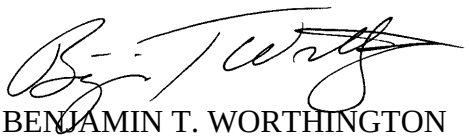
FOREST PLAN ADEQUACY STATEMENT
FROM
THE FOREST SUPERVISOR
DANIEL BOONE *NATIONAL FOREST*

Attached is the Monitoring & Evaluation Report for FY-98. My direction to the monitoring team was to document the findings from activities that occurred during FY-98 as they relate to noteworthy issues. Since September 31, 1998, many actions have been set in motion and some actions have been completed.

I have reviewed the information contained in this report. Amendment #10, which amended Forest Plan direction for off-highway vehicle use, has been challenged in court. I have already initiated the Plan revision process which is the appropriate avenue for addressing many of the action items identified in this and previous reports. Prior to the Plan revision being completed, I initiated a Forest Plan amendment (SHNS) that would incorporate Special Habitat Needs and Silviculture methods into the current Plan.

Because the Plan contains deficiencies, and Prior to completing a revised Plan or completing the SHNS amendment, the Forest Plan is insufficient to carry out a timber sale program. However, the Plan even though it is not a state-of-the-art document, is sufficient for implementing other activities designed to protect and/or improve the human environment. These activities may involve the incidental cutting of trees in order to achieve their stated objectives.



BENJAMIN T. WORTHINGTON Dated August 9, 1999
Forest Supervisor

FISCAL YEAR 1998
MONITORING AND EVALUATION REPORT
for
DANIEL BOONE NATIONAL FOREST

SUMMARY OF M&E RESULTS AND REPORT FINDINGS

The Daniel Boone National Forest identified noteworthy issues which were used to help focus the content of the monitoring and evaluation report. The issues identified include: threatened and endangered species specifically Indiana bats, red-cockaded woodpeckers, and aquatic species; off-highway vehicle use; vegetation management specifically prescribed burning, compliance with a Court ordered preliminary injunction from timbering activities, and herbicide use to control woody vegetation within utility rights-of-ways; and road access onto the National Forest.

Biological diversity was monitored by evaluating management indicator species (MIS) and proposed, endangered, threatened, and sensitive (PETS) species. The report does not contain any findings related to these species.

Forest and range health was monitored by evaluating air quality and fuel treatment conditions. Measurements indicate that areas on or near the National Forest do not exceed the standard for particulate matter (PM) 10 microns and less in diameter. With a recent change in the PM standard to less than 2.5 microns in diameter, the monitoring data should be available in 1999. Prescribed burning during specified environmental conditions has resulted in compliance with smoke management objectives.

Watershed conditions are monitored by evaluating soil disturbance and water quality. Standards for protecting and enhancing soil productivity have been effective. An issue still remains on determining the tolerable soil loss while still maintaining soil productivity. Fifteen watersheds across the forest were monitored using 20 locations for water sampling. Results indicate that the vast majority of streams on National Forest land are of the highest quality and that land management activities are not significantly degrading water quality.

Outdoor recreation opportunities are monitored by evaluating dispersed areas. Data was not available for consideration at this time.

Infrastructure consideration was evaluated using road maintenance, collector and local road construction and reconstruction. Data was not available for consideration at this time.

Timber resource monitoring was evaluated considering allowable sale quantity, and timber planning assumptions. Timber harvesting on the forest has been enjoined by a Court order. No new timber sale decision were made outside of approval by the Court. Removal of hazard trees to improve public health and safety in recreation areas and along roads did occur.

Economics were summarized in Table C.1 for areas that appear in the Forest Plan. This data was compiled for FY-98 as well as a 10-year average. Dollars were adjusted to 1988. A comparison of Forest Plan estimates with allocated expenditures indicate that funding has not kept pace with Forest Plan estimates. The result, is reduced service, accomplishments, and outputs from Forest Plan projections.

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

The Monitoring and Evaluation (M&E) Report is structured to correspond with Chapter VI of the 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 year 1998. Monitoring and evaluation of programs is done to determine the progress toward achieving management goals, objectives and applying standards and guidelines (S&G) 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 Table VI-1, on pages VI-4 through VI-15 of the Forest Plan. 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** - Documentation of what was found.
>
> **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 - 1999 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.

1.A. SUMMARY OF NOTEWORTHY ISSUES

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.

