

**DANIEL BOONE NATIONAL FOREST
MONITORING AND EVALUATION REPORT**
for
FISCAL YEARS 2002 and 2003

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FOREST SUPERVISOR'S CERTIFICATION
DANIEL BOONE NATIONAL FOREST

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

The Forest Plan is sufficient to guide forest management for that portion of fiscal year 2004 until such time that the Regional Forester revises the Forest Plan. The Forest Plan was revised on April 16, 2004. Implementation of the Forest Plan began on May 24, 2004, thirty days following publication of the Notice of Availability of the Final Environmental Impact Statement in the Federal Register. Although this report is being issued after the completion of the Revised Forest Plan, the monitoring results documented in this report and previous monitoring and evaluation reports were considered during the development of the Revised Forest Plan.

Any amendments to the Revised Forest Plan will be made using the appropriate NEPA procedures.

/s/ George Bain (for)

BENJAMIN T. WORTHINGTON
Forest Supervisor

September 29, 2004

Date

EXECUTIVE SUMMARY

Over the years, points of contention on how the Daniel Boone National Forest should be managed have come and gone. Some of the more recent concerns are listed below. These points of contention have been identified to help focus monitoring and evaluation in areas appropriate to any controversy.

The following is a summary of NOTEWORTHY ISSUES for fiscal years 2002 and 2003:

Forest Health

- -Restoration of areas where pine trees were killed by the southern pine beetle.
- -Oak decline and the associated twolined chestnut borer activity in older white oak trees.

Reforestation

- -Survival of planted and natural southern yellow pine seedlings.

Recreation

- -Public and employee safety from hazard trees resulting from the southern pine beetle infestation, from oak decline (Twolined chestnut borer), and storm damage.
- -Effectiveness of off-highway vehicle trail standards.

Cultural Resources

- -Inventory and protection of archaeologically significant sites within the Red River Gorge and Geological Area.

Lands

- -Acid mine drainage from abandoned mine sites continues to impact some streams flowing across the National Forest.
- -Requests for access to outstanding and reserved minerals continues to increase.
- -Requests for leasing of federal minerals (coal, gas, and oil)
- -Land exchange proposals where the recipient of National Forest System lands intends to mine coal.

Fuels Hazards

- -Increased fuels from storms and SPB infestation has created hazardous conditions.

Forest Products

- -Utilization of wood products following unplanned events such as southern pine beetle, oak decline (twolined chestnut borer), and ice storm.

Monitoring and Evaluation Findings

1. Numerous grassy openings were maintained or converted to native warm or cool season grasses. These types of habitat favor numerous wildlife species including the reintroduced elk.
2. Use of fire as a tool is on the increase. However, monitoring ecological change over time would be beneficial to validate and predict future conditions.
3. Southern pine beetle activity has slowed as a result in increased populations of predator beetles and a substantial decrease in the number of live yellow pine trees.
4. Gypsy moth monitoring continues with no positive captures.
5. Oak decline continues to be a concern as the forests continue to age. Secondary insects, such as the two-lined chestnut borer has been found in large old white oak trees.
6. A watershed basin inventory was completed in the Upper Cumberland River through the Kentucky Management Framework. Compared with other sub-watersheds, those on the Daniel Boone National Forest were in relatively good condition. The main cause of impairment were from activities that occur off of National Forest System lands. The Rock Creek watershed was evaluated in 2003. The upper portion is in excellent shape. The lower portion is in an impaired condition due to abandoned coal mining.

7. Water monitoring occurred at eleven sites on Laurel River Lake and at three sites on Cave Run Lake for swimming quality. All samples were in compliance.
8. Results from water quality monitoring has shown that a vast majority of streams on National Forest System lands are of the highest quality and land management activities are not significantly degrading water quality. There still remain approximately 40 miles of streams that are impacted by acid mine drainage from past coal mining activities and brine from old oil wells.
9. Sewage treatment plants at Holly Bay and Grove recreation areas did not meet state regulatory requirements. These facilities were replaced in 2003 and now meet state requirements.
10. Cultural and biological sites in the Red River Gorge Geological Area continue to be impacted by dispersed recreational use.
11. There are still some impacts to water quality occurring as a result of off-highway vehicle use particularly at stream crossings.
12. Off-highway vehicle use on designated trails appears to protect cultural sites.
13. Property boundaries remain below Forest Service standard.
14. One land exchange occurred, Leslie Resources Inc. Land Exchange. Currently that decision was challenged and being reviewed in District Court, Eastern District of Kentucky (6th Circuit).
15. Land purchases totaled 4,166 acres.
16. The biggest expense in road maintenance continues to be removal of roadside pine trees that died from the southern pine beetle infestation.
17. Approximately 600 acres per year are being reforested by planting shortleaf pine seedlings. Their survival is dependant on being released from competing vegetation.
18. Unplanned events, such as ice storms, continue to pull resources away from accomplishing tree improvement activities.
19. Most timber products sold were a result of unplanned events such as wind, snow, ice and insect activity.
20. More than 10% of the Special Uses on the Forest are not in compliance with the terms of their permit.
21. The Red River Gorge Geological Area was nominated as a National Historic Site.

I. INTRODUCTION, M&E PROCESS, AND REPORT LAYOUT

The Monitoring and Evaluation (M&E) Report is structured to correspond with Chapter VI of the 1985 Daniel Boone National Forest Land and Resource Management Plan (Forest Plan; Plan; FLMP). It is also structured to address the monitoring and evaluation requirements found in the National Forest Management Act (NFMA).

The purpose of this process is to document the results of the Forest Plan monitoring and evaluation for fiscal years 2002 and 2003. Monitoring and evaluation of programs is done to determine the progress toward achieving management goals, objectives and applying standards and guidelines for the Forest Plan.

Monitoring and evaluation is an ongoing process. It is documented through annual reviews made by the Forest Supervisor, Forest Staff Officers, District Rangers, and other Forest personnel. Information from these reviews is compiled into a comprehensive report after the fiscal year is completed. Monitoring indicates whether the management direction contained in the Forest Plan is being effectively carried out, and if any modification in direction is needed. It also indicates if the effects of implementing the Plan are occurring as predicted; whether the application of management area prescriptions are responding to public issues as well as management concerns; and if the costs of implementing the Plan are on target.

