



# FIVE-YEAR REVIEW

(May 24, 2004 through September 30, 2009)

## LAND AND RESOURCE MANAGEMENT PLAN FOR THE DANIEL BOONE NATIONAL FOREST

UNITED STATES  
DEPARTMENT OF  
AGRICULTURE  
FOREST SERVICE  
SOUTHERN REGION  
DANIEL BOONE  
NATIONAL FOREST  
WINCHESTER, KY

September 2010



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## **FOREST SUPERVISOR'S CERTIFICATION**

This fifth-year review of implementing the Forest Plan, documents the results of monitoring activities occurring from May 2004 through September 2009 on the Daniel Boone National Forest. I evaluated and endorse the monitoring and evaluation results presented in this report. An interdisciplinary review resulted in no recommendations to change existing plan direction.

I find that there are no recommended changes to the Forest Plan at this time warranting immediate action. The Forest Plan is sufficient to continue to guide land and resource management of the Daniel Boone National forest for the foreseeable future.

*/s/ Frank R. Beum*

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FRANK R. BEUM  
Forest Supervisor

*30 December 2010*

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Date

## 1. INTRODUCTION

This is the fifth-year review of implementing the revised Land and Resource Management Plan (Forest Plan) and covers the period beginning May 24, 2004 through September 30, 2009. As stated in 36 CFR 219.10(g) [1982 Planning Regulations], “[t]he Forest Supervisor shall review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.”

### Forest Plan

The Forest and Rangeland Renewable Resources Planning Act (RPA), as amended by the National Forest Management Act (NFMA), directs that each national forest develop a comprehensive forest management plan, and that these plans be reviewed and updated every 10 to 15 years, or earlier if conditions change significantly. In addition to the RPA and the NFMA, the National Environmental Policy Act (NEPA), Government Performance and Results Act of 1993 and the 2000 Revision of the USDA Forest Service Strategic Plan guided the revision process.

The first Forest Plan for the Daniel Boone National Forest was approved in September 1985. That plan was amended fourteen (14) times over the years as new information became available, and issues and conditions changed. Even so, an analysis of the current management situation identified a need to revise the Forest Plan to better reflect changing conditions, evolving public values, new scientific findings, new laws and regulations, and current agency policy. The following is a summary of the milestones and dates that occurred in revising the Forest Plan:

**June 21, 1996** - Notice of intent (NOI) to prepare an environmental impact statement was published in the Federal Register.

**April 2003** - The Draft Environmental Impact Statement (DEIS) was released.

**November 6, 2003** - A Biological Assessment was prepared and formal consultation occurred between the Forest Service and the USDI Fish and Wildlife Service as required by the Endangered Species Act.

**February 4, 2004** – The November 6, 2003 Biological Assessment was supplemented to include the effects on the Indiana bat related to green tree cutting activities; salvage & sanitation timber sales; and prescribed burning.

**March 20, 2004** - A final Biological Opinion was released by the USDI Fish and Wildlife Service.

**April 16, 2004** - A Record of Decision (ROD) and accompanying Final Environmental Impact Statement (FEIS) and Forest Land and Resource Management Plan (Forest Plan) were released.

**May 24, 2004** - Implementation of the Forest Plan begins.

**July 2004** - Two appeals were filed; one appeal was filed on behalf of Kentucky Forest Industries Association, East Kentucky Chapter of the Society of American Foresters, Daniel Boone Forest Alliance, and the Southern Appalachian Multiple Use Council; and a second appeal was filed on behalf of Heartwood, Kentucky Heartwood, Cumberland Chapter of the Sierra Club, Wild South, and Wildlaw.

**July 25, 2006** - An Appeal Decision from the Washington Office was rendered affirming the Regional Forester's April 16, 2004 decision.

**February 12, 2007** – Fish and Wildlife Service clarifies no effect and not likely to adversely affect concurrences in their March 20, 2004 Biological Opinion.

**February 12, 2007** – Forest Service re-initiates formal consultation on the Land and Resource Management Plan.

**April 3, 2007** – Fish and Wildlife Service issues a Revised Final Biological Opinion.

**April 17, 2008** – A review was conducted to determine the need to reinitiate formal consultation under Section 7 of the Endangered Species Act as a result of unprecedented die-off of bats in the Northeastern U.S.; linked to the presence of a white fungus, dubbed “white-nose syndrome”. The review found that none of the factors were met that would trigger reinitiating consultation.

**Goals from the revised Forest Plan**

- Maintain a variety of life and recover native and desirable non-native populations that are rare and declining;
- Improve the ability of the Forest's ecosystems to withstand and recover from disturbance, especially catastrophic disturbance, either naturally occurring or introduced. Reduce the compounding impacts of catastrophic events;
- Manage and/or restore watersheds to ensure the quality and quantity of water necessary to protect ecological functions, aquatic species and habitats, and support state designated beneficial uses;
- Maintain or improve soil productivity and air quality;
- Protect geological features such as arches, caves, and rock shelters;
- Preserve heritage resources;
- Provide a sustainable mix of desired uses, valued characteristics, and services to improve the long-term benefit to local communities and the public;
- Provide renewable products on a sustainable basis when such provision is compatible with Desired Future Conditions;
- Provide mineral commodities for current and future generations commensurate with the need to sustain the long-term health and biological diversity of ecosystems;
- Conserve Forest resources while accommodating the rights of private mineral owners;
- Provide habitat to sustain wildlife populations suitable for recreational pursuits such as viewing, photographing, hunting, and fishing;
- Provide road and trail network, buildings and other facilities that support the Forest's Desired Future Conditions;
- Obtain a National Forest ownership pattern (surface and subsurface) that facilitates management efficiency and supports the Forests' Desired Future Conditions;
- Engage the public and other agencies in cooperative, collaborative efforts that build trust and support in helping to meet Desired Future Conditions; and
- Improve delivery of assistance to rural communities.

## 2. AREA OVERVIEW

The area analyzed in this report is the Daniel Boone National Forest (DBNF or Forest). Proclaimed in 1937, the main stretch of the DBNF is a relatively narrow strip running 140 miles northeast along the western edge of the Cumberland Plateau from the Tennessee border to the northern tip of Rowan County. On the eastern side of the Plateau lies the Redbird unit, which was added in 1964. About one-third of the proclamation area's 2.1 million acres -- 707,763 acres -- is federally owned and managed by the Forest Service. National Forest System lands are within portions of twenty-one (21) rural counties (Appendix E). The Forest Supervisor's office is located in Winchester, KY. Four ranger districts -- Cumberland, London, Stearns, and Redbird (Appendix D) -- provide local services.

**Figure 2.1 - Daniel Boone National Forest Vicinity**



### 2.1. Ecological Overview

Steep-sided, winding valleys and ridges mark the Forest's hilly to mountainous terrain. Local relief varies from about 400 feet in the north to about 2,000 feet in the south. Thousands of miles of small branches and streams dissect this combination of flat-topped ridges and rolling hills.

Three rivers, the Licking, Kentucky, and Cumberland, drain portions of the DBNF. Water quality is generally excellent, except in some fourth and fifth order streams impacted by brine disposal from oil and gas drilling and by acid discharges from abandoned surface and deep coalmines. However, streams with substandard water quality account for only three percent of the water flow. The riparian areas of the forest are home to some distinctive resources and ecosystems, including 100-year flood plains and wetlands.

Forested lands of the DBNF are constituents of the mixed Mesophytic region of the Eastern Deciduous Forest. An extremely wide variety of species thrive in both the under and overstories, including more than 40 commercial tree species. The Forest is a mosaic of various seral stages of mostly upland hardwood types, with oak-hickory most common.

About 75% of subsurface rights on the Forest are either "reserved" by the previous surface owners of "outstanding" in third parties. Minerals currently being extracted include coal, petroleum, natural gas, and limestone.

More than 80 different kinds of soils are currently mapped on the DBNF. Acid sandstone, shale, and some siltstone and limestone in alternating layers underlie the Forest. Soils formed from these materials are mostly of mixed mineralogy, generally acidic, and possess low to moderate fertility.

The ecological classification hierarchy for the terrestrial area covered by the DBNF is defined through Landtype Associations. Overall, most of the Forest (88%) is within the Northern Cumberland Plateau Section. Detailed descriptions can be found in the Final Environmental Impact Statement (FEIS) for the DBNF Forest Plan (April 2004) beginning on page 1-5.

- 200 – Humid Temperate DOMAIN
  - 221 – Eastern Broadleaf Forest (Oceanic) PROVINCE
    - 221H – Northern Cumberland Plateau SECTION
      - 221Ha – Rugged Eastern hills Subsection
      - 221He – Low Hills Belt Subsection
      - 221Hb – Central Escarpment Subsection
      - 221Hc – Southwestern Escarpment Subsection
  - M221 – Central Appalachian Broadleaf – Coniferous Forest meadow PROVINCE
    - M221C – Cumberland Mountain SECTION
      - M221Cd – Southern Cumberland Mountain Subsection
      - M221Ce – Pine & Cumberland Mountains Subsection
  - 222 – Eastern Broadleaf Forest (Continental) PROVINCE
    - 222E – Interior Low Plateau, Highland Rim SECTION
    - 222Ej – Eastern knobs Transition Subsection

## **2.2. Social and Economic Overview**

Within the Forest are 18,000 acres of designated Wilderness and 19 miles of Wild and Scenic Rivers. The proclamation area of the Forest is also home to three state parks and four U.S. Army Corps of Engineers lakes. The Big South Fork National River and Recreation Area abuts the Forest's southern boundary.

The DBNF is exceedingly rich in the non-renewable resources that represent over 13 thousand years of people interacting with their environment. The record of those who came before us is held in over 3,800 archaeological sites that have been documented on the Forest with thousands more remaining to be recorded. These sites range from prehistoric camps and rock art to pioneer trails, Civil War battlefields, farmsteads, coal towns, and iron furnaces. Each one of these sites is a valuable part of the diverse mosaic that portrays the story of those who preceded us.

The Forest's five million annual visitors make recreation one of the largest of its multiple uses. Both developed and dispersed uses of the Forest are in high demand. Two reservoirs, Cave Run Lake and Laurel River Lake provide the backdrop for most of the Forest's developed recreation use. Off-highway-vehicle (OHV) use is popular and use is only permitted on a system of designated trails. The Shelton Trace National Scenic and Recreation Trail traverses the Forest from north to south. Other Forest trails provide opportunities for hiking, horseback riding and bike riding. Several waterways provide opportunities for canoeing and kayaking.

As an outcome of management activities to restore and maintain various habitat conditions and reduce forest health impacts, the DBNF produces varying amounts of wood products that contribute to the local economy and adds to the nation's timber supply.

The DBNF directly affects and is predominantly influenced by citizens of 21 Kentucky eastern counties. The presence of the Bluegrass Army Depot, Kentucky State Parks, National Parks, and Universities influence the demographics of the Forest user groups as well as they contribute greatly to local economies. Demographics of people, business, and geography for the 21 counties that have NFS lands administered by the DBNF as part of their land base are summarized in Appendix J. These 21 counties continue to be predominately rural in nature. The following are a few notable statistics from the census data regarding these 21 counties:

- 1) Population change:  
US = +8% (3 counties were near or above 8%),  
KY = +5.6% (4 counties above 5.6%, 8 counties had negative growth)
- 2) High School degree:  
US = 80%  
KY = 74% (21 counties below 74%, range is 49% to 71%)
- 3) Bachelor's degree or higher:  
US = 24%  
KY = 17% (20 counties below 17%, range is 6% to 13%)  
Rowan County is 22% because of Morehead State University
- 4) Homeownership rate:  
US = 66% (21 counties above 70%)  
KY = 71% (20 counties above 71%, range is 70% to 82%)
- 5) Median housing unit value:  
US = \$120,000  
KY = \$87,000 (21 counties below median, range is \$37,000 to \$80,000)
- 6) Median household income:  
US = \$50,740  
KY = \$40,300 (21 counties below median, range is \$21,200 to \$34,300)
- 7) Persons below poverty:  
US = 13%  
KY = 17% (21 counties below 17%, range is 22% to 44%)
- 8) Persons per square mile:  
US = 80 (16 counties below 80)  
KY = 102 (Laurel County at 121, range is 25 to 121)

In addition to economic benefits to the local communities derived from products, services, recreation visits, contracting, and other money coming into the local communities as a result of the presence of the DBNF, direct payments are made to the counties each year in lieu of taxes. Payments to counties over the past five years (2005 – 2009) amounted to more than \$4.3 million. A summary of annual payments to each of the 21 counties is in Appendix E. Payments are largely based on the percentage of land in federal ownership, which averages 15% for the 21 counties and less than 3% for the State (Appendix D, Table D.2.).

## 3. SUSTAINABILITY

Sustainability is analyzed by addressing the nineteen (19) Forest Plan monitoring questions (Forest Plan, Appendix D).

### 3.1. ECOLOGICAL

#### 3.1.A. ECOSYSTEM DIVERSITY

##### #1 - Are rare communities being protected, maintained, and restored?

Twelve rare community types were identified in the Forest Plan. The Plan set a goal of monitoring 1200 acres over 10 years. To date, approximately 170 acres per year have been inspected, putting the Forest on track for 1700 acres over a 10-year period. Of these, streamhead seeps/bogs and slope seeps have been regularly inspected over the last five years. These are sensitive sites, easily damaged with heavy rain, animal activity or blow down. These wetlands are the most inspected sites. Three wetland areas were checked for qualification as rare communities, but did not qualify. These sites were heavily degraded and lacked most expected species and functions.

In the last five years, a project was completed to slow water flow and encourage build of sediment in a streamhead that was badly eroding through head cutting and down cutting. Fourteen log structures were installed to create sedimentation pools. To date, down cutting has slowed or possibly stopped, and head cutting has slowed. The water table on the lower end of the stream has been returned to levels present 15 years ago. By continually capturing sediment, the expectation is that this will help raise the water table closer to the rare species that occur in the wetland system.

At another site, degradation of stream conditions (occurring on private land) was leading to damage in a stream head wetland on NFS land above the private land. A state agency stepped in and provided funding to work with the land owner and correct the problem. The wetland is habitat for a state listed and Regional Forester's sensitive species.

Some other streamhead wetlands on the Forest show signs of degradation. The Forest is pursuing various methods to correct identified problems. This may involve university research.

Three areas were chosen to develop into canebrake habitat, one on the London District, and two on the Stearns District. Plantings occurred in 2006, 2007 and 2008. The areas do not have the characteristics that would qualify them as canebrakes, but are expected to expand into canebrakes over the next 5-10 years.

## **#2 – Are landscape-level and stand-level composition and structure of major forest communities within desirable ranges?**

**Trend in Forest Cover** - A significant change occurred to the forest during 1999-2001 because of a widespread southern pine beetle (SPB) outbreak. Based on the trends from the stand exams done since then, some of the stands that were overstocked with mixtures of pine and hardwood have been naturally thinned and are now adequately stocked with hardwood sawtimber or poletimber. Some stands have become two-storied or multi-storied, with various mixtures of hardwood regeneration. A few have regenerated with off-site tree species, vines, and shrubs and could benefit from reforestation.

Many of these former pine stands are included within landscape controlled burns, which are usually conducted on a three to five year cycle. Due to many variables that occur within a large landscape burn, vegetation character of some stands can change markedly following fire. For example, in young stands as trees re-sprout following fire, the stand year-of-origin becomes the date of the latest burn. Stand inventory has seldom kept pace with such vegetation change caused by fire.

Due to the high variability in the stands damaged by the SPB, remotely sensed photography has not provided sufficient detail for accurate classification of former pine stands. Although some inventories have focused on the old pine stands, a more accurate report of the Forest's age-class /community type distribution should be possible when a complete field inventory cycle is completed. The inventory cycle normally takes 10-15 years.

There was no pitch pine stands artificially or naturally regenerated on the Forest during fiscal year 2009. Efforts to locate superior specimens of pitch pine should continue for scion or cone collection, to initiate a source for seed at the region's seed orchard.

By the end of fiscal year 2009, about 15% of the 100,000-acre area that was estimated to have been affected by the SPB had been inventoried. Based on sampling data, the estimate now would be that 10,000 acres are classified as having a component of more than 30% pine. Approximately, 80,000 acres of former pine stands (50-100% pine component) that are now hardwood have not yet been updated in the database. However, this estimated difference is reflected in Table 2.1. Acreage of stands having a composition of at least 50% yellow pine is still significantly below Forest Plan objectives (objective 1.1.F. & 1K-goal-2).

**Table 2.1 – Trend in Community Type, DBNF**

	White pine / hemlock	Meso- phytic / flood-plain	Xeric and Mesic oak	Oak-pine	Pine & pine-oak	Total classified as forest
2001 <sup>1</sup> (acres)	30,542	163,746	367,603	98,647	1,272	661,810
(%)	4.6%	24.7%	55.5%	14.9%	0.2%	
2008 <sup>2</sup> (acres)	32,199	170,006	384,667	57,019	6,972	650,863
(%)	4.9%	26.1%	59.1%	8.8%	1.1%	
2009 <sup>3</sup> (acres)	2,659	165,900	385,042	67,245	6,544	657,390
(%)	5.0%	25.2%	58.6%	10.2%	1.0%	

There has been a large decrease in 0-10 age-class since the Forest Plan estimate in 2001 and the data available in 2009 (Table 2.2 and Figure 2.1.). Based on the stands sampled since the SPB outbreak, the figures shown for 2001 in the LRMP-EIS for age 0-10 stands were over-estimated. Many of the pine stands sampled since then, have a significant component of hardwood of the same age remaining, although stocking has been significantly reduced. Therefore, the 2009 figures for the 0-10 age-class should be more reasonable than the 2001 estimate. The 2009 figure for 0-10 age-class is below the early-succession goal in the Forest Plan. FSveg data also shows an increase in acreage in 6 of 7 age-classes greater than age 80, which shows progress toward the old-growth goals in the Forest Plan (Table 2.2 and Figure 2.1).

**Table 2.2 – Trend in Age-Class (percent of all forestland), DBNF**

Age	2001	2009
<b>0</b> <sup>4</sup>	0.0%	1.8%
<b>1-10</b>	9.9%	0.6%
<b>11-20</b>	6.8%	6.1%
<b>21-30</b>	6.8%	7.0%
<b>31-40</b>	6.0%	6.5%
<b>41-50</b>	3.7%	5.8%
<b>51-60</b>	4.5%	4.1%
<b>61-70</b>	8.7%	5.9%
<b>71-80</b>	14.2%	12.0%
<b>81-90</b>	13.8%	14.3%
<b>91-100</b>	11.9%	14.1%
<b>101-110</b>	7.8%	11.6%
<b>111-120</b>	4.0%	6.5%
<b>121-130</b>	1.1%	2.3%
<b>131-140</b>	0.8%	0.7%
<b>141-150</b>	0.0%	0.6%
<b>150+</b>	<u>0.0%</u>	<u>0.1%</u>
	100%	100%

<sup>1</sup> LRMP-EIS page 3-277

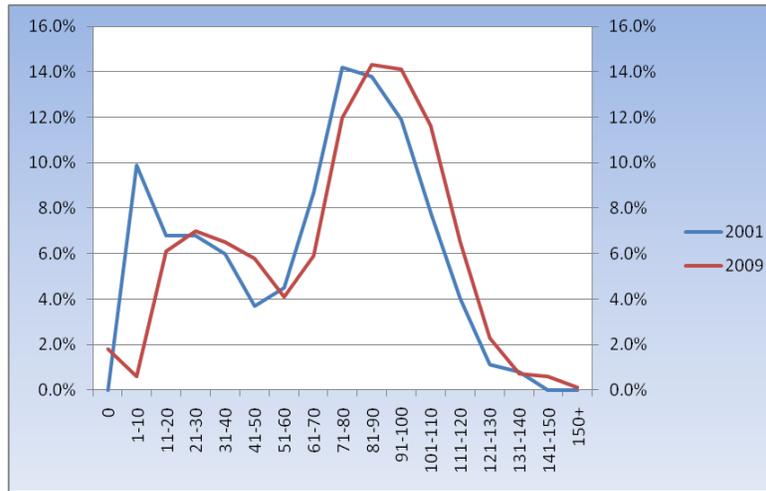
<sup>2</sup> FSveg database as of Dec 2008 (GIS acreage estimate)

Estimates were not made in years 2001-2007, due to the unknown effect of yellow-pine mortality.

<sup>3</sup> FSveg database as of Dec 2008 (GIS acreage estimate)

<sup>4</sup> Figures shown for age 0 include stands classified as “in regeneration” and “non-stocked”.

**Figure 2.1 – Trend in Age-Class (percent of all forestland), DBNF**



**Silvicultural Treatments** - A record of silviculture treatments is kept in the corporate database “Forest Activity Tracking System” (FACTS). Vegetation inventory data is kept in the corporate database “FSveg”, which is one of several databases in the “National Resource Information System” (NRIS). FSveg is linked to the “stands” layer in the corporate Geographic Information System (GIS). However, construction of the FACTS-GIS layers is still in progress. Therefore, there is no linkage to the FACTS database, and no way to relate treatments to community type (groups of forest types) in GIS.

Based on field observation, most if not all of the following treatments occurred either in the mesic or xeric oak community types. Planting of shortleaf pine occurred in stands that were previously occupied by various mixtures of yellow pine and hardwood. A list of silvicultural activities that occurred during the five-year period is shown in Table 2.3.

Silvicultural treatments within the Middle Kentucky River and Cumberland Management Areas focused on re-establishment of shortleaf pine in stands damaged by the southern pine beetle, which occurred early in the decade (Objective 1.1.F). Activities also continued on the Cold Hill Silvicultural Research Project, which, among other research, will quantify regeneration trends under various amounts of residual canopy cover.

Silvicultural treatments in the Licking River Management Area concentrated on thinning of overstocked hardwood stands (Goal 2.1); treatment of an ice-storm damaged area (Goal 8.2); control of understory vegetation for stimulation of advanced oak regeneration (a non-commercial pre-shelterwood treatment, classified in FACTS as “area release”); and maintenance of seed production genetic improvement test areas (Goal 2.2).

Pre-commercial thinning treatments occurred in the Upper Kentucky River Management Area to stimulate growth and favor oak in hardwood sapling stands (Goals 2.1 & 8.3).

**Table 2.3 – Silvicultural Treatments (acres), DBNF <sup>5</sup>**

ACTIVITY	FY05	FY06	FY07	FY08	FY09	Average
Shelterwood Prep Cut (2-aged system)	0	0	0	0	21	4
Shelterwood Seed Cut (2-aged system)	0	17	173	42	40	54
Improvement Cut	80	44	442	0	0	113
Commercial Thinning	0	93	186	98	86	93
Salvage Cut (intermediate treatment)	0	0	72	0	380	90
Sanitation Cut	0	0	108	341	326	155
Special Cut (Create Woodland)	0	0	156	0	116	54
Full Planting without Site Prep (fire area)	0	0	15	0	0	3
Full Planting concurrent with Site Prep	623	560	387	1	6	315
Fill-in Planting without concurrent site prep	0	0	0	15	78	19
Site Prep for Planting	343	935	0	2	0	256
Site Prep for Natural Regeneration	0	120	61	66	19	53
Tree release [seedlings]	322	0	51	606	541	304
Tree release [midstory removal]	0	0	0	184	47	46
Pre-commercial Thin	785	0	1,040	2,256	3,181	1,452
Thin – hazardous fuels	0	0	0	0	3,162	632
Control of Understory Vegetation	0	471	886	0	0	271
Genetic/ Progeny Test Operations	3	0	0	0	0	1
Seed Production Area Operations	30	53	26	4	0	23
<b>TOTAL AREA TREATED</b>	<b>2,186</b>	<b>2,293</b>	<b>3,603</b>	<b>3,615</b>	<b>8,003</b>	<b>3,940</b>

**Controlled Burning and Wildland Fire** – Table 2.4 displays the total acres burned and the controlled burn objective on the Forest during the first five-years of the Forest Plan.

