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Mark Twain
National Forest

September 2007

Fiscal Year 2006

Monitoring & Evaluation Report

Mark Twain
National Forest

Cover photo: McClurg Glade, Mark Twain National Forest, USDA Forest Service

Photographer: Becky Bryan

APPROVAL AND DECLARATION OF INTENT

I have reviewed the FY2006 Monitoring and Evaluation Report for the Mark Twain National Forest that was prepared by an interdisciplinary team during the fall of 2007. The Monitoring and Evaluation Report meets the intent of both the Forest Plan (Chapter IV) as well as the regulations contained in 36 CFR 219.

This report is approved:

/s/ Paul I.V. Strong 9/28/2 007

for Ronnie Raum Date
Forest Supervisor

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Fiscal Year 2006 Annual Monitoring & Evaluation Report

Introduction

Effective Forest Plan monitoring and evaluation fosters improved management and more informed planning decisions. It helps identify the need to adjust desired conditions, goals, objectives, standards and guidelines as conditions change. Monitoring and evaluation helps the Agency and the public determine how a Forest Plan is being implemented, whether plan implementation is achieving desired outcomes, and whether assumptions made in the planning process are valid.

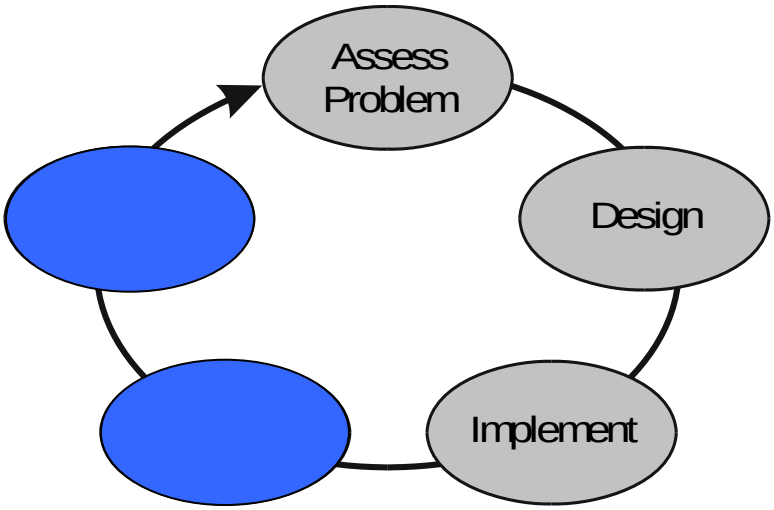
Monitoring and evaluation are learning tools that form the backbone of adaptive management. With these tools, information is collected and compiled to serve as reference points for the future; new scientific understanding and technology, changes in law, policy and resource conditions, growing concerns, trends and changing societal values are incorporated into forest planning; and the scientific validity and appropriateness of assumptions used in the development of the forest plan is evaluated. In short, they breathe life into a static document—the Forest Plan—to make it dynamic, relevant, and useful.

Several kinds of activities can be referred to as "monitoring." Programmatic monitoring tracks and evaluates trends of ecological, social, or economic outcomes. Project implementation monitoring monitors compliance with Forest Plan standards and guidelines. Effectiveness monitoring evaluates how effective our management actions are at achieving desired outcomes. Validation monitoring verifies assumptions and models used in Forest Plan implementation. Monitoring may also address issues for large geographic areas of which the forest is a part.

Monitoring and Evaluation Requirements

Minimum monitoring and evaluation requirements have been established through the National Forest Management Act (NFMA) at 36 CFR 219 (1982). Some requirements provide guidance for the development of a monitoring program, while others include specific compliance requirements. The minimum legally required monitoring tasks were identified in Table 4-1 of the Forest Plan and will be noted in this Report.

Monitoring and evaluation are separate, sequential activities required by NFMA regulations. Monitoring involves collecting data by observation or measurement. Evaluation involves analyzing and interpreting monitoring data. The information gained from monitoring and evaluation is used to determine how well the desired conditions, goals, objectives, and outcomes of the Forest Plan have been met. Monitoring and evaluation keeps the Forest Plan up-to-date and responsive to changing conditions and issues. This process provides the feedback mechanism for adaptive management (see figure below). The results are used to identify when changes are needed to either the Forest Plan itself or the way it is implemented.



Previous Monitoring Efforts

Under the 1986 Forest Plan, monitoring activities were conducted and Annual Monitoring and Evaluation Reports (Annual M&E Reports) were compiled. These reports were used to inform the Analysis of the Management Situation (AMS), which was developed in preparation for the Forest Plan revision. The AMS described the current condition of the Forest and evaluated inventory and monitoring information to identify necessary changes in management direction. The AMS, in essence, closed the book on monitoring under the 1986 Forest Plan.

This is the first Annual M&E Report compiled under the 2005 Mark Twain National Forest Plan. The plan was signed by Regional Forester, Randy Moore, on September 21, 2005, and implementation of the Plan began on January 3, 2006. The Monitoring Program is described in Chapter IV of the Forest Plan.

Monitoring Program

Forest Plan

Chapter 4 (Monitoring and Evaluation) of the Forest Plan is strategic in nature and provides programmatic direction for monitoring and evaluating Forest Plan implementation. The Forest Plan addresses several types of monitoring. These requirements fall into four broad categories:

Category 1:	Required monitoring items (NFMA, and 1982 36 CFR 219 regulations, as permitted by 36 CFR 219.14(e) and (f) of the 2005 Planning rule.)
Category 2:	Attainment of goals and objectives
Category 3:	Implementation of standards and guidelines and
Category 4:	Effects of prescriptions, management practices, and off-road vehicles

Required Category 1 monitoring items are mandatory components of every forest plan, whereas Category (2) through (4) monitoring items are more flexible and tailored to address issues raised through public scoping and interdisciplinary team review. A more complete description of Category 1 through 4 monitoring items can be found in Chapter 4 of the 2005 Forest Plan.