Threatened and Endangered Species

- Mist netting results have led to the necessary assumption that all forested areas of the Daniel Boone are suitable summer habitat for Indiana bats, a federally listed species.
- Red-cockaded woodpeckers are close to being extirpated from Kentucky. The few remaining birds in Kentucky are on National Forest System lands. Habitat management is critical in order to sustain the resident population and restock the populations of these woodpeckers to viable levels.
- Federally listed aquatic species are located primarily on the southern end of the Forest. Water quality is of primary concern for maintaining and improving habitat conditions.

Recreation

- Off-highway vehicle (OHV) use continues to be controversial.

Vegetation Management

- Prescribed burning is still not readily accepted as a management tool. Smoke management from controlled burns is a challenge because of the dissected ownership.
- The Forest is under a Federal Court Injunction pending amendment of the Forest Plan to incorporate protective measures and to consult with the US Fish and Wildlife Service.
- Herbicide use has always been controversial and has recently received attention because of a proposal to incorporate herbicides into a maintenance program for electric transmission and distribution lines owned by EKPC.

Facilities

- Road access into the National Forest continues to be controversial. Some want good access while others don't want roads. Proposals to construct roads into Roadless Areas has drawn much controversy nationally.

II. DETAILED M&E RESULTS AND FINDINGS

A. Ecosystem Condition, Health and Sustainability

1. Forest and Range Health

* Identify measures needed to coordinate emissions from NFS lands with other sources to ensure air quality control and compliance with the applicable Federal, State, and/or local standards or regulations (36 CFR 219.27(a)(12)).
* Ensure that air quality standards are maintained on FS Class I and II lands (36 CFR 219.27(a)(12)).
* Determine if insects, disease, and noxious weeds have increased to damaging levels (36 CFR 219.12(k)(5)(iv), 219.20(b)).

A.1.a Air Quality - Smoke Management

Variability which would initiate future action: Non-compliance with the Clean Air Act and State air standards. More specifically, particulate matter monitoring data for any area within or adjacent to the Forest is close to exceeding Clean Air Act or State ambient air quality standards.

Findings: The most recent PM10 (particulate matter 10 microns and less in diameter) monitoring data available for the state of Kentucky is from 1997. In that year no areas on or near National Forest lands exceeded the particulate standard, nor was any areas close to the standard. This indicates that the level of prescribed fire that occurred in 1997 did not cause exceedence of the PM10 standard. In 1998 the Forest conducted much less prescribed burning than in 1997, and therefore would have had little to no impact on ambient particulate levels.

However, there has been a change in the particulate matter standards to better protect human health. A new PM2.5 (particulate matter less than 2.5 microns in diameter) standard has been established to further limit the amount of fine particulate in the atmosphere. The state is completing installation of a PM2.5 monitoring network this year (1999). After three years of data collection the state will determine whether sites are attaining the new standard. The Forest will then need to look at PM2.5, as well as PM10 ambient monitoring data.

The Forest plans to continue to follow smoke management guidelines on all prescribed fires to maximize smoke dispersion and minimize negative impacts. As the acres of prescribed fire increase the Forest may consider using smoke models to predict particulate concentrations downwind of proposed burns. This information would be useful in prescribed fire planning.

Recommendations: Replace Variability wording with "Particulate matter monitoring data for any area within or adjacent to the Forest is close to exceeding National or State ambient air quality standards".

A.1.b 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: Accomplished acres for FY-98 reached 4% of target. A precipitation pattern of frequent spring season showers resulted in fewer days when prescribed fires could be managed to successfully reach burn objectives. The Forest continues to utilize a program of aerial ignition, detailers, and pooled Forest personnel to burn large areas.

Burn execution and short term fire effects are reviewed and documented by the Burn Boss on the site specific Burn Plan. These objectives are being met. Achievement of long term goals and objectives will be measured using guidelines established in the Forest Prescribed Fire Monitoring Plan.

Recommendations: None.

2. Watershed Conditions

* Determine if the conservation of soil and water resources are being ensured and the permanent impairment of site productivity is being avoided (36 CFR 219.27(b)(5).
* Determine if the desired water quality and quantity objectives are being achieved (36 CFR 219.27(b)(6)).
* Ensure compliance with State water quality requirements, monitor the effect and adequacy of the BMPs (36 CFR 219.27(a)(4),(b)(5),&(c)(6); 219.12(k)(2)).