**Table 2.4 –Fire on National Forest System Lands, DBNF, FY2005-2009 acres**

	FY05	FY06	FY07	FY08	FY09	5-year average
Controlled Burn (Objective.2.4.C)	15,000	19,000	23,000	27,000	31,000	23,000
Controlled Burn	19,052	17,659	8,473	15,342	9,439	13,993
Wildland fire	6,446	2,930	6,730	2,771	1,864	4,148

Controlled burn data are just beginning to be recorded in GIS in a form that allows determination of the extent of burning in various forest types and desired fire regimes. A central latitude and longitude is entered for each burn unit, but very little polygon data is yet available. The FACTS GIS layers are still being created, and several prescribed burn polygons have been entered, but the linkage to the data is not yet operational. As a result it is not yet practicable to determine the acres of various forest community types burned in a particular season, or even how much of a community type was burned.

Although there is insufficient spatial data to determine changes over time in forest community types burned by prescription, the areas we burn have become permanently located so that control lines can be used periodically. In general, the prescribed burn units are located in upland oak-hickory and mixed oak-pine types. Control lines may follow creeks, but fire intensity normally decreases in stands on north and east slopes and along damp drainages. Most wildfires occur during the dormant season, during the area's historical arson fire period. For cove and bottomland forests, this is a more optimal time for fire than during the growing season. For the other forest community types growing season burns are

<sup>5</sup> Harvest acres are reported when cut. Other treatments are reported when contracts are awarded.

generally considered more favorable to developing rich herbaceous understory. Therefore many prescribed burns are scheduled during the early growing season.

GIS data for wildland fire indicate 1864 acres burned within the proclamation boundary in FY 2009, with most of that originating on NFS lands. Wildland fire data exist in GIS as points and polygons, depending on fire size. Point data include size and date of the fire, but no data regarding the shape and distribution of the fire. Point data do not allow the determination of a fire's extent with relationship to forest communities.

Wildland fire polygon data showing size and spatial extent is linked to the corresponding point data which includes ignition date. Some wildfire polygon data with dates exist that can be used to determine the relationship of a fire to a particular forest community type; however, such data is only available for four years, FY 2003-2007, and the spatial data has not yet been linked to the point data for FY 2008 or 2009 (table 2.5).

**Table 2.5 – Wildland fire acres where spatial information is available, FY2003-2007, DBNF**

Forest Community	Dormant Season	Growing Season			Total
	Winter (Nov-Mar)	Spring (Apr-May)	Summer (Jun-Aug)	Fall (Sep-Oct)	
Cove	1,025	155	20	132	1,332
Yellow Pine	599	206	216	269	1,201
Upland Oak Hardwood	9,554	1,576	289	1,550	12,969
Bottomland Brush, Non-Forest, Uninventoried	63	10	0	2	75
Oak/Cove*	317	63	5	41	426
Oak/Cove*	3,092	511	7	467	4,078
<b>Total</b>	<b>14,650</b>	<b>2,521</b>	<b>537</b>	<b>2,461</b>	<b>20,081</b>

\*Recorded in FSVeg as a type that ranges from mesic oak to cove hardwoods. Some fire is expected in mesic oaks, while less fire is expected in cove hardwoods.

### #3.a – Are high-elevation habitats being provided?

High elevation habitat of any kind is limited on the Daniel Boone National Forest. Only about 2600 acres of NFS lands is above 2000 feet in elevation and most of that is 2200 feet in elevation or less. Currently, about 2754 acres at or above 2000 feet in elevation are within NFS lands administered by the DBNF. No acquisition of lands above 2000 feet has occurred since the adoption of the 2004 Forest Plan. Most of these higher elevation lands are located on the Redbird District, although some are in the Jellico Mountains of the Stearns District.

As of March 2010, 2191 acres of NFS lands are in the 2000 to 2199 foot elevation range. This consists of 347 parcels, the largest of which is about 52 acres, with 26 parcels above 20 acres in size, and 209 parcels under 5 acres in size. On average, these parcels are about 6 acres in size. Within this group, about 3 acres forested with trees that are less than 10 years old, and about 25 acres (one parcel) is in grass and/or shrubs. Parcels, such as these provide temporary habitat for species such as the golden-wing warbler. The remainder of NFS lands in this elevation range does not provide useable habitat for high elevation species. Either there is insufficient land or the tracts are too small.

As of March 2010, 536 acres on NFS lands are in the 2200 to 2499 foot elevation range. This consists of 65 parcels, the largest of which is about 55 acres. On average, these parcels are about 8 acres in size, with 5 parcels above 20 acres and 39 parcels less than 5 acres. Most of this does not readily provide useable habitat for high elevation species: 1) it is not high enough, and 2) parcels are too small. About 2 acres (1 parcel) of this elevation range is in grass and/or shrubs. There is no forested land that is 10 years old or younger in this elevation range. The remainder of NFS lands in this elevation range does not readily provide useable habitat for high elevation species: Either there is insufficient land or the tracts are too small.

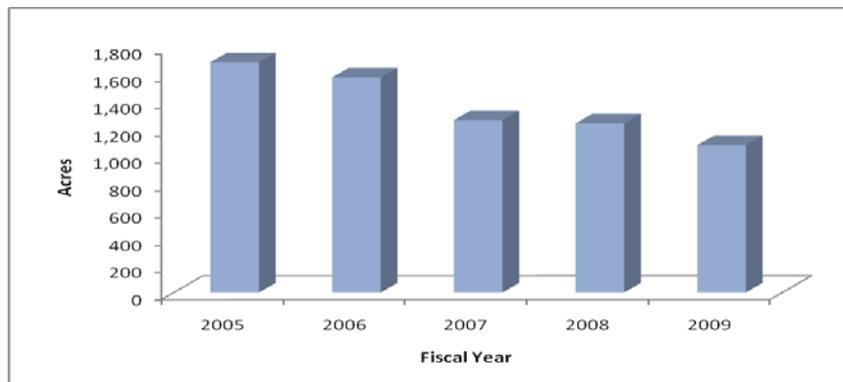
As of March 2010, 27 acres on NFS lands are in the 2500 foot elevation or greater elevation range. This consists of 5 parcels of land, the largest of which is about 14 acres. On average, these parcels are about 5 acres in size, with no parcels above 20 acres and 3 parcels less than 5 acres. All lands in this elevation range are mature forests and do not readily serve as useable habitat for high elevation species. Either there is insufficient land or the tracts are too small.

### #3.b – Are permanent grassy openings being maintained?

There is currently 2170 acres of grassy openings habitat on the DBNF based on Forest GIS data. Alternative C1 (the forest plan) estimated 2170 acres of grassy opening habitat existed in 2004 – the year in which the forest plan was implemented based on data in CISCII and GIS in 1998. A simple comparison suggests that the permanent grassy openings are being maintained (Table 3b.1).

Openings do not require annual maintenance. A lag of 2-3 years between treatments is sufficient to maintain the desired characteristics. Thus, in order to maintain 2170 acres in an open condition, 723 - 1085 acres would need to be treated annually. Approximately 50-78% of that total is maintained annually. If the acres treated are in a 2-3 year rotation (data sources do not allow verification of this) then the Plan objective (Forest Plan Objective 1.5.A.) of 2200 acres of grassland habitat in various prescription areas is being met.

**Table3b.1 - Acres of Grassy Openings Maintained by Fiscal Year, DBNF**



### #3.C – Are key successional stage habitats being provided?

Grassy field/old field habitat is being provided. See #3.b. above for more information.

Existing old growth is limited on the DBNF. A portion of each of the Rock Creek RNA, the Tight Hollow proposed RNA, and the Right Fork Elisha Creek proposed RNA is considered old growth. Numerous stands on the forest are considered potential old growth (POG), that is, they have the minimum age of, but not necessarily other characteristics of reference old growth sites. Analysis of POG was summarized in the FEIS for the Forest Plan (FEIS, p. 3-92, Table 3-26). Data was displayed by old-growth community type. This same analysis was completed using *FSVeg* data pulled in February 2010. The results are shown in Table 3c.1 paired with the data from the FEIS.

**Table 3c.1 – Forest communities, pre and post southern pine beetle (SPB) attack, DBNF**

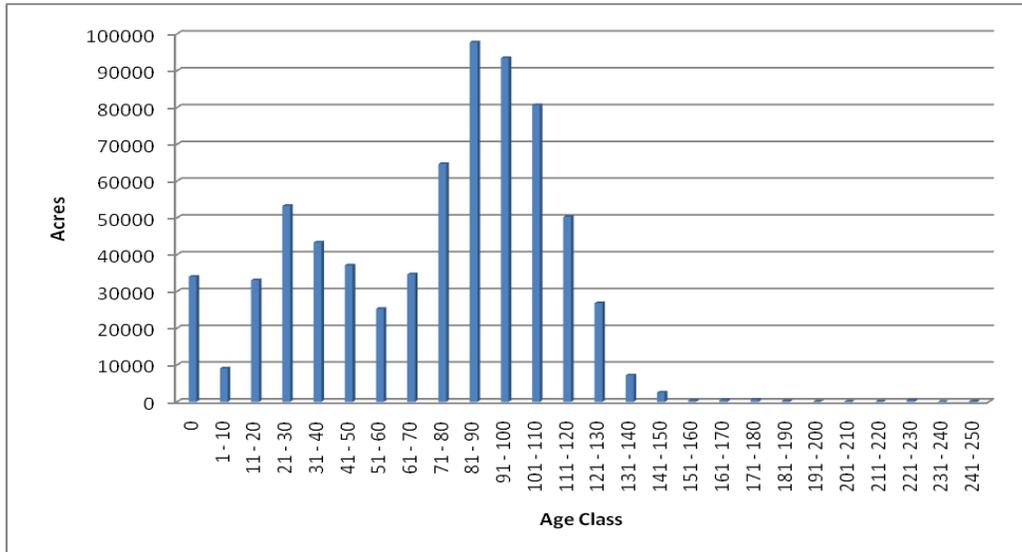
Community	Pre-SPB acres	Post-SBP acres	2010 acres
Conifer-northern hardwood forest	1,400	1,400	2,643
Mixed mesophytic forest	728	728	986
River floodplain hardwood forest	61	61	131
Dry-mesic oak forest	532	532	2,906
Dry and xeric oak forest	1,483	1,483	6,975
Xeric yellow pine and yellow pine-oak forest	11,017	7,065	5,542
Dry and dry-mesic oak-yellow pine forest	912	912	6,930
Eastern river front forest	-	-	20
<b>Total</b>	<b>16,133</b>	<b>12,181</b>	<b>26,133</b>

Some of the acreage change shown in the table above is the result of some older stands being acquired in the last 5 years. All community types except xeric yellow pine and yellow pine-oak forest gained POG acres due to general aging of the forest. Another 10,000 acres of POG is entirely possible in the next 10 years, again the result of general aging of the forest. The yellow pine community type decreased in acres as a result of further efforts to inventory forest stands following the southern pine beetle irruption of 1999-2001. The POG acres presented here as of 2010 may still be above actual for pine and pine-oak types, but represent the best estimate based on several years of sampling.

Future old growth (FOG), areas of the forest that based on predominate management direction will tend to age in place, are also growing older. Analysis of FOG using March 2010 *FSVeg* data was based on the summarized data in the FEIS in Tables 3-27 and 3-28 indicated a change of 256,377 acres (FEIS) to 224,089 acres (current). This change is an artifact of the analysis process as the base spatial data for prescription areas has only changed for prescription areas 1.K.(Habitat Diversity Emphasis), and 3.H.1.(Ruffed Grouse Emphasis). An amendment to the Forest Plan moved roughly 10,000 acres from prescription area 1.K. to 3.H.1 with the establishment of a ruffed grouse prescription area within the Upper Kentucky River Management Area, on the Redbird District. All other prescription area spatial data sets have remained the same even though there has been acquisition of land including at least riparian corridor (1.E.) and cliffline community (1.C.) habitat. The approximately 32,000-acre difference is not the result of changes to prescription areas considered here. The change is attributed to differences in the analysis which may include differences in how water in riparian areas is handled and what portion of the Source Water Protection prescription area (5.C.) was used.

*FSVeg* data was extracted in March 2010 to produce the age class distribution shown below (Table 3c.2). Acres shown in age class 0 include, utility, road and railroad rights-of-way, wildlife openings, surface mine lands, some special uses, water, and un-inventoried forested lands or forested lands without stand level data, but for which plot data exists. Approximately one third of these acres are in the last two categories. As at the time of the adoption of the current Forest Plan, the distribution is bimodal with peaks in the 21-50 year old group and the 71-120 year old group. The first is the result of management practices in the 1960s to the 1980s. The second is the result of the history of management on the land prior to its inclusion in the National Forest System. The 0-10 age class is below Forest Plan objective of 5-6% within prescription area 1.K. lands (approximately 18,750 to 22,500 acres over 10 years, or 1,875 to 2,250 acres per year). Older forest is being provided as is mid-age forest. Forest older than 150 years is limited, but this habitat can only be grown with time. Additional information on stand-level composition and structure of major forest communities is provided in # 2 above.

**Table 3c.2 - Age Class Distribution by Acres**



**#4 – How well are terrestrial habitat attributes being provided?**

As currently defined in the monitoring elements found in Appendix D of the Forest Plan (Forest Plan p. D-3), the method of data collection to answer this question is “Map and update changes in forest composition and condition through routine inventories. Infer snag and downed wood by the acres of older age class forests and mortality due to insects and disease.” As forests age, the number of dead and dying trees tends to increase. This in turn leads to an increase in the number of snags and eventually the amount of coarse woody debris on the ground. Figure 2.1 indicates a slight shift in the age of the forest over the last 9 years. For most age groups, the shift is an increase of 9 years in age. There is an expectation that this slightly older forest will have a slightly higher number of snags and slightly more downed wood. Through attrition of older or weaker trees, a supply of both snags and downed wood is maintained on the forest.

Downed wood and snags are specifically addressed directly in the Forest Plan in one or more forms. For coarse woody debris, all vegetative management projects (outside of fire) are to leave at least 2 pieces of wood  $\geq 12$  inches diameter at midpoint and 10 ft long per acre (Forest Plan, 1.K-Objective 1.M.). For snags, Forest Plan Standard DB-WLF-2 states, “Retain or create at least three snags per acre equal to or greater than 9 inches dbh with all timber harvest, regeneration, sanitation, salvage, or thinning project units when available.” It is desirable that snags be  $\geq 12$  inches dbh.

Currently, there is no tracking method set up either for downed wood or snags that encompasses all forested areas of the Forest. In practice, there is usually sufficient coarse woody debris left to meet or exceed the objective, plus additional smaller diameter wood in harvested areas. In areas where biomass is harvested, much less downed wood is left.

Snags are inventoried as part of green tree harvest and prescribed burning projects to meet Terms and Conditions under the Forest Plan Biological Opinion issued by U.S. Fish and Wildlife Service. While this data has been collected since 2006, it only is collected on those projects that utilize the Forest Plan BO authorizing take of Indiana bat. These areas cover a small portion of the Forest and only a portion of the vegetation management projects that occur on the forest. Based on this inventory for green tree harvest 2006-2009, snags per acre greater than 6 inches dbh ranged from 0 to 36. The average over 732 acres of harvest, where complete data was available, was 0.51 snags per acre before any activity and 0.74 snags per acre after activity. The actual average number of snags per acre is probably higher than reported

here, both prior to and after activity. What probably does not change is the fact that after activity, the number of snags is increased. For prescribed fire, the snag number is often immediately reduced, but this is not a surprise as snags often burn and fall in fires. It is also known from observation that snags are created over several years following fire and their actual numbers 2 to 5 years following fire is probably equal to and likely greater than that prior to burning, at least following the first couple of fires in an area. Some snags are expected to fall during green tree harvest activities because of proximity to large trees that are cut or because they pose an immediate safety hazard.

The Forest Plan includes direction regarding retention of snags in standards DB-WLF-1, DB-WLF-2, DB-WLF-15, DB-Veg-1, and 1.K-Veg-1. The first two and the last apply specifically to green tree harvest, and/or sanitation/salvage projects. The third applies to sanitation and salvage sales. The fourth one applies to any and all projects. DB-WLF-1 states no snags  $\geq 6$  inches dbh may be intentionally felled except to remove an immediate threat to human safety. DB-WLF-2 states that at least 3 snags per acres  $\geq 9$  inches dbh will be retained or created for harvest and thinning projects. DB-Veg-1 allows the cutting of hazard trees (dead or alive) when they are an immediate threat to human safety. 1.K-Veg-1 states snags  $\geq 6$  inches dbh may be replaced for snags  $\geq 9$  inches dbh when the latter are not available.

The individual data collected for the Biological Opinion Terms and Conditions report show indications of data collection problems (inconsistent data collection methods, locations and or timing). We also know that some snags are lost because of legitimate safety concerns. The data also represent a small subset of the area in which projects occur and the method was not designed to collect data from across the forest. While it appears snag density is low by Forest Plan standards in some areas, we do not know for a fact that it is. We also know snags are formed within 2 to 5 years of green tree harvest or fire, and these are not documented through any data collection method. Snags, and ultimately coarse woody debris, are provided through aging of the forest and the results following vegetation management activities.

**Mast production capability** is inferred from the status of *older age classes of oak forest* community types. For purposes of mast production, stands with ages of at least 80 years were considered as “older age”. Stands having  $\geq 50\%$  upland hardwood and having an oak component were considered as “Oak forest community types”. The latest summary of older-age oak forest is shown in table 4.1.

**Table 4.1 - Acres of 80 plus year old oak forest, by Condition Class, DBNF**

Stand Condition Class Code	2006	2007	2008	2009
02 - Damaged. poles	0	0	465	491
03 - Damaged. saw timber	1508	1471	1593	1507
05 - Sparse poles	0	0	398	380
06 - Sparse saw timber	20,587	20,714	20,753	20,580
07 – Low-quality poles	0	0	12,878	14,245
08 – Low-quality saw timber	55,105	55,528	54,290	56,818
09 – Older pole	0	0	550	505
10 - Large saw timber	21,459	21,896	21,696	22,212
11 - Younger pole	0	0	11,295	12,121
12 – Small saw timber	71,991	75,281	78,804	81,449
16 - Group mosaic	97	97	91	98
17 - Multiple- story	539	974	1095	1269
18 - Two-aged	0	0	45	58
<b>Total</b>	<b>171,286</b>	<b>175,961</b>	<b>203,953</b>	<b>211,731</b>

Table 4.1 shows that over 211,000 acres of upland oak stands were potentially available for mast-production by the end of 2009. In addition, other forest types not shown, such as the mixed mesophytic hardwood or pine types, often have a significant component of oak, hickory, walnut, beech, and other nut producers.

Between 2006 and 2009 there was a four percent increase in upland oak stands (excluding poletimber) that were available for mast-production. Additionally, other forest types, such as mixed mesophytic hardwood or pine types, often have a significant component of oak, hickory, beech, and other nut producers. However, even with oak decline and beech bark disease mortality, the forest is generally becoming older, and many pine stands have converted to hardwood, resulting in stable and plentiful mast production.

**Snag and downed wood** is inferred by the *acres of older age class forests* and *mortality due to insects and disease*. For purposes of this estimation, “older age class forests” are defined here as stands 100 years old and older. The desired condition for older age forest is about 30-40% of total forest area based on the proportion of forest managed under Forest Plan 1K-Objective 1A. Table 4.2 shows the trend in age 100 and older forests within the DBNF.

**Table 4.2 - Trend in Age, one-hundred year and older forest stands, DBNF <sup>1</sup>**

Year	Forest stands 100 years + (acres)	Total forest (acres)	Percent of total
2006	104,000	650,000	15 %
2007	136,759	655,000	21 %
2008	130,442	660,624	20 %
2009	169,614	660,629	26 %

<sup>1</sup> Data from FSVeg-Spatial database as of March 2010.

About 100,000 acres of forest stands having various amounts of pine were affected by the southern pine beetle in an infestation that occurred from 1999 to 2001. An estimated 5000 or more acres of older oak forest have been affected by the two-lined chestnut borer.

Although much of the pine forest that was impacted by the southern pine beetle has not been inventoried and reclassified, Inventory data suggests that many of these stands retain a component of older hardwood in a multistoried (uneven-aged) condition. Pine snags are still available for cavity nesters. The initial density of pine snags has now decreased by about 80%, as many of these snags now have become downed wood and are in various stages of decay.

Hardwood snags are continuously being created and becoming more prevalent in those areas of the forest that are being affected by the two-lined chestnut borer. Most of these snags are still standing. Approximately 5,000 acres of older oaks have been affected by the two-lined chestnut borer leaving snags scattered across the landscape.

Hardwood snags are abundant in areas impacted by the 2003 ice storm at the north end of the Forest. Many are still being created because of top damage and droughty conditions. Uprooted, downed hardwoods also occur in scattered pockets throughout portions of the forest, due to random storm winds.

**Riparian Area Management and Trends:** The riparian areas of the Forest are within the 1E Riparian Corridor Prescription Area, classified as Unsuitable for Timber Production. One-hundred seventy three acres of silvicultural work was reported to have occurred in forest classified as unsuitable for timber production in FY 2009, of which, fifteen acres was a midstory thinning, done in the Riparian Prescription area. Some management activities are being planned in the riparian prescription area within the Upper Kentucky River management area which may occur in 2011.

Table 4.3 displays changes in 10-year age-classes of stands, over the past four years, within the Riparian Corridor Prescription Area. Table 4.4 displays forest community types in the same manner. Figures are based on data as of 8/2007 for FY06, 7/2008 for FY07, 12/2008 for FY08, 3/2010 for FY09.

Table 4.4 indicates that the Upland Oak community type continues to be the most common in the riparian area. Within this community, various species of oak and hickory make up at least fifty percent of the stand stocking. The second most common is the mixed-mesophytic/ floodplain community type where

“yellow-poplar/ white oak/ red oak” and “hemlock/ hardwood” are the most common forest types. Most of this occurs in intermittent and narrow drainages. As previously mentioned, the southern yellow pine types have not been completely updated and are therefore overestimated in the table. The table shows that many of the stands in the riparian corridor are still around 90 years of age.

Although an analysis of forest type by age was not done for the revision of the LRMP, we now have several years of trend information. Based on the data, there has been little change in the riparian area composition during the period. From field observation, minor change has occurred within the riparian prescription area in the last five years due to isolated storm damage and scattered pine mortality. In some riparian stands, white pine was killed by the southern pine beetle. However, it is highly probable that extensive damage will occur to eastern hemlock trees from the woolly adelgid infestation that was expanding into Kentucky in 2009.