Monitoring and Evaluation Implementation Guide (Monitoring Guide)

The Monitoring and Evaluation Implementation Guide (Monitoring Guide) is part of the overall monitoring framework for the Mark Twain National Forest. While Chapter 4 (Monitoring and Evaluation) of the Forest Plan is strategic in nature and provides programmatic direction for monitoring and evaluating Forest Plan implementation, the Monitoring Guide provides direction that is more specific to implement the monitoring strategy outlined in the Forest Plan. The Monitoring Guide details the methodologies and protocols used to conduct monitoring and evaluation tasks identified in the 2005 Forest Plan for the Mark Twain National Forest. The Monitoring Guide also assigns responsibilities for monitoring and evaluation tasks, and defines where monitoring data is to be stored.

The Guide is flexible and may be changed as new methodologies and techniques are developed. It allows the principles of adaptive management to be applied so that as monitoring techniques are implemented they can be evaluated for their effectiveness and efficiency (and revised as appropriate). Such changes and updates are administrative corrections and do not require a plan amendment or revision. (§ 219.6(b))

The Forest Plan ID Team developed this Monitoring Guide to facilitate data collection and storage of monitoring items using standardized monitoring protocols and corporate data/information storage.

Annual Monitoring Activities

The Annual Monitoring Schedule identifies which items will be measured, and how the monitoring questions will be answered. It identifies and schedules various site-specific, on-the-ground monitoring activities, and describes the purpose, methods, locations, responsible persons, and estimated costs.

Budgetary constraints may affect the level of monitoring that can be done in a particular fiscal year. If budget levels limit the Forest's ability to perform all monitoring tasks, then those items specifically required by law are given the highest priority.

Each Ranger District will conduct three monitoring field trips per year. In addition, the SO will lead three monitoring field trips per year, scheduled so that each Ranger District is visited every two years.

Annual Monitoring and Evaluation Report (Annual M&E Report)

Providing timely, accurate information about Forest Plan implementation to the decision makers and the public is a key requirement of the monitoring and evaluation strategy. The annual monitoring and evaluation report, which provides the analysis and summary of the monitoring results, is the vehicle for disseminating this information. As stated on page 4-6 of the 2005 Forest Plan this report, "…provides an opportunity to track progress towards the implementation of forest plan decisions and the effectiveness of specific management practices. The focus of the evaluation is in providing short and long-term guidance to ongoing management."

Evaluation is the process of transforming data into information—a value-added process. It is a process of synthesis that brings together value, judgment and reason with monitoring information to answer the question, "So what?" and perhaps, "Why?" Evaluation requires context. A sense of the history of the place or the circumstances (temporal and spatial context) are important to the evaluation of management activities. Evaluation describes movement from a known point (base line or reference condition) either toward or away from a desired condition. The desired conditions may or may not ever be fully achieved, but it is

important to know if management activities are heading in the right direction. Evaluation produces information that is used to infer outcomes and trends: Conclusions will be drawn from an interpretation of evidence. These conclusions are documented in the Annual Monitoring and Evaluation Report.

The Annual Monitoring and Evaluation Report is not intended to be a comprehensive compilation of all the monitoring and evaluation described in the plan. While the report may provide summaries of data collected, it is primarily written to display evaluation of the data. The evaluation process determines whether the observed changes are consistent with Forest Plan desired future conditions, goals, objectives and what adjustments may be needed. Comparison of subsequent monitoring and evaluation reports provide a means to track management effectiveness from year to year and to show the changes that have been made or are still needed.

Key information displayed in the Annual Monitoring and Evaluation Report includes:

- Forest accomplishments toward achieving multiple use objectives for providing goods and services.
- The degree to which on-the-ground management is maintaining or making progress toward the desired conditions and objectives for the plan
- The effects of the various resource management activities within the plan area on the productivity of the land
- Conclusions and recommendations regarding the need to adjust monitoring or change the Forest Plan
- Status of other agency/institution cooperative monitoring
- Update of research needs
- Status of any Forest Plan Amendments or Administrative Corrections
- Documentation of any monitoring that has not been completed and the reasons and rationale (budget or staffing limitations or unexpected conditions, such as a severe fire season)

Use of Monitoring and Evaluation Information

This report is of value for the public and Forest Service leadership, managers and employees. The Annual M&E Report describes to the public how their public lands are being managed and how effectively the commitments made to them through the 2005 Forest Plan are being met. The information gained from the Annual M&E Report is used to determine how well the desired conditions, goals, objectives, and outcomes of the forest plan have been met. The Annual M&E Report also provides a readily available reference document for Forest Service managers as they plan, evaluate the effects of actions on resources, and implement future projects. The information can illuminate changes needed in project planning and implementation, or changes needed in Forest Plan direction.

The information contained in the Annual M&E Reports will also be used to inform the Comprehensive Evaluation Report (CER) which will be due January 2011 (five years after the implementation date of the revised plan.) The CER will build on the AMS developed for the Forest Plan revision, incorporating the monitoring and evaluation documented in the annual monitoring and evaluation reports. In the years that a CER is required, it will take the place of the Annual Monitoring and Evaluation Report.

Monitoring Activities in Fiscal Year 2006 (FY 2006)

This report documents monitoring for the first nine months of Forest Plan implementation. Most of the projects monitored had been planned, and in some cases implemented, under the 1986 Forest Plan direction. Therefore, trends, patterns, and results from implementation of the 2005 Forest Plan are not clearly defined. On-the-ground changes to forest type composition, age structure, and other attributes will not be evident at this early date. In addition, evaluations and conclusions that would lead to changes in the Forest Plan are not expected at this point.

The type of monitoring most commonly reported herein is implementation monitoring. We believe it is important to first ensure that we are properly following the objectives, standards and guidelines established in our Forest Plan. This report also focuses on those monitoring questions that can be answered using existing corporate databases.