* Determine the effects of management actions on soil quality and site productivity (36 CFR 219.12(k)(2); 219.27(a)(1),(b)(5)).
* Determine the effects of management actions on riparian values, soil and water quality, and stream bank stability (36 CFR 219.27(a)(4),(b)(6),(c)(6),&(e)).
* Determine if temporary roads are being revegetated within 10 years of contract or permit termination (36 CFR 219.27(a)(11)).

A.2.a Soil Disturbing Activities - Determine if prescribed standards and guidelines, and mitigation measures are protecting soil productivity. Validate projected erosion rates and ``T'' factors for various management activities. Visual estimates and transects which monitor amounts and conditions of ground cover, nutrient status, soil bulk density. Use of special techniques will measure soil loss specifically related to individual management areas, soil mapping units, etc.

Variability which would initiate future action: Any deviation from Forest-wide standards and guidelines, and when actual erosion rates exceed projected erosion rates and ``T'' factors.

Findings: Based on Functional Assistance Trips (FATS), project level monitoring, and compliance monitoring accomplished through the timber sale contract administration process, it can be concluded that the Forest was moderately successful in achieving prescribed standards and guidelines, and goals and objectives in the Forest Plan for protecting and enhancing soil productivity through implementation of mitigation measures. Monitoring hasn't been fully implemented to Forest Plan direction to provide the needed precision and reliability necessary to support a "highly" successful conclusion of effects on soil productivity. "Highly" successful for "precision and reliability" is respectively defined in the Forest Plan to mean - (1) sampling intensity to show small changes in soil or water data to within 1/2 (standard deviation) about the mean; and (2) conclusions of monitoring characterize or represent actual trends at least 80 percent of the time. In contrast, a moderately successful conclusion is respectively defined to mean - (1) sampling intensity will be at a study level in which only moderate or large changes will be detected. Small changes may go unnoticed and data is expected to be within one standard deviation about the mean; and (2) conclusions of monitoring are then expected to be reliable only 60 percent of the time. Professional judgment in interpretation would increase reliability.

No actual nor predicted erosion rates have been developed to validate "T" factors or confirm predictions made in the Forest Plan concerning tolerable soil loss rates by soil series for interpreting effects of various kinds of disturbances on soil properties and qualities/soil productivity and future use and management.

Recommendations: Improve data collection/documentation through monitoring to assess effects of management actions (disturbance) on soil properties and qualities, evaluate Forest Plan Standards and Guidelines, and validation of standards for allowable change for maintaining soil productivity. Validation of "T" factors has been identified as a research need in the Forest Plan (Chapter V-3). This validation process will require consultation and collaboration with Forest Service Research, other agencies, and the academic community.

A.2.b 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: Monitoring activities on the Forest involved a broad-based water sampling program that addressed compliance with state and federal regulations, long-term trend analysis, baseline data collection, and the cause-and-effect relationship between land management and water quality. More than 20 locations were sampled on a regular basis in 15 watersheds during 1998. Overall results showed that a vast majority of streams on National Forest land 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, that are impacted from land use prior to Forest Service ownership, do not meet state water quality standards and can not support aquatic life. These streams are monitored on a regular basis and restoration projects continue as funding and technology permits. In 1998 restoration projects were complete in Wildcat Branch on the

Somerset Ranger District. These projects are being monitored to evaluate their effectiveness and are part of larger watershed rehabilitation efforts that will take quite a few years to complete.

The DBNF has also been actively involved in the development of Forest and State-wide Watershed Management Frameworks. These frameworks will help guide monitoring, watershed assessment, and restoration into the next century. As part of these frameworks the forest cooperated with several other agencies and collected macroinvertebrates (aquatic insects) from 16 sites in the Kentucky River drainage. Currently the information has not been completely analyzed but it will give a general assessment of these watersheds and will help direct restoration efforts in the Kentucky River basin. The information will also be used during Forest Planning.

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). These studies and a few that have been conducted by the Forest indicate that the small changes in flow from our management activities are not significantly affecting downstream beneficial uses.

Recommendations: None.

A.2.c 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 in general are being met. However, the exception to this are severely disturbed mining areas and acid mine drainage problems on acquired land. Funding for trend analysis is limited.

Recommendations: None.