**Table 4.3 - Stand Age class within the DBNF Riparian Corridor, by fiscal year**

Stand Age-Class	FY06	FY07	FY08	FY09
<b>0 - 9</b>	2116	2114	1593	1685
<b>10 - 19</b>	8475	8388	7962	4873
<b>20 - 29</b>	6652	6607	6960	7947
<b>30 - 39</b>	6798	6607	7049	6950
<b>40 - 49</b>	5640	5212	6102	6465
<b>50 - 59</b>	5073	5046	5703	4953
<b>60 - 69</b>	8763	8763	7996	7079
<b>70 - 79</b>	17430	17415	17095	12942
<b>80 - 89</b>	21593	21583	23082	21717
<b>90 - 99</b>	20336	20337	20658	21676
<b>100-109</b>	14356	14125	15410	17642
<b>110-119</b>	7896	7889	9033	11492
<b>120-129</b>	5458	5457	3310	6019
<b>130-139</b>	n/a	n/a	1191	1850
<b>140-149</b>	n/a	n/a	544	902
<b>150+</b>	n/a	n/a	1101	1226
<b>No data</b>	n/a	n/a	4061	745

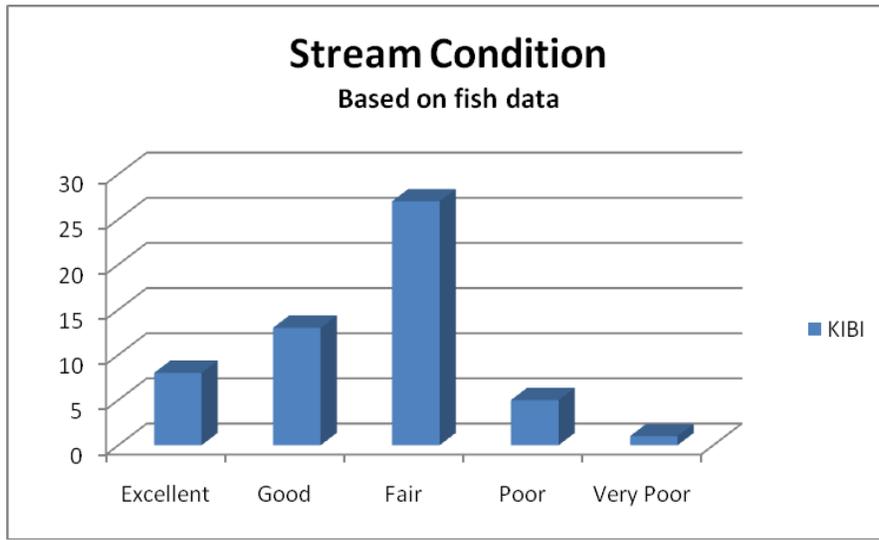
**Table 4.4 - Community Type within the DBNF Riparian Corridor, by fiscal year**

Community Type	FY06	FY07	FY08	FY09
Upland Oak	52,882	53,175	55,302	55,081
Mesophytic / Flood	37,819	37,081	34,718	39,147
Oak/Pine	11,420	11,145	16,938	12,624
Pine/ Pine-Oak	14,124	14,124	13,740	13,663
WhitePine / Hemlock	14,319	14,016	15,152	15,144
Non-forest or no data	n/a	n/a	n/a	503
Total riparian area	n/a	n/a	n/a	136,163

**#5 – What is the status and trend in aquatic habitat conditions in relationship to aquatic communities?**

Over the last five years eighty one randomly selected stream locations have been monitored for fish, macroinvertebrates (aquatic insects), and physical habitat characteristics. These parameters were monitored in an effort to establish a baseline from which trends can be determined over the next five years. Indices (KY DOW, 2002; KY DOW, 2003; Kappesser, 2002) were run using the data that was gathered and streams were divided into condition classes. The fish (Figure 5.1) and macroinvertebrate (Figure 5.2) indices show that a majority of the streams and watersheds are in a fair condition. The physical habitat index (Figure 5.3) rank more streams in the poor category. However, all the indices showed a significant number of streams and watersheds in the better condition classes. These results are slightly lower than the watershed condition classes that were estimated in the FEIS (Forest Plan FEIS p. 3-20). This does not necessarily mean a decline in condition but rather, better on the ground data. Trends will continue to be assessed over the next five years.

**Figure 5.1 – Stream condition (KIBI index), DBNF**



**Figure 5.2 – Stream condition (MBI index), DBNF**

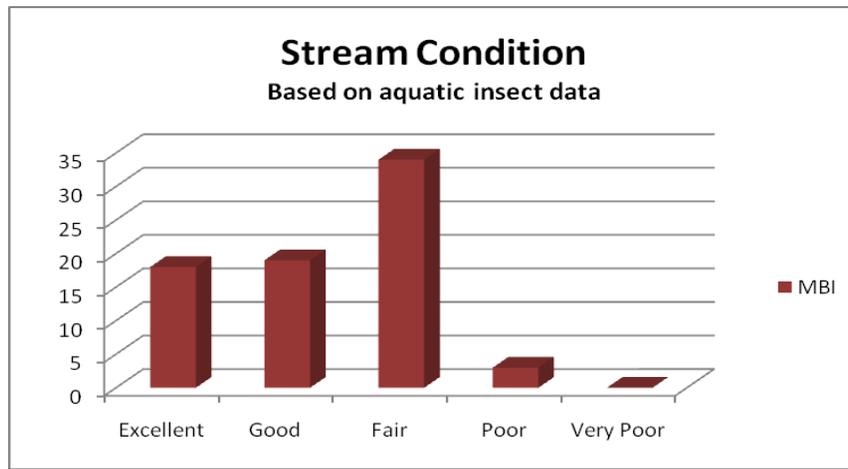
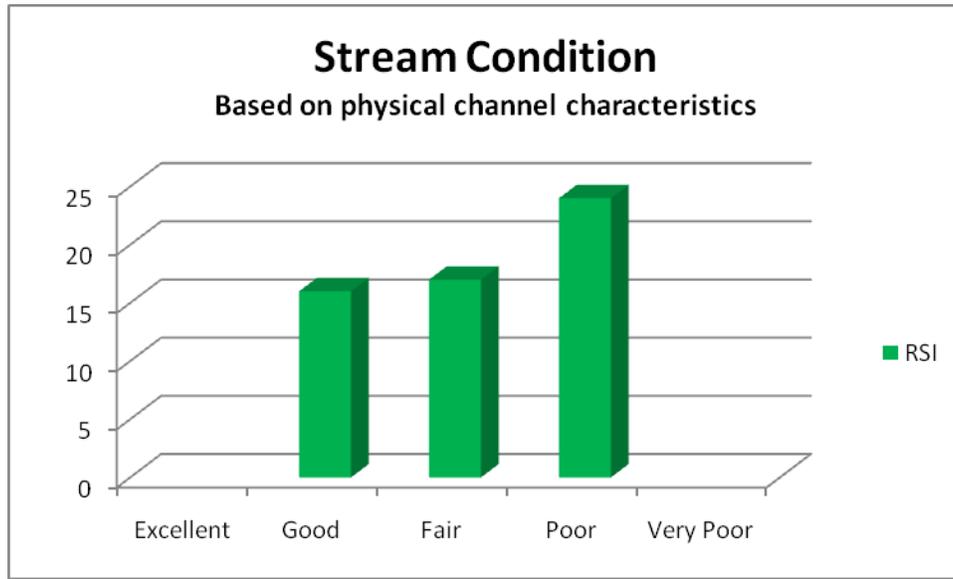


Figure 5.3 – Stream condition (RSI index), DBNF



#### #6 – What are status and trends of forest health threats on the forest?

**Hemlock Woolly Adelgid (HWA)** surveys continued in Kentucky in 2009, and were reported to the UK Department of Entomology. Infestations occur in ten counties in southeastern Kentucky. The counties include Powell, Pike, Letcher, Leslie, Clay, Laurel, Harlan, Bell, Whitley and McCreary. Infestations occur on private, state and federal lands. There is a noticeable spread of HWA, although the rate of spread has not been examined. Four state agencies including the Division of Forestry (DOF), State Nature Preserves Commission, Department of Fish and Wildlife Resources and the Division of Water have partnered and are treating on selected state lands. [http://www.fs.fed.us/foresthealth/fhm/fhh/fhh\\_09/ky\\_fhh\\_09.pdf](http://www.fs.fed.us/foresthealth/fhm/fhh/fhh_09/ky_fhh_09.pdf)

On the DBNF, the hemlock woolly adelgid was found feeding on hemlock trees on the Redbird District in Clay County, on the Cumberland District in Powel County, and on the London District in Laurel County, in 2008. No additional locations were found in 2009 on the DBNF.

**Dogwood Anthracnose** is a fungus that has infected and killed many flowering dogwood trees throughout the eastern forests over the last two decades. Diseased dogwoods can be found on the DBNF. No practical treatment is known to reduce this loss in large forested areas.

**The Southern Pine Beetle** was having negligible effect in Kentucky in 2009, and was occurring at low levels since most host southern pine trees were killed early in the decade.

**Gypsy Moth** is an insect that has killed many oaks in the northeastern US. Trees are weakened by continual defoliation in successive years. Seventy-five traps were placed in high-use recreation areas in 2009. No Gypsy Moth females or egg masses were trapped or found on the Forest or in KY in 2009.

**Oak Decline** continues to occur in the Appalachians and on the DBNF. This disease is a result of a complex of stress factors such as drought or physical damage to mostly red oaks, but often to white oaks as well. The two major pests associated with oak decline are *Armillaria mellea* (Vahl: Fr.), a root disease commonly called armillaria root rot, and *Agrilus bilineatus* (Weber), the two-lined chestnut borer. No estimate has been made as to the extent of this disease on the DBNF, although salvage timber sales occur where significant areas of mortality are accessible.

**Emerald ash borer (EAB)** was discovered on May 18 in Shelby and Jessamine Counties in central Kentucky. Since that date, a total of 11 counties have been confirmed from specimens taken from infested trees and traps. Confirmed counties include: Campbell, Fayette, Franklin, Greenup, Henry, Jefferson, Jessamine, Kenton, Oldham, Owen and Shelby. All states surrounding Kentucky, except Tennessee, have some level of EAB infestation. The north central region of Kentucky has 20 counties under quarantine that restricts the movement of ash material. Greenup County is not within the 20-county regulated area but lies in the northeastern corner of the state. This county, along with Henry County (within the regulated area), are the most recently confirmed counties. These two counties were confirmed on October 23rd after adult beetles were found on traps.

[http://www.fs.fed.us/foresthealth/fhm/fhh/fhh\\_09/ky\\_fhh\\_09.pdf](http://www.fs.fed.us/foresthealth/fhm/fhh/fhh_09/ky_fhh_09.pdf)

Introduction into Kentucky was from apparent firewood movement as well as natural spread from nearby states (Ohio and Indiana). Kentucky state parks have banned all non-certified firewood regardless of source location. No EAB has been found on the DBNF, although the “Don’t Move Firewood” posters have been placed in campgrounds and public areas. In 2009, approximately 5500 EAB traps were placed in northern Kentucky by the University of Kentucky, Department of Entomology. Emerald Ash Borer traps will be placed in DBNF campgrounds and recreation areas in 2010.

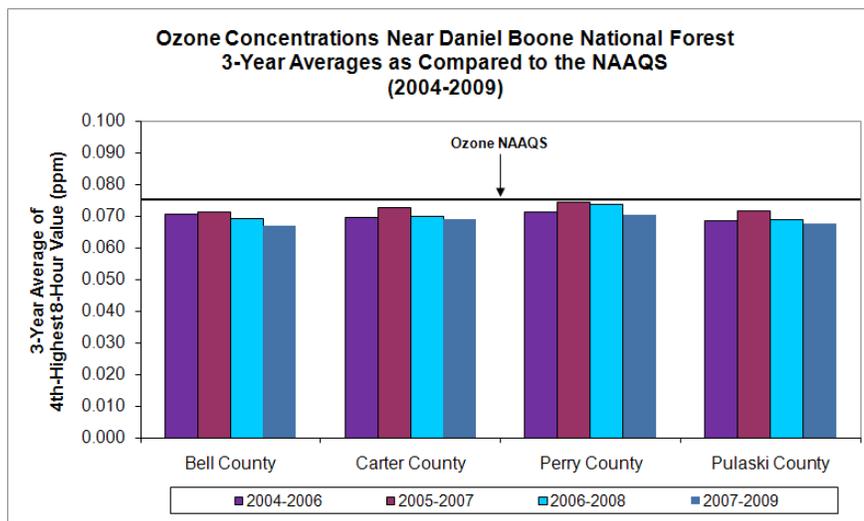
Mortality is a natural process that occurs constantly within every forest. As the average age of stands on the DBNF increase, increased mortality is expected until average mortality rate levels off with average growth rate. Other than this slight annual increase in mortality, no significant change has occurred as a result of native insects or disease since the SPB outbreak in 2001. However, significant change will likely occur in the next decade due to non-native pathogens mentioned above.

**Non-Native Plants:** Four hundred forty-five (445) acres were treated for non-native invasive plant species (FACTS activity code 2510) in FY2009. Locations of such plants are recorded in the TESP-Invasive Plants database, which is monitored by the Forest Botanist.

**Trend in ozone concentrations over the past five years**

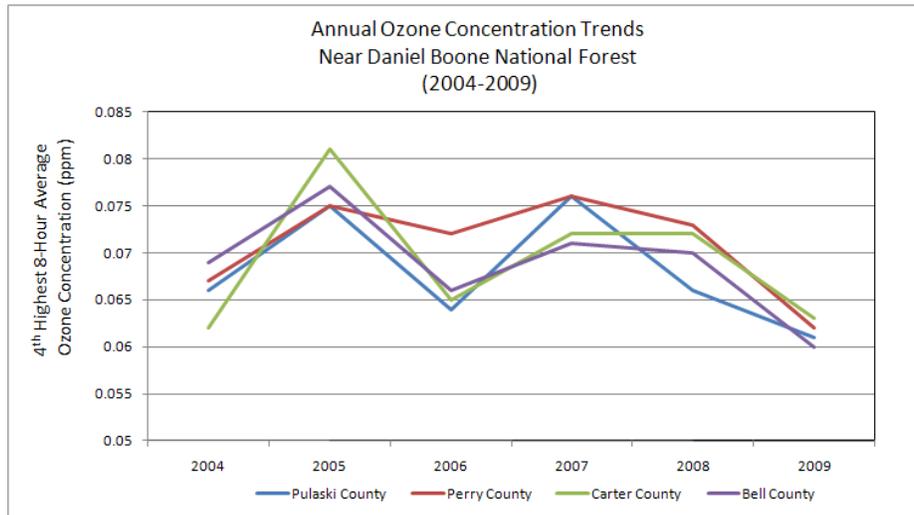
The Kentucky Division of Air Quality measures the concentrations of ozone throughout the state, including at locations near the Daniel Boone National Forest. The resulting concentrations are compared to the National Ambient Air Quality Standard (NAAQS) that is set to protect human health and vegetation. The current NAAQS is 0.075 ppm, calculated as the three-year average of the 4<sup>th</sup> highest 8-hour average ozone concentration. No monitors near the Daniel Boone National Forest have exceeded this standard since 2004 (Figure 6.1).

**Figure 6.1**



Ozone concentrations at each of these sites have fluctuated up and down over the years, as shown in Figure 6.2. Concentrations increased from 2004 to 2005, then decreased in 2006, increased in 2007, and showed a decrease for the years 2008 and 2009. Because ozone formation is dependent on warm temperatures, these increases and decreases may be due to fluctuations in weather during that same time period.

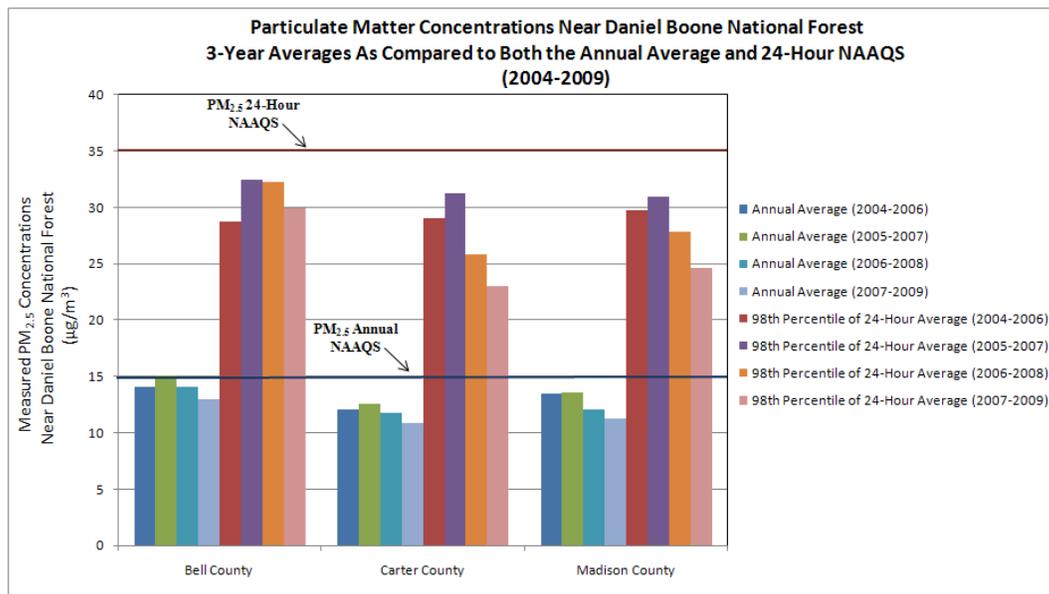
**Figure 6.2**



**Trend in particulate pollution near the Daniel Boone National Forest over the past five years**

As with ozone, the KY DAQ measures fine particulate matter (PM<sub>2.5</sub>) concentrations throughout the state, including near the Daniel Boone National Forest, and these values are compared to the 24-hour and annual PM<sub>2.5</sub> NAAQS. Figure 6.3 shows the measured concentrations near the Forest as compared to the NAAQS. Although the monitor in Bell County exceeded the annual standard for the years 2005-2007, it has since come back into compliance with the standard. All other monitors were fully in compliance with the NAAQS from 2004 through 2009.

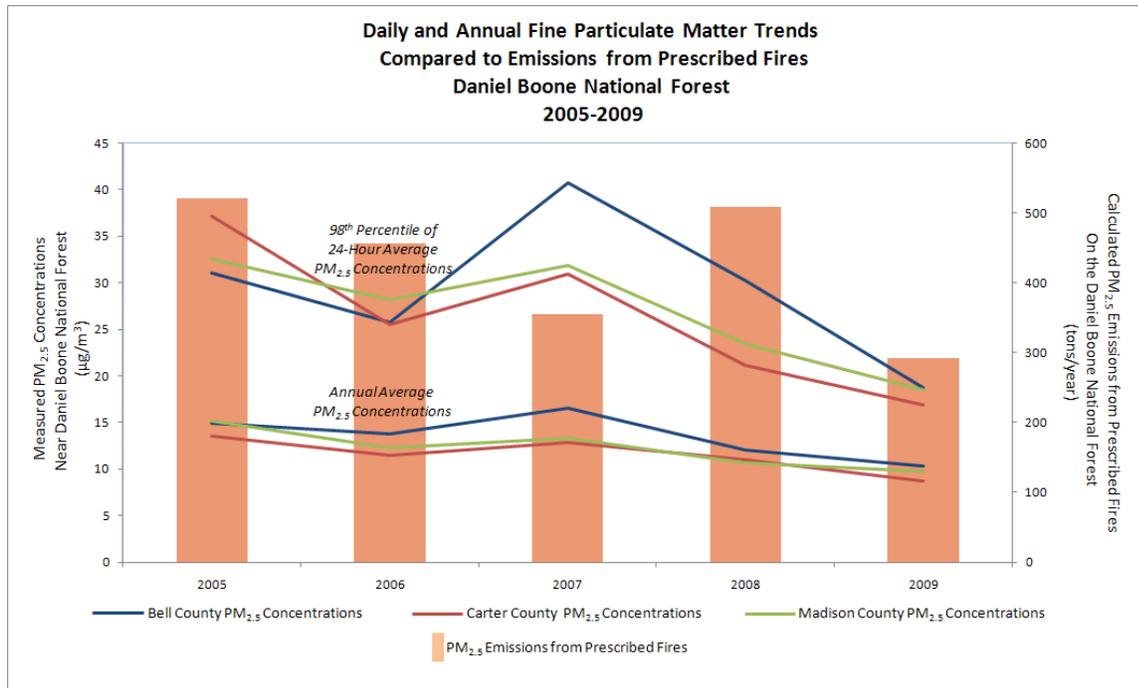
**Figure 6.3**



**Controlled fire’s contribution to concentrations of particulate matter in the air**

The use of prescribed fire emits PM<sub>2.5</sub>, along with other pollutants. However, based on the annual emissions that were calculated, there does not appear to be a correlation between prescribed fire emissions and measured fine particulate matter concentrations near the Daniel Boone National Forest. Note also that similarly to ozone, concentrations were highest during 2005 and 2007, and then declined during 2008 and 2009 (Figure 6.4).

**Figure 6.4**



**Trend in acidic deposition over the past five years**

Acidic deposition is monitored in eastern KY and northeastern Tennessee at three National Atmospheric Deposition Program (NADP) sites, two Clean Air Status and Trends Network (CASTNET) sites, and one Kentucky Division for Air Quality site. None of the locations are on the Daniel Boone National Forest, but the data collected represent a range of sites from north to south and is probably representative of conditions occurring on the Forest. Although the data available from the Kentucky DAQ site does not go back far enough to show a statistically significant improvement in acidic deposition, data from the CASTNET and NADP sites indicate that deposition rates of both sulfate and nitrate have been decreasing, and pH levels have shown a modest increase. Acidic deposition on the Daniel Boone National Forest is improving.

**Air quality collaboration and information transfer**

In 2006 and 2008 Forest Air Specialists and FS Research held multiple day workshops, funded by a Joint Fire Science Project, on smoke management in Ohio and Kentucky. The main purposes of the workshops were to provide a forum for state/federal fire managers and state air regulators to discuss smoke management and air quality regulations, as well as provide training in the most current smoke management tools being developed by the Fire and Environmental Research Team (Pacific Northwest Research Station) and the Air Resource Management Program. The workshops were well attended with representatives from all major users of prescribed fire in the two states. The Forest has incorporated new tools for fuel characterization and consumption, emissions prediction and smoke dispersion into the current fire management program.

**#15 – Are watersheds maintained, and where necessary restored, to provide resilient and stable conditions to support the quality and quantity of water necessary to protect ecological functions and support intended beneficial uses?**

Even with lower than anticipated budgets (Figure 17.1) the Forest has been able to complete 630 acres of soil and water improvement projects (Table 17.2). Many of these acres are a result of partnerships with Kentucky Division of Water, Kentucky Department of Fish and Wildlife, and Kentucky Division of Abandoned Mines. As a result, several watersheds have been maintained and restored. Through the American Recovery and Reinvestment Act (ARRA), work has started on replacing approximately 200 culverts across the Forest. This will improve both watershed conditions and aquatic organism passage.

**#16 – What are the conditions and trends of riparian area, wetland and floodplain functions and values?**

Historical impacts such as channel straightening and wetland draining have impacted riparian area, wetland and floodplain functions. In many streams conditions continue to deteriorate. However, the Riparian Corridor Prescription Area (Forest Plan p. 3-9) is starting to reverse this trend as can be seen by active partnering with the Kentucky Department of Fish and Wildlife through its *In-lieu of Fee* program to complete stream restoration projects. Currently, there are four on-going projects and more are anticipated over the next five years.

### 3.1.B. SPECIES DIVERSITY

**#7 – What are the status and trends of federally listed species and species with viability concerns on the forest?**

Range-wide recovery efforts have resulted in delisting of the Eggert's sunflower, and the bald eagle.

Breeding bird surveys were conducted in 2004, 2005, 2006, 2008, and 2009. The surveys are part of a region-wide program of monitoring avian population trends and annual abundance of birds in the Southern Region which includes 10 physiographic areas and for 14 national forests. Periodically, the data is analyzed and published. The Southern Region has not announced when, for which datasets will be used in the next round of analysis.

In collaboration with the FS, FWS, and KSNPC, biannual population census for hibernating bats are conducted at significant bats caves. Data is retained by the KDFWR.

Virginia big-eared bat summer emergence surveys are conducted annually. Within the DBNF proclamation boundary, five known summer colony sites are all located within about two miles of one another and together they account for the summer whereabouts of about 30 percent of the Kentucky population in the winter hibernacula. Bat populations at individual summer roosts fluctuate greatly from year to year, and even from week to week within a year, apparently as a result of the frequent movement of adult bats between roost sites. Similar fluctuations have been observed in winter population surveys as well. The species is especially vulnerable due to its relatively small numbers and limited distribution. This year, half of the entire Virginia big-eared bat species (the West Virginia population) is hibernating in areas now infected with WNS. In 2009, the FWS concluded that Virginia big-eared bats likely faced imminent danger of extinction from white-nose syndrome.

An acoustic transect project was designed to assess the impacts of WNS to multiple species on a broad geographic scale. It employs a "roaming" or mobile AnaBat unit which records the relative abundance of echolocating bats flying through the sampling area. Transects are approximately 30 miles long and pass through common habitat types of the area. In 2009, the first year of the study, the DBNF established 11 transects. Data was collected for approximately 3,300 acres.