Development of Monitoring Guide

The primary focus of the monitoring program in FY 06 was on development of the Monitoring and Evaluation Implementation Guide (Monitoring Guide). The Forest Plan Revision ID Team worked together to develop the protocols, timing and responsibilities for each of the monitoring questions in the Forest Plan. The Monitoring Guide was completed in September 2006. While some of the monitoring methods and protocols in the Monitoring Guide are straight forward and have been used for many years, some other methods are newer and have not yet been fully tested. Monitoring activities during FY 2007 will help validate the efficacy and reliability of the monitoring protocols described in the Monitoring Guide.

During FY 2006, the team worked with scientists from the Northern Research Station and the Northern Monitoring Program to develop methods for answering some of the monitoring questions at the Forest-wide scale. These methods include using FIA data to determine whether the Forest as a whole is moving towards the desired condition as described in the Forest Plan, identifying changes in habitat for MIS and TES species, and other large scale issues. The Forest's coordination with the Northern Research Station and the Northern Monitoring Program in on going. These monitoring results will be of most value in looking at long-term changes, such as will be done in the Comprehensive Evaluation Report.

Monitoring Field Trips

There were no monitoring field trips conducted by the Forest Monitoring Team during FY 2006. The Forest Monitoring Team was focused on developing the monitoring guide, helping Districts learn how to implement the new 2005 Forest Plan, and responding to appeals on the 2005 Forest Plan. The Potosi District did conduct four monitoring field trips, and the Recreation Program Manager monitored some activities on the Cassville unit during FY 2006. The reports of these trips have been incorporated into this Annual report.

Monitoring Results

The monitoring and evaluation described in this report is organized by the specific Forest Plan Goal (found in Chapter 1 of the 2005 Forest Plan) that drives each of the monitoring questions.

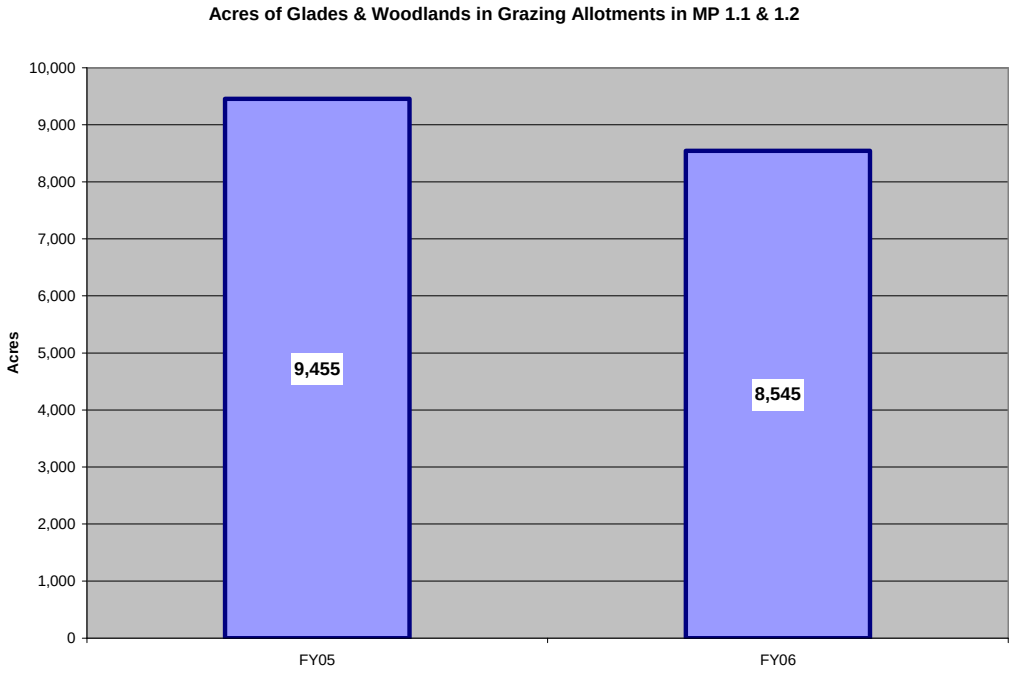
Goal 1 – Promote Ecosystem Health and Sustainability

Goal 1.1 – Terrestrial Natural Communities

Question – To what extent has domestic livestock grazing been removed from glades and woodlands in MP 1.1 and 1.2?

Glades and woodlands are unique natural communities that provide habitat for many sensitive plant and animal species. Past heavy grazing has greatly diminished the original diversity of grasses, sedges and wildflowers on glades and in woodlands. Heavy grazing has accelerated eastern red cedar invasion. Consequently many glades and woodlands are currently degraded and outside their range of natural variability. Around 1969, open range was discontinued and intensive management of some glade communities began using cedar control and prescribed fire. While this has improved the condition of some glade communities, they are far from being productive or sustainable ecosystems. Currently the general ecological condition of glade and woodland natural communities is poor. With few exceptions, existing glades and woodlands do not have sufficient natural integrity to reintroduce or sustain grazing in such a manner that would allow recovery of the natural community. Thus, the 2005 Forest Plan requires that domestic livestock grazing on glades and woodlands in MP 1.1 and 1.2 (where the primary emphasis is restoration of ecosystem health) be discontinued upon expiration of allotment permits.

There were five allotments that contained approximately 9,455 acres of glades and open woodlands when the ROD for the 2005 Forest Plan was signed. Almost 10% (910 acres, including 2 entire allotments) of the glade and woodland acres in grazing allotments in MP 1.1 and 1.2 have been closed. At the end of FY 2006, a total of 8,545 acres, in four separate allotments, remained.



Question – Are restoration activities increasing plant species richness for woodlands, glades and forests?

and

Question – Are we moving toward desired condition for groundcover and natural community type structural characteristics?

Measuring the entire range of natural communities for every project location in which they occur is cost-prohibitive, and unnecessary. The MTNF had developed a methodology based on repeatedly monitoring the plant species richness (expressed as the Floristic Quality Index (FQI)) and groundcover (expressed as an estimate of % cover) in a sampling of the different natural community types. The Floristic Quality Index (FQI) is developed based on numerical values (between 0 and 10) assigned to each native vascular plant species. This numerical index is an expression of the relative integrity of the ecosystem, much like the optimal range of numerical indices established for cholesterol or blood pressure measurements in humans.