B. Sustainable Multiple Forest and Range Benefits

1. Outdoor Recreation Opportunities

* Determine if the desired recreation uses, opportunities, and aesthetic values are being achieved (36 CFR 219.27(b)(6),219.21(a)(2)&(3)).
* Determine if the Forest Plan visual quality objectives are being met (36 CFR 219.27(c)(6),(d)(1)).
* Monitor off-road vehicle use to determine if planned use levels and management requirements are sufficient to protect the land and other resources, promote public safety, and minimize conflicts with other uses of NFS lands (36 CFR 219.21(g)).

B.1 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: As a result of potential impacts to resources (i.e.adverse effects to soil and water resources, as well as potential effects to a number of threatened and endangered species), the Forest Supervisor, on April 24, 1998, decided to amend the Forest Plan to permit OHV use on designated routes only. The decision also designated an initial system of OHV routes, but made allowance for additional designations.

Recommendations: none.

2. Infrastructure

* Ensure that any roads constructed are designed according to standards appropriate to the planned uses (36 CFR 219.27(a)(10),(b)(7)).

B.2.a 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: Finding: Road maintenance was funded 20% less in FY98. Although there was a funding shortfall road maintenance is generally being performed to an acceptable level to protect resources. Surface blading and roadside mowing needs are generally being met. Surface replacement, brushing, and project maintenance are not fully met, but are within a 20% deviation. Funding needs for annual maintenance remain constant but represent a 26% shortfall in what is needed on the forest. Maintenance needs for Level 1 and 2 roads did not increase from the previous year.

Recommendations: None.

B.2.b Collector Road Construction/Reconstruction - Ensure that the amount of reconstruction is correct and accomplished as scheduled, and that road design standards are appropriate for management needs. Review the Management Attainment Report for compliance.

Variability which would initiate future action: Deviation of +/- 25% from assigned targets.

Findings: Finding: The target for road construction and reconstruction was met. The additional mileage for reconstruction was a carryover from the previous fiscal year. All roads were constructed to meet the design standards in the forest plan. The level of road construction/reconstruction below the Plan level is due partially to a timber harvest below the Plan level.

	FY98 Target	Accomplished	FLMP/YR
Construct	1.3	1.7	74
Reconstruct	0	2.5	56

Recommendations: Revise Forest Plan to reflect more accurate road needs.

B.2.c Local Road Construction/Reconstruction - Ensure that the density and amount of local roads needed is correct and construction/reconstruction is accomplished as scheduled. Ensure that design standards are appropriate for management needs and that cost estimates are correct. Monitor through the Management Attainment Report, field reviews, and contracts and timber sale appraisals.

Variability which would initiate future action: Deviation of +/- 25% from assigned targets.

Findings: Finding: At the present time the Forest Plan does not set road densities for the forest. The forest is in the process of loading our GIS roads data. This information will be used to determine our road densities based on land allocation objectives. The target for local road construction/reconstruction was accomplished.

Recommendations: Revise Forest Plan to reflect more accurate road needs.

3. Timber

* Determine if timber resource sale schedule is within the Forest Plan's ASQ (36 CFR 219.27(c)(2)).
* Determine if silvicultural practices are in compliance with the Forest Plan (36 CFR 219.27(c)&(d)).
* Determine if harvested lands are adequately restocked within 5 years (36 CFR 219.27(c)(3)).
* Determine if maximum harvest unit size limits are being met and should be continued (36 CFR 219.12(k)(5)(iii), 219.27(d)).
* Ensure that no timber harvesting occurs on lands classified as not suited for timber production, except for salvage sales or sales necessary to protect other multiple-use values where the Forest Plan establishes that such actions are appropriate (36 CFR 219.27(c)(1)).
* Determine if lands identified as not suitable for timber production have become suitable (36 CFR 219.12(k)(5)(iii), 219.14(d), and 219.27(c)(1)).

B.3.a Allowable Sale Quantity - To track the chargeable yields during the planning period. This quantity is established as a quantity that could be sustained indefinitely, if not exceeded. Monitoring is provided for in the ten-year timber sale program, timber management information system (TMIS).

Variability which would initiate future action: Greater than 15% change from 5-year base harvest schedule. More than 10% of sales located outside of scheduled 10-year plan.

Findings: All sales offered in FY-98 occurred outside the 5-year base harvest schedule. Timber sale contracts were used to remove hazard trees that that became damaged from winter and spring storms.

In Fiscal Year 1998, the US District Court issued a preliminary injunction and ordered the Daniel Boone National Forest to immediately terminate timbering activities pending formal consultation with the USDI Fish and Wildlife Service, and amendment of the Forest Plan to include various direction to protect resources.