The Forest Plan set a goal to recover white-haired goldenrod (Forest Plan, 1.C-Goal 2). Approximately 90% of the known populations are on National Forest System lands, within the proclamation boundary of

one forest. This allows for a good chance of success with recovery as sufficient populations and habitat are probably on federal land. Willing private land owners may also contribute to recovery efforts.

Forest personnel have worked with USFWS and Kentucky State Nature Preserve Commission (KSNPC) to set up monitoring and a review process to determine what is needed for delisting and what progress is being made. KSNPC with Section 6 funding has taken much of the monitoring lead to determine condition of all sites. The Forest has taken the lead to watch sites for recreation damage and invasive species, responding appropriately including fencing, signing, public education, and weeding to correct or prevent threats. Public compliance with fences has been excellent and this has helped improve the outlook for the species. Continued monitoring of WHG sites by KSNPC and USFS personnel has allowed for the creation of a multi-year data set which can be used as baseline data. This data also allows for the setting of priorities and goals for specific actions to enhance sites.

As of 2009, current data suggest that recovery of white-haired goldenrod is possible over the next 10 years or less but some sites need to be better insulated from recreational pressure to allow more area for recovery of the species. Simple chicken wire fences and signs have proved successful in keeping people out of WHG habitat and will probably be employed at a few more sites. Seedlings of WHG have established in many fenced areas and in a few cases, established crowns appear to have recovered from trampling. The Forest's management of cliff zones including the regulation of camping in areas WHG may inhabit have improved the outlook for the species.

A single population of Cumberland sandwort was found on the Forest in 1986. It has never been relocated. In 2005, the Center for Research of Endangered Wildlife (CREW) housed at the Cincinnati Zoological and Botanical Garden indicated they needed a place to try outplanting of tissue cultured Cumberland sandworts as part of a test to see if tissue culture was a viable means of increasing plants for conservation of the species. Working with USFWS, the Forest located a place to try planting the plants. Plants from several genetic lines were intentionally mixed up in various areas of microhabitat. Over 4 years, several of the microhabitat areas proved not suitable and the plants have died or are faring poorly. In other areas, the plants are thriving and have reproduced, nearly replacing all plants that died.

A small population of *Arenaria cumberlandensis* (Cumberland sandwort) planted on the forest in 2005 was monitored in 2006. A few plants had died over winter, but several were in flower and were growing vigorously. A few additional plants died over winter 2006-07, but in July, flowering plants and seedlings from planted plants were found. More plants died over winter in 2007-2008, but additional seedlings were found in summer 2008. In summer 2009, a large number of new plants were found, so many that determining which were new and which were original plants was not possible. Plants have been flowering and seeding since 2006. All plants planted in 2005 had come from tissue culture stock grown at CREW, Cincinnati Zoological and Botanical Garden.

It appears that tissue cultured Cumberland sandwort stock could be used to supplement existing populations or establish new ones. Because we saw some difference in the response of genetic lines (some consistently weak and others consistently strong), there is some concern that genetic diversity might be hijacked. Otherwise the process seems to work.

The largest population of Virginia spiraea on the Forest was surveyed in 2007 with KSNPC. Numerous locations, all previously known were found. Plants were generally healthy and some were in flower. Habitat appeared stable and generally in good condition. This population appeared stable. A second population was checked in 2006. One site was not found, but another was. Habitat was not in the best condition. This site appears less stable.

Virginia spiraea appears stable in some areas, but not stable in others. Its habitat, riverine cobble bars is by nature unstable and this probably affects the plant's ability to maintain itself in various locations. Populations on the forest appear to be stable, possibly leaning toward decreasing.

Three white fringeless orchid sites were checked for condition of plants and sites. All sites were moist and plants were present, many in flower. A report in August 2006 from the public indicated the London

powerline site had produced 100 flowering stems-the most in several years. In August 2007, 102 flowering stems and another 89 in bud were counted. In August 2008, about 110 flowering stems were seen. In August 2009, about 100 stems were found, but others had been eaten off by deer.

White fringeless orchid continues to maintain itself on the Forest, but several sites are under threat from nonnative invasive plants (*Microstegium*) or from habitat changes related to hydrology. Attempts to correct hydrology have started, but are yet unproven. Improvement has been seen, but much is still needed. Weeding of sites does help, but needs to be expanded.

A fourth Forest population of rattlesnake master, a conservation species, was discovered in 2008. None of the known populations is large, but this is the smallest with 5 plants. The species is a prairie/woodland/savanna species that should fare better once woodland and savanna habitat on the Forest is in the maintenance phase.

It is expected that species such as rattlesnake master, which are tied to a more open habitat and fire will become more plentiful as woodland and savanna habitat are restored.

#### #8 – What are the trends for demand species and their use?

The Daniel Boone National Forest provides habitat for several sport fisheries. The U.S. Fish and Wildlife Service (USFWS) and the Kentucky Department of Fish and Wildlife Resources (KDFWR) recognize this and are willing to invest the resources required to supplement fish populations. Table 8.1 reflects this stocking supplement for FY05 through FY09. The changes in numbers per individual species result from various management considerations. Current data supports the conclusion that Daniel Boone National Forest provides significant habitat which supports sport fisheries.

**Table 8.1 – Fish stocking, DBNF**

Common Name	Waterbody	FY05	FY06	FY07	FY08	FY09	Total
Brown Trout	East Fork Indian Creek	700	400	400	400	400	2300
	Bark Camp	500	500	500	500	0	2000
	Chimney Top Creek	450	500		500	450	1900
	Slab Camp	200	0				200
	Laurel River Lake	250	250				500
	Laurel River Lake			15,775			15,775
	Laurel Creek	500	250				750
Rainbow Trout	Big Double	2000	2800	2000	2000	2000	10,800
	Cave Run Lake	8500	8500				17,000
	Cave Run Lake	11,200	8500				19,700
	Tailwaters						
	Station Camp Creek	2000	3000	2000	2000	2000	11,000
	Sturgeon Creek	1000	1000	1000	1000	1000	5000
	Craney	700	1400	1400	1400	1400	2300
	East Fork Indian Creek	900	3800	5600	4300	4700	19,300
	Greasy Creek	1500	1500	500			3500
	Little Double / fishing derby	800	800	800	800	800	4000
	Middle Fork Red River	5000	5000	5000	5000	5000	25,000
	Redbird River	800	800				1600
	Swift Camp	1000	1000	1000	1000	1000	5000
	Tripplett	4700	4700	4000	4000	4000	10,600
	War Fork	4500	4000	6400	5600	3900	25,400
	War Fork / fishing derby	800	800	800	800	800	4000
	Bark Camp	3600	3600	3600	3600	3600	18,000
Cane Creek	3900	4900	4900	4900	4900	23,500	
Rock Creek	17,600	17,600	17,600	17,600	18,800	89,200	

FIVE-YEAR REVIEW OF IMPLEMENTING THE FOREST PLAN  
At the end of Fiscal Year 2009  
DANIEL BOONE NATIONAL FOREST  
Kentucky

Common Name	Waterbody	FY05	FY06	FY07	FY08	FY09	Total
	Mill Creek Lake	6500	4500	4000	5500	5500	26,000
	Laurel Creek	3000	3000	2000	2000		10,000
	Laurel River Lake	223,932	0	102,000	112,000	101,000	538,932
	Laurel River Lake	250	250				500
	Tailwaters						
	Buckhorn Lake		3800		3550		7350
	Tailwaters						
	Buckhorn Lake	6000				3800	9800
Bass, Hybrid striped	Lake Cumberland			32,395	40,164	56,680	129,239
Bass, Largemouth	Buckhorn Lake	9295	12,478		12,371	18,721	52,865
	Laurel River Lake	56,000	55,989		28,061		140,050
	Licking River				200		200
	Cave Run Lake	31,797				3880	35,677
	Kentucky River		400,687			250,310	650,997
	Kentucky River, Middle Fork	52,500					52,500
Bass, White	Cumberland River, Big South Fork			2,500,000	27,390	29,001	2,556,391
Catfish, Blue	Mill Creek Lake		545			700	1245
	Laurel River Lake		224				224
Catfish, Channel	Mill Creek Lake	3750				3187	6937
	Kentucky River, Middle Fork	2400					2400
	Licking River		1025				1025
	Laurel Creek	1050					1050
Crappie	Laurel River Lake	74,676	282,89	28,289			131,254
Lake Sturgeon	Cumberland River				973	1973	2946
	Cumberland River, Big South Fork					2004	2004
Muskellunge	Cave Run Lake	2800	2798	2798	2700	2808	13,904
	Kentucky River	85	59,825	56,176	105,001	125,824	346,911
	Kentucky River, Middle Fork	170					170
	Kentucky River, North Fork	140					140
	Kentucky River, South Fork	140	51	51	150	47	439
	Licking River		3100	23,440	30,720	100	57,360
	Red River	254	136	135	50	74	649
	Station Camp Creek	15	50	50	50	25	190
	Sturgeon Creek	15	50	50	50	25	190
	Triplett Creek	75	22			12	98
	Triplett Creek, North Fork				8	11	19
	Buckhorn Lake	415	450		425	440	1730
Sauger	Kentucky River			15,913	15,913	49,513	81,339
Walleye	Lake Cumberland			1,045,950	51,360	23,754	1,121,064
	Laurel River Lake			300,615			300,615
Walleye, Native	Rockcastle River			11,100			11,100

**Non-timber Forest Products (and firewood)**

Meaningful trends cannot be derived from five years of data, but there are increases (and decreases) of note. Firewood permit (not free use) issuance increased 79% from FY2005 to FY2006, 128% from FY2006 to FY2007 and 32% from FY 2007 to FY2008 and 115% from FY2008 to FY2009. Higher energy costs may be contributing to these numbers. Mixed roots increased four-fold from FY 2006 to FY 2008, but decreased by 58% from FY2007 to FY2008 and remained unchanged in FY2009. Ginseng permit issuance increased 53% from FY2005 to FY2006, 70% from FY2006 to FY2007, and 121% from FY2007 to FY2008, but decreased 55% from FY 2008 to FY 2009. Ginseng prices were increasing through 2008 and this may be driving the increase in permit sales. In particular, ginseng prices were reported between \$600-\$900/lb for FY2008, but fell in FY 2009. Goldenseal permit issuances increased 20% from FY2005 to FY2006, 100% from FY2006 to FY2007, and 142% from FY2007 to FY2008, but decreased by 45% from FY2008 to FY 2009. Black cohosh permit issuance is also up from FY2006, but about equal with issuance in FY2005. Permits increased by 200% between FY2007 and FY2008 and decreased by 14% between FY2008 and FY2009. Bloodroot permit issuance in FY2007 was up 600% from both FY2005 and FY2006, but down by 83% in FY2008 and unchanged in FY2009. Variation in market demand may be driving these changes. The increase in free use firewood permits from FY2008 and FY2009 is related to an ice storm event in January 2009.

**Table 8.2 – Numbers of forest product permits issued (non-timber), DBNF**

<b>Product</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>
Free-use- Research Collections	5	12	6	14	8
Free use- herbaceous Plants	1	0	0	0	0
Free use- sawdust	0	1	0	1	2
Free use- firewood/hazard tree			6	11	64
Mixed Roots	15	3	12	5	5
Bloodroot	2	2	12	2	2
Ginseng	15	23	39	86	47
Black cohosh	4	0	7	21	18
Goldenseal	5	6	12	29	8
Moss	4	1	1	5	10
Grapevine	6	5	5	6	5
Posts	5	0	0	0	0
Firewood	28	50	114	150	323

**3.2. SOCIAL AND ECONOMIC**

**#9 – Are high quality, nature-based recreation experiences being provided and what are the trends?**

Total number of recreation sites increased by 4% (totaling 147) with a 9% increase in the number of recreation sites maintained to standard (totaling 102). The forest continues to provide nature based recreation opportunities such as campgrounds, picnic areas, boat ramps, interpretive sites, overlooks, swimming areas, and trailheads. Concessionaire operations continue to partially maintain and operate the forest’s major campgrounds on the Cumberland and London Ranger Districts during the primary use season. Recreation fees are collected and utilized at eligible recreation sites through the program authorized by the Federal Lands Recreation Enhancement Act (REA).

There was a 26% increase in the “Percent of Capacity” that was accessible for a total of 69.4%. Opportunities to improve accessibility are explored and implemented when recreation facilities undergo major upgrades or reconstruction. New facilities are designed according to Forest Service accessibility standards.

The number of recreation buildings decreased by two to a total of 132 and accessibility of recreation buildings increased from 88% to 90.2%.

The 2007 National Visitor Use Monitoring Program (NVUM) report on visitor satisfaction shows that 80% of visitors surveyed report being highly satisfied, 16% somewhat satisfied, 1% somewhat dissatisfied, 1% dissatisfied, and 2% neither. Table 9.1 summarizes satisfaction with a variety of categories in developed and undeveloped areas, and in wildernesses as reported in 2007:

**Table 9.1 – National Visitor Use Monitoring results (2007), DBNF**

Items Rated	Satisfied Survey Respondents (%) <sup>a</sup>		
	Developed Sites <sup>b</sup>	Undeveloped Areas (GFAs)	Wilderness
Developed Facilities (includes restroom cleanliness and facility condition)	83.4	88.6	90.3
Access (includes parking availability, parking lot condition, road condition and trail condition)	89.1	90.9	95.7
Services (includes availability of information, signage, employee helpfulness)	78.8	85.1	80.6
Perception of Safety	90.5	96.6	96.4

<sup>a</sup> This is a composite rating. It is the proportion of satisfaction ratings scored by visitors as satisfied or very satisfied. It is computed as the percentage of all ratings for the elements within the grouping that are at or above the target level, and indicates the percent of all visits where the person was satisfied with agency performance.

<sup>b</sup> This category includes both Day Use and Overnight Use Developed Sites.

Because the NVUM survey is conducted at five year intervals, comparable data is not available for this five year monitoring report. However, the table 9.1 provides a baseline of satisfaction levels which were established during the life of the current forest plan. This baseline will be available to monitor satisfaction levels over a five year horizon. The next NVUM study is scheduled for 2012. See also chapter 4, Goal 4 for additional information.

#### **#10 – What are the status and trends of recreation use impacts on the environment?**

The Red River Gorge Geological Area (RRGGA) on the Cumberland Ranger district has been one of the forest's primary focuses for addressing recreation use impacts over the last five years. The RRGGA is an area rich in cultural resources, home to several species receiving special protection under the Endangered Species Act (ESA), and a popular recreation destination because of the numerous cliffs and trails. Impacts from recreational use were analyzed using the *Limits of Acceptable Change* (LAC) process (Forest Plan 3.E-Objective 3.A., p. 3-68). Inventory for the LAC process was completed by the end of calendar year 2006 and the nine-step process was completed in December of 2008. The inventory identified 900 dispersed campsites outside of rock shelters, and 400 dispersed campsites inside of rock shelters; 194 miles of user-developed trails; and 770 climbing or bouldering routes. The inventory also included 280 destination points and 650 rock shelters that were used for some type of dispersed recreation activity (including the 400 camping as mentioned above). Since completion of the LAC process, the forest has moved forward with rehabilitating or eliminating campsites, rehabilitating impacts to rock shelters, and eliminating some user-developed trails. This effort continues as the LAC process is implemented.

The forest continues to protect sensitive biological or cultural areas in the RRGGA and immediately surrounding area through the use of visitor education, low-maintenance fencing, and law enforcement. The forest also utilizes the Gladie Cultural and Environmental Learning Center (Gladie Center) as a primary source of visitor education efforts. The Gladie Center expands operating hours seasonally to accommodate higher than expected visitation rates. Though visitation statistics for the entire RRGGA are

not readily available, indicators such as number of overnight passes sold and reports from back country rangers indicate recreation use in the RRGGA has remained relatively stable over the past five years.

On the Stearns Ranger District, recreational use of riparian areas have remained about the same over the 2004 – 2009 period, though impacts on key watersheds have been reduced. Projects along the Rock Creek (a state wild river and proposed federal wild and scenic river) and Jellico Creek corridors, both of which contain species listed under the ESA and species listed by the Forest Service as “sensitive”, have reduced erosion due to dispersed camping and illegal OHV use. Four campsites along Jellico Creek were designated as dispersed campsites and hardened. Five overnight sites and one day use site were designated along Rock Creek. Other non-designated, user-created sites and roads were closed in order to reduce concentration and reduce impacts to the streams. On the Rock Creek and Jellico Creek corridors, camping is allowed only in designated sites.

Forest wide, illegal use of ATV's and OHV's continues to occur. Some areas, such as Cromer Ridge on the London Ranger District, have shown marked improvement through law enforcement, land acquisition, and watershed restoration efforts of the Forest Service and state efforts. Prior to these efforts, heavy sediment loads resulting from ATV and OHV use of the Cromer Ridge area were flowing into the Rockcastle River. Efforts similar to those implemented in the Cromer Ridge are needed in other watersheds on the forest.

#### **#11 – What is the status and trend of wilderness character?**

Data on visitor use of wildernesses compiled in early 2010 categorize Beaver Creek Wilderness as a low use area (<10,000 visitors) and Clifty Wilderness as high use (>30,000 visitors). Compared with data from 2003 the trend is that Beaver Creek Wilderness visitation is remaining stable while Clifty Wilderness use has increased.

The RRGGA LAC effort included the Clifty Wilderness. Through the LAC effort, the lands within the Clifty Wilderness were inventoried for recreation use related impacts such as campsites, user-developed trails, climbing or bouldering routes, and destination points. The LAC planning process identified zones within the Clifty Wilderness and identified prescribed levels of use or impact applicable to each zone. Prescribed visitor use levels within these zones are intended to protect Clifty Wilderness values from becoming impaired.

In the Clifty Wilderness, efforts to improve wilderness character included efforts such as demolition and removal of a user-developed concrete trail, removing numerous trash dumps, closing off access to illegal motorized use, closing and demolishing a non-system road, and eliminating and rehabilitating numerous campsites and user developed trails. Backcountry rangers monitor conditions in the Clifty Wilderness and make contact with visitors for education purposes.

Known biological threats which may affect the wilderness character of both the Clifty and Beaver Creek Wildernesses are non-native invasive plants that could replace native vegetation and Hemlock Woolly Adelgid that has the potential to kill hemlock trees.

In 2005 the Forest Service pledged to bring wildernesses to a minimum level of stewardship by 2014 (50<sup>th</sup> anniversary of the Wilderness Act). The goal of the Chief (Forest Service) is that within 10 years, every Forest Service unit of the National Wilderness Preservation System will meet at least 6 of 10 stewardship elements. Currently, only 18% of the Forest Service's 406 wilderness units meet minimum standard. The ten stewardship elements are:

1. Wilderness is covered by a fire plan that allows for the full range of management responses
2. Wilderness is successfully treated for noxious/invasive plants.
3. Air quality monitoring is conducted and baseline is established.
4. Wilderness education plans are implemented.
5. Wilderness has adequate standards, in which monitored conditions are within forest plan standards, and opportunities for solitude or primitive and unconfined recreation are stable or increasing.
6. Wilderness has completed recreation site inventory.

7. Outfitter and guide permit operating plans are in place that direct outfitters to model appropriate wilderness practices and incorporate appreciation for wilderness values in their interaction with clients.
8. Wilderness has a full-range of adequate standards which prevent degradation of the wilderness resource.
9. Wilderness managers have their priority information needs addressed through data collection and corporate applications.
10. Wilderness has a baseline workforce (from workforce assessment) in place for each wilderness.

Two of these wilderness units are on the Daniel Boone National Forest (Clifty and Beaver Creek). From 2005 to 2009, the *Managed to Minimum Stewardship Level* for both the Clifty and Beaver Creek Wildernesses has generally gone up on. Table 11.1 shows the reported scores for each wilderness over that five year period.

**Table 11.1 – Clifty and Beaver Creek Wildernesses, Managed to Minimum Stewardship Level scores (2005-2009), DBNF**

	2005	2006	2007	2008	2009
Beaver Creek	11	15	21	47	45
Clifty	14	19	31	41	43

**#12 – What are the status and trend of Wild and Scenic River conditions?**

The Red River remains the forest’s only Federally-designated river to be included into the National Wild and Scenic River (W&SR) system. Over the last five year period, the Forest has taken a number of steps to protect or improve the Outstandingly Remarkable Values (ORV) identified for the Red River. These ORVs include: water quality; scenic, geologic, and recreational values; historic and cultural values; and botanical and aquatic values.

The Red River corridor was included in the LAC process for the RRGGA. Through this process, recreational use zones and applicable standards were identified for the lands inside the Red River W&SR corridor. These LAC zones were identified and standards developed to protect W&SR values.

Actions have been undertaken over the five year period to protect the Red River’s water quality. The Forest partnered with the Kentucky Transportation Department to repair and improve the Wolfpen culvert following a major flood event. The Cumberland district also employed a volunteer trail crew to construct a retaining wall to repair a roadside slide that was affecting water quality near the Sheltolee Suspension Bridge off of Kentucky Highway 715. Water quality improvement efforts also included closing and rehabilitating a non-system road that was eroding into the Red River; demolishing and removing a user-developed concrete trail in the upper reaches of the river; and frequent trash removal efforts conducted by both volunteers and Forest Service personnel.

The Forest has undertaken projects to protect the scenic, geologic, and recreational values of the Red River over the past five year period. The LAC planning process discussed above identifies management of zones within the river corridor. These zones are intended to move the current condition of the river corridor toward a desired condition by a series of actions, including designating campsites where necessary to meet zone limitations. In terms of improvements, the Forest redesigned the Osborn Bend Trailhead (Wilderness Gateway) to manage parking at the trailhead and to provide visitors with on-the-spot information regarding the Clifty Wilderness and the Red River. This trailhead redesign improved the scenic quality of the river by managing parking and improving the trailhead’s constructed features.

When the Civilian Conservation Corps (CCC) constructed Wolfpen culvert was damaged by a major flood, the forest partnered with the Kentucky Transportation Department to protect historical values during the reconstruction of the culvert. Other efforts to protect historical or cultural values in the river corridor include monitoring and evaluating sites within the river corridor and providing educational and interpretive messages about the Red River history and culture at the Gladie Center, during field contact with visitors, and at information boards and kiosks.

In an effort to control non-native invasive species in the Red River corridor, the Forest began an inventory of the Clifty Wilderness, including those sections in the Red River corridor. This inventory is scheduled to be completed in 2010. As stated above, the LAC planning effort also included protection of botanical and aquatic values.

During the five year review horizon, the Forest acquired a 52 acre tract inside the Red River W&SR. Acquisition of this tract contributes toward perpetual protection of the river's outstandingly remarkable values.

The five rivers identified in the Forest Plan as suitable for inclusion into the National Wild and Scenic River System has not yet been federally designated. These rivers remain in a free-flowing condition and are managed as prescribed in the Forest Plan. Over the five-year review horizon, acres have been purchased along these five rivers. These acquisitions will help to preserve free-flowing river conditions and meet the Goals and Objectives outlined in the Forest Plan.

#### **#14 – Are heritage sites being protected?**

Cultural resource sites that occur in climbing and recreation areas are generally more susceptible to adverse effects from visitor use and as such, are the focus of most of the monitoring and protection activities conducted on the Daniel Boone National Forest. In 2009, one hundred and sixteen (116) archaeological sites were monitored and condition assessments completed. For the last five years, nearly 400 archaeological sites have been subjected to monitoring for condition and changes in integrity. Regular assessments at sensitive locations provide the opportunity to monitor the effectiveness of the fences and signage. The majority of these sites were in the Red River Gorge National Register District in heavily used recreational areas. Based on this monitoring, fencing and signage at sites where effects had been previously noted have helped to reduce the occurrence of additional site damage.

Other threats to heritage sites include effects from dispersed camping, intentional looting, and deterioration from natural causes. These impacts are harder to track, but damage to cultural resources from dispersed camping include camping in rockshelters where sites are located and the destruction of wooden heritage elements which are used as fuel for campfires. Intentional looting is also common and widespread, not only in the Red River Gorge Geological Area, but also on the rest of the forest. Activity is often focused in rockshelters, but can also occur where ever cultural material is noted. A recent looting event was noted by law enforcement personnel where cultural material had eroded from a forest service road cut. An unknown individual had excavated further into the road bank and a sifting pile with discarded cultural materials was also noted.

