forest Highway Program. The NFsMS has also paid for the design of 4 more bridges. The Forest Highway Program, administered by the Federal Highway Administration, allows the NFsMS to improve the transportation infrastructure on critical non-federal routes in and around national forests. Practically speaking, this program enables the NFsMS to replace weight limited county bridges that are hindering the accessibility of logging vehicles, fire transports, construction equipment, and other heavy trucks and equipment to certain areas of the forest. No important changes were made during Fiscal Years 2013 and 2014.

What major changes were made to the forest transportation system to increase efficiency?

In FY12, 116 miles of road were decommissioned (permanently removed from service). Virtually all of these roads were already closed to public use, so impacts to the traveling public were negligible. The work required for decommissioning varied from road to road, but generally involved a combination of activities such as removing culverts, ripping and/or disking the roadbed, installing waterbars, restoring natural contours, and seeding.

The National Forests in Mississippi historically harvested much more timber than it currently does and therefore utilized an extensive network of roads. These roads were constructed or reconstructed for timber sales, then closed afterward with the expectation they would be needed again within a few years. However, with small volumes of timber now being cut, many of those closed roads will not be needed for many years, if ever. The decision was made to decommission those roads and if or when timber sale access is ever needed again in one of these areas, temporary access will be established. Although decommissioning does not immediately obliterate a road, the work stabilizes and restores the land, giving nature a good head start to erasing all traces of it. During Fiscal Years 2013 and 2014 permenately open and seasonally open system roads only required routine maintenance to maintain efficiency.