Monitoring plots are located within areas of analogous vegetation that represent the range of variation within respective similar natural communities, and are homogeneous with respect to their history of use, lack thereof and management treatments. This scientific method provides a sound way of obtaining a sufficient sample to allow inferences to be made to similar natural communities Forestwide in response to similar management treatments, assuming like diagnosis of current conditions. In another words, when proper sampling procedures are followed, data from monitoring plots are used to infer results for the similar natural community type as a whole. The aggregates of all the monitoring plots assigned to similar or like stratifications (clearcuts, grazed glades, similar ELTs, untreated sites, etc) can then be analyzed as a single data set within respective MP 1.1 or 1.2 areas.

After the initial baseline data is gathered, monitoring frequency would vary somewhat by community and habitat type. For all but the most sensitive habitat types (and these are mostly small patch wetlands such as sinkhole ponds and fens) adoption of a five year monitoring cycle will most likely be sufficient.

During FY 2006, contract botanists (individuals with demonstrated field familiarity with the local vascular flora, and adept at identifying even sterile or juvenile live/dead plant material to species with high levels of consistency and accuracy) established and collected data on 75 plots on the Ava Glades to establish the baseline condition for this community type. This data was entered into FS Veg for report tracking and retrieval.

Analysis generally must rely on at least two repeat collections of data at the same sampling location (following significant management treatments) to measure changes/trends in data. Since only one collection of data has occurred at the Ava Glades, there are no results to report for that community type.

The Nature Conservancy used this same methodology (repeatedly monitoring the plant species richness (FQI) and percent of groundcover) to evaluate the effects of treatment in the Pineknot Project. Data was collected in 2000, 2002, and 2005. The analysis of plant data collected before and after vegetation treatments at Pineknot showed significant trends toward desired plan species richness in this pine woodland natural community.

Goal 1.2 – Non-Native Invasive Species

Question – To what extent is Forest management contributing or responding to non-native invasive species (NNIS)?

The Chief of the USDA Forest Service has identified invasive species as one of the four critical threats to our nation's ecosystems. Non-native invasive species (NNIS) include terrestrial and aquatic plants and animals. Infestations of NNIS increasingly threaten the integrity of the ecosystems and biodiversity on the MTNF. Of particular concern are those NNIS that are successful at invading natural habitats. Throughout the MTNF, NNIS plants are most abundant in regularly disturbed areas such as roadsides and old fields.

As of July 2006, there were a total of 40,248 acres on 1,739 sites known to be infested with NNIS plants. During FY 2006, 2,945 acres were treated for NNIS plants by mowing (1,517 ac), hand pulling (69 ac) other manual treatments (56 ac) or by cattle grazing (1,237 ac). Approximately 47 ac were along roadways, and the rest were in grazing allotments. Future monitoring of these sites will be required in order to determine the effectiveness of these treatments.

Goal 1.3 – Soils, Watersheds, and Water Quality

Question – Are the effects of Forest management, including prescriptions, resulting in significant changes to productivity of the land?

The methods outlined in the Monitoring Guide for answering this question include qualitative assessments (mostly ocular) of the activity areas during Monitoring Field Trips. These observations are then to be compared to the R9 Soil Quality Condition Monitoring Protocol (FSH 2509.18-2002-1) to determine if "detrimental soil conditions" are occurring. All of the Monitoring Field trip reports from the Potosi District for FY 2006 reported that Watercourse Protection Zones (WPZ) standards and guidelines were being followed. None of the reports mentioned any soil erosion, movement, compaction, or other problems.

Question – How many lakes and streams are being treated to improve down woody material?

Large woody material is part of the inherent ecological processes and functions of the associated aquatic, riparian, and upland components within the riparian corridor. It helps to maintain streams in normal function within natural ranges of flow, sediment movement, temperature, and other variables.

There was no placement of large woody material in lakes or streams during FY 2006. However, approximately 1 mile along the Gasconade River was planted with hardwood seedlings, which will eventually contribute towards the recruitment of large woody material in that river.

Question – To what extent is Forest management affecting water quality, quantity, and the physical features of aquatic, karst, riparian, or wetland ecosystems?

Two monitoring trips on the Potosi Ranger District focused specifically on implementation of new Forest Plan direction regarding Riparian Management Zones (RMZ) and Watercourse Protection Zones (WPZ). The first trip (2/13/2006) included members of the Forest Planning Team, and was designed as a field practice for delineating RMZs and WPZs. There was also much discussion regarding the standards and guidelines regarding these features. The second trip (8/22/2006) reviewed one of the first sales on the District that had been laid out under the 2005 Forest Plan to determine if WPZ measures were adequately implemented. The District

monitoring team found that the WPZ standards and guidelines were being followed, and in some cases had been exceeded.

Other monitoring of harvest units, temporary road construction, road maintenance, and trail construction projects found that stream channels and special habitats were being protected, and that all mitigation measures had been followed.

Goal 1.4 – Wildlife and Aquatic Habitat

Question – To what extent are forest management activities providing habitat for Management Indicator Species?

and

Question – To what extent is Forest management contributing to the conservation of sensitive species and moving toward objective for their habitat conditions?

and

Question – To what extent is Forest management contributing to the conservation of threatened and endangered species and moving toward objective for their habitat conditions?

and

Question – Are specialized habitats (caves, fens, seeps, springs, cliffs, rock outcrops, wetlands, etc) being protected, maintained and restored?

The Forest Wildlife Biologist has been detailed to other duties since January of 2007, and was not available to provide a summary of the FY 2006 Monitoring activities or to evaluate and report on the results of that monitoring. Monitoring trip reports from the Potosi District indicated that the projects reviewed (Ozark Trail construction and three separate timber sales) met the mitigation measures contained in the project concurrence letters from USFWS, the Terms and Conditions of the USFWS Biological Opinion for the 2005 Forest Plan, and that stream channels and special habitats were adequately protected.