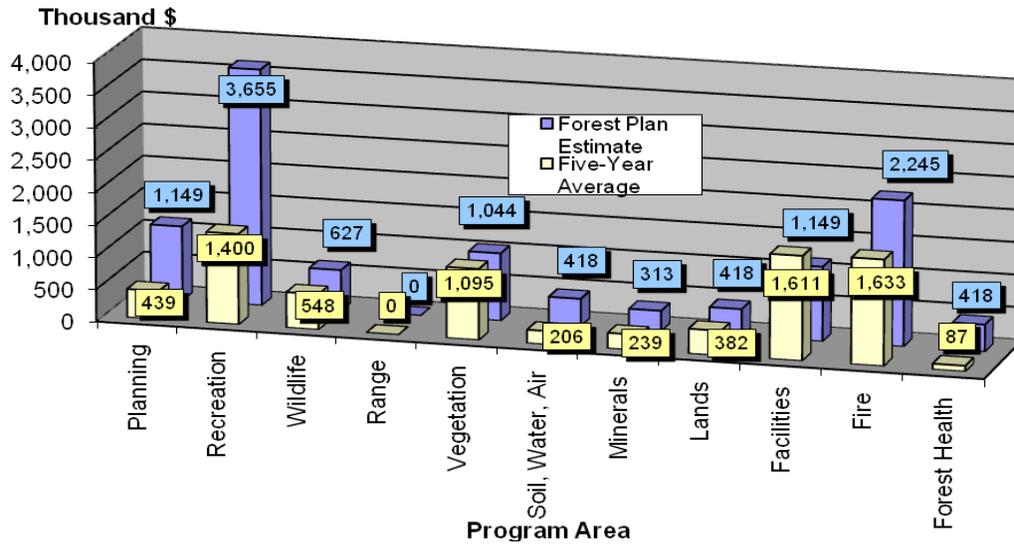
Therefore we must say that while some sites are being protected, there are others that are still being impacted. Heritage staff is working to develop new strategies to improve our ability to detect and prevent damage. These strategies should include public outreach and education to help prevent damage before it occurs, but must also continue to provide protective measures, followed by the enforcement of penalties, when possible, when looting and damage occur.

### **3.3. FOREST PLAN IMPLEMENTATION**

#### **#17 – How does actual outputs and services compare with projected?**

Over the past five years, traditional federal allocations were approximately \$7.6 million annually, which was about 67% of Forest Plan estimates. Some resource areas received full funding (such as vegetation and facilities), while others were funded at approximately 38% of Forest Plan Estimates (such as planning and recreation) (Table 17.1.). Accomplishments are summarized in Table 17.2. Additional federal allocations accounted for approximately \$3.4 million annually (Appendix C, Table C.2.). In fiscal year 2007, extensive reallocation of funds occurred to support an exceptional wildland fire suppression effort. Restoration of those funds, approximately \$397,000, occurred in fiscal year 2008 (Appendix C, Table C.3.). In fiscal year 2008, the *American Recovery and Reinvestment Act* (ARRA) was passed. The Forest submitted several proposals and received approximately \$4.15 million (Appendix C, Table C.4.).

**Figure 17.1 - Comparison of budget allocations for the past five fiscal years (2005 – 2009) compared to Forest Plan estimates, DBNF (thousand dollars), (base year 2000, using a 3% discount rate)**



**Table 17.1 - Budget Allocations, thousand dollars, base year 2000, using a 3% discount rate, DBNF**

Program Area	Forest Plan Estimate	FY05	FY06	FY07	FY08	FY09	5-Year Average
Planning	1,149	528	369	428	456	541	439
Recreation	3,655	1,487	1,595	1,338	1,402	1,597	1,400
Wildlife	627	638	632	568	526	549	548
Range	0	0	0	0	0	0	0
Timber	1,044	601	693	1,365	1,285	1,521	1,095
Soil/Water/Air	418	173	209	173	204	207	206
Minerals	313	289	345	297	191	187	239
Lands	418	504	358	267	382	409	382
Engineering	1,149	1,887	1,629	1,288	1,760	1,963	1,611
Fire	2,245	1,622	1,459	1,829	1,812	1,904	1,633
Forest Health	418	282	152	16	8	23	87
<b>TOTAL</b>	<b>11,436</b>	<b>8,013</b>	<b>7,441</b>	<b>7,773</b>	<b>8,025</b>	<b>8,900</b>	<b>7,640</b>

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**Table 17.2 - Accomplishments Compared to Forest Plan Estimates (Forest Plan Table C – 2.b.), DBNF**

Activity	Source	Unit of measure	Forest Plan 10-Year Objective	Forest Plan Annual Objective	FY05	FY06	FY07	FY08	FY09
<b>VEGETATION MANAGEMENT</b>									
Total Timber Sales (sold)	Spectrum est.	MMCF	22.9	2.29	0.17	0.26	0.87	0.95	1.39
Regeneration Harvest Area <sup>2</sup>	1.K.1.A., 3.H.1.A.	Acres	18,750	1,553	54	267	173	89	399
Reforestation-Yellow Pine (all)	1.K.2.E.	Acres	8,200	822	603	560	402	0	0
Wooded Grassland Established-Pine	1.K.2.B.	Acres	100	10	0	0	0	0	0
Wooded Grassland Established-Hwd.	1.K.2.E.	Acres	660	66	0	0	0	0	0
Woodland Established-Pine	1.K.2.C.	Acres	100	10	0	0	0	0	0
Woodland Established-Hardwood	1.K.2.F.	Acres	6,140	614	0	0	156	45	116
Thinning-Forest (60BA) <sup>3</sup>	1.K.1.D.	Acres	5%	900	0	0	186	129	387
Thinning Overstocked Forest		Acres	10,000	0 to 1000	0	0	2,890	3,464	6,429
Pitch Pine Restoration	1.1.D.	Acres	3,000	300	0	0	0	0	0
Upland White Pine Plantations-Conversion		Acres	n/a		0	0	0	0	0
Controlled Burn Acres	EIS, Table 3-15	Acres	379,000	19,000 to 23,000	19,052	17,659	8,473	15,342	9,439
Maintain Openings (1600 ac./3years)	1K.1.B	Acres	1,600	533	1,689	1,579	1,835	1,662	1,081
<b>WATER SOURCES</b>									
Uplands/ridges within 5 miles of significant Indiana bat hibernacula	1.2.B.	structures	1 per 1/2 mi.	n/a			5	0	0
<b>Special Communities</b>									
Open Canopy Developed (uneven-aged)	1.E.2.C.	Acres	1075[1%]	107	0	0	0	0	0
Fixed Shrub Openings	1.E.2.B	Acres	1075[1%]	107	0	0	0	0	0
Canabrakes Developed	1.E.2.D.	Acres	1075[1%]	107	0	0	6	6	6

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Activity	Source	Unit of measure	Forest Plan 10-Year Objective	Forest Plan Annual Objective	FY05	FY06	FY07	FY08	FY09
Canebrakes Maintenance		Acres			0	0	13	10	13
<b>WATERSHEDS</b>									
Watershed Improvement	1.E.3.A.,3.B.	Acres	760	120	75	80	75	95	129
<b>RECREATION</b>									
Non Motorized Trails Established		Miles	20	2	0	0	0.67	0	0
Trails Maintained (BMPs) <sup>4</sup>	12.1.B	Miles	685	137	278	175	77	114	97
Inventory user-developed trails	12.1.C	%	100%	20%	80	112	0	12	0
Address user-developed trails	12.1.C	%	100%	20%	0	0	0	27	0
OHV trails (constructed)	EIS, Table 3-4	Miles	60	6	20	0	0	0	0
<b>ROADS (SYSTEM)</b>									
Construct (Redbird District)	Estimate	Miles	20	2.0	2.0	0.2	2.0	0	0
Repair or decommission	12.0.A.	Miles	150	15	11.8	4.3	11.8	7.6	4.3
<b>INTEGRATED INVENTORY</b>									
Forest Inventory	1G.2A & ch.5,#2	Acres	663,682	66,400	15,000	17,000	15,000	80,485	85,746
Assess Rare Communities	1.G.2.A.	Acres	~1200	120	150	150	122	201	97
Assess Designated O.G. Areas	EIS, Table 3-29	Acres	15,331	1,533	0	62	0	0	0
Assess Possible O.G. Areas	Preliminary Inv.	Acres	18,033	1,800	668	1,012	689	559	300
Heritage Inventory	6.3.A	Acres	50,000	5,000	1,531	4,651	3,965	2,380	2,328
Heritage Site Evaluation	6.4.A.	Sites	100	10	34	68	19	7	57
<b>LAND ACQUISITION</b>									
Acquisition (10 yr. historic mean)	13.2.A.	Acres	29,000	2,900	1,765	1,005	364	0	0

<sup>1</sup> Based on Constrained EIS Budget, 1st Period.

<sup>2</sup> Includes 1K harvest (cliff/bat/rip/0-10 bug removed) and grouse areas (3H = 8744 ac., with cliff/bat/riparian removed).

<sup>3</sup> 5% of area thinned to 60BA [cliff/bat/rip/0-10 bug removed].

<sup>4</sup> Maintain trails to BMPs, 20% per year.

**#18 – Are silvicultural requirements of the Forest Plan being met?**

**Adequate restocking of trees** is occurring within 5 years of regeneration treatments. With the exception of a small amount of timber salvaged from roadsides and from administrative areas such as campgrounds, trees that were harvested from the Forest prior to the revision of the LRMP were cut from lands where timber production was the primary objective. Trees cut following the LRMP revision have been cut from lands where timber production is a “secondary” objective. In both cases therefore 36 CFR 219.27(c)(3) regulation<sup>6</sup> for reforestation applies to all timber harvest areas that occurred within the past 5 years.

The Forest Activity Tracking System (FACTS) Reforestation Needs Report showed 9,036 acres of reforestation needs at the end of FY2009. The reforestation needs assessment was reduced by 20,000 acres based on an estimate of stands naturally regenerated without treatment, and 103 acres were certified as artificially regenerated. No additional acres were added to reforestation needs in FY2009 due to final harvests. There are no pending reforestation needs that were created from final harvests that occurred beyond five years ago (prior to FY2004).

**#19 – Are Forest Plan objectives and standards being applied, and are they accomplishing their intended purpose?**

Forest Plan *objectives* are consistently present in project proposals as desired conditions. Forest Plan *standards* are consistently included in project proposals as design criteria, management requirements, or mitigation. Projects are consistently implemented using required protection measures included in the decision document. Forest Service project inspectors are knowledgeable of required protection measures and ensure that they are implemented appropriately and in a timely manner.

Retention of snags following project implementation involving the cutting of trees should be emphasized during project planning. Forest Plan direction related to snag habitat suggests that habitat for bat species should be protected, maintained, or enhanced during project analysis (Forest Plan objective 1.1.A.). Additional direction is provided for project planning and implementation that is specific to snag management:

*DB-WLF-1 - No snags equal to or greater than six inches in diameter at breast height (dbh) and equal to or greater than 10 feet in height are to be intentionally felled within timber harvest, regeneration, and thinning projects, unless identified as an immediate threat to human safety. This standard does not apply to salvage or sanitation projects.*

*DB-WLF-2 – Retain or create at least three snags per acre equal to or greater than 9 inches dbh within all timber harvest, regeneration, sanitation, salvage, or thinning project units when available.*

*DB-WLF-15 – Create, or retain where available, at least one snag 12 inches dbh or greater per acre in any area in which overstory trees are cut as part of habitat creation or maintenance, sanitation or salvage.*

*DB-VEG-1 – Hazard trees (dead or alive) considered to be an immediate threat to human safety may be removed anytime. This supercedes all other standards.*

*1.K-VEG-1 – When 9-inch dbh snags are not available or cannot be created to meet a minimum of 3 snags per acre, snags of at least 6 inches dbh may be retained or created to provide snag habitat.*

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<sup>6</sup> Note that 36 CFR 219.27(c)(3) calls for adequate restocking with 5 years of “final harvest” not “regeneration treatment”.

## 4. CONTRIBUTIONS TO THE FOREST SERVICE STRATEGIC PLAN

This section describes the contribution of implementing the DBNF Forest Plan toward achievement of outcomes of the Forest Service national strategic plan (*USDA Forest Service Strategic Plan FY 2007-2012*, July 2007, FS-880) (Strategic Plan).

### ***Goal 1. Restore, Sustain, and Enhance the Nation’s Forests and Grasslands***

#### Objective 1.1. Reduce the risk to communities and natural resources from wildfire

Controlled burning is an essential tool for managing forest ecosystems and reducing the threat of wildfire in the wildland- urban interface. Forest Plan objectives were to apply controlled fire on 15,000 to 31,000 acres annually, within a range of 7,500 to 50,000 acres over a ten-year period.

**Table 4.1.1. Controlled burns and funding, FY05 through FY09, DBNF**

	FY05	FY06	FY07	FY08	FY09	5-Year Average
Accomplishments (acres)	19,052	17,659	8,473	15,342	9,439	13,993
Funding (actual dollars)	\$394,678	\$409,306	\$679,496	\$687,834	\$785,167	\$591,296

A large portion of the Forest is in Fire Regime Condition Class 3<sup>7</sup>, where fire regimes on these lands have been significantly altered from their historical return interval. Hazard fuels reduction activities, using mechanical methods or prescribed fire, reduced vegetation density and changed vegetation composition. These changes are temporary and minor as these burns do not normally result in forest type changes after one treatment. Moving these lands toward desired conditions is considered a long-term objective and will occur at a slow pace by varying the timing, frequency, and intensity of controlled burns. Therefore, nearly 100 percent of the acres accomplished are moving toward the desired condition.

Output for controlled burning is below what was planned or expected in the Forest Plan. Although the numbers given in this objective were intended to be an estimate of what could be expected, it has often been seen as either a minimum or maximum annual need. Barriers to meeting the objectives are primarily a result of weather conditions that are outside of the burning parameters identified in the burn plans. Typically, only about 10 days a year meet all of the weather parameters needed to conduct a controlled burn. This will continue to hamper objectives of increasing prescribed burning acres on the Forest.

Two stewardship contracts have been awarded since this option was made available in 1999.

- 1) The *Fuget Stewardship Sale* was awarded in September 2004 and closed August 2007. Accomplishments include: 43 acres of regeneration harvest, 34 acres of thinning, 856 acres of mid-story removal, 70 acres of crop tree thinning, 16 ponds constructed, 11 acres of grassy openings renovated, and 2 acres of new grassy openings created.

<sup>7</sup> Fire Regime Condition Class is a qualitative measure describing the degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. Condition Class 3 – Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been significantly altered from their historical range (Forest Plan p. A-11)

- 2) The *Cold Hill HFRA Stewardship Timber Sale* was awarded in April 2007 and closed in June 2010. Accomplishments include: 146 acres of regeneration harvest, 158 acres of woodland harvest, 152 acres of commercial thinning, and 121 acres of midstory removal with herbicide. This project was conducted under Title IV of the Healthy Forest Restoration Act of 2003. The Cold Hill Silvicultural Assessment included ten research studies that are being conducted by the Southern Research Station, Northern Research Station, University of Kentucky, University of Tennessee, and Eastern Kentucky University. See Appendix B for a summary of research activities associated with this Silvicultural Assessment.

### Objective 1.2. Suppress wildfires efficiently and effectively

Wildland fire preparedness to control wildfire is still below the most efficient level. The resources at hand (equipment and personnel) are less than indicated by the Fire Program Analysis (FPA) model outputs. Resources identified in FPA are being made available in accordance with budget funding levels. Increases in accomplishment in hazardous fuels reduction will serve to prevent and minimize resource losses resulting from wildland fires.

**Table 4.1.2. Percentage of fires not contained in initial attack, FY05 through FY09, DBNF**

	FY05	FY06	FY07	FY08	FY09	5-Year Average
Number of fires	52	117	104	78	67	84
Total acres	914	8,616	7,371	2,858	2,569	4,466
Percentage not contained during initial attack	2%	5%	7%	4%	5%	5%

### Objective 1.3. Build community capacity to suppress and reduce losses from wildfires

Firewise Communities/USA is a unique opportunity available to America's fire-prone communities. Its goal is to encourage and acknowledge action that minimizes home loss to wildfire. It teaches home preparedness before a fire occurs. The program adapts especially well to small communities, developments and residential associations of all types. Kentucky currently has 29 [Firewise USA Communities](#). Completion of a *Community Wildfire Protection Plan* is a requirement to becoming a Firewise USA Community. Most of the interface areas would be classified as intermix community with structures scattered throughout the wildland areas. There is no clear demarcation between wildland fuels and structures or developed areas.

McCreary County has had a Firewise Council since 2001 that was formed after a severe 2000 fire season where two homes were burned. The county has completed a mitigation assessment and previous defensible space projects.

**Table 4.1.3: Percentage of acres treated in the wildland-urban interface that have been identified in community wildfire protection plans or equivalent plans, DBNF**

Program Area	FY05	FY06	FY07	FY08	FY09	5-Year Average
Controlled Fire	40%	31%	4%	42%	55%	34%

### Objective 1.4. Reduce adverse impacts from invasive and native species, pests, and diseases

#### Nonnative Invasive Plants (NNIP)

Forest personnel have identified 42 species of nonnative invasive plants that are of moderate or severe threat to Forest's ecosystems and another 14 species that under some conditions would become serious

threats, but generally are nuisance species. All 56 species are currently found on the Forest in one or more populations. An additional 11 species of nonnative invasive plants (NNIPs) are on a watch list. These are species known to be invasive in adjacent states, but which have not been found in Kentucky or have not been found on the Forest. All of these would be treated as serious threats if discovered on the Forest. Two native species with invasive tendencies have also been identified because of identified threats they pose to sensitive or federally listed species.

Mapping of populations of NNIPs is underway on the forest as part of various projects. The incidence of NNIPs on the forest is high and mapping will take many years. Mapping within and around Beaver Creek and Clifty wildernesses will be complete in 2010.

Forest personnel have treated 601 acres of nonnative invasive species over the last two years and expect to continue to treat around 300 acres per year for the next year or two. Most of the treatment was by herbicide application, but other treatments included hand pulling, digging and deep burying, and close mowing.

A forest-wide nonnative invasive plant treatment project is in the NEPA stage at present. It should be in place for use in 2011 which will allow an increase in treatment of nonnative invasive plants by 2012 to meet R8 Framework - RESTORE Objective 2, Outcome Measure 1.

### Objective 1.5. Restore and maintain healthy watersheds and diverse habitats

Based on modeling and five years of stream monitoring, approximately 12 percent of watersheds across the Forest are in the highest Condition Class (Class I). Even with lower than anticipated budgets (Figure 17.1 and Table 17.1) the Forest has been able to complete 620 acres of soil and water improvement projects (Table 17.2). Many of these acres are a result of partnerships with Kentucky Division of Water, Kentucky Department of Fish and Wildlife, and Kentucky Division of Abandoned Mines. As a result, several watersheds have been maintained and restored. Through the American Recovery and Reinvestment Act, work has started on replacing approximately 200 culverts across the Forest. This will improve both watershed conditions and aquatic organism passage.

**Table 4.1.4: Aquatic and wildlife habitat restored or enhanced, DBNF**

	Miles of stream habitat restored or enhanced	Acres of lake habitat restored or enhanced	Acres of wildlife habitat (terrestrial) (TES and non TES) restored or improved
FY05	30	30	2,353
FY06	22	83	2,283
FY07	20	88	1,919
FY08	39	458	18,870
FY09	24	349	14,004

## **Goal 2. Provide and Sustain Benefits to the American People**

Objective 2.1. Provide a reliable supply of forest products over time that (1) is consistent with achieving desired conditions on NFS lands and (2) helps maintain or create processing capacity and infrastructure in local communities

Forest products sold during the five-year period totaled 3.64 MMCF (million cubic feet), which averages approximately 0.73 MMCF per year. The Forest Plan predicted 2.29 MMCF of annual forest product sales (Forest Plan, Table C-2.b., p. C-2). Accomplishments were approximately 32% of predictions.

Biomass has not been a normal product that is routinely removed from NFS lands. Historically, during contract award, purchasers indicate whether they want to buy pulpwood and roundwood. The Cold Hill project was the first timber sale on the Forest where removal of small roundwood (biomass) was required as part of an operations research study. Approximately 3,702 tons of biomass was removed during this study.

**Objective 2.2. Provide a reliable supply of rangeland products over time that (1) is consistent with achieving desired conditions on NFS lands and (2) helps support ranching in local communities**

There are no range/grazing allotments on the DBNF.

**Objective 2.3. Help meet energy resource needs**

The only known prescribed timeframe is that the authorized officer shall, within 60 calendar days of receipt of a proposal, review the proposal and advise the proponent as to whether the Forest Service will accept the proposal as a formal application or deny the proposal based on initial or second-level screening criteria. Though no records were kept to know the exact percentage of applications that met the timeframes, most of the proposals were reviewed and accepted as an application or denied within the 60 day timeframe.

Of the energy mineral applications processed by the DBNF (both federal and private) since implementation of the Forest Plan, approximately 38% of the applications were processed within the applicable timeframes. There has been a significant turnover in personnel since 2004, with the concomitant loss of expertise on the Forest directly impacting the minerals program. This has had the additional impact on the percentage of applications processed by the minerals program.

The funding average for the past 5 years approximately equals the 2000 estimate (Appendix C, Table C.1). However, funding has ranged from a high of \$411,797 to a low of \$241,799. The lowest funding levels occurred in 2008 and 2009.

### ***Goal 3. Conserve Open Spaces***

**Objective 3.1. Protect forests and grasslands from conversion to other uses**

Over the past five years, approximately 3,134 acres (Appendix D, Table D.1.) of predominantly forest land were acquired to protect them from conversion to other uses – primarily development. Most Daniel Boone NFS lands (707,763 acres) can be protected from development. A land acquisition plan is in place, which identifies tracts of private land that are of high interest to consolidating national forest system lands. Some of those areas occur within the Red River Gorge Geological Area, while other occurs within the larger, more contiguous blocks of national forest system lands.

There are approximately 334 Special Use Permits (SUP) that have the potential to cause environmental damage on the Daniel Boone National Forest out of a total 386 SUPs. Of the 334 SUPs, 152, or 45.5% are administered to standard. To meet the 100% target by 2012 the forest will have to get 182 SUPs, or 54.5% administered to standard while the 152 permits continue to be maintained to standard.

### ***Goal 4. Sustain and Enhance Outdoor Recreation Opportunities***

**Objective 4.1. Improve the quality and availability of outdoor recreation experiences**

The number of facilities maintained to standard increased by eleven sites from 2006 to 2009. The forest completed a number of improvements at recreations sites such as Natural Arch picnic area that brought a few of the facilities up to standard. In addition, the total number of sites increased by six during this same time period. Therefore the figures are not an overall reflection

of the condition of the facilities. Field observations indicate several sites across the forest are not maintained to standard due to aging facilities that are deteriorating faster than they are being replaced or repaired.

Recreation sites capacity to meet accessibility requirements increased by sixteen percent from 2005 to 2009. This is primarily due to the installation of several accessible vault toilets and trashcans across the forest, as well reconstruction of Natural Arch Scenic area. An accessible walking trail of approximately one mile in length was constructed on the Stearns District.

**Table 4.1 Recreation sites maintained standard or providing accessible facilities in fiscal years 2005-2009.**

	FY05	FY06	FY07	FY08	FY09
Total # of Recreation Sites	N/A	141	141	142	147
Number of Recreation Sites Maintained to Standard	N/A	91	98	101	102
% of Recreation Sites Maintained to Standard	N/A	64.5	69.5	71.1	69.4
% of Capacity that is Accessible	5.6	16.6	21.2	21.1	21.6
Number of Recreation Buildings	N/A	N/A	134	133	132
% of Recreation Buildings that are Accessible	N/A	N/A	88	89.5	90.2

Note: "N/A" indicates data is not available at this time for these years.