Organization of the Findings and Recommendations Section of this Report

Specific monitoring requirements are listed in the Forest Plan, Table VI-1, on pages VI-4 through VI-15; OHV Forest Plan amendment, Appendix E-3; and SHNS Forest Plan Amendment, Appendix D. Section II - DETAILED M&E RESULTS AND FINDINGS, of this report is formatted similar to this table and contains the following information:

Monitoring Item Description - The activity, practice, effect or resource being monitored, with a statement discussing the method used for monitoring and its objectives.

Variability which would initiate future action - The acceptable tolerance levels, beyond which some future action would be initiated.

Findings - Summary of findings.

Recommendations - Actions to take in response to the findings. Recommendations are made by Forest Staff Officers after they evaluate the findings. Possible recommendations include: 1) no action is needed; 2) continue Forest Plan implementation and monitoring; 3) amend the Forest Plan to clarify, revise, or improve resource management; 4) further study to determine the best action to take; 5) elimination of current monitoring item; or 6) inclusion of new items.

Section III - 2004 M&E ACTION PLAN, of this report summarizes recommendations from section II, and contains the following information:

Action - Summary of one or more recommendations.

Responsibility - The person or position responsible for this action.

Completion date - Anticipated completion date.

Over the years, points of contention on how the Daniel Boone National Forest should be managed have come and gone. Some of the more recent concerns are listed below. These points of contention have been identified to help focus monitoring and evaluation in areas appropriate to any controversy.

The following is a summary of **NOTEWORTHY ISSUES** for fiscal year 2002 and 2003:

Forest Health

- -Restoration of areas where pine trees were killed by the southern pine beetle.
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- -Public and employee safety from hazard trees resulting from the southern pine beetle infestation, from oak decline (Twolined chestnut borer), and storm damage.
- -Effectiveness of off-highway vehicle trail standards.

Cultural Resources

- -Inventory and protection of archaeologically significant sites within the Red River Gorge and Geological Area.

Lands

- -Acid mine drainage from abandoned mine sites continues to impact some streams flowing across the National Forest.
- -Requests for access to outstanding and reserved minerals continues to increase.
- -Requests for leasing of federal minerals (coal, gas, and oil)
- -Land exchange proposals where the recipient of National Forest System lands intends to mine coal.

Fuels Hazards

- -Increased fuels from storms and SPB infestation has created hazardous conditions.

Forest Products

- -Utilization of wood products following unplanned events such as southern pine beetle, oak decline (twolined chestnut borer), and ice storm.

II. MONITORING RESULTS AND FINDINGS

A. ECOSYSTEM CONDITION, HEALTH AND SUSTAINABILITY

1. Biological Diversity

A.1.a Wildlife and fish related standards and guidelines - Ensure that management standards and guidelines are properly applied for maintaining viable populations and diversity of plant and animal communities. Monitoring is done through compartment prescriptions and sale review, CISC inventory data, and water quality data.

Variability which would initiate future action: Significant deviation from management standards and guidelines.

A.1.a.1 Population objectives for Demand species (FLMP p. IV-13) - Habitat conditions are monitored using the CISC database. Population monitoring is accomplished cooperatively with the KDFWR using various census techniques and harvest data.

Findings: The Kentucky Department of Fish and Wildlife routinely inventories population counts for white tail deer, turkey, quail, and various types of demand species of fish.

Habitat for many species of birds, mammals, amphibians and reptiles was improved within existing 2.2-mile long electric transmission line right-of-way on the Morehead District. Personnel from the USDA Forest Service and East Kentucky Power Cooperative, Inc. worked together to establish native prairie grasses (7 acres), cool season grasses (3 acres), ephemeral wetlands (17), emergent wetlands (5), and bat roosting boxes (6 rocket style).

Kentucky's elk population is distinguished as being the largest east of the Mississippi River. The population is about 2,200 and it's pertinent that the Redbird District actively enhances habitat for this formally extirpated megafauna. The district completed the following habitat improvement work: 1) mow, plow and disc undesirable flora, and seed to desirable flora on six acres of strip-mined areas.

Recommendations: None

A.1.a.2 Wildlife openings - established and maintained (FLMP p. IV-14,15) - The Plan's objective for establishing new permanent wildlife openings is 100 acres per year and average annual maintenance of 1,500 acres (FLMP IV-56).

Findings:

Fiscal Year 2002

The Openings Maintenance Project was designed to provide habitat for a wide variety of species such as the white-tailed deer, wild turkey, Canada goose, eastern bluebird and song sparrow. The project increased opportunities for visitors to watch wildlife on public land. Existing grassy openings were maintained by fire, mowing, discing and seeding. A total of 596 acres of openings were maintained by fire, mowing, discing and seeding. Ten acres were seeded to native prairie grasses. Volunteers from the Menifee County Fish and Game Club and the Rowan County Wildlife Club helped with the project. **(Morehead District)**

To convert ten acres of lespedeza on reclaimed strip mine area to native warm or cool season grasses. 1; Disc with John Deere dozer and/or tractor 2; Seed with warm or cool season grasses 3; Lime and fertilize. Initiated the conversion of 10 acres of reclaimed striped mine area that is growing in lespedeza to warm or cool season grasses. **(Redbird District)**

The purpose of this action is to maintain existing opening habitat in an area of eastern Kentucky that is densely forested. Total land area for counties located within and/or adjacent to the Redbird Ranger District is 1,455,050 acres and total forestland area is 1,241,450 acres. Specifically, the action is needed to maintain 100 acres of opening habitat within the 24,000 acres Redbird Wildlife Management Area (RWMA). 1) brush/mow weeds and prune tree seedlings and saplings as needed on approximately 100 acres of existing wildlife openings; 2) plow and disc as needed on approximately 100 acres of existing wildlife openings; 3) fertilize and lime as needed on approximately 100 acres of existing wildlife openings; 4) prescribe burn as needed on approximately 100 acres of existing wildlife openings; 5) plant seeds that are directly or indirectly beneficial to wildlife on approximately 100 acres of existing wildlife openings. Maintained one hundred acres of the Redbird Wildlife Management Area's wildlife openings. **(Redbird District)**