Goal 2 – Provide a Variety of Uses, Values, Products, and Services

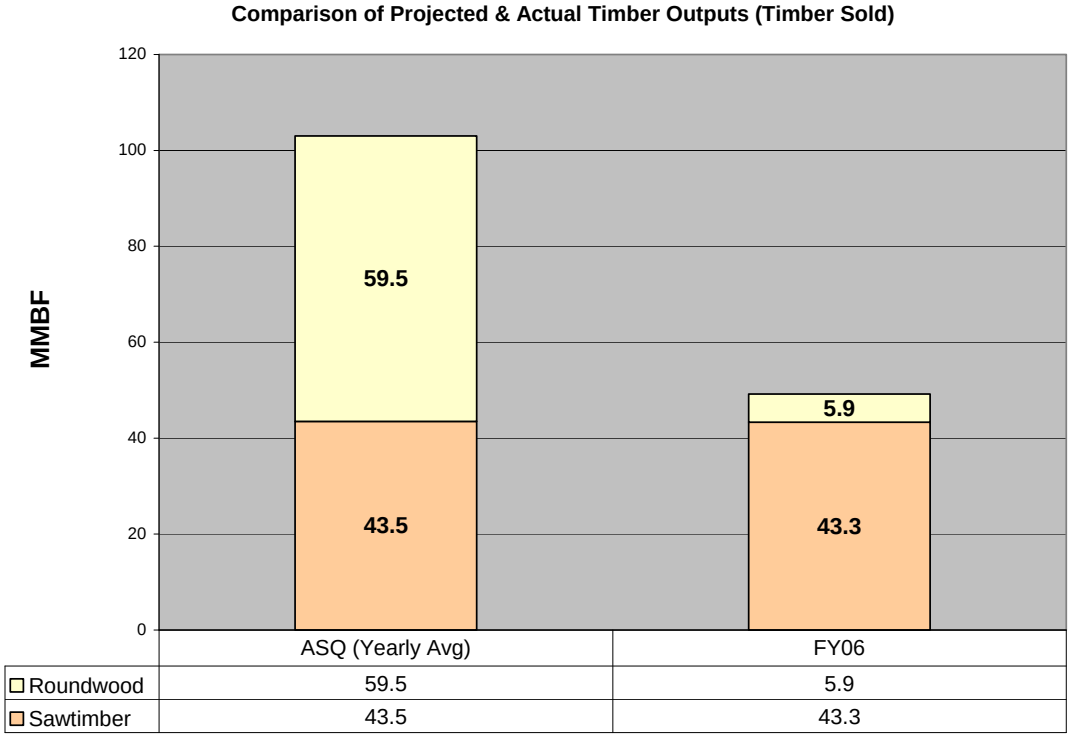
Goal 2.1 – Public Values

Question – How close are Projected outputs and services to actual?

The Allowable Sale Quantity (ASQ) for the first decade of 2005 Forest Plan implementation is 1,030 million board feet (MMBF), which equates to an annual average of 103 million board feet per year. The ASQ is a maximum capacity of suitable land to grow timber volume on a long-term sustained yield basis under a given management scenario (Forest Plan). While the amount of timber sold in any given year can exceed the annual average, the total amount sold over the decade cannot exceed 1,030 million board feet (MMBF). ASQ is not a target. The actual amount of timber sold in any given year may vary based on the budgets received, the Forest's capability to implement projects, changes in the timber market, insect and disease outbreaks, and any number of other variables.

The model used to determine the ASQ estimated that roundwood products would constitute the majority of the products sold (59.5 MMBF or 58% of the total), with sawtimber products accounting for the remainder (43.5 MMBF, or 42% of the total.) This emphasis on smaller material is due to the heavy need for thinning of forested stands throughout the Forest.

The following chart shows the timber sold in FY 2006. Note that while the sawtimber portion was very close to that projected by the ASQ, the roundwood products sold were only 10% of that projected, indicating that the thinning needs are not being met.



In addition to the projected timber output, the Forest Plan also estimated the proposed and probable management activities that would be used to work toward the vegetative and other multiple-use desired conditions and objectives of the Forest Plan, based upon modeling estimates. Again, these are not targets, and actual treatments during plan implementation may vary from these modeled outputs. The following table compares the estimated decade total to the actual activities implemented. (Reporting of miles of temporary roads and acres of skid trails were not readily available for FY 2006.)

Management Activity	Unit	FY 2006	Cumulative Decade Total	Estimated Decade Total
Commercial Thinning	acres	3,340	3,340	99,800
Pre-commercial thinning and release	acres	3,278	3,278	40,200
Regeneration cut	acres	2.321	2.321	112,700
Temporary roads	miles	N/A	N/A	1,500
Skid Trails (1mile = .96 acres)	acres	N/A	N/A	4,000
Non-commercial thinning	acres	0	0	8,400
Red Cedar Reduction	acres	0	0	12,600
Prescribed Burning	acres	17,888	17,888	688,000
Hazard Fuels Treatment - Mechanical	acres	2,000	2,000	149,200

The Forest is also working on a methodology and protocol for tracking and reporting on the progress towards meeting the objectives listed in Chapter 1of the Forest Plan. This progress will be reported in future Annual M&E Reports.

Question – How close are projected costs to actual?