The National Visitor Use Monitoring<sup>8</sup> (NVUM) prepared in November, 2008, indicates most visitors are satisfied with the recreational facilities, services, and settings. The data indicates approximately 96 percent of surveyed visitors were either very satisfied or somewhat satisfied, while only 2 percent were somewhat dissatisfied or very dissatisfied. Approximately 2% of the visitors surveyed were neutral. The study is conducted once every five years. Therefore, trend data is not available for the period of 2005 – 2009.

The suitability for passenger car use on roads intended for that use deals directly with proper maintenance needed. Over the past 5 years the DBNF has consistently met road maintenance targets on all appropriate maintenance levels of roads. More specifically regarding the Maintenance Level 3,4 and 5 roads, which are passenger car roads, the Forest has maintained, on average, approximately 350 miles annually. This includes various activities such as grading, mowing, brushing, cleaning ditches, drainage structures, cleaning culverts, repairing signs and replacing aggregate or asphalt. The total number of passenger car miles currently for the Forest is approximately 435. Although this is a percentage of about 80%, the actual percentage of passenger car suitability is closer to 95%. This is due in part to the method we use to maintain these roads. There are heavily used roads that receive general maintenance every year and there are roads that only receive maintenance every other year or more due to lower use. Even though they receive attention periodically, they are still considered to be suitable for proper use; it just takes longer for them to get to that point of needing attention.

Funds received for general maintenance, such as grading, mowing, brushing and stone placement continues to be somewhat adequate. However, every year the cost per mile of these activities goes up by a small percentage affecting the total miles that can be accomplished. Occasionally, some roads incur costly problems resulting from landslides or wash outs. These situations could shut down a road entirely. These situations are more time consuming and costly to return to suitability standards. If funds are directly allocated for these situations, funds are transferred from routine maintenance activities resulting in a back-log in routine maintenance.

<sup>8</sup> *National Visitor Use Monitoring Results, October 2008, Data collected FY2002 and FY2007.* USDA Forest Service, Region 8, Daniel Boone National Forest. November 2, 2008.

#### Objective 4.2. Secure legal entry to national forest lands and waters

Because of the broken ownership pattern of the Daniel Boone National Forest there are numerous tracts of NFS lands that do not have legal access. In the last five years right-of-way acquisition has been driven by specific high priority needs in the timber and recreation programs. Legal access has been obtained by acquiring right-of-ways, eliminating right-of-way needs by purchasing adjoining property, or by working with other agencies that have been able to obtain legal access.

### ***Goal 5. Maintain Basic Management Capabilities of the Forest Service***

#### Objective 5.1. Improve accountability through strategic and land-management planning and efficient use of data and technology in resource management

Nonnative invasive plant (NNIP) population information is being entered into NRIS TESP-Invasive Plants. Currently some data is being inspected before transfer to the Data Center. Data from another project is being inspected and corrected before transfer. This should be entered by the end of the fiscal year.

Rare plant data is being reviewed for possible mass migration. Missing data values may prevent the transfer of much of the older data held by the Forest. Rare animal data is also being reviewed for possible mass migration. The older data also has missing values that may prevent its transfer.

#### Objective 5.2. Improve the administration of national forest lands and facilities in support of the agency's mission

The Forest Plan states in Objective 13.5.B "Resolve a majority of existing land claims, title deficiencies, and trespasses; give priority to cases of unauthorized occupancy on Forest land". Because of the Forest's broken ownership pattern, growth of urban interface, and budget constraints in boundary line management (NFLM), the Forest has seen a significant increase in encroachments and title claims. The Forest does not have sufficient resources and funding to take on and resolve the constant influx of claims and encroachments occurring on NFS lands. In the last several years the Daniel Boone has met its target for land management title cases resolved. Despite this effort the number of new title claims and encroachments continue to exceed our ability to administer them to standard.

### ***Goal 6. Engage Urban America with Forest Service Programs***

#### Objective 6.1. Promote conservation education to increase environmental literacy through partnerships with groups that benefit and educate urban populations

New Heritage standards will be implemented in fiscal year 2011 and tracked in the corporate database, INFRA. The measurements for a Heritage Program Managed to Standard represent the goals of social, environmental, and economic sustainability in the Forest Service Recreation Strategy and the program responsibilities in the Heritage Program National Strategy to:

1. Protect historic properties,
2. Share the value of historic properties with the public, and
3. Contribute information and perspectives to land management.

These three elements are to be achieved through consultation and coordination with Federal and State agencies, Indian Tribes, local governments, and other partners and reflect the guidance in FSM 2360 – Heritage Program Management.

The Heritage Program for the Forest will be measured on seven factors:

1. Whether a forest has a Heritage Program Plan,
2. Field survey of areas where sites are likely to occur under Section 110,
3. Nomination for the National Register of Historic Places for previously recorded cultural resources as appropriate,
4. Up to date condition assessments on Priority Heritage Assets (PHAs),
5. Protection and maintenance of PHAs,
6. Opportunities for study and/or public use of cultural resources,
7. Volunteer activities that enhance cultural resources and expand the capacity, visibility, and delivery of the Heritage Program.

The current Daniel Boone National Forest Heritage Program already incorporates several of these key provisions including the up to date condition assessments of PHAs, and opportunities for study. The Forest Archaeologist with work with Heritage staff to set goals that will ensure the Daniel Boone progresses towards meeting the remainder of the new standards.

## **5. EVALUATION OF NEW INFORMATION**

### **5.1. Emerging Issues**

#### CLIMATE CHANGE

It is the policy of the Forest Service to evaluate how NFS plans and projects may affect and may be affected by climate change (*Climate Change Considerations in Project Level NEPA Analysis*, January 13, 2009) and (*Forest Service Global Change Research Strategy, 2009-2019, FS-917a, June 2009*). Ecosystem restoration is believed to be helpful in making forests better able to adapt to climate changes. The DBNF Forest Plan focus on, among other actions, restoring habitat communities, restoring fire adapted ecosystems, thinning overstocked stands of trees, and taking action to control or recover from attacks by non-native and native invasive species.

#### NON-NATIVE INVASIVE SPECIES

Numerous non-native invasive species are present on the DBNF and more are threatening to become established. The most common vector for non-native invasive species movement is the interaction of humans with the environment across the country and internationally.

Some of the non-native invasive species that are not present on the DBNF, but are in close proximity include: gypsy moth, emerald ash borer, thousand cankers disease, and more.

Some of the non-native invasive species that are present on the DBNF include: hemlock woolly adelgid, numerous plants, white-nose syndrome and more.

#### WHITE-NOSE SYNDROME (WNS)

White-nose syndrome (WNS) is a disease responsible for unprecedented mortality in cave-hibernating bats in the eastern U.S. This previously unknown disease has spread very rapidly since its discovery in January, 2007, and poses a considerable threat to cave-hibernating bats throughout North America. In some hibernacula, 90 to 100 percent of the bats are dying. Sick, dying and dead bats have been observed in and around caves and mines from Vermont to Tennessee. To date, WNS has not been detected in Kentucky. If spread and mortality continues at their present rate, it's likely additional species of bats will be listed under the Endangered Species Act.

The U.S. Fish and Wildlife Service assumed a National leadership role in 2008 and are coordinating the efforts (e.g., data sharing; identifying research and monitoring needs) of partners from other federal

agencies, Canadian wildlife agencies, state wildlife management agencies, non-profit conservation organizations, and academic research institutions.

#### ENDANGERED SPECIES ACT (ESA) LISTINGS (NEW SPECIES & NEW CRITICAL HABITAT)

Candidate species are plants and animals for which the U.S. Fish and Wildlife Service (FWS) has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species receive no statutory protection under the ESA. Currently there are seven candidate species on the DBNF; one fish (Cumberland darter [*Etheostoma susanae*]); two plants, Short's bladderpod (*Lesquerella globosa*), White fringeless orchid (*Platanthera integrilabia*) and four species of mussels (Fluted Kidneyshell (*Ptychobranthus subtentum*), Rabbitsfoot (*Quadrula cylindrica cylindrica*), Sheepsnose (*Plethobasus cyphus*), and Spectaclecase (*Cumberlandia monodonta*).

The Frankfort Field Office (FFO) of the FWS anticipates the Service publishing "a proposal to list" the Cumberland darter as threatened within the next 12 months. They have also indicated their desire to add the Kentucky Arrow Darter (*Etheostoma sagitta spilotum*) to the list of candidates species within the next 6-12 months.

#### INCREASED BIOMASS USE AND SOILS

Increasing biomass utilization from logging sites has the potential to cause increased soil disturbance and reduce soil productivity. Soil disturbance has been recently monitored on the *Coldhill Silvicultural Assessment* project on the London District. Initial results show that disturbance may be slightly higher than the 10 percent that is listed in the DB-VEG-26 standard in the Forest Plan (page 2-26). Further monitoring is currently being conducted and the results should be finalized in 2011. If necessary, future biomass projects will be modified to reduce the amount of soil disturbance.

## **5.2. Changes in National / Regional Policy**

In April 2003, former FS Chief Dale Bosworth described his concept of the *Four Threats to the Health of the Nation's Forests and Grasslands*. The *USDA Forest Service Strategic Plan for Fiscal Years 2004 – 2008* provided a new framework for accomplishing the Agency's mission and incorporated actions to resolve the Four Threats. The "Four Threats" and actions to address them included:

**Fire and fuels**—Restore healthy, disturbance-resilient ecosystems on lands at risk from catastrophic fire, improving the condition and function of critically important watersheds, and sustaining critical wildlife habitat nationwide.

**Invasive species**—Protect forest and rangeland ecosystems by preventing the release of non-native species and by controlling the spread, or eradicating, invasive species.

**Loss of open space**—Conserve the nation's forests and rangelands most at risk due to subdivision and land conversion by working with partners, communities and landowners to balance development with sustaining ecosystem services and viable working landscapes.

**Unmanaged recreation**—Work with partners to develop travel management plans that regulate the use of off-highway vehicles on designated roads, trails, and parks in an appropriate manner.

Forest Service Chief Abigail R. Kimbell, who succeeded Chief Bosworth, reinforced the national commitment to reducing the "Four Treats" within the overall *USDA Forest Service Strategic Plan FY2007–2012* issued in July 2007. The national strategic goals and objectives for fiscal years 2007–2012 are:

1. Restore, sustain, and enhance the Nation's forests and grasslands.

2. Provide and sustain benefits to the American People.
3. Conserve Open Space.
4. Sustain and Enhance Outdoor Recreation Opportunities.
5. Maintain Basic Management Capabilities of the Forest Service.
6. Engage Urban America with Forest Service Programs.
7. Provide Science-Based Applications and Tools for Sustainable Natural Resources Management.

Former Chief Kimbell added three emphasis areas: climate change, water, and reconnecting people with nature – especially children.

Current Chief Tom Tidwell reiterated support for these focus areas when he assumed his position in the summer of 2009.

Forest Service Travel Management Rule (36 CFR 212, Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use), Effective December 9, 2005

- The rule requires each national forest or ranger district to designate those roads, trails, and areas open to motor vehicles.
- Designation will include class of vehicle and, if appropriate, time of year for motor vehicle use. A given route, for example, could be designated for use by motorcycles, ATVs, or street-legal vehicles.
- Once designation is complete, the rule will prohibit motor vehicle use off the designated system or inconsistent with the designations.
- Designation decisions will be made locally, with public input and in coordination with state, local, and tribal governments.
- Designations will be shown on a motor vehicle use map. Use inconsistent with the designations will be prohibited.

P.L. 109-54, Fiscal Year 2006 Interior-Environment Appropriations, Title V – Facilities Realignment and Enhancement Act of 2005, Authorized Secretary to convey administrative sites on National Forest System Lands and retain receipts for construction, maintenance and renovation of facilities for administrative purposes.

P.L. 108-447, Consolidated Appropriations Act, 2005, (Div J, Title VIII – Federal Lands Recreation Enhancement Act), December 8, 2004, Beginning in FY 2005, and thereafter, the Secretary may establish, modify, charge and collect recreation fees at Federal recreation lands and waters as provided for in the Act. Authority terminates 10 years after the date of enactment.

P.L. 109-58, Energy Policy Act of 2005, as amended. Directed the Departments of Agriculture and of the Interior to provide better access for the purpose of leasing oil and natural gas on Federal lands and to streamline the permitting process for oil and natural gas development. The Act provided for categorical exclusions for oil and gas drilling related to exploration and development on Federal lands pursuant to the Mineral Leasing Act of 1920. Amended the Geothermal Steam Act to make it a priority for the Secretary of the Interior and for the Secretary of Agriculture with respect to National Forest System lands, to ensure timely completion of administrative actions, including amendments to applicable forest plans and resource management plans necessary to process applications for geothermal leasing pending on the date of enactment of this Act. It required all future forest and resource management plans for areas with high geothermal resource potential to consider geothermal leasing and development.

P.L. 108-7 February 20, 2003, Joint Resolution Making Consolidated Appropriations for 2003. Title III, Sec. 323 Amended P.L. 105-277 Sec 323 to extend authority for stewardship contracting until September 30, 2013. P.L. 105-277 Omnibus Appropriations Act of 1999, (Stewardship Contracting) Title III – Sec. 347 Authorized the Forest Service to enter into no more than 28 contracts with private persons and entities to perform services to achieve land management goals for the National Forests that meet local and rural community needs.

## 6. EVALUATION OF NEED TO CHANGE EXISTING PLAN DIRECTION

The DBNF Forest Plan and FEIS can be found on the Forest web site at:  
<http://www.fs.fed.us/r8/boone/planning/program/revisedplan.shtml>

### 6.1. Issues

The DBNF Forest Plan was developed around 14 issues:

1. Fragmentation
2. Old-Growth
3. RARE Communities
4. Endangered, Threatened, and Sensitive Species
5. Fish and Wildlife Management
6. Aquatic and Riparian Areas
7. Fire Management
8. Forest Health
9. Timber Products
10. Minerals
11. Recreation Opportunities
12. Scenery Resource Management
13. Access within the Forest
14. Specially Designated Areas

These 14 issues remain relevant and no new issues were identified during the 5-year review. **The review team identified no need to change existing plan direction regarding “Issues”.**

### 6.2. Goals / Desired Conditions

Several goals and desired conditions are associated with each “Issue” in the DBNF Forest Plan. Goal statements broadly describe the desired future condition the Plan seeks to achieve. While Goal statements furnish direction, they are timeless and may not necessarily be achieved during the 10 to 15-year life of the Forest Plan. Goal statements are the first step to making Forestwide and Prescription Area desired conditions operational.

Due to the broad and timeless nature of the goal/desired condition statements in the DBNF Forest Plan, none were identified that need to be changed, and none were identified that needed to be added. **The review team identified no need to change existing plan direction regarding Goals/Desired Conditions.**

### 6.3. Objectives

Several Objectives are associated with each Goal/Desired Condition in the DBNF Forest Plan. Objectives are more specific management direction designed to collectively move toward desired conditions. Objectives may have quantifiable outcome statements – such as, “Maintain approximately 0.4 percent of each management area (1,600 acres total within this Prescription Area [1.K.]) in grassy or old-field openings, generally greater than one-quarter acre, of which about half are warm-season grass dominated.” Or, objectives may be more qualitative – such as, “Work cooperatively with air management agencies and regional haze planning organizations to improve air quality.”

**The review team recognizes that some modifications in the Objectives might be appropriate, but is not critical given the current workload of the DBNF.** This review reinforces the view commonly held at the time the DBNF Plan was signed that it was overly ambitious, and that staffing and funding levels could

not support all the planned activities. The belief at the time was that if opportunities presented themselves, the objectives would allow for a larger program of work. As can be seen from a summary of allocated funds, the DBNF was funded at 67% of the Forest Plan estimate.

#### **6.4. Standards**

While Goals and Objectives provide direction on where we are headed for a particular area, Standards are limitations on actions or thresholds not to be exceeded during project planning and implementation. Some Standards as written in the DBNF Forest Plan do not conform to the ideal for how Standards should be written, and some simply provides guidance or are rewrites of management goals.

These suggested changes to Standards are not critical for continued implementation of the DBNF Forest Plan. **The review team identified no need to change existing Forest Plan direction regarding Standards.**

#### **6.5. Timber Suitability**

During Forest planning, the Forest Service is required to identify lands unsuited for timber production (16 USC 1604(k); 36 CFR 219.14 (1982 Rule)). This identification process involves three stages of analysis. Stage 1 analysis identifies lands tentatively suitable for timber production. Stage 2 analysis explores the financial attractiveness of varying intensities of timber management on lands identified as tentatively suitable for timber production. Stage 3 analysis identifies lands as unsuited for timber production under the alternative (C-1) selected as the revised Forest Plan.

**The review team identified no need to change existing plan direction in regard to Suitability of areas for timber production.**

#### **6.6. Management Areas / Prescription Areas**

The DBNF is divided into four Management Areas based on the Forest's four main river basins (Figure 7.1). Additional information about Management Areas can be found in Chapter 4 of the Forest Plan. Management Areas are further divided into 21 Prescription Areas (Forest Plan, Chapter 3). A Prescription Area is an allocation of one or more parcels of land within which resource conditions and corresponding management emphasis are similar. Prescription Areas describe the ways the Forest Service intends to manage these key features. Some Prescription Area boundaries overlap with others. In those situations, the more restrictive direction takes precedence. Most Prescription Areas are mapped. However, some are descriptive and are applicable upon finding such features, such as Rare Communities (PA 1.G.). Table 7.6.1 shows the Prescription Areas and acres.



**Table 7.6.1. Prescription Areas, DBNF**

Prescription Area	Alternative C-1 (2004)	Alternative C-1 (2009) <sup>1/</sup>
1.A. Research Natural Area (acres)		
Rock Creek RNA	189	189
Elisha Branch and Tight Hollow (proposed RNA)	469	469
1.C. Cliffline Community (acres)	111,205	120,306
1.E. Riparian Corridor (acres)	155,379	159,449
1.G. Rare Community (acres) <sup>2/</sup>	1,200	995
1.I. Designated Old-Growth (acres)	15,300	15,334
1.J. Significant Bat Caves (acres)	6,115	6,309
1.K. Habitat Diversity Emphasis (acres)	375,891	371,129
2.A. Clifty Wilderness (acres)	12,646	12,646
2.B. Beaver Creek Wilderness (acres)	4,791	4,791
3.A. Developed Recreation (acres)	3,700	3,700
3.B. Large Reservoirs (acres)	30,673	30,673
3.C.1. Red River National Wild & Scenic River: Wild River Segment (acres)	683	753
3.C.2. Proposed Wild & Scenic River: Marsh Creek - Wild River (acres)	1,244	1,244
3.C.3. Red River National Wild and Scenic River: Recreational River Segment (acres)	1,440	1,459
3.C.4. Proposed Wild & Scenic River: Cumberland River, War Fork Creek, Rockcastle River – Scenic Rivers (acres)	5,622	5,664
3.C.5. Proposed Wild & Scenic River: Rock Creek and marsh Creek - Recreational Rivers (acres)	6,184	6,228
3.E. Red River Gorge Geological Area (acres)	16,042	17,459
3.F. Natural Arch Scenic Area (acres)	1,065	1,065
3.H.2. Ruffed Grouse Emphasis (acres) <sup>3/</sup>	10,500	20,367
5.A. Communications Sites (each)	20	20
5.C. Source Water Protection – zones 1 and 2 (acres)	34,015	41,425
TOTAL DBNF NFS lands <sup>4/</sup>	693,728	707,763

<sup>1/</sup> Changes in acreage from 2004 do not necessarily mean that boundaries have changed. Changes are usually a result of more refined GIS calculations or adjustments to land ownership.

<sup>2/</sup> Rare Community was not mapped in 2004, and known sites were mapped in 2009 resulting in a change in acres.

<sup>3/</sup> Forest Plan Amendment #1 added a Ruffed Grouse area to the Upper Kentucky River Management Area (Appendix A).

<sup>4/</sup> Prescription Area acres will NOT total to the DBNF land base as several Prescription Areas overlap.

**The review team identified no need to change existing plan direction regarding Management Areas or Prescription Areas.**

## **6.7. Monitoring and Evaluation**

Chapter 5 of the DBNF Forest Plan outlines a Monitoring and Evaluation (M&E) program to be implemented of the course of the planning period. Nineteen (19) monitoring questions were identified along with 87 monitoring tasks. Typically, M&E programs are overly ambitious and are rarely, if ever, fully implemented. Such is the case with the DBNF Monitoring Program.

**The review team recognizes that some modifications in the M&E program might be appropriate, but is not critical given the current workload of the DBNF.** The DBNF will continue prioritize monitoring tasks and monitor the more critical elements, such as Indiana bat winter counts and other items required for upward reporting.

## 7. APPENDICES

### *Appendix A: Forest Plan Amendments*

*Table A.1. Forest Plan Amendments, FY08 M&E Report, DBNF*

<b>Amendment No.</b>	<b>Date</b>	<b>Responsible Official</b>	<b>Amendment Description</b>
1	8/26/2008	Jerome E. Perez	Establish a 9,867-acre Ruffed Grouse Emphasis Prescription Area 3.H.1. on the Redbird Ranger District

## ***Appendix B: Research Activities***

Patricia De Sá sampled for Sudden Oak Death on the forest twice during this period.

Dr. Andrew Simmons, Carleton University, Ontario, Canada, collected pine and hemlock cores and seeds of several weedy species in an attempt to correlate environmental conditions via tree rings to evolution of weedy species.

Gregory Watkins-Colwell, Yale University, collected reptile specimens for the collection at Yale to promote broad regional studies of differences.

Ryan Keplar, Oregon State University, investigated the fungal flora of insects on the forest as part of a larger regional project.

Brian Jorg, Cincinnati Zoo and Botanical Garden, collected vegetative parts of various Trillium species to test the efficacy of establishing tissue cultured stock for eliminating collection pressure on wild populations.

Matthew Valente, University of Tennessee, sampled the forest population of Bay Star Vine as part of a large regional genetic study of the species.

Leith Nye, Missouri Botanical Garden, sampled goldenseal populations on the forest as part of a large regional project looking at genetics of the species.

Matthew Klooster, University of Cincinnati, looked at pollination biology of sweet pinesap on the Forest as part of a larger regional project.

Harold Keller, and students, Central Missouri State University, looked at slime mold flora of trees vs. grape vines on the forest as part of a larger regional project.

Matt White, Indiana University of Pennsylvania, completed the second year of an initial five year study of the effects of canopy alteration on Cerulean Warblers use and nesting success of forested areas with various degrees of canopy modification.

Luke Dodd, University of Kentucky- Lexington, has been monitoring bat use of area with various degree of canopy disturbance; first year of post-treatment data collection. (Study co-located with cerulean warbler study.)

Mary Arthur, University of Kentucky-Lexington, continues to collected data as part of a long-term (over-ten years) study of forest change following multiple prescribed burns on a landscape scale. Data collection in 2006 followed implementation of prescribed burns.

Matt Dickinson, Northern Research Station, conducted study of smoke production and distribution during prescribed burning during growing season burns.

Dan Cox, University of Kentucky, conducted study of bat movement and response during growing season prescribed burns. (Co-located with smoke production study)

Mike Compton of Texas Tech University, is currently conducting a post graduate study on microhabitat requirements of the olive and ashy darter.

Ken Copenhaver, Jon Fridgen, Karly Hellrung, Shilpa Venkataraman of The Institute for Technology Development's Healthy Forest Project Team working with NASA, Southern Research Station and the Daniel Boone NF, investigated the use of high altitude, multispectral photography to detect non-native invasive plant species infestations.

Carrie Wells of Clemson University, conducted a study to determine the genetic makeup and ecological history of Diana fritillary butterfly populations across its range.

Paul Groff of the University of Miami, conducted a study looking at the genetics of the gentian family throughout its range and included collections from the Daniel Boone NF.

David Matlaga, with USDA ARS, University of Illinois, Urbana-Champaign, began a study looking at the ecological impacts and eradication costs of Chinese Silverplume (*Miscanthus*) to provide additional data to those consider use of the plant as a alternative fuel stock.