Prepare NEPA Documentation and decision for maintenance of 210 acres Stanton District wildlife openings. Openings surveyed to determine current conditions and examined for species of concern. Scoping letter developed and mailed to interested parties. Decision made. NEPA completed. **(Stanton District)**

NEPA work to maintain 120 acres of preexisting wildlife openings. Methods to be used will be ESA/NEPA documentation. A categorical exclusion was issued to prepare for this project, which will be established in FY2003. **(Somerset District)**

Inventory of openings. Field inventory was completed on 100 acres. Collect site-specific information for Opening Maintenance. Legal requirements. **(Stearns District)**

Fiscal Year 2003

Conduct inventory of existing wildlife openings in Whitley County. Determine management needs and complete NEPA requirements for this project. Visit and evaluate 35 existing wildlife openings. Complete Scoping, BAE, and Decision Notice. Rehabilitate existing wildlife openings to the benefit of local wildlife. **(London District)**

Cooperative projects consist of maintaining existing wildlife openings utilizing management techniques such as prescribed burning, mowing, and/or seeding in Mill Creek, Cane Creek, and Goose Management Area. Prescribed burning was used on 30 openings. Mowing was used on 10 openings. Maintain the wildlife openings for the benefit of wildlife diversity on the forest. **(London District)**

This project maintained 600 acres of habitat for wild turkey, white tailed deer, Canada geese, American woodcock, eastern bluebird and many other species that depend on grassland communities in the National Forest. Prescribed fire and mowing were used to manage existing openings of prairie grasses and cool season grasses. Public wildlife viewing opportunities were maintained in campgrounds, at wildlife viewing areas, along roadsides, on lakeshores, near trails and in the general forest area. **(Morehead District)**

To maintain grassy openings damaged by a major ice storm in February, 2003. Personnel with chainsaws and operators with heavy equipment worked to remove hundreds of fallen trees from grassy openings so that areas could be maintained by mowing. Over 200 acres of existing grassy openings were cleared of fallen trees prior to mowing. The openings are now providing important habitat to many wildlife species and excellent viewing opportunities. **(Morehead District)**

Land within and/or adjacent to the Redbird Ranger District is densely forested and there is less than one percent opening land. The project was completed to maintain the small amount of grassy opening that exists on the Redbird RD. (1) plow, disc with tractor (2) hand seed and fertilize Land within and/or adjacent to the Redbird Ranger District is densely forested and there is less than one percent opening land. The project was completed to maintain the small amount of grassy opening that exists on the Redbird RD. About 10 acres exist in Big and Little Double Creeks. **(Redbird District)**

The Redbird Ranger District has most of its wildlife openings located in the Redbird Wildlife Management Area, which is located in Leslie County, KY. Leslie County is about 90% forested and less than one percent is in wildlife openings. It's important that we continue to maintain these existing openings. (1) mow, plow, disc with tractor (2) seed with desirable flora (3) prune and/or cut hazard trees/bushes. Areas within and/or adjacent to the Redbird Wildlife Management Area has less than one percent opening habitat and the rest is predominantly forested (about 90%). Completing this project ensures that at least 70 acres will not revert to forested habitat. **(Redbird District)**

Maintain pre-established native grass plots. Start conversion of serrecia dominated mine land to a native grass/pine savannah. Biological inventories, consultation with district staff, use of tractor, plow and fire crew were methods used. Pre-established native grass stands were burned, new areas were inventoried and site preparation has begun. **(Somerset District)**

Conduct NEPA, FNMA and ESA compliance on the district. GIS, field checks, review of existing documents and preparation of new analysis. Preparation of documents to allow the implementation of maintenance of district wildlife openings. **(Somerset District)**

Maintain 150 acres of wildlife openings in early successional vegetation. All openings were mowed with a bush hog. This project prevented 150 acres of grassy openings from growing up in saplings. Besides benefits to deer, wild turkey and songbirds that require early successional habitat, approximately 25 acres of riparian fields provide crucial habitat for the corn snake. This is the only location for this species in eastern Kentucky. **(Stanton District)**

Recommendations: None

2. Forest Health

A.2.a Fuel Treatment - Evaluate the extent and effects of prescribed fire. Review prescribed fire plans before and after burning and on-site inspections of prescribed fires during the burn and post-burn to evaluate burning conditions, smoke behavior, smoke dispersal, and burn objectives.

Variability which would initiate future action: Objectives of prescribed fire are not being met.

Findings: All indications are that prescribed fire objectives are being met. However, monitoring ecological changes over time would be beneficial for future predictions.

Recommendations: Establish permanent plots to more closely evaluate the reduction of fuels and changes to vegetation.

A.2.b Insect and Disease - Determine extent of insect and disease activity. Assess effect of insect and disease occurrence on resources so that destructive insects and disease organisms do not increase to potentially damaging levels following management activities. Aerial and ground surveys, and forest pest management biological evaluation.

Variability which would initiate future action: Based on forest pest management biological evaluation.

Findings:

Southern Pine Beetle (SPB)– Predator populations have increased resulting in a large decline in SPB activity. This epidemic still shows limited activity in isolated stands of younger pine trees. Detection and protection activities continue in areas as necessary.

Gypsy Moth - Annual monitoring for gypsy moth (Table A.2.e) is being done using pheromone traps located in high-use recreation and travel corridors. No gypsy moths were captured as a result of Forest Service trapping. In

2002, two moths were captured at Cumberland Gap National Historic Park, and one moths was captured at mammoth Cave National Park. Trapping in 2003 resulted in no captures in these two National Parks.