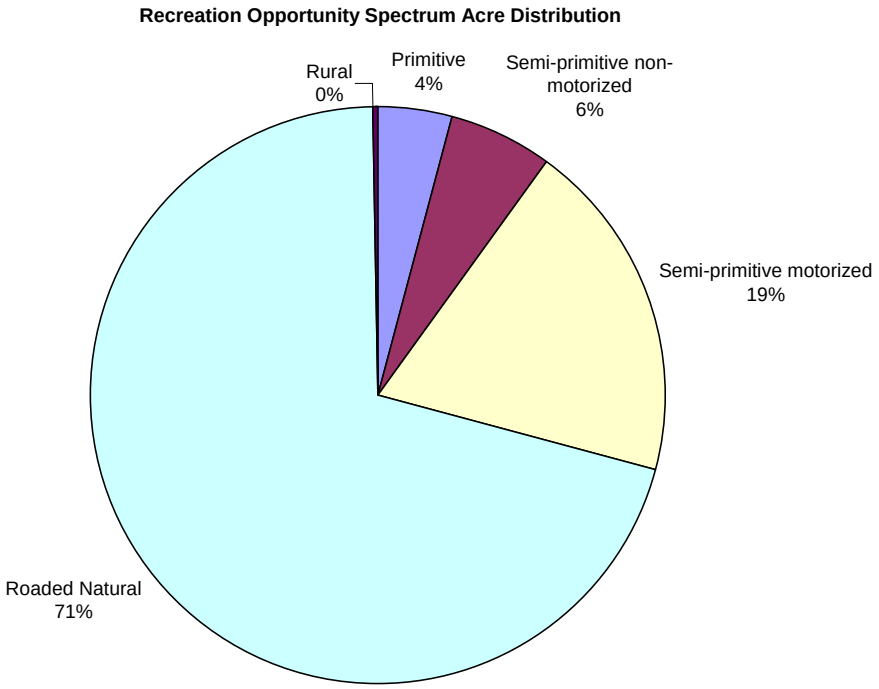
The estimated costs for timber activities shown below were used in the Spectrum modeling conducted for the Forest Plan FEIS. The Forest has not calculated these costs for FY 2006, but is putting in place a protocol and mechanism for tracking and reporting these costs in the future.

Work	Unit of Measure	FEIS Estimated Cost
Temporary Roads		
UEAM	**MCF**	$4.00
Ecosystem Management	**MCF**	$2.50
Timber Medium Level	**MCF**	$1.75
Timber Minimum Level	**MCF**	$1.00
No Harvest	**MCF**	$0.50
System Road Work	**MCF**	$18.93
Timber Sale Costs (NEPA to Close)		
UEAM	**MCF**	$445.00
EAM Regeneration	**MCF**	$270.00
EAM Thinning	**MCF**	$392.00
Regeneration Work	**Acre**	$80.00
Non-Commercial Tree Felling	**Acre**	$595.00

Question – To what extent is the Forest providing a range of motorized and non-motorized recreation opportunities that incorporate diverse public interests yet achieve applicable Management Area and Law Enforcement objectives?

The Recreation Opportunity Spectrum (ROS) is a planning tool used to identify, evaluate, and define the supply of recreation settings on the national forests. Five ROS classes have been inventoried on the Mark Twain NF. These settings are Primitive (P), Semi-Primitive Non-Motorized (SPN), Semi-Primitive Motorized (SPM), Roaded Natural (RN) and Rural (R). ROS class objectives are used to integrate a variety of recreation opportunities across the National Forest.

On the Mark Twain NF, the ROS class objectives are set by management prescriptions, and describe the desired condition for the lands allocated to a given management prescription. The land allocations under the 2005 Forest Plan were designed to provide a range of recreation opportunities to satisfy diverse public interests. Approximately 90% of the MTNF is allocated to management prescriptions that allow motorized recreational activities, with the remaining 10% providing for non-motorized recreation. The following chart illustrates the allocations made by the 2005 Forest Plan. Changes to these percentages could result from land exchanges, purchases, or changes to the management area prescription for a given area. There were no changes to the ROS distribution during FY 2006.



Question – Does Forest management of utility, recreation, and other use permits meet Forest Plan and agency direction?

The MTNF had over 830 special use permits on the books in FY 2006. During the year, 137 permits were closed, and 49 were processed. All permits met Forest Plan and agency direction.

Field inspections of selected permits were conducted for permit and civil rights compliance. Overall, 65% of total permits were administered to standard, which means that the authorizing documents are current, inspections have been done and any needed corrective actions taken, permit fees have been paid, etc.

Question – What are the effects of MTNF management on people and communities in areas adjacent to the forest?

"Payments in Lieu of Taxes" (or PILT) are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries. PILT payments help local governments carry out such vital services as firefighting and police protection, construction of public schools and roads, and search-and-rescue operations. PILT payments are one of the ways that the Federal government can fulfill its role of being a good neighbor to local communities.

The Secure Rural Schools and Community Self-Determination act of 2000 (SRS) (PL 106-393) was enacted to provide transitional assistance to rural counties affected by the decline in revenue from timber harvests in federal lands. Traditionally, these counties relied on a share of receipts from timber harvests to supplement local funding for school systems and roads.

Some federal lands are leased to individuals and companies for minerals development. Lease holders competitively bid, initially pay a bonus and subsequently, rent for the right to develop these minerals. If minerals are found, extracted and sold, the federal government is entitled to a certain percentage of, or royalty on, the production. Distribution of revenues associated

with onshore federal lands is split 50-40-10, with 50 percent of the money going directly to the state within which the specific lease was located. Forty percent is sent to the Reclamation Fund of the U.S. Treasury. This special account finances the Bureau of Reclamation's water projects in 17 western states. The remaining 10 percent goes to the Treasury's General Fund.

The following table shows the payments made to counties containing National Forest System (NFS) lands. SRS and Minerals payments are made to the State; the distribution by county shown below is based on the acres of NFS lands in each county.