Lauren Quinn with USDA ARS, University of Illinois, Urbana-Champaign, began a study looking at the causes of the invasive nature of Chinese Silverplume (*Miscanthus*) in the U.S. compared to growth in its native Japan.

Valerie Pence of the Cincinnati Zoo and Botanical Garden, conducted a study using material from the Daniel Boone NF to determine the techniques for tissue culturing quillworts (*Isoetes*).

Adrienne Cooper of Eastern Kentucky University, began a study to locate pockets of old growth on the Daniel Boone NF to establish additional reference cores for a dendrochronological record in eastern Kentucky.

Jessica Brzyski of the University of Cincinnati, began a study to investigate the genetic diversity of Virginia spiraea populations across its range. Collections were obtained from the Daniel Boone NF.

Kacie Tackett of Eastern Kentucky University, began a study to document disturbance history, age structure and climatic influences in two stands of eastern hemlock to provide a record prior to the likely loss due to hemlock woolly adelgid.

Ryan Kepler of Oregon State University, conducted a study to sample the insectiphagous fungi of the Daniel Boone NF.

Amy Ross-Davis of Purdue University, conducted a study to sample genetic diversity of butternut in the eastern U.S. Numerous samples from the Daniel Boone NF were included.

Dan Brown , Eastern Kentucky University, is developing research proposal on avian response to the hemlock wooly adelgid.

Matt Thomas, Kentucky Department of Fish and Wildlife Resources, is conducting propagation and survival research on the arrow darter.

Ryan Evan, Kentucky State Nature Preserves Commission, conducted mussel distribution study in the Redbird River System.

Craig Roghair, et all, USFS Southern Research Station, is conducting research pertaining to aquatic passage model validation.

Michael Croasdaile, University of Louisville, is compiling a 319 grant proposal to assess potential impacts and their sources upon Sinking Creek, designated critical habitat.

Matt Thomas, Kentucky Department of Fish and Wildlife Resources, is conducting propagation and survival research on the lake sturgeon.

Research Studies related to the *Cold Hill Silvicultural Assessment* under Title IV of the Healthy Forest Restoration Act of 2003

- 1) Regeneration, Southern Research Station (SRS) - Callie Schweitzer
- 2) Overstory, Northern Research Station (NRS) - Kurt Gottxchalk
- 3) Harvest impact/biomass, SRS - Bob Rummer and Jason Thompson
- 4) Soil, SRS - Emily Carter
- 5) Vegetation response, University of Kentucky (UK) - Jeff Stringer
- 6) Light and canopy cover, University of Tennessee (UT) - David Buckley and Stephen Grayson
- 7) LIDAR, UT - Jason Henning and Richard Cristan
- 8) Dendroecology, SRS - Stacy Clark, and Eastern Kentucky University (EKU) - Neil Pederson
- 9) American chestnut, SRS - Stacy Clark, UT - Scott Schlarbaum and Leila Pinchot

- 10) Bat habitat assessment, SRS – Susan Loeb, ECU – Charles Elliott, Ryan Slack, and Brooke Slack

## Appendix C: Funding Allocations

**Table C.1. Funding allocations from traditional sources fiscal years 2005 through 2009, DBNF (Actual year dollars)**

	Expanded Budget Line Item (EBLI)	Forest Plan Estimate 2000	FINAL ALLOCATIONS (excluding carryover and other adjustments)					5-Year Average
			FY05	FY06	FY07	FY08	FY09	
	NFPN		27,701	14,479	103,000	122,778	189,954	91,582
	NFIM		584,814	426,628	423,000	455,233	515,719	481,079
<b>Planning</b>	<b>TOTAL</b>	<b>1,149,000</b>	<b>612,515</b>	<b>441,107</b>	<b>526,000</b>	<b>578,011</b>	<b>705,673</b>	<b>572,661</b>
	NFRW		1,385,655	1,539,324	1,315,400	1,412,403	1,691,233	1,468,803
	CMTL		338,760	364,852	330,785	363,138	392,098	357,927
<b>Recreation</b>	<b>TOTAL</b>	<b>3,655,000</b>	<b>1,724,415</b>	<b>1,904,176</b>	<b>1,646,185</b>	<b>1,775,541</b>	<b>2,083,331</b>	<b>1,826,730</b>
<b>Wildlife</b>	<b>NFWF</b>	<b>627,000</b>	<b>739,697</b>	<b>754,107</b>	<b>698,614</b>	<b>665,907</b>	<b>716,396</b>	<b>714,944</b>
<b>Range</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	CWKV		13,356	60,950	25,900	35,701	38,627	34,907
	CWK2		0	331,190	343,464	0	72,000	149,331
	NFTM		294,972	250,147	767,116	598,273	577,721	497,646
	NFVW		200,450	261,703	379,228	616,686	1,135,756	518,765
	RTRT		188,316	224,283	146,167	377,066	160,013	219,169
	SSSS		0	30,000	17,500	0	0	9,500
<b>Vegetation</b>	<b>TOTAL</b>	<b>1,044,000</b>	<b>697,094</b>	<b>1,158,273</b>	<b>1,679,375</b>	<b>1,627,726</b>	<b>1,984,117</b>	<b>1,429,317</b>
<b>Soil, Water, Air</b>	<b>NFVW</b>	<b>418,000</b>	<b>200,000</b>	<b>250,000</b>	<b>365,000</b>	<b>258,694</b>	<b>270,000</b>	<b>268,739</b>
<b>Minerals</b>	<b>NFMG</b>	<b>313,000</b>	<b>334,996</b>	<b>411,797</b>	<b>328,355</b>	<b>241,799</b>	<b>243,725</b>	<b>312,134</b>
	LALW		236,331	165,862	98,391	143,841	30,000	134,885
	NFLM		348,085	262,101	363,167	339,951	504,149	363,491
<b>Lands</b>	<b>TOTAL</b>	<b>418,000</b>	<b>584,416</b>	<b>427,963</b>	<b>461,558</b>	<b>483,792</b>	<b>534,149</b>	<b>498,376</b>
	CMFC		1,421,855	624,227	448,572	761,399	519,320	755,075
	CMII		229	0	60,000	214,000	74,730	69,792
	CMLG		0	0	0	11,000	135,642	29,328
	CMRD		721,903	1,158,554	883,008	987,693	1,511,480	1,052,528
	FDCL		44,000	0	52,000	50,000	50,000	39,200
	CP09		0	162,438	140,995	204,800	269,751	155,597
<b>Facilities</b>	<b>TOTAL</b>	<b>1,149,000</b>	<b>2,187,987</b>	<b>1,945,219</b>	<b>1,584,575</b>	<b>2,228,892</b>	<b>2,560,923</b>	<b>2,101,519</b>
	WFPR		1,485,955	1,332,498	1,570,329	1,607,600	1,698,644	1,539,005
	WFHF		394,678	409,306	679,496	687,834	785,167	591,296

FIVE-YEAR REVIEW OF IMPLEMENTING THE FOREST PLAN  
 At the end of Fiscal Year 2009  
 DANIEL BOONE NATIONAL FOREST  
 Kentucky

	Expanded Budget Line Item (EBLI)	Forest Plan Estimate 2000	FINAL ALLOCATIONS (excluding carryover and other adjustments)					5-Year Average
			FY05	FY06	FY07	FY08	FY09	
<b>Fire</b>	<b>TOTAL</b>	<b>2,245,000</b>	<b>1,880,633</b>	<b>1,741,804</b>	<b>2,249,825</b>	<b>2,295,434</b>	<b>2,483,811</b>	<b>2,130,301</b>
	SPFH		326,931	181,500	20,000	10,000	30,000	113,686
	SPEA		23	0	0	0	0	5
<b>Forest Health</b>		<b>418,000</b>	<b>326,954</b>	<b>181,500</b>	<b>20,000</b>	<b>10,000</b>	<b>30,000</b>	<b>113,691</b>
<b>TOTAL</b>		<b>11,436,000</b>	<b>9,288,707</b>	<b>9,215,946</b>	<b>9,559,487</b>	<b>10,165,796</b>	<b>11,612,125</b>	<b>9,968,412</b>

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**Table C.2. Funding allocations from other sources fiscal years 2005 through 2009, DBNF (actual year dollars)**

Expanded Budget Line Item (EBLI)	FY05	FY06	FY07	FY08	FY09	5-Year Average
CWFS	110,500	295,000		242,706	431,923	216,026
CWF2			34,800		735	7,107
GBGB	500		100	100		140
QMQM	36,000	36,000	60,000	60,000	69,000	52,200
CACA		2,551,255				510,251
HTRP					4,000	800
FDDS	230,000	260,000	400,000	316,000	420,000	325,200
HTAE	2,000		11,000	10,139	11,853	6,998
MSEQ	3,700	1,000	2,400	16,000	16,000	7,820
MVIS	18,000	11,000	5,000	48,000	28,000	22,000
NFSA	461,827					92,365
NXFX	7,610					1,522
NFN3					38,000	7,600
NFXN	21,421					4,284
TRTR			21,401			4,280
FDRF				37,000	2,203,733	448,147
WFW3				34,000	188,958	44,592
TPCD			193,000			38,600
URMJ				12,070		2,414
CMXN	165,391					33,078
RIRI	250	1,000	4,000	2,500		1,550
WFSU	10,445					2,089
NFSD		481,527				96,305
POOL			2,698,868	2,507,488	2,494,955	1,540,262
URMJ					10,102	2,020
URMN				4,079	7,500	2,316
EXSC			38,000	20,000	11,000	13,800
<b>TOTAL</b>	<b>1,067,644</b>	<b>3,636,782</b>	<b>3,468,569</b>	<b>3,310,082</b>	<b>5,935,759</b>	<b>3,483,766</b>

**Table C.3. Fire borrowing restored in fiscal year 2008, DBNF (actual year dollars)**

Expanded Budget Line Item (EBLI)	Dollars FY2008
NFPN	50,733
NFIM	40,888
CMTL	13,197
NFWF	25,839
NFVW	98,765
NFMG	22,549
NFLM	19,595
WFPR	55,000
WFHF	70,000
<b>TOTAL</b>	<b>396,566</b>

**Table C.4. American Recovery and Reinvestment Act (ARRA), fiscal year 2009, DBNF (actual year dollars)**

Expanded Budget Line Item (EBLI)	Dollars FY09	Project ID	Project Name
		CIM-0802-09F	Fitchburg furnace stabilization
CRFR	808,200	CIM-0802-1	Kentucky ice storm trails and roads restoration
CRRD	910,000	CIM-0802-37R	Kentucky road maintenance
CRTR	200,000	CIM-0802-10T	Trail Maintenance
		CIM-0802-02W	Non-native invasive species treatment
		CIM-0802-07W	Kentucky dump site cleanup
CRWE	1,083,500	CIM-0802-10W	Aquatic monitoring near road and trails
WRHR	1,145,000	WFM-0802-13HF	Fuels for forest health
<b>TOTAL</b>	<b>4,146,700</b>		

**ARRA Projects on the Daniel Boone National Forest**

**CIM-0802-1 Kentucky Ice Storm Trails and Roads Restoration**

Trails and roads in several areas on the Daniel Boone National Forest in eastern Kentucky were damaged by severe ice and wind storms during the winter of 2009. Many of these locations were at popular tourism destinations such as the wilderness area of the Red River Gorge, campgrounds at Cave Run Lake, and the Redbird Crest Trail. Removal of debris and trees blocking roads and trails was necessary to reduce health and safety risks to visitors, as well as re-open routes to recreation attractions that draw tourists who support local merchants and the regional economy. This project focused on clearing and repairing damaged trails and roadways. The rugged terrain and back country locations required much of the work to be done by hand, and there was an emphasis on using local crews and contractors. This tourism-dependent area had already been impacted by layoffs and plant closures, and could have been further devastated by a reduction in the local eco-tourism industry if access had not been restored.

**WFM-0802-13HF Fuels for Forest Health**

This project is a preventative forest health measure to thin portions of the forest in such a manner to resist attacks by Gypsy Moths and other forest pests. Various stands of timber, scattered across the forest, have been identified to be thinned. Across the treated areas, healthier trees would be favored to keep especially species most valuable for wildlife and timber. Other trees would be removed with hand

tools or herbicides to promote forest health. Healthier forests are more resistant to insect and disease attacks. Some of the material cut down during thinning could be available for firewood permits. By thinning these stands and reducing the available fuels, the stands will be more resistant to damaging wildfire.

#### **CIM-0802-37R Kentucky Road Maintenance**

This project includes multiple smaller maintenance projects: A) Three large culverts will be replaced to allow aquatic organism passage for threatened and endangered species, B) Numerous small culverts, that are no longer serviceable, will be replaced, decreasing the amount of sediment in streams; C) Roads used by passenger cars in need of surfacing material will receive new gravel, which will improve safety and make a smoother ride; and D) A road slide will be repaired and the impacted pavement replaced to address safety issues. All of these projects address a backlog of deferred maintenance, improve the affected watersheds, and improve public access to the forest.

#### **CIM-0802-10W Aquatic Monitoring near roads and trails**

This project involves aquatic monitoring near roads and trails to determine road impacts to the stream system, and habitat for Threatened & Endangered mussel species. Monitoring is part of Forest Plan implementation, and will establish a baseline for future research and monitoring. The Center for Aquatic Technology Transfer will hire employees to conduct this monitoring.

As a result of this monitoring, the Forest will have an indicator of any current issues with the streams, set a baseline for better monitoring of future management activities, and be better able to manage Threatened and Endangered aquatic species.

#### **CIM-0802-02W Non-native Invasive Species Treatment**

In 2003, the Cumberland Ranger District received significant ice storm damage, which opened up the forest canopy, particularly near roads. Since then, various Non-native Invasive plant species have moved in, become established and are spreading. Some areas have small concentrations of these invaders. Contract crews can remove them by hand pulling. Other areas have much larger concentrations and will require the use of herbicides.

Preliminary surveys have been conducted to identify general locations. This project will also include specific surveys to identify sites for work to occur and monitoring after completion. This project will enable forest managers to be good stewards and manage the national forest properly for future generations.

#### **CIM-0802-07W Kentucky Dump Site Clean-up**

The Daniel Boone National Forest has hundreds of illegal garbage dump sites scattered across the Forest—along pull-offs, near rivers, at the ends of roads, etc. (deleted a sentence) The Forest will work with KY PRIDE and local county governments to clean up these illegal sites and restore these impacted areas. This will address multiple health and safety related issues, improve the visitor experience and clean up the forest.

#### **CIM-0802-09F Fitchburg Furnace Stabilization (Kentucky)**

The Fitchburg Furnace, also known as the Red River Iron Furnace, is a 19<sup>th</sup>-century; charcoal-fired blast furnace that once turned Kentucky ore and materials into pig iron used for rails, railroad car wheels, and other products that were distributed across the country. The furnace is a monumental example of dry stone laid architecture measuring 80 feet wide by 60 feet high, making it the largest double furnace in the world.

Initial stabilization work has already begun on the structure by the Forest, Friends of the Furnace, Estill County, Aldersgate Methodist Church Camp, and the KY State Historic Preservation Office. This

project would complete that stabilization work, support the arches, place roof over structure to preserve it, improve drainage to preserve the stability of the structure. In addition to other contract work, some skilled rock masonry work will be utilized. The public will gain significant value by having this piece of history preserved for future generations.

**CIM-0802-10T Trail Maintenance**

This project involves trail maintenance for 100 miles of trail. Work includes: grading, brushing, ditching, culvert cleaning, culvert replacement, hazard tree removal, and relocating hiking, motorized, and equestrian trails to avoid sensitive areas and steep slopes. This work will involve grading, ditching, culvert cleaning, culvert replacement, brushing, and removing hazard trees. These activities meet forest management goals to: restore watersheds (improved water quality due to less sediment from properly maintained and constructed trails) and improve habitat (protection of sensitive plants and habitats).

## Appendix D: NFS land by District and by County

**Table D.1. National Forest System Land Status (acres) by Ranger District as of September 30, 2009, DBNF**

COUNTY	Cumberland	London	Stearns	Redbird	TOTAL	Change Since 2004 (Acres)
Bath	19,386				19,386	0
Clay				77,947	77,947	-131
Estill	2,265	3,333			5,598	0
Harlan				803	803	0
Jackson		59,603			59,603	+823
Knox				74	74	0
Laurel		64,257			64,257	+610
Lee	5,822	2,765			8,587	0
Leslie				52,142	52,142	0
McCreary			142,671		142,671	+5
Menifee	46,857				46,857	+57
Morgan	13,090				13,090	+60
Owsley		3,848		12,723	16,571	+137
Perry				2,151	2,151	0
Powell	15,974				15,974	+446
Pulaski		23,455	14,840		38,295	0
Rockcastle		16,765			16,765	+401
Rowan	62,650				62,650	+107
Wayne			1,174		1,174	+532
Whitley		34,018	12,500		46,518	0
Wolfe	16,650				16,650	+87
<b>TOTAL</b>	<b>182,694</b>	<b>208,044</b>	<b>171,185</b>	<b>145,840</b>	<b>707,763</b>	<b>+3,134</b>
<b>% of Total</b>	<b>26%</b>	<b>29%</b>	<b>24%</b>	<b>21%</b>		<b>0.44%</b>

**Table D.2. Land Status by County as of September 30, 2009, DBNF**

COUNTY	Total Acres	Total DBNF- NFS Acres	Percent NFS Acres
Bath	178,854	19,386	10.84%
Clay	301,446	77,947	25.86%
Estill	162,515	5,598	3.44%
Harlan	299,008	803	0.27%
Jackson	221,651	59,603	26.89%
Knox	248,102	74	0.03%
Laurel	278,829	64,257	23.05%
Lee	134,310	8,587	6.39%
Leslie	258,579	52,142	20.16%
McCreary	273,728	142,671	52.15%
Menifee	130,496	46,857	35.91%
Morgan	244,006	13,090	5.36%
Owsley	126,778	16,571	13.07%
Perry	218,976	2,151	0.98%
Powell	115,290	15,974	13.86%
Pulaski	423,424	38,295	9.04%
Rockcastle	203,219	16,765	8.25%
Rowan	179,725	62,650	34.86%
Wayne	294,016	1,174	0.40%
Whitley	281,696	46,518	16.51%
Wolfe	142,579	16,650	11.16%
<b>TOTAL</b>	<b>4,717,229</b>	<b>707,763</b>	<b>15.00%</b>
Kentucky	25,426,035	707,763	2.78%
USA	3,537,438.44	707,763	0.03%

## Appendix E: Payments to States and Counties

**Table E.1. Payment to States and Counties, 2005 to 2009 DBNF, (actual year dollars)**  
(dollars are rounded to whole dollars)

County	FY05	FY06	FY07	FY08	FY09	5-Year Total 2005-2009	5-Year Average 2005 - 2009
<b>Bath</b>	21,363	21,603	21,764	30,471	26,751	121,952	24,390
<b>Clay</b>	85,044	84,809	86,959	121,629	106,633	485,074	97,015
<b>Estill</b>	6,340	6,445	6,488	9,115	8,036	36,424	7,285
<b>Harlan</b>	4,761	4,843	4,830	7,497	7,493	29,424	5,885
<b>Jackson</b>	62,622	64,246	65,131	91,649	80,602	364,250	72,850
<b>Knox</b>	0	0	0	97	0	97	19
<b>Laurel</b>	70,066	71,569	72,434	101,906	79,707	395,682	79,136
<b>Lee</b>	9,503	9,663	9,733	13,642	11,991	54,532	10,906
<b>Leslie</b>	60,051	61,082	61,533	86,731	76,873	346,270	69,254
<b>McCreary</b>	194,198	197,664	198,797	285,820	260,472	1,136,951	227,390
<b>Menifee</b>	51,312	52,263	52,648	73,626	64,669	294,518	58,904
<b>Morgan</b>	28,042	28,519	28,820	43,006	41,044	169,431	33,886
<b>Owsely</b>	17,882	18,385	18,521	25,945	22,799	103,532	20,706
<b>Perry</b>	5,599	5,694	5,697	9,362	9,093	35,445	7,089
<b>Powell</b>	17,129	17,425	18,183	25,593	23,302	101,632	20,326
<b>Pulaski</b>	78,135	79,445	79,558	118,166	112,090	467,394	93,479
<b>Rockcastle</b>	18,669	18,981	19,652	27,741	24,620	109,663	21,933
<b>Rowan</b>	68,611	69,940	70,469	98,727	86,762	394,509	78,902
<b>Wayne</b>	40,142	41,554	41,465	65,672	67,081	255,914	51,183
<b>Whitley</b>	64,170	65,518	53,590	75,268	66,362	324,908	64,982
<b>Wolfe</b>	22,552	23,031	23,773	25,730	22,540	117,626	23,525
<b>TOTAL</b>	<b>926,191</b>	<b>942,679</b>	<b>940,045</b>	<b>1,337,393</b>	<b>1,198,920</b>	<b>4,308,007</b>	<b>1,069,046</b>

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## Appendix F: County Demographics

Table F.1.a. – Population demographics for counties with National Forest System lands, DBNF (<http://quickfacts.census.gov/qfd/index.html>), January 11, 2010

People Quick Facts	Bath	Clay	Estill	Harlan	Jackson	Knox	Laurel	Lee
Population, 2008 estimate	11,750	23,930	14,948	30,783	13,645	32,810	57,586	7,414
Population, percent change, April 1, 2000 to July 1, 2008	5.9%	-2.5%	-2.3%	-7.3%	1.1%	3.2%	9.2%	-6.3%
Population estimates base (April 1) 2000	11,094	24,556	15,307	33,202	13,495	31,783	52,715	7,916
Persons under 5 years old, percent, 2008	6.6%	5.7%	6.4%	6.3%	6.3%	7.9%	6.6%	5.1%
Persons under 18 years old, percent, 2008	23.9%	22.2%	23.2%	22.8%	22.9%	25.6%	24.3%	19.3%
Persons 65 years old and over, percent, 2008	14.2%	12.6%	13.9%	14.1%	14.3%	14.1%	12.7%	15.5%
Female persons, percent, 2008	50.8%	47.4%	51.5%	52.2%	50.7%	51.9%	51.2%	47.9%
White persons, percent, 2008 (a)	96.8%	93.7%	98.8%	95.3%	99.0%	97.5%	97.3%	94.6%
Black persons, percent, 2008 (a)	2.1%	5.1%	0.3%	2.6%	0.2%	1.1%	0.9%	4.1%
American Indian and Alaska Native persons, percent, 2008 (a)	0.3%	0.2%	0.3%	0.5%	0.2%	0.3%	0.4%	0.3%
Asian persons, percent, 2008 (a)	Z	0.1%	0.1%	0.5%	Z	0.2%	0.5%	0.1%
Native Hawaiian and Other Pacific Islander, percent, 2008 (a)	0.0%	Z	0.0%	Z	Z	Z	Z	Z
Persons reporting two or more races, percent, 2008	0.8%	0.9%	0.5%	1.1%	0.6%	1.0%	0.9%	0.9%
Persons of Hispanic or Latino origin, percent, 2008 (b)	1.1%	1.5%	0.7%	0.8%	0.6%	0.8%	0.7%	0.6%
White persons not Hispanic, percent, 2008	95.9%	92.5%	98.2%	94.6%	98.4%	96.8%	96.7%	94.1%
Living in same house in 1995 and 2000, pct 5 yrs old & over	61.7%	66.1%	58.3%	70.3%	66.3%	62.6%	59.3%	62.9%
Foreign born persons, percent, 2000	0.7%	0.7%	0.3%	0.6%	0.4%	0.4%	0.8%	0.2%
Language other than English spoken at home, pct age 5+, 2000	1.7%	2.3%	1.6%	1.6%	1.9%	1.8%	2.1%	1.8%
High school graduates, percent of persons age 25+, 2000	59.0%	49.4%	58.5%	58.7%	52.9%	54.1%	63.9%	50.9%
Bachelor's degree or higher, pct of persons age 25+, 2000	10.1%	8.0%	6.9%	8.9%	6.8%	8.8%	10.6%	6.3%
Persons with a disability, age 5+, 2000	2,989	7,471	4,578	11,515	4,081	10,089	13,490	2,275
Mean travel time to work (minutes), workers age 16+, 2000	28.7	31.2	34.9	27	35	24.6	22.5	35.4
Housing units, 2008	5,277	9,911	7,092	15,618	6,357	14,702	23,480	3,490
Homeownership rate, 2000	79.8%	74.7%	74.0%	73.5%	80.1%	71.4%	77.0%	76.6%
Housing units in multi-unit structures, percent, 2000	4.9%	6.8%	8.9%	9.3%	4.7%	9.2%	9.6%	7.1%
Median value of owner-occupied housing units, 2000	\$65,000	\$43,800	\$50,200	\$43,000	\$48,300	\$59,400	\$77,300	\$52,300
Households, 2000	4,445	8,556	6,108	13,291	5,307	12,416	20,353	2,985
Persons per household, 2000	2.47	2.62	2.48	2.47	2.52	2.51	2.56	2.41
Median household income, 2007	\$31,740	\$20,999	\$28,797	\$25,939	\$25,653	\$24,881	\$33,244	\$24,617
Per capita money income, 1999	\$15,326	\$9,716	\$12,285	\$11,585	\$10,711	\$10,660	\$14,165	\$13,325