The Forest issued a proposal to amend the Forest Plan to include Special Habitat Needs and Silviculture, known as the SHNS amendment. A pre-decisional environmental assessment is expected to be released for public review during the summer of 1999.

Recommendations: None.

B.3.b Timber Planning Assumptions - Acres of Regeneration Cutting by Management Area - To track the amount of regeneration and intermediate cutting by management area, chargeable/non-chargeable yields.

Variability which would initiate future action: More than 10% change.

Findings: Reforestation activities was at 18% of what the Forest Plan anticipated to occur. A reduction in timber sale activity has resulted in a greatly reduced reforestation program.

In February, 1998 a snow storm dumped nearly 2-feet of wet snow over most of southeastern Kentucky. Areas previously reforested to shortleaf pine received extensive damage. Trees, from very young (5-years) to approximately 25 years old were bent over and remained in that position for several days. After the snow melted, these trees were structurally damaged, and are not capable of returning to their original form. Over the next few years there should be an increase in reforestation activities as these areas are prepared for planting and shortleaf pine seedlings planted.

Recommendations: None.

C. Organizational Effectiveness

1. Economics

a. There is a need to document costs associated with carrying out the planned management prescriptions, as compared with the costs estimated in the Forest Plan (36 CFR 219.12(k)(3)). Evaluate radical deviations between planned and budgeted.

Table C.1 - FLMP Accomplishments 1998
Daniel Boone National Forest
(All dollar amounts are adjusted to 1988 dollars)

MAR No.	Management Description	Unit of Measure	ANTICIPATED FLMP 10-year average		ACCOMPLISHED Annual Average 1986 thru 1998		FY-1998	
			Target	Allocation[1]	Accomp.	Allocation[1]	Accomp.	Allocation[1]
RECREATION								
26.0	Developed sites-ops & maint.	PAOT day	4,486,000	$2,054,640	4,955,371	$1,152,000	2,678,945	$1,004,000
2602	Developed sites	PAOT day					2,810,329	n/a
21.0	Trail constr.[2]	mile	12.5	$58,391	15.9	$81,000	42	$93,000
21.1	Trail maint.	mile	322	$71,000	190	$81,000	101	$40,000
HERITAGE								
27.1	Surveys	acre	67,000	$124,500	8,774	$84,000	429	$60,000
65.2	Site evaluation	each	5	n/a	3.6		10	n/a
65.3	Site interpreted	each					3	n/a
65.4	Site protected	each					1	n/a
VEGETATION								
77.0	Timber offered	mmcf	8.2	$728,851	5.1	$940,000	.2	$496,000
17.0		mmbf	45	n/a	28.1		1.3	n/a

[1]Allocations are adjusted to equal 1988 dollars.

[2]Trail construction miles does not include construction of trail bridges.

MAR No.	Management Description	Unit of Measure	ANTICIPATED FLMP 10-year average Target	ANTICIPATED FLMP 10-year average Allocation[1]	ACCOMPLISHED Annual Average 1986 thru 1998 Accomp.	ACCOMPLISHED Annual Average 1986 thru 1998 Allocation[1]	FY-1998 Accomp.	FY-1998 Allocation[1]
18.0	Silviculture Px.	acre	66,413	$200,060	64,916[3]	$184,000	n/a[4]	$401,000
19.1	Reforestation	acre	7,035	$1,645,432	5,081	$807,000	1,275	$185,000
20.1	Timber stand imp	acre	4,035	$461,433	2,358	$310,000	5	$62,000
18F4	Regen. MA 5:							
	Morehead	acre	57		15		0	
	London	acre	64		26		0	
	Somerset	acre	24		12		0	
	TOTAL	acre	145	n/a	53		0	n/a
WILDLIFE								
66.2	Habitat imprv.	acre	450	$165,790	1,033	$178,000	992	$81,000
37.2	Habitat structures	each	120	$68,875	329	$65,000	508	$49,000
68.4	Fish hab. imprv.	acre	30	$7,450	58	$21,000	66	$8,000
68.3	Fish structures	each	10	$5,000	78	$14,000	9	$3,000
72.6	T&E hab. imprv.	acre	600	$13,420	2,493	$39,000	894	$35,000
39.2	T&E structures	each	2	$4,140	60	$87,000	37	$6,000
RANGE								
28.0	Grazing permitted	aum	100	$10,353	111	$9,000	0	$0
29.0	Range non-struct.	each	50	$5,177	21	$2,000	0	$0
30.0	Range structures	acre	2	$4,141	2	$2,000	0	$0
SOIL, WATER & AIR								
13.0	Improvements	acre	144	$157,200	166	$158,000	158	$223,000
13.6	Improv. maint.	acre	495	$152,752	1,650[4]	$51,000	n/a	$0
MINERALS & GEOLOGY								
87.3	Energy Operation	each	720	$262,800	387	$207,000	551	$200,000
LANDS								
32.0	Land exchange	acre	2,056	$121,751	1,611	$46,000	0	$69,000
31.0	Land purchase	acre	300	$72,471	549	$64,000	1,200	$84,000
33.0	Landline establish	mile	115	$354,280	94	$158,000	17	$49,000
90.1	Landline maint.	mile	280	$126,824	245	$69,000	75	$50,000
34.0	Right-of-way	cases	33	$119,782	26	$39,000	1	$4,000
PROTECTION								
16.2	Fuel reduction	acre	5,830	$150,947	2,667	$61,000	421	$106,000
FACILITIES								
91.2	Maintained	mile	1,144	$607,415	1,083	$462,000	1,310	$467,000
93.x	Constr./reconstr.	mile	92	$1,516,320	30	$750,000	4.2	$117,000