County	NFS Acres	PILT Payments	SRS Payments	Minerals Payments	Total Payments
Barry	55,183	$60,457	$101,090	$74,160	$235,707
Bollinger	1,646	$1,715	$2,891	$2,212	$6,818
Boone	4,142	$4,819		$5,566	$10,385
Butler	44,459	$35,872	$89,524	$59,748	$185,145
Callaway	12,104	$14,097	$12,957	$16,267	$43,321
Carter	90,644	$84,666	$168,554	$121,816	$375,037
Christian	51,597	$53,094	$95,843	$69,341	$218,277
Crawford	50,053	$51,440	$92,309	$67,266	$211,015
Dent	72,280	$66,041	$130,753	$97,137	$293,931
Douglas	40,910	$41,929	$76,139	$54,979	$173,046
Howell	50,421	$52,241	$91,131	$67,761	$211,132
Iron	95,571	$84,013	$177,443	$128,438	$389,893
Laclede	30,026	$31,094	$53,650	$40,352	$125,096
Madison	51,341	$52,982	$93,380	$68,997	$215,359
Oregon	105,632	$95,419	$189,329	$141,959	$426,707
Ozark	38,672	$40,384	$71,855	$51,971	$164,211
Phelps	63,161	$55,338	$119,295	$84,882	$259,514
Pulaski	37,861	$35,771	$88,025	$50,881	$174,678
Reynolds	89,915	$88,406	$165,984	$120,837	$375,227
Ripley	97,357	$82,721	$177,978	$130,838	$391,537
Shannon	83,814	$85,709	$154,954	$112,637	$353,301
St Francois	673	$650	$1,499	$904	$3,054
Ste. Genevieve	10,254	$10,514	$19,061	$13,780	$43,356
Stone	9,626	$12,224	$28,699	$12,936	$53,860
Taney	61,814	$63,912	$118,973	$83,072	$265,957
Texas	47,287	$48,344	$90,167	$63,549	$202,060
Washington	82,398	$73,204	$152,813	$110,734	$336,751
Wayne	87,248	$91,176	$162,343	$117,252	$370,772
Wright	7,159	$7,363	$13,172	$9,621	$30,156
State Total	1,473,248	$1,569,485	$2,739,813	$1,979,894	$6,289,192

Goal 2.2 – Prescribed Fire, Fuels, and Wildland Fire Management

Question – What level of wildland fire on the landscape is appropriate and desirable?

In areas with a wildland fire use plan, the desire is to allow natural starts to burn under manageable objectives and conditions. MTNF will completely suppress fires in these areas if fire fighter safety, public safety, or structures are at risk.

There were no natural ignition fires recorded among the 200 wildfires that burned in FY 2006.

Question – To what extent is unwanted wildland fire on the landscape suppressed, and at what size were wildfires contained?

There were 200 wildland fires recorded with a total of 6,019 acres burned. The average size of these fires at containment was 24 acres.

Question – To what extent were prescribed fires used to mimic natural processes, maintain/improve vegetative conditions, and/or restore natural processes and functions to ecosystems?

A total of 17,888 acres were treated with prescribed fire to restore historic natural conditions and improve ecosystems. This is a little over 1% of the total acres in Fire Regime Condition Class 2 (FRCC2) and FRCC3 on the forest.

Question – To what extent were prescribed fires used to treat fuel levels in high risk areas?

and

Question – How many acres of hazardous fuels reduction activities were accomplished within the Wildland-Urban Interface?

14,816 acres were treated on elevated fuel conditions within the Wildland Urban Interface (WUI). MTNF reduced fuel loads on 17,888 acres in high to moderate risk areas identified in the 2005 Forest Plan Fire Risk Assessment.

Question – Are fuel treatments (mechanical and burning) effective?

Pre- and post-treatment fuel loading plots were placed in the Bates Hollow, Indian Creek and Scotia Pine prescribed burn areas (all located on the Salem Ranger District) and in the Pineknot project area. The data collected from these plots located in areas that were burned and mechanically treated showed an overall 25% decrease in fuel levels a year later. Reducing fuel loads creates less intense wildfires, less complex prescribed burns, and more improvement in biodiversity.

Question – To what extent is the Forest management contributing or responding to air quality effects on ecosystems, human health, or human enjoyment?

The 17,888 acres burned on MTNF produced 773 tons of PM2.5 emissions, which is higher than the seven-year average cited in the 2005 EIS for the Forest Plan. This is a result of the increase in acres burned across the forest, which is addressed in the 2005 EIS. No sensitive areas were impacted by smoke or emissions, due to the preliminary analysis and emission reduction techniques employed by the Forest.

Goal 2.3 – Transportation System

Question – What are the effects of off-road vehicle use on the physical environment?

In FY 2006, the forest set up soils monitoring plots in the proposed OHV Trail Study project area to document benchmark effects before the study, and to monitor continuing effects if the study makes OHV use legal in those areas for three years.

The Forest has established soil monitoring plots located within both of the established ATV/Motorcycle Areas on the Forest (Chadwick and Sutton Bluff), however no monitoring of these plots was conducted in FY 2006.

Question – How effective are forest management practices managing OHV use?

Recreation staff riding the ATV/Motorcycle Trails within the Chadwick Motorcycle and ATV Area estimated that they found in excess of 20 miles of illegal/user-made trails and user opened trails. Although they closed or blocked the entrances to many of these trails, some of the trails were repeatedly reopened, especially those representing hill-climbs or short cuts.

Early in the fiscal year, the Ozark Trail Association reported that several members were seeing an increase in ATV tracks along some sections of the Ozark Trail. LEOs conducted a few saturation patrols to provide additional enforcement near those trails and at other problem areas.

Citations and warnings issued by LEOs and FPOs for OHV violations were similar in number to those issued in the past couple of years, with the following violations recorded: 37 violation notices (tickets), 33 incident reports, and 45 warnings, totaling 115 formally recorded violations.

Question – Is a minimum transportation system being provided and maintained to meet resource management objectives?

As noted in the EIS for the 2005 Forest Plan, the transportation system for the Forest is largely in place. At the start of FY 2006 there were 2,292.92 miles of NFS roads. During the course of the year, 2.43 miles were added to the system, including 1.6 miles of unclassified road, for a total of 2,295.35 miles. Maintenance was performed on 795 miles (35%) of system roads, and 37% of the total system road miles met the Objective Maintenance Level (ObML).

Question – How many miles of road have been decommissioned?

During FY 2006, 12.25 miles of unclassified road were decommissioned.

Question – Are unneeded roads being decommissioned in an effective manner?