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Persons below poverty, percent, 2007	23.9%	41.9%	26.3%	29.3%	34.1%	31.1%	22.0%	34.9%
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**Table F.1.b. – Population demographics for counties with National Forest System lands, DBNF (<http://quickfacts.census.gov/qfd/index.html>), January 11, 2010 (continued)**

People Quick Facts	Leslie	McMCreary	Menifee	Morgan	Owsley	Perry	Powell	Pulaski
Population, 2008 estimate	11,639	17,315	6,744	14,156	4,634	29,241	13,859	60,851
Population, percent change, April 1, 2000 to July 1, 2008	-6.1%	1.4%	2.9%	1.5%	-4.6%	-0.6%	4.7%	8.2%
Population estimates base (April 1) 2000	12,401	17,080	6,556	13,948	4,858	29,422	13,237	56,217
Persons under 5 years old, percent, 2008	5.6%	7.0%	5.4%	5.4%	6.4%	6.5%	6.5%	6.4%
Persons under 18 years old, percent, 2008	21.1%	25.0%	21.5%	20.0%	21.8%	23.1%	22.6%	22.5%
Persons 65 years old and over, percent, 2008	14.3%	13.1%	16.6%	13.3%	15.5%	13.3%	18.7%	16.9%
Female persons, percent, 2008	51.9%	50.8%	50.6%	44.7%	50.8%	51.6%	50.9%	51.5%
White persons, percent, 2008 (a)	99.1%	97.4%	97.4%	94.4%	99.2%	96.8%	98.2%	97.1%
Black persons, percent, 2008 (a)	0.1%	1.2%	1.6%	4.5%	0.1%	1.8%	0.9%	1.3%
American Indian and Alaska Native persons, percent, 2008 (a)	0.1%	0.5%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%
Asian persons, percent, 2008 (a)	0.1%	0.1%	Z	0.1%	Z	0.7%	0.1%	0.5%
Native Hawaiian and Other Pacific Islander, percent, 2008 (a)	Z	Z	Z	Z	Z	Z	0.0%	Z
Persons reporting two or more races, percent, 2008	0.6%	0.8%	0.8%	0.7%	0.5%	0.7%	0.7%	0.7%
Persons of Hispanic or Latino origin, percent, 2008 (b)	0.7%	0.9%	1.2%	0.6%	0.8%	0.6%	0.9%	1.3%
White persons not Hispanic, percent, 2008	98.4%	96.6%	96.5%	94.0%	98.5%	96.2%	97.4%	95.9%
Living in same house in 1995 and 2000, pct 5 yrs old & over	75.1%	61.0%	64.0%	64.4%	70.9%	72.2%	56.6%	58.2%
Foreign born persons, percent, 2000	0.2%	0.5%	0.4%	0.7%	0.1%	0.6%	0.2%	0.8%
Language other than English spoken at home, pct age 5+, 2000	0.9%	1.6%	2.7%	2.9%	1.0%	2.0%	0.7%	2.1%
High school graduates, percent of persons age 25+, 2000	52.5%	52.6%	57.6%	56.4%	49.2%	58.3%	56.1%	65.6%
Bachelor's degree or higher, pct of persons age 25+, 2000	6.3%	6.7%	8.4%	7.7%	7.7%	8.9%	6.5%	10.5%
Persons with a disability, age 5+, 2000	4,273	5,536	1,850	3,382	1,676	8,651	3,946	15,344
Mean travel time to work (minutes), workers age 16+, 2000	33.5	28.2	36.1	33.2	28.7	23.2	28.9	22.5
Housing units, 2008	5,802	7,558	3,899	5,793	2,359	13,409	5,819	27,849
Homeownership rate, 2000	82.3%	75.7%	81.4%	79.8%	78.5%	77.4%	74.0%	76.0%
Housing units in multi-unit structures, percent, 2000	2.6%	6.3%	3.0%	4.3%	5.1%	8.6%	9.1%	11.6%
Median value of owner-occupied housing units, 2000	\$36,900	\$46,300	\$54,500	\$55,400	\$40,800	\$52,500	\$63,000	\$74,100
Households, 2000	4,885	6,520	2,537	4,752	1,894	11,460	5,044	22,719
Persons per household, 2000	2.52	2.55	2.49	2.55	2.51	2.53	2.6	2.42
Median household income, 2007	\$26,114	\$24,293	\$28,928	\$28,514	\$21,189	\$30,089	\$31,228	\$32,368
Per capita money income, 1999	\$10,429	\$9,896	\$11,399	\$12,657	\$10,742	\$12,224	\$13,060	\$15,352
Persons below poverty, percent, 2007	31.0%	35.5%	27.2%	27.1%	44.4%	31.4%	25.6%	21.7%

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**Table F.1.c. – Population demographics for counties with National Forest System lands, DBNF (<http://quickfacts.census.gov/qfd/index.html>), January 11, 2010 (continued)**

People Quick Facts	Rockcastle	Rowan	Wayne	Whitley	Wolfe	Kentucky	USA
Population, 2008 estimate	16,788	22,733	20,696	38,668	6,989	4,269,245	304,059,724
Population, percent change, April 1, 2000 to July 1, 2008	1.2%	2.9%	3.9%	7.8%	-1.1%	5.6%	8.0%
Population estimates base (April 1) 2000	16,582	22,094	19,923	35,870	7,065	4,042,284	281,424,602
Persons under 5 years old, percent, 2008	6.0%	5.7%	6.0%	6.0%	8.0%	6.7%	6.9%
Persons under 18 years old, percent, 2008	22.2%	19.8%	22.7%	23.3%	26.2%	23.6%	24.3%
Persons 65 years old and over, percent, 2008	15.7%	12.8%	14.7%	15.2%	14.5%	13.3%	12.8%
Female persons, percent, 2008	51.0%	51.4%	50.8%	51.8%	51.3%	51.1%	50.7%
White persons, percent, 2008 (a)	98.5%	95.7%	97.2%	97.8%	99.0%	89.9%	79.8%
Black persons, percent, 2008 (a)	0.3%	1.9%	1.5%	0.8%	0.3%	7.7%	12.8%
American Indian and Alaska Native persons, percent, 2008 (a)	0.2%	0.2%	0.2%	0.2%	0.1%	0.3%	1.0%
Asian persons, percent, 2008 (a)	0.1%	1.1%	0.1%	0.3%	Z	1.0%	4.5%
Native Hawaiian and Other Pacific Islander, percent, 2008 (a)	Z	Z	0.0%	Z	Z	Z	0.2%
Persons reporting two or more races, percent, 2008	0.8%	1.0%	0.9%	0.8%	0.6%	1.1%	1.7%
Persons of Hispanic or Latino origin, percent, 2008 (b)	0.8%	1.3%	2.8%	0.8%	0.9%	2.4%	15.4%
White persons not Hispanic, percent, 2008	97.8%	94.5%	94.7%	97.1%	98.1%	87.8%	65.6%
Living in same house in 1995 and 2000, pct 5 yrs old & over	64.1%	50.3%	63.3%	61.6%	64.7%	55.9%	54.1%
Foreign born persons, percent, 2000	Z	1.4%	1.3%	0.7%	0.7%	2.0%	11.1%
Language other than English spoken at home, pct age 5+, 2000	1.5%	3.7%	2.5%	2.0%	1.8%	3.9%	17.9%
High school graduates, percent of persons age 25+, 2000	57.7%	70.9%	57.8%	61.3%	53.6%	74.1%	80.4%
Bachelor's degree or higher, pct of persons age 25+, 2000	8.3%	21.9%	7.2%	13.4%	10.6%	17.1%	24.4%
Persons with a disability, age 5+, 2000	4,350	4,521	6,538	10,102	2,291	874,156	49,746,248
Mean travel time to work (minutes), workers age 16+, 2000	28.4	24.4	22.2	25.1	33.8	23.5	25.5
Housing units, 2008	7,726	9,425	9,964	16,039	3,446	1,920,581	129,065,264
Homeownership rate, 2000	79.5%	69.8%	76.5%	72.6%	73.9%	70.8%	66.2%
Housing units in multi-unit structures, percent, 2000	5.4%	10.2%	6.3%	10.6%	6.1%	17.7%	26.4%
Median value of owner-occupied housing units, 2000	\$57,000	\$80,000	\$55,400	\$62,100	\$45,300	\$86,700	\$119,600
Households, 2000	6,544	7,927	7,913	13,780	2,816	1,590,647	105,480,101
Persons per household, 2000	2.49	2.39	2.49	2.52	2.45	2.47	2.59
Median household income, 2007	\$29,235	\$34,278	\$28,154	\$27,424	\$24,749	\$40,299	\$50,740
Per capita money income, 1999	\$12,337	\$13,889	\$12,601	\$12,777	\$10,321	\$18,093	\$21,587
Persons below poverty, percent, 2007	26.8%	24.5%	27.0%	27.7%	36.7%	17.2%	13.0%

FIVE-YEAR REVIEW OF IMPLEMENTING THE FOREST PLAN  
At the end of Fiscal Year 2009  
DANIEL BOONE NATIONAL FOREST  
Kentucky

**Table F.2.a. – Economic information for counties with National Forest System lands, DBNF (<http://quickfacts.census.gov/qfd/index.html>), January 11, 2010**

<b>Business QuickFacts</b>	<b>Bath</b>	<b>Clay</b>	<b>Estill</b>	<b>Harlan</b>	<b>Jackson</b>	<b>Knox</b>	<b>Laurel</b>	<b>Lee</b>
Private nonfarm establishments, 2007	150	281	199	508	132	494	1,197	101
Private nonfarm employment, 2007	1,515	2,947	1,784	6,360	1,612	7,791	23,653	1,680
Private nonfarm employment, percent change 2000-2007	2.6%	-5.7%	-13.6%	11.3%	-28.7%	37.8%	36.9%	-2.0%
Non-employer establishments, 2007	801	1,107	957	1,215	961	2,171	4,002	442
Total number of firms, 2002	825	1,200	982	1,484	1,079	1,876	4,330	470
Black-owned firms, percent, 2002	F	F	F	F	F	F	F	F
American Indian and Alaska Native owned firms, percent, 2002	F	F	F	F	F	F	F	F
Asian-owned firms, percent, 2002	F	F	F	F	F	F	F	F
Native Hawaiian and Other Pacific Islander owned firms, percent, 2002	F	F	F	F	F	F	F	F
Hispanic-owned firms, percent, 2002	F	F	F	F	F	F	F	F
Women-owned firms, percent, 2002	23.3%	20.8%	32.4%	22.1%	S	17.9%	34.0%	F
Manufacturers' shipments, 2002 (\$1000)	NA	NA	NA	NA	155,565	D	657,575	NA
Wholesale trade sales, 2002 (\$1000)	D	6,406	D	68,695	D	40,606	D	D
Retail sales, 2002 (\$1000)	43,180	118,715	76,728	159,789	33,271	224,606	711,993	35,885
Retail sales per capita, 2002	\$3,781	\$4,861	\$4,997	\$4,910	\$2,439	\$7,092	\$13,080	\$4,545
Accommodation and foodservices sales, 2002 (\$1000)	D	7,864	7,196	16,921	2,183	9,898	50,389	1,360
Building permits, 2008	6	0	1	0	0	8	12	0
Federal spending, 2008	144,705	401,780	295,564	595,814	215,118	405,413	498,667	122,292

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At the end of Fiscal Year 2009  
DANIEL BOONE NATIONAL FOREST  
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**Table F.2.b. – Economic information for counties with National Forest System lands, DBNF (<http://quickfacts.census.gov/qfd/index.html>),  
January 11, 2010 (continued)**

<b>Business QuickFacts</b>	<b>Leslie</b>	<b>McCreary</b>	<b>Menifee</b>	<b>Morgan</b>	<b>Owsley</b>	<b>Perry</b>	<b>Powell</b>	<b>Pulaski</b>
Private nonfarm establishments, 2007	115	176	68	194	49	709	180	1,471
Private nonfarm employment, 2007	1,076	1,618	563	2,018	0	10,375	1,729	22,575
Private nonfarm employment, percent change 2000-2007	-11.5%	-18.3%	-1.6%	-10.8%	NA	8.6%	-26.8%	10.7%
Non-employer establishments, 2007	603	1,045	442	895	284	1,462	912	4,411
Total number of firms, 2002	666	1,143	496	946	297	1,988	949	5,035
Black-owned firms, percent, 2002	F	F	F	F	F	F	F	F
American Indian and Alaska Native owned firms, percent, 2002	F	F	F	F	F	F	F	F
Asian-owned firms, percent, 2002	F	F	F	F	F	F	F	F
Native Hawaiian and Other Pacific Islander owned firms, percent, 2002	F	F	F	F	F	F	F	F
Hispanic-owned firms, percent, 2002	F	F	F	F	F	F	F	F
Women-owned firms, percent, 2002	S	9.1%	S	S	F	24.2%	S	S
Manufacturers' shipments, 2002 (\$1000)	NA	NA	NA	NA	NA	157,073	80,248	760,398
Wholesale trade sales, 2002 (\$1000)	D	D	NA	D	D	191,493	14,114	533,479
Retail sales, 2002 (\$1000)	38,085	74,155	14,836	76,306	14,193	346,697	73,629	677,481
Retail sales per capita, 2002	\$3,104	\$4,329	\$2,208	\$5,355	\$2,979	\$11,753	\$5,531	\$11,812
Accommodation and foodservices sales, 2002 (\$1000)	D	3,915	D	3,271	D	33,113	9,033	53,253
Building permits, 2008	0	0	0	0	0	9	0	8
Federal spending, 2008	203,415	267,748	105,570	156,017	125,622	404,432	120,449	661,971

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**Table F.2.c. – Economic information for counties with National Forest System lands, DBNF (<http://quickfacts.census.gov/qfd/index.html>),  
January 11, 2010 (continued)**

<b>Business QuickFacts</b>	<b>Rockcastle</b>	<b>Rowan</b>	<b>Wayne</b>	<b>Whitley</b>	<b>Wolfe</b>	<b>Kentucky</b>	<b>USA</b>
Private nonfarm establishments, 2007	245	476	342	701	89	93,539	7,705,018
Private nonfarm employment, 2007	2,389	6,908	4,893	10,435	674	1,550,192	120,604,265
Private nonfarm employment, percent change 2000-2007	-15.9%	8.9%	11.1%	-25.9%	-4.0%	2.4%	5.7%
Non-employer establishments, 2007	1,229	1,465	1,269	2,455	497	278,100	21,708,021
Total number of firms, 2002	1,158	1,646	1,378	3,547	544	300,685	22,974,655
Black-owned firms, percent, 2002	F	F	F	F	F	2.5%	5.2%
American Indian and Alaska Native owned firms, percent, 2002	F	F	F	F	F	0.4%	0.9%
Asian-owned firms, percent, 2002	F	F	F	F	F	1.1%	4.8%
Native Hawaiian and Other Pacific Islander owned firms, percent, 2002	F	F	F	F	F	0.0%	0.1%
Hispanic-owned firms, percent, 2002	F	F	F	F	F	0.7%	6.8%
Women-owned firms, percent, 2002	18.0%	29.0%	S	28.6%	20.2%	25.7%	28.2%
Manufacturers' shipments, 2002 (\$1000)	60,887	239,029	218,906	269,271	NA	88,513,497	3,916,136,712
Wholesale trade sales, 2002 (\$1000)	D	48,725	17,733	D	D	51,838,719	4,634,755,112
Retail sales, 2002 (\$1000)	70,393	216,225	140,966	434,416	46,942	40,062,561	3,056,421,997
Retail sales per capita, 2002	\$4,210	\$9,718	\$7,016	\$11,802	\$6,714	\$9,795	\$10,615
Accommodation and foodservices sales, 2002 (\$1000)	11,239	25,501	14,997	55,938	D	4,908,331	449,498,718
Building permits, 2008	0	13	0	23	0	10,494	905,359
Federal spending, 2008	182,677	194,892	258,125	537,769	123,450	52,264,206	2,771,782,152

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At the end of Fiscal Year 2009  
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Kentucky

**Table F.3.a. – Geographic information for counties with National Forest System lands, DBNF**  
(<http://quickfacts.census.gov/qfd/index.html>), January 11, 2010

Geography QuickFacts	Bath	Clay	Estill	Harlan	Jackson	Knox	Laurel	Lee
Land area, 2000 (square miles)	279.46	471.01	253.93	467.2	346.33	387.66	435.67	209.86
Persons per square mile, 2000	39.7	52.1	60.3	71.1	39	81.9	120.9	37.7
Metropolitan or Micropolitan Statistical Area	Mount Sterling, KY Micro Area	None	None	None	None	None	London, KY Micro Area	None

**Table F.3.b. – Geographic information for counties with National Forest System lands, DBNF**  
(<http://quickfacts.census.gov/qfd/index.html>), January 11, 2010 (continued)

Geography QuickFacts	Leslie	McCreary	Menifee	Morgan	Owsley	Perry	Powell	Pulaski
Land area, 2000 (square miles)	404.03	427.7	203.9	381.26	198.09	342.15	180.14	661.6
Persons per square mile, 2000	30.7	39.9	32.1	36.6	24.5	85.9	73.5	84.9
Metropolitan or Micropolitan Statistical Area	None	None	Mount Sterling, KY Micro Area	None	None	None	None	Somerset, KY Micro Area

**Table F.3.c. – Geographic information for counties with National Forest System lands, DBNF**  
(<http://quickfacts.census.gov/qfd/index.html>), January 11, 2010 (continued)

Geography QuickFacts	Rockcastle	Rowan	Wayne	Whitley	Wolfe	Kentucky	USA
Land area, 2000 (square miles)	317.53	280.82	459.4	440.15	222.78	39,728.18	3,537,438.44
Persons per square mile, 2000	52.1	78.6	43.4	81.5	31.7	101.7	79.6
Metropolitan or Micropolitan Statistical Area	Richmond-Berea, KY Micro Area	None	None	Corbin, KY Micro Area	None		

## ***Appendix G: Integrated Resource Management Strategy (IRMS)***

An IRMS was developed in May 2006 and revised in June 2009. The IRMS is a process the Forest uses to systematically implement the Forest Plan. Additional information and a copy of the Integrated Resource Management Strategy (Strategy) can be found on the Daniel Boone National Forest web site at [http://www.fs.fed.us/r8/boone/planning/IRMS/index\\_irms.shtml](http://www.fs.fed.us/r8/boone/planning/IRMS/index_irms.shtml).

Thirty-three (33) landscape areas were originally identified, but that number was reduced to 23 as larger landscape areas were identified. Annually, each district will inventory approximately 10% of their land base. Bi-annually, each district will conduct an assessment of one landscape area. It is not the intent of the Strategy that all projects are a result of a landscape analysis. Routine activities and unforeseen circumstances can lead to proposing activities at any time.

## ***Appendix H: Management Reviews***

**A. GENERAL MANAGEMENT REVIEW** – none occurred in FY 2009.

### **B. ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)**

A National EMS was put in place in 2008.

The Unit Management Review occurred on October 21, 2009.

There were no Finding Notices received.

EMS training – 94% of the employees received training (DBNF, SIFC, LE&I), excluding the two Job Corp Centers. EMS training will be included in new employee orientation packets.

A ***Fleet Action Plan*** was approved on October 21, 2008.

An ***Emergency Response Plan*** was revised on October 27, 2009

#### Significant Aspects

**Fleet Management:** In December 2008 the Voyager card was replaced by US Bank card. The new system is not able to produce a summary of fuel used, or a distinction between petroleum and non-petroleum based fuel. Therefore, fuel usage was calculated from total miles driven and average mpg by vehicle. This method was not accurate. Therefore, results could not be reported at the local/Forest level.

- Petroleum-based fuel use reduction (Objective = 2%) (Accomplishment = ??%)
- NON-Petroleum-based fuel use increased (Objective = 10%) (Accomplishment = ??%)

The DBNF maintains an internal web site at [http://fsweb/lmp/EMS/EMS\\_index.html](http://fsweb/lmp/EMS/EMS_index.html) that provides training and guidance related to implementation of EMS significant aspects.

## ***Appendix I: Appeals and Litigation Activity***

### **APPEALS ACTIVITY in FY 2009**

Administrative appeals filed under 36 CFR 215 regulations:

- 1) Group One Red Bird River Project was appealed jointly by Kentucky Heartwood and Heartwood in October 2008 (09-08-02-0002). The Forest Supervisor's decision was affirmed.
- 2) Upper Rock Creek Vegetation Management Project received two appeals in February 2009. One was a joint appeal by Heartwood and Kentucky Heartwood (09-08-02-0016), and the other was by Robert Stephens (09-08-02-0015). The Forest Supervisor withdrew the decision.

### **LITIGATION ACTIVITY in FY 2009**

Cases ruled on:

- 1) *Heartwood, Inc. and Kentucky Heartwood, Inc. v. Agpaoa* (CA 07-114) - 2003 Ice Storm Recovery Project. On April 27, 2009, the US District Court for the Eastern District of Kentucky issued judgment in favor of the U.S. Forest Service.
- 2) *Robert Stephens v. U.S. Forest Service* (CA 08-6322) – East Stearns Fuel Treatment and Preparedness Project. On September 3, 2009, the U.S. Court of Appeals for the Sixth Circuit issued an Order dismissing the complaint.

New case:

- 1) *Heartwood, Inc. and Kentucky Heartwood, Inc. v. Agpaoa*, (CA 09-5761) 2003 Ice Storm Recovery Project. Filed Notice of Appeal to the Sixth Circuit Court of Appeals; June 2009. (Case pending)
- 2) *Robert Stephens v. U.S. Forest Service* (CA 08-6322) - East Stearns Fuel Treatment and Preparedness Project – Notice of Appeal was filed with the Sixth Circuit Court of Appeals, October 2008. (Case closed. See above)

Carryover cases:

- 1) *Slusher v. USA, et. al.*, filed September 2008, CA 08-304 (Case pending)

## ***Appendix J: Report Preparers***

***Table G.1. Report Preparers, FY08 M&E Report, DBNF***

<b>Resource Specialist</b>	<b>Expertise</b>
Adams, Wayna	Archaeologist
Baker, Gene	Engineer
Braun, Richard	Biologist
Davis, Patti	Geologist
Huber, Cindy	Air Resource Specialist
Finke, Paul	Planner
Gandy, Mitch	Fire and Fuels
Kluempke, Mike	Forester
Malone, Joy	Staff officer
Martin, Pam	Fisheries Biologist
Pitrolo, Melanie	Air Resource Specialist (T)
Rock, Mike	Lands Forester
Ross, Nancy	Staff Officer
Stone, Amos	Forester/Silviculturist
Taylor, David	Botanist
Walker, Jon	Hydrologist
Walker, Marie	Staff Officer
Williamson, Myra	Recreation Forester