2. Evaluating New Information

a. Identify emerging issues, concerns and opportunities that need to be addressed (36 CFR 219.7(f)).
b. Determine when changes in RPA, policies, or other direction would have significant effects on Forest Plans (36 CFR 219.10(g)).
c. Determine if conditions or demands in the area covered by the Plan have changed significantly (36 CFR 219.10(g)).
d. Evaluate the effects of National Forest management on land, resources, and communities adjacent to or near the National Forest; and the effects upon National Forest management of activities on nearby lands managed by other Federal, State or local government agencies (36 CFR 219.7(f)).

Section 1.A,. of this report, identifies noteworthy issues that helped to focus the monitoring items documented in this report.

[3]Tracking discontinued after FY-95. Average target for 10 years, 1986-1995.

[4]Tracking discontinued after FY-95. Average target and dollars for 10 years, 1986-1995.

III. 1999 M&E ACTION PLAN

A. Actions NOT REQUIRING Forest Plan amendment or revision

1. Action: Replace Variability wording with "Particulate matter monitoring data for any area within or adjacent to the Forest is close to exceeding National or State ambient air quality standards". (See recommendation # A,2,a. - Air Quality - Smoke Management, p. x)
   Responsibility: Lands Staff Officer
   Completion Date: FY-99 M&E Report
   Status, FY2000 Report:

2. Action: Improve data collection/documentation through monitoring to assess effects of management actions (disturbance) on soil properties and qualities, evaluate Forest Plan Standards and Guidelines, and validation of standards for allowable change for maintaining soil productivity. Validation of "T" factors has been identified as a research need in the Forest Plan (Chapter V-3). This validation process will require consultation and collaboration with Forest Service Research, other agencies, and the academic community. (See recommendation # A,3,a.- Soil Disturbing Activities, p. x)
   Responsibility: Lands Staff Officer
   Completion Date: Concurrent with revision of the Forest Plan.
   Status, FY2000 Report:

B. Actions REQUIRING amendment or revision to the forest Plan

1. Action: Revise Forest Plan to reflect more accurate road needs (Monitoring Items B.2.b & B.2.c).

C. Amendments to be completed

1. Action: Special Habitat and Silviculture (SHNS) Forest Plan amendment is in being prepared and the environmental assessment completed in 1999.
   Amendment Description: The SHNS amendment to the Forest Plan adds standards that provide for specific protective measures for cliffline habitat, Indiana bat habitat, and red-cockaded woodpecker habitat. It also includes silvicultural tools for vegetation management.
   Responsibility: Forest Supervisor
   Projected Completion Date: October 1999.

D. Recommendations where No Action will be taken in FY99.

1. Recommendation: None.

APPENDICES

A. List of preparers

George Chalfant - Soil Scientist

Jon Walker - Hydrologist

Kathleen Kennedy - Fire Dispatch

Mike Gay, Special Agent

Mason Miller - Engineering/Recreation Staff Officer

Kevin Lawrence - Forest Planner

Paul Finke - Implementation Coordinator / Silviculturist

B. Forest Plan amendments since, September 27, 1985

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

C. Status of 1998 recommendations and action plan

B. RECREATION

· **DISPERSED AREA CONDITION**

Recommendation:
1) Recommend that Forest Plan management direction for OHV's be changed.
2) Standards and guidelines for the Clifty Wilderness Area need to be developed.
3) Standards and guidelines for rock climbing need to be developed Forest-wide.
4) Trails in the RRGGA will continue to be monitored and as new problem areas are recorded they will be addressed as resources become available.