Table A.2.b – Results of Gypsy Moth trapping on the Daniel Boone National Forest, FY-2002 and 2003

District	Pheromone trapping (No. of traps)		Results of trapping (NO. and sex of gypsy moths captured)		Dilimited grid trapping occurred (yes / no)	Results of dilimited grid trapping (NO. and sex of gypsy moths trapped)
	2002	2003	2002	2003		
Morehead	22	22	0	0	No	N/A
Stanton	12	12	0	0	No	N/A
London	42	42	0	0	No	N/A
Somerset	5	5	0	0	No	N/A
Stearns	6	6	0	0	No	N/A
Redbird	2	2	0	0	No	N/A

In 1999, the USDA Forest Service, State partners, and other USDA agencies began using the Slow The Spread (STS) program along the 1,200 mile front which stretches from North Carolina to Wisconsin. Intensive monitoring will occur to identify recently established, low-level populations in the transition area for possible treatment. With the STS in place, gypsy moth populations are estimated to enter the northeastern portion of Kentucky by the year 2025. Without STS, then all of Kentucky is expected to have gypsy moth infestation within a few years.

Oak Decline – Symptoms of oak decline are becoming more noticeable as stands continue to age. Most recently the twolined chestnut borer has been observed in older dominant white oak trees. Aerial flights indicate widespread death of individual and clumps of white oak trees on the Morehead and London districts. White oak tree mortality has also been noticed on other districts, but to a lesser extent. Cultural control includes rapid drying of the host tree by felling infested oaks during the summer promotes faster drying of the cambial region and can kill developing larvae. The felling, removal, and debarking of infested trees from autumn through spring can reduce local borer populations. Cultural treatments to improve tree vigor, may allow some trees to survive. However, no treatment program can guarantee lifelong protection against future attack.

Recommendations: Gypsy moth defoliation is likely to occur in Kentucky at some point in the future. Management activities should prepare oak-dominated stands for gypsy moth presence. In older stands, activities should encourage development of advanced oak regeneration to replace overstory trees as they become defoliated and die. In younger stands, activities should provide for vigorous growing trees. Trees should have plenty of room to develop root and crown growth. In recreation areas, activities should encourage vigorous growing trees.

Twolined chestnut borer activity is expected to continue. Efforts to detect and suppress twolined chestnut borer activity should continue. Other activities that improve tree vigor are encouraged.

3. Watershed Conditions

A.3.a Water Resource Inventory - Track inventory progress, evaluate quality/completeness of work and determine whether objectives are being achieved through program reviews and Management Attainment Report.

Variability which would initiate future action: Improper analysis or mapping.

Findings: During 2002 a basin-wide inventory project was completed in the Upper Cumberland River watershed through the Kentucky Watershed Management Framework. The Daniel Boone National Forest is an active member of this organization. In this web-based document, monitoring results were evaluated and sub-watersheds were ranked. The ranking was based on observed and potential impacts, and the need for resource protection. The final results showed that when compared with other sub-watersheds in the Upper Cumberland River, many of the watersheds on the Daniel Boone National Forest were in relatively good condition. However, two sub-watersheds did rank high enough to be considered statewide priorities. The causes of impairment in these sub-watersheds were

from activities that occur off of National Forest System lands. For more detailed results go to: http://www.watersheds.ky.gov/Upper_Cumberland/UCbasin.htm.

A second report was completed in 2003 for the Rock Creek watershed on the Stearns District. The report followed modified Forest Service Hydrologic Condition Assessment (HCA) protocols. The report found that even though the upper portion of this watershed is in excellent shape there are several opportunities for improving conditions. Most of the recommendations centered on the need to improve and maintain facilities (trails, roads, and camping areas) in this high recreation use watershed. The lower portion of Rock Creek is in an impaired condition due abandoned coal mining. This has been well documented in other publications including the 2001 Preliminary Assessment of mining activities by BAT and Associates (located in DBNF files in Winchester, KY).

Physical and biologic stream characteristics were monitored in the Licking, Kentucky, and Upper Cumberland basins. Many of these sites will be used for "reference sites".

Recommendations: None.

A.3.b Water Quality Monitoring at Swimming Areas - Ensure that the water quality is suitable for water contact sport activities. Monitor with water samples collected at swimming areas. Follow E.P.A approved technique for analysis.

Variability which would initiate future action: Exceeding minimum S.S. water quality standards. Reference FSM 2532.5, Region-8 Supplement No. 42, dated 11/87.

Findings: Eleven sites were regularly monitored at Laurel River Lake and three at Cave Run Lake for swimming water quality during 2002 and 2003. All samples were in compliance.

Recommendations: None.

A.3.c. Effects of Activities on Water (Surface and Ground) Quality and Riparian Areas - Determine if management practices on analysis areas and drainage basins are affecting water quality. Verify predicted water yield and sediment rates in relation to beneficial use of water. Monitor projects using above, below or paired watershed sampling techniques. Select areas having a high potential for adverse impacts such as soils developing from Pennington shale.

Variability which would initiate future action: Activities not meeting State and Federal water quality standards or leading to possible long-term degradation of the watershed.

Findings: Results from past water quality monitoring has shown that a vast majority of streams on National Forest System lands are of the highest quality and land management activities are not significantly degrading water quality. Even though most of the streams on the Daniel Boone National Forest are of highest quality, there are still over 40 miles that are impacted by acid mine drainage from past coal mining activities and brine from old oil wells. Most of these streams are impacted from land use prior to becoming part of the National Forest System, and do not meet state water quality standards or support aquatic life. Some of these streams were monitored in 2002 and 2003. However, due to a limited monitoring budget the program was smaller than in past years. In 2002 a restoration project was complete in Wildcat Branch on the Somerset Ranger District in an effort to improve one stream that was impaired by coal mining. Future monitoring will determine if this project was successful.

Recommendations: None.

A.3.d Trends for Water Quantity, Quality and Timing - Determine effect of plan on long-term trend for water quality, quantity and timing. Determined by specific sampling design, available data, and data to be collected. Monitor representative drainage basins with a mix of practices.

Variability which would initiate future action: Any downward trend or lack of progress in achieving stated goals and objectives.