One report of monitoring on Cassville unit (4/6/2006) indicated that non-system roads closed using earthern berms and falling trees were not always successful. Some districts have been successful using large boulders dumped in the roadway to block unwanted traffic.

Goal 2.4 – Timber Management

Question – Are harvested lands adequately restocked after five years?

First and third year stocking surveys were conducted on a total of 3,887 acres of natural regeneration sites, and 1,738 acres (all of the 3rd year survey sites) were certified as adequately restocked. The remaining acres will be resurveyed in 2008. First year survival surveys were conducted on 119 acres planted in 2005, and all were certified as stocked, with 93% survival. There was no regeneration planting in 2005, and therefore no third year surveys were conducted.

Question – Are insect and disease populations compatible with objectives for restoring or maintaining healthy forest conditions?

The Forest continues to experience widespread oak decline. In FY2006, 2,226 acres were salvaged in response to oak decline. No other significant insect or disease problems have been identified.

Goal 2.5 – Geology and Minerals Management

Question – Are mineral exploration, development, and production stipulations effective and being followed as recommended in project designs?

A total of 41 drill hole sites were monitored during FY 2006. Of those 7 had not yet been drilled, and 9 were still being drilled at the end of the FY. The remaining 25 sites had been rehabilitated in accordance with the lease or permit stipulations, and applicable Forest Plan standards and guidelines.

Goal 2.6 – Land Adjustment Program

Question – How successful is the Forest's land adjustment program in support and enhancement of Forest Plan desired conditions and objectives and contributing to efficient and effective stewardship?

During FY 2006, the MTNF exchanged a total of 55.5 acres of Federal land for a total of 157.3 acres of non-federal land valued at $128,000, for a net increase of 101.8 acres. In addition, the Forest purchased a total of 80 acres, bringing the total NFS area to 1,491,203 acres. These lands adjustments contributed to more efficient and effective management by consolidating ownership patterns and reducing the amount of boundary lines needed.

Goal 2.8 – Recreation Opportunities

Question – To what extent do Forest recreation facilities and opportunities meet accessibility, health, safety, cost, and maintenance requirements and achieve resource and social objectives?

Preseason Developed Recreation Facility inspections were conducted by district personnel at all developed recreation sites. After removal of identified hazard trees and other site preparation procedures, all sites were determined to meet or exceed all of the critical performance standards, which include health and safety standards.

We began implementation of the Facility Master Plan, completing the following recreation improvement projects:

- Install 2 Flush Toilets with showers – Cobb Ridge & Sutton Bluff
- Implement 1 Electrification Project – Lane Spring
- Rehabilitate1 Recreation Site, new boat ramp – Bay Nothing
- Implement 5 Dam Maintenance Projects – Markham, Beaver, Pinewoods, Fourche, Ripley
- Decommission 1 Wastewater Treatment Plant – Noblett Lake
- Decommission 8 Wells – Forestwide
- Install 6 Double Concrete Vault Toilets – Paddy Creek Picnic, Markham, Council Bluff (Wild Boar) Boat Launch, Float Camp Day Use, Pine Ridge, Bar-K
- Install 6 Single Concrete Vault Toilets – Camp Ridge, Stone Mill Spring, Pine Ridge, Enough Boat Launch, Carrington Pits, Hercules Tower
- Reconstruct 1 Toilet – Float Camp Campground
- Replace pit toilets with wilderness toilets – 5 float camps on Eleven Point River, + 1 other site
- Complete improvements previously initiated – North Fork Toilet Installation, Loggers Lake Toilet Construction.

In addition to these projects, some or all of the facilities were removed from several sites that we can no longer afford to operate and maintain to standard, including: Buffalo Creek, Camp Five Pond, Crane Lake Picnic Area, Dewitt Pond, Fourche Lake and Pinewoods Campground. These areas remain open to the public for dispersed recreation use. Accessibility improvement projects were completed at Stone Mill Spring, Lane Spring, Council Bluff, Greer Crossing, and Noblett Lake.

Two River Patrol Rangers provided extra Forest Service presence during the summer primarily along the Eleven Point Scenic River, to improve compliance with the regulations and to assist visitors, and to help keep the river corridor clean.

Question – Does water in Forest-provided drinking water sources and swimming beaches meet standards of quality protective of human health and aesthetics?

Public drinking water sources on the Forest are monitored in accordance with State law during the recreation season. In most instances, water samples meet State criteria. In the rare cases when problems surface, the Forest works closely with the State to rectify those problems.

Question – To what extent are Forest management activities in semi-primitive management areas within the Recreation Opportunity Spectrum Objectives (ROS)?

This question is to be answered by reviewing projects with management prescriptions managed for semi-primitive ROS objectives (1.2, 6.1, 6.2, and scenic portions of 6.3.) None of the monitoring field trip reports for FY 2006 addressed this question, so there is no information available to report.

Goal 2.10 – Heritage Resources

Question – Are avoidance or mitigation measures effective and being followed as recommended in project designs?

The zone archeologists and archeology technicians insure that known archeology sites are identified on maps used by the marking crew, sites are flagged on the ground , and boundaries painted. The timber sale administrator insures that the archeology sites are protected from disturbance by the timber harvesting operations. The zone archeologists insure surveys of temporary roads and skid trails prior to their use.

Post burn monitoring of archeology sites occurs after prescribed burns. Monitoring is documented by zone archeologists and reported to SHPO.

Question – Are heritage resources being affected in non-project areas?

Yes in some cases. Dispersed recreation, such as ATV use off trails, cave looting, large deer camps at old house places or in riparian areas can cause damage to archeology sites. LEO's and other forest staff document the damage and action is taken where evidence is available.

Historic administrative sites and historic recreation areas are maintained in consultation with the State Historic Preservation Officer (SHPO).

Goal 2.11 – Wilderness Opportunities

Question – Are air quality related values of the Class I air sheds being maintained? (Hercules Wilderness)

There is no data available for FY 2006.

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