Responsibility: 1) Forest Planning Team
2) District Ranger
3) District Ranger/Forest Supervisor
4) District Ranger

Completion Date: 1) Forest Plan Revision
2) Forest Plan Revision
3) Forest Plan Revision
4) Ongoing

Status: Data not available at this time.

C. WILDLIFE - PROPOSED, ENDANGERED, THREATENED, AND SENSITIVE (PETS) SPECIES

· **ADDITIONAL PETS SPECIES (PLANTS)**

Recommendation: 1) Develop monitoring plans for Cumberland Sandwort (Fed. E), Virginia Spiraea (Fed. T), and American Chaffseed (Fed. E). Continue to search for Chaffseed, especially in and around areas treated with prescribed fire for RCW habitat management.

2) Establish several species as Management Indicator Species (MIS) to provide some measure of the condition of particular ecosystems. In particular, a suite os species associated with the Southern Yellow pine/Upland oak barrens/savannah community, should be used. Where possible, sensitive and conservation species should be addressed in Conservation Strategies/management plans tied to habitat.

3) Modify timber harvest and road design in the vicinity of white fringeless orchid populations to leave higher basal area along all stream channels above populations. Place all roads outside of stream drainage where populations or suitable habitat are located. Remove timber by endline or unbladed skid trails. Treat all streams near populations as perennial. Even though most do not flow above ground during summer, survey information in 1995 during drought conditions indicate that these streams are seep-fed and flow below the surface year-round.

4) Work with permittees on management of rights-of-way which provides for their needs and supports populations of rare and PETS plants. This includes uses of herbicides and mowing regimes. An ID Team was established to address the herbicide portion of this concern.

5) Work with recreation staff to develop signs encouraging Forest visitors to stay out of White-haired Goldenrod sites. Reroute trails where necessary and work with organized visitor groups to promote conservation education.

Responsibility:
1) Forest Botanist / Biologist
2) Forest Botanist / Biologist
3) Forest Botanist / Biologist
4) Forest Botanist and Lands Staff
5) Forest Botanist and Recreation Staff

Completion Date: Forest Plan Revision

Status: Data not available at this time.

· **ADDITIONAL PETS SPECIES (ANIMALS)**

Recommendation: Develop recovery strategies for each Federally-listed species and consult with the US Fish and Wildlife Service to agree on management that will not only protect, but recover populations. Develop conservation strategies for sensitive species, using the same process, that will preclude Federal listing by increasing populations to secure levels.

Responsibility: T&E Biologist

Completion Date: Forest Plan Revision

Status: Data not available at this time.

D. TIMBER

- **ALLOWABLE SALE QUANTITY** - .

Recommendation: Amend the Forest Plan to include the cliffline Management policy, two-aged shelterwood policy, and Indiana bat management strategy. Enter into consultation with the USFWS. Districts to begin landscape scale analysis to identify future projects.

Responsibility: Forest Management Team

Completion Date: Spring 1999

Status: The SHNS proposal to amend the Forest Plan is underway with an environmental assessment expected to be complete by August 1999.

E. SOIL, WATER AND AIR

- **SOIL DISTURBING ACTIVITIES**

Recommendation: Collaborate with Forest Service Research on validation standards for allowable change or tolerable soil loss to maintain long term soil productivity.

Responsibility: Forest Soil Scientist

Completion Date: Forest Plan Revision

Status: No standards have been developed at this time, but consideration is being given during the Forest Plan revision process.

G. FACILITIES

- **ROAD MAINTENANCE**

Recommendation: Continue to review level 1 and 2 maintenance needs on a case-by-case basis.

Responsibility: Engineering/Recreation Staff Officer

Completion Date: October 1999

Status: Data not available at this time.

- **ROAD CONSTRUCTION / RECONSTRUCTION**

Recommendation: Revise Forest Plan to reflect more accurate road needs

Responsibility: Engineering/Recreation Staff Officer

Completion Date: Concurrent with Forest Plan revision

Status: Data not available at this time.