Findings: Water quality standards are generally being met (See Sections **A.3.a** and **A.3.c**). However, the exception is on severely disturbed mining areas and acid mine drainage problems. Funding for trend analysis is limited.

For the most part, research studies conducted by other federal and state agencies are being relied on for information on water yield and timing of flows (e.g. USGS, KY Geological Survey, and KY Division of Water).

Recommendations: None.

B. SUSTAINABLE MULTIPLE FOREST BENEFITS

1. Outdoor Recreation Opportunities

B.1.a Developed Site Condition - To ensure that facilities and the general areas of developed sites are maintained in a safe and sanitary condition in accordance with appropriate management levels. These conditions are monitored annually through on-site inspections.

Variability which would initiate future action: Deterioration rates higher than historic patterns at heavily developed sites.

Findings: In 2002, the sewage treatment plants at Holly Bay and Grove Recreation Areas did not meet state regulatory requirements. In 2003 these two facilities were replaced and now are consistent with state requirements.

Boat-in campsites at the White Oak and Grove campgrounds on the London District continue to deteriorate.

Recommendations: Rehabilitate White Oak and Grove boat-in campgrounds.

B.1.b Dispersed Area Condition - Identify problems and changing situations and conditions. Provide assistance in management of dispersed activities.

Variability which would initiate future action: When problem areas or situations are identified by an interdisciplinary team review or line officer.

Findings: Cultural and biological sites in the Red River Gorge Geological Area continue to be impacted by dispersed recreational use.

Recommendations: Complete the Limits of Acceptable Change (LAC) analysis and implement applicable actions needed to protect resources.

B.1.c Dispersed Area Conditions (OHV Amendment, Appendix E, p. E-3) – Annually, Check all designated OHV routes and associated structures for impacts to natural resources or possibly cause sedimentation in streams important to PETS species and their habitat.

Variability which would initiate future action: When problem areas or situations are identified by field checks that would take more than routine maintenance to correct.

Findings: There are still some impacts to water quality occurring as a result of OHV activity, particularly at stream crossings.

Recommendations: Accelerate work to harden stream crossings.

B.1.d Dispersed Area Condition (OHV Amendment, Appendix E, p. E-3) – Biannually, check all archeological sites on or adjacent to designated OHV routes for impacts to cultural resources sites to ensure that no adverse direct or indirect impacts are occurring.

Variability which would initiate future action: When problem areas or situations are identified by field checks.

Findings: Archeological sites are not being adversely impacted by OHV use.

Recommendations: None.

2. Infrastructure

B.2.a Property Line Location Maintenance - Determine if objectives and standards and guidelines are met through activity reviews and Management Attainment Reports.

Variability which would initiate future action: 10% of property lines not meeting direction to standard.

Findings: Past activity reviews document that Forest's boundary lines are not being managed to Forest Service standards. Funding to bring these lines to standards is not available.

Recommendations: None.

B.2.b Property Line Establishment - Determine if objectives, and standards and guidelines are met through activity reviews and Management Attainment Report.

Variability which would initiate future action: 10% of property lines not meeting direction to standard.

Findings: Past activity reviews document that Forest's boundary lines are not being managed to Forest Service standards. Funding to bring these lines to standards is not available.

Recommendations: None.

B.2.c Landownership Adjustment - Exchange - Determine if objectives are met by the acres reported in the Management Attainment Report.

Variability which would initiate future action: None.

Findings: In fiscal year 2002, no exchanges occurred. In fiscal year 2003, there was one land exchange known as Leslie Resources Inc., Land Exchange. In this exchange the National Forest System acquired 98.17 acres and gave up 92.11 acres on the Redbird District. This exchange helped by consolidating a private inholding that was mostly surrounded by National Forest System land. The land given up was an island of National Forest System land located on the far northeastern portion of the Redbird District. The decision for this exchange was appealed and is currently being litigated. Property deeds have been exchanged and the lands are being managed according to landowner direction. The objectives for this exchange were consistent with those described in the Forest Plan.

Recommendations: None.

B.2.d Landownership Adjustment - Purchase - Determine if objectives, and standards and guidelines are met by activity reviews and Management Attainment Report.

Variability which would initiate future action: None.

Findings: In fiscal year 2002, fifteen (15) cases resulted in the purchase of 1,717 acres. In fiscal year 2003, ten (10) cases resulted in the purchase of 2,449 acres. These purchases helped to move the Forest toward its desired condition of land consolidation. All the purchases were consistent with direction in the Forest Plan while accomplishing one or more of the goals and objectives for land consolidation, including the Land Adjustment Plan.

Recommendations: None.

B.2.e Road Maintenance - Ensure that road maintenance estimates were correct, and protection of resources is adequate. Ensure that the amount of reconstruction is correct and accomplished as scheduled; that design standards are appropriate for management needs; and that estimated costs are correct. Review the Management Attainment Report, annual budgets, contracts and timber sale appraisals, and conduct field reviews for compliance.

Variability which would initiate future action: Average costs deviate from estimates by more than 25%. Road condition surveys show increase in maintenance needs (\$) of more than 20% from previous year. Deviation of +/- 25% from planned mileage.

Findings: The Forest is adequately complying. Forest continues to alleviate hazard trees along roads caused by southern pine beetle and other insects and infestations and ice damage.

Recommendations: None.

3. Timber

B.3.a Reforestation Practices and Assumptions - To ensure that planting densities and survival rate are in range established by FLMP standards and guidelines; regeneration is obtained within five years; regeneration objectives are met; and scheduled planting is accomplished. Use CISC, plantation survival reports, and certification and field checks to monitor.

Variability which would initiate future action: Less than 100% accomplishment of scheduled natural site preparation or planting in five years. Less than 80% of accomplishment per year.

Findings: Survival and stocking exams indicate that reforestation is occurring. Some units have higher survival from others, which is expected because less emphasis is placed on pure yellow pine stands and more emphasis is placed on mixed pine/hardwood stands. Survival of planted pine seedlings is dependent on their ability to compete with other vegetation and not become overtopped. Release of planted seedlings is a critical step in reforestation efforts, especially during the first few years of a seedlings growth and establishment.

Table B.3.a – Plantation Evaluation and Performance Results for Fiscal Years 2002 and 2003

	Restocking Standards No. of trees per acre, by level (FLMP IV-21)			Average survival No. trees per acre (1st and 3rd year reports)			
	Low	Target	Upper	2002		2003	
				1 st -yr 2001	3 rd -yr 1999	1 st -yr 2002	3 rd -yr 2000
Yellow pine	300	600	900	378	455	225	289
White pine	200	300	700	N/a	N/a	N/a	N/a
Hardwoods	150	250	1000	N/a	N/a	N/a	N/a
Pine/Hardwood	300	400-600	900	N/a	N/a	N/a	N/a

Recommendations: None.

B.3.b Timber Stand Improvements (TSI) and Assumptions - Ensure that scheduled TSI projects are accomplished which provide correct forest type objectives and density. Monitor through field checks, and CISC database.

Variability which would initiate future action: Less than 90% accomplishment of scheduled TSI in five years, or less than 80% accomplishment annually.

Findings: Timber stand improvement activities are necessary for maintaining or improving the health and vigor of stands of trees and in turn the health of a landscape. Accomplishments have fallen short of targets, mostly due to unplanned events such as the 2002 ice storm. This storm damaged an area where 600 acres of thinning were planned.

Recommendations: None.

B.3.c Unregulated Volume Prepared for Sale - Ensure that unregulated volume follows projections by reviewing annual programmed sale quantity/TMIS, and silviculture prescriptions.

Variability which would initiate future action: +/- 100% change of projected unregulated volume harvested.

Findings: The annual programmed sale quantity has not been reached since the early to mid 1990's. This was a result of litigation that stopped planned timber sales. Most of the timber volume removed during this time was as a result of unplanned events such as wind, snow and ice, and insect activity.

Recommendations: None.

4. Other Products

B.4.a Special Uses Administration - Determine if permit conditions are being met by assistance trips, inspections of permit areas for permit compliance.

Variability which would initiate future action: 10% of permits not in compliance.

Findings: Special Use Permits are tracked using a database called Special Use Data System (SUDS). Reports from SUDS indicates that there are numerous expired permits, resulting in more than 10% of the special use permits not being in compliance.

Recommendations: Bring all special use permits up to standard. Staffing and time are limiting factors for accomplishing this.

5. Heritage Resources

B.5.a Heritage Resources - Ensure compliance with the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), Archaeological Resource Protection Act (ARPA), and Forest Plan standards and guidelines. Strive to meet Forest Plan goals for inventoried acres and sites evaluated for National Register of Historic Places. Compliance is monitored by field and office reviews of project plans and implementation.

Variability which would initiate future action: Non-compliance with applicable regulations and Plan standards and guidelines.

Findings: Submitted nominations for National Register District in the Red River Gorge Geological Area.

Recommendations: None.

C. ORGANIZATIONAL EFFECTIVENESS

1. Accomplishments

**Table C.1 - FLMP Accomplishments fiscal years 2002 and 2003
Daniel Boone National Forest**

MAR No.	Management Description	Unit of Measure	ANTICIPATED FLMP 10-year average	FY-2002 Accomplished	FY-2003 Accomplished
RECREATION					
RM-PAOTS-TOT	Developed sites-ops & maint.	PAOT day	4,486,000	1,337,041	1,689,412
TR-MTC-STD	Developed sites Trail constr. ¹ /maint	PAOT day mile	12.5 / 322	134	216
HERITAGE					
	Surveys	acre	67,000		
RM-HERT-EVAL	Site evaluation	each	5		
RM-HERT-INTP	Site interpreted	each			
RM-HR-STD	Sites to standard	each		66	134
VEGETATION					
FM-VOL-OFF	Timber offered		81,818 ccf 45 mmbf	4,068 ccf	3,850 ccf
	Silviculture Px.	acre	66,413		
VW-REF	Reforestation	acre	7,035	799	523
VW-EV	Timber stand imp	acre	4,035	1452	129
	Regen. MA 5:				
	Morehead	acre	57		
	London	acre	64		
	Somerset	acre	24		
	TOTAL	acre	145		
WILDLIFE					
WL-THAB-RES	Habitat imprv.	acre	450	1231	859
WL-STRUCTURE	Habitat structures	each	120		
WL-IF-LAK-RE	Fish hab. imprv.	acre	30	30	51
WL-IF-STR-RE	Fish structures	each	10	32	
WL-TES-HAB	T&E hab. imprv.	acre	600	8	953
WL-TES-STRUC	T&E structures	each	2		1 mile

¹Trail construction miles does not include construction of trail bridges.

MAR No.	Management Description	Unit of Measure	ANTICIPATED FLMP 10-year average	FY-2002 Accomplished	FY-2003 Accomplished
SOIL, WATER & AIR					
SW-RES-IMP	Improvements	acre	144	71	75
	Improv. maint.	acre	495		
MINERALS & GEOLOGY					
MG-BNE-OP-PR	Energy Operation	each	720	42	25
LANDS					
LA-EXCH-	Land exchange	acre	2,056	0	+98.17 / -92.11
LA-LND-PURCH	Land purchase	acre	300	1,717	2,449
LM-LL-NEW	Landline establish	mile	115		
LM-BL-TOTAL	Landline maint.	mile	280	39	61
LM-ROW-ACQ	Right-of-way	cases	33	2	2
PROTECTION					
FP-RUELS-	Fuel reduction	acre	5,830	8,909	4,951
FACILITIES					
RD-HIGH/PASS	Maintained	mile	1,144	1,058	1,025
RD-RAP-COMP	Constr./reconstr.	mile	92	80	
RD-DECOMM	Roads	mile	n/a	3	
	Decommissioned				

III. ACTION PLAN

A. Actions NOT REQUIRING Forest Plan amendment or revision

- Action:** (See recommendation #A.2.a) - **Establish permanent plots to more closely evaluate the reduction of fuels and changes to vegetation.**
Responsibility: Fire Management Officer
Completion Date: Ongoing
- Action:** (See recommendation #A.3.a.) - **Gypsy moth defoliation is likely to occur in Kentucky at some point in the future. Management activities should prepare oak-dominated stands for gypsy moth presence. In older stands, activities should encourage development of advanced oak regeneration to replace overstory trees as they become defoliated and die. In younger stands, activities should provide for vigorous growing trees. Trees should have plenty of room to develop root and crown growth. In recreation areas, activities should encourage vigorous growing trees.**

Twolined chestnut borer activity is expected to continue. Efforts to detect and suppress twolined chestnut borer activity should continue. Other activities that improve tree vigor are encouraged.

Responsibility: District Rangers – Project identification and implementation.
Completion Date: Ongoing

- Action:** (See recommendation #B.1.a.) - **Rehabilitate White Oak and Grove boat-in campgrounds.**
Responsibility: London District Ranger
Completion Date: 2004

- 4. Action: (See recommendation #B.1.b.) - **Complete the Limits of Acceptable Change (LAC) analysis and implement applicable actions needed to protect resources.**
Responsibility: Stanton District Ranger
Completion Date: 2005
- 5. Action: (See recommendation #B.1.c.) - **Accelerate work to harden stream crossings.**
Responsibility: Recreation Staff Officer
Completion Date: Ongoing
- 6. Action: (See recommendation #B.4.a.) - **Bring all special use permits up to standard. Staffing and time are limiting factors for accomplishing this.**
Responsibility: Lands Staff Officer
Completion Date: Ongoing

B. Actions REQUIRING amendment or revision to the Forest Plan

None. The Forest will complete a revision of the Forest Plan in 2004.

C. Amendments to be completed None.

D. Recommendations where No Action will be taken in FY04 None.

APPENDICES

A. List of preparers

Mike Rock	Lands Forester
Dick Braun	Wildlife Biologist
Jon Walker	Hydrologist
Vicki Bishop	Fisheries Biologist
Paul Finke	Implementation Coordinator/Forest Silviculturist

B. Forest Plan amendments from, September 27, 1985 to Present

Amendment No.	Date	Responsible Official	Amendment Description
1	04-06-87	Chief, Robertson	EIS/ROD Suppression of southern Pine Beetle
2	01-21-88	Forest Supervisor, Wengert	Updated implementation schedules for trail construction, timber sales, studies of rivers, Cave Run Lake botanical area.
3	07-27-89	Regional Forester, Alcock	Incorporation of methods and tools for use in the FEIS on Vegetation Management in the Appalachian Mountains
4	03-27-89	Regional Forester	Cutting policy within 3/4 mile of RCW colonies on existing timber sale contracts
5	May 1990	Regional Forester	Interim Standards and Guidelines for the Protection and Management of RCW Habitat within 3/4 mile of colony sites.
6	07-09-90	Forest Supervisor, Wengert	Direction for management of mixed types (pine-hardwood or hardwood-pine)
7	12-20-90	Forest Supervisor, Wengert	Changes to Standards and Guidelines for soil and water.
8	06-21-95	Regional Forester, Joslin	Designation of tentative HMA for suitable RCW habitat
9	06-19-95	Forest Supervisor, Powell	Removal of Two Gauging Stations from within the Beaver Creek Wilderness Area
10	04-24-98	Forest Supervisor, Worthington	OHV Management Direction
11	7-28-00	Forest Supervisor Worthington	Special Habitat Needs and Silviculture (SHNS)
12	10-02-02	Forest Supervisor Worthington	Swift Camp Wilderness Restoration and Watershed Improvement
13	10-26-02	Regional Forester, Jacobs	Supplement to the Final Environmental Impact Statement Vegetation management in the Appalachian Mountains
14	10-31-02	Forest Supervisor Worthington	The Redbird Crest Trail Relocation

C. Status of FY-2002 Action Plan from FY-2001 M&E Report NOT REQUIRING a Forest Plan Amendment or Revision

1) Action: Eastern towhees are believed to be good early successional MIS and should be retained as such on the DBNF. This bird is a resident and has a relatively small home range (4-15 acres). Thus, even in areas of interspersed land ownership, changes in National Forest managed land can be related to eastern towhee population changes. Further, both the Breeding Bird Survey and the R8 Bird Point Survey are well established on the forest along with a group of trained professional and volunteer observers.

Responsibility: Forest Biologist

Completion Date: Prior to Fiscal year 2003

Status: The Eastern towhee was retained as a MIS during FY2002. Breeding Bird surveys and R8 Bird Point Surveys were conducted during FY 2002. However, analysis of this data was not completed. **Retention as an MIS** is expected with the release of the Record of Decision on the revised Forest Plan.

2) Action: Evaluate the Forest's susceptibility to gypsy moth attack. Take action to increase advance regeneration, especially oaks.

Responsibility: Forest Silviculturist

Completion Date: Prior to Fiscal year 2003

Status: this evaluation was done during analysis of the Revised Forest Plan. The results indicate that more than 175,000 acres are in a condition that makes them a high to extreme risk of death during gypsy moth attack. Few actions to improve forest conditions have occurred, mostly a result of limited personnel and funding. A great deal of Forest personnel have been involved in revising the Forest Plan or dealing with unplanned events such as storm damage and beetle infestation.

3) Action: Continue to monitor areas near sites of known species at risk. Continue to improve existing designated trails and to close user-developed trails as appropriate for the protection of species at risk. Initiate seasonal closures on trails not capable of handling year-round traffic. Restrict all trail uses, except hiking, to existing routes that were constructed for that type of use.

Responsibility: Forest Threatened and Endangered Species Biologist

Completion Date: Prior to Fiscal year 2003

Status: New standards, goals, and objectives are expected with release of the Record of Decision on the revised Forest Plan.

4) Action: Increase target and funding allocations for landline maintenance.

Responsibility: Lands Staff Officer

Completion Date: Fiscal year 2002

Status: Additional funds and targets were requested, but not available.

5) Action: Increase target and funding allocations for property line establishment.

Responsibility: Lands Staff Officer

Completion Date: Fiscal year 2002

Status: Additional funds and targets were requested, but not available.

6) Action:

1. Identify funding sources that could assist in reclaiming the sites that are not found to contain hazardous materials.
2. Continue to prepare to compete for the CERCLA funding to complete the reclamation. Within two years, inventory the number of acid mine drainage sites should be completed and needed work prioritized.

Responsibility: Lands Staff Officer

Completion Date: Fiscal year 2002

Status: The Kentucky Division of Abandoned Mine Lands has secured funds from various sources to restore lands and streams on National Forest System land affected by acid mine drainage. The Forest is receiving CERCLA money for analysis, planning, design and eventually reclamation of acid mine drainage sites. The Forest is completing an inventory of abandoned mine land features including AMD sites. Eventually funding will be requested for restoration of abandoned mine lands.

7) Action: Seek additional funding for administering special use permits.

Responsibility: Lands Staff Officer

Completion Date: Fiscal year 2002

Status: The Forest requested additional funding for administration of special use permits and to bring all permits to standard. Funding is not available.

REQUIRING a Forest Plan Amendment or a Revision

8) Action: During revision of the Forest Plan, drop the RCW as a Management Indicator Species.

Status: Expected to be accomplished with release of the Record of Decision on the revised Forest Plan.

9) Action: During revision of the Forest Plan, ensure that appropriate protection of heritage resources occur, particularly within the Red River Gorge Geological Area.

Status: Expected to be accomplished with release of the Record of Decision on the revised Forest Plan. Currently, protection is ongoing using a variety of methods.

10) Action: As suggested in the 1991 5th Year Review Report, a better group of aquatic MIS would be macro-invertebrates. MIS species will be addressed in the revision of the Daniel Boone's Forest Plan. As part of this, consideration should be given to the macro-invertebrate group. These species are much less mobile than fish and population trends could be related to long-term land management activities. Analysis would require a more rigorous sampling system than now exists on the DBNF.

Status: Expected to be accomplished with release of the Record of Decision on the revised Forest Plan.

11) Action: Eastern Bluebird—Cause and effect relationships between population trends and national forest management are difficult to establish. When DBNF MIS are addressed as part of the Forest Plan revision, it is recommended that this species be dropped.

Status: Expected to be accomplished with release of the Record of Decision on the revised Forest Plan.

Forest Plan Amendments to be completed

12) Action: Proposed project-specific amendment to use equipment in the Clifty Wilderness on the Stanton district.

Status: Amendment number 12 to the Forest Plan occurred on October 2, 2002 for the Swift Camp area following a land purchase. Restoration of the area to a Wilderness-like condition has been completed.

13) Action: Proposed project-specific amendment for an off-highway trail location on the Redbird district.

Status: Amendment number 14 to the Forest Plan occurred on October 31, 2002, allowing for the relocation of a segment of the Redbird Crest Trail.

No Action will be taken in fiscal years 2002 & 2003

14) Recommendation: The FWRP staff visited several white-haired goldenrod *Solidago albopilosa*; (federal listed T) sites in conjunction with the Kentucky State Nature Preserves Commission (KSNPC), the U.S. Fish and Wildlife Service (USFWS), and staff from the Stanton Ranger District. During this visit, Forest Service efforts to work with the public in the protection of the species were reviewed. Cooperative monitoring efforts (KSNPC and Forest Service) were discussed. Efforts were considered positive and providing good information.

A discussion at several sites led to an agreement by the USFWS to help define terms such as population and occurrence in the light of recovery goals. The meeting also confirmed that further discussion of de-listing of the species over the next planning period was warranted.

Status: Discussion(s) were ongoing during FY02. Goals and objectives for de-listing of the WHGR are expected with the release of the Record of Decision on the revised Forest Plan.

D. Daniel Boone National Forest Land Status

Table D.1. – National Forest System lands administered by the Daniel Boone National Forest, FY 2002

<u>County</u>	<u>Morehead</u>	<u>Stanton</u>	<u>London</u>	<u>Somerset</u>	<u>Stearns</u>	<u>Redbird</u>	<u>Total</u>
Bath	19,300						19,300
Clay						77,890	77,890
Estill		2,265	3,333				5,598
Harlan						803	803
Jackson			58,375				58,375
Knox						74	74
Laurel			63,303				63,303
Lee		5,822	2,765				8,587
Leslie						52,194	52,194
McCreary				41,048	101,172		142,220
Menifee	24,356	22,372					46,728
Morgan	13,030						13,030
Owsley			3,848			12,432	16,280
Perry						2,191	2,191
Powell		15,528					15,528
Pulaski			109	37,494			37,603
Rockcastle			14,793				14,793
Rowan	62,509						62,509
Wayne					642		642
Whitley			32,865		12,500		45,365
Wolfe		16,563					16,563
Total	119,195	62,550	179,391	78,542	78,542	145,584	699,575

Table D.2. – National Forest System lands administered by the Daniel Boone National Forest, FY 2003

<u>County</u>	<u>Morehead</u>	<u>Stanton</u>	<u>London</u>	<u>Somerset</u>	<u>Stearns</u>	<u>Redbird</u>	<u>Total</u>
Bath	19,300						19,300
Clay						78,078	78,078
Estill		2,265	3,333				5,598
Harlan						803	803
Jackson			58,507				58,507
Knox						74	74
Laurel			63,484				63,484
Lee		5,822	2,765				8,587
Leslie						52,142	52,142
McCreary				41,057	101,172		142,229
Menifee	24,356	22,372					46,728
Morgan	13,030						13,030
Owsley			3,848			12,586	16,434
Perry						2,151	2,151
Powell		15,528					15,528
Pulaski			109	37,687			37,796
Rockcastle			15,850				15,850
Rowan	62,509						62,509
Wayne					642		642
Whitley			33,497		12,500		45,997
Wolfe		16,563					16,563
Total	119,195	62,550	181,393	78,744	114,314	145,834	702,030