

JEFFERSON NATIONAL FOREST
Revised Land and Resource Management Plan
Administrative Change
2012 Planning Rule Monitoring Program Transition
September 2016

This Administrative Change – the 2012 Planning Rule Monitoring Program Transition – to the 2004 Revised Land and Resource Management Plan (Forest Plan) for the Jefferson National Forest (JNF), brings the plan monitoring program into conformance with the requirements of the 2012 Planning Rule. As defined by 36 CFR 219.13(c) in the 2012 Planning Rule, an administrative change is defined as "... any change to a plan that is not a plan amendment or revision. Administrative changes include corrections of clerical errors to any part of the plan, conformance of the plan to new statutory or regulatory requirements, or other content in the plan (36 CFR 219.7(f))."

Administrative Change

The administrative changes to the plan monitoring program are as follows:

Evaluation Reports

Monitoring Evaluation Reports will be produced on a biennial schedule. It is anticipated that the next Monitoring Evaluation Report will be available by October 2017.

Climate Change

In meeting the requirement to monitor "measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area" (36 CFR 219.12(a)(5)(vi)), the following monitoring questions and indicators are added to the Forest's Monitoring Program:

Monitoring Question 19 – What is the impact of climate change on the planning area? This question was added to mirror the same question in the 2014 Forest Plan for the George Washington National Forest (GWNF). It has the same indicators as in the GWNF Forest Plan.

Indicators and Procedures for Monitoring Question 19: Trends in the numbers, locations, abundance and conditions of rare community occurrences by type. Trends in MIS populations in relationship to the major forest community/condition MIS was selected to indicate. Trends in MIS populations in relationship to the terrestrial habitat attributes MIS was selected to indicate. How many acres of high-elevation early-successional habitats exist and what are the trends in their abundance and condition. Conditions and trends in the overall health of streams including trends in water quality parameters and physical habitat conditions in relationship to aquatic communities. Trends in presence and abundance of wild trout in relation to acidification of stream systems and the application of mitigating measures. Trends in air quality related values in Class 1 Wilderness areas. Trends in air pollution effects on forest soil and vegetation. Trends in air pollutants (ozone, fine particulates, and acid deposition). Condition and trend of chemical resilience of watersheds across the Forest as indicated by chemical parameters.

Monitoring Question 21 – How has climate variability changed and how is it projected to change across the region?

Monitoring Question 22 – How is climate variability and change influencing the ecological, social, and economic conditions and contributions provided by plan areas in the region?

Monitoring Question 23 – What effects do national forests in the region have on a changing climate?

Indicators and Procedures for Monitoring Questions 21, 22 and 23:

These three monitoring questions will be addressed and evaluated through the Region 8 Broader-Scale Monitoring Strategy, which the Forest will incorporate into the Forest Evaluation Reports. To see the indicators and procedures that will be used at the broader-scale for these monitoring questions, see the Region 8's Broader-Scale Monitoring Strategy at www.fs.usda.gov/main/r8/landmanagement/planning.

In addition to adding Monitoring Questions 19, 21, 22, and 23, existing Monitoring Questions from the Monitoring Program in the JNF Forest Plan also provide monitoring information to evaluate "other stressors that may be affecting the plan area." These include Monitoring Questions 1, 2, 3, 4, 5, 6, 7, 14, and 15.

Social, Cultural and Economic Sustainability

In meeting the requirement to monitor plan contributions to the social, cultural, and economic sustainability of communities, which is a part of monitoring the progress toward meeting the desired conditions and objectives, including providing multiple use opportunities (see 36 CFR 219.12(a)(5)(vii)), the following monitoring questions and indicators are added in to the Forest's Monitoring Program:

Monitoring Question 20 – What changes are occurring in the social, cultural, and economic conditions in the areas influenced by national forests in the region?

Indicators and Procedures:

This monitoring question will be addressed and evaluated through the Region 8 Broader-Scale Monitoring Strategy, which the Forest will incorporate into the Forest Evaluation Reports. To see the indicators and procedures that will be used at the broader-scale for this monitoring question, see the Region 8's Broader-Scale Monitoring Strategy at www.fs.usda.gov/main/r8/landmanagement/planning.

In addition to adding Monitoring Question 20, existing Monitoring Questions from the Monitoring Program in the JNF Forest Plan also provide information to evaluate social, cultural, and economic sustainability. The premise is that by producing or contributing to the ecosystem services that provide benefits to people and communities, social, cultural, and economic sustainability is enhanced. The following Monitoring Questions provide information needed to evaluate ecosystem service benefits that are relevant to plan implementation: Monitoring Questions 8, 9, 10, 11, 12, 13 and 16.

Focal Species

Another requirement is that the plan monitoring program must include monitoring questions and indicators on the status of a select set of focal species to assess ecological conditions (see 36 CFR 219.12(a)(5)(iii)). A "focal species" is defined as a "species whose status permits inference to the integrity of the larger ecological system to which it belongs and provides meaningful information regarding the effectiveness of the plan in maintaining or restoring the ecological conditions to maintain the diversity of plan and animal communities in the plan area" (36 CFR 219.19).

The following table shows the species that are identified as "focal species" for this plan's monitoring program, along with ecological system/ecological conditions that each focal species serves as an indicator of:

Focal Species	Ecological System/Conditions
Wild Brook Trout	Riparian ecosystems, water quality, aquatic species health, water temperature, climate change effects

These species were already being monitored in the existing monitoring program and they will continue to be monitored according to the protocols already established. However, the evaluation of the information gathered from the monitoring of these species will now be used within the context of evaluating the integrity of the ecological system the species is a part of, along with the effectiveness of the plan in maintaining or restoring those ecological conditions.

The following is a list of the existing species related monitoring questions that also provide information related to brook trout: Monitoring Questions 5, 8, and 19.

Forest Plan Chapter 5 and Appendix E

This Administrative Change includes adding the new Monitoring Questions to Chapter 5 and Appendix E of the JNF Forest Plan, as attached.

Approval and Effective Date

This Administrative Change becomes effective upon signature below, and being posted online at the Forest's website. Administrative changes are not subject to the objection process (36 CFR 219.50). This Administrative Change will remain in effect until the 2004 Revised Forest Plan for the Jefferson National Forest is revised.



JOBY P. TIMM
Forest Supervisor

9/28/16

Date

IMPLEMENTATION, MONITORING, & EVALUATION



INTRODUCTION

INTRODUCTION

Chapter 5 provides information to guide putting the Revised Forest Plan into practice, or implemented. One of the most important aspects of implementing the Forest Plan is monitoring and evaluation. Monitoring and evaluation provide information to determine whether programs and projects are meeting Forest Plan direction, and whether the Plan should be amended or revised. This Chapter establishes Monitoring Questions that are to be answered over the course of Forest Plan implementation.

The last section of this Chapter discusses how this Forest Plan may be amended or revised as a result of this monitoring and evaluation.

IMPLEMENTATION

IMPLEMENTATION

The approval of this Revised Forest Plan establishes direction so that all future decisions in the planning area will include an "interdisciplinary approach to achieve integrated consideration of physical, biological, economic and other sciences" (16 USC 1604(b)). The Forest Plan will be implemented through a series of project-level decisions based on appropriate site-specific environmental analysis and disclosure to assure compliance with the NEPA. The NEPA analysis process begins once these individual projects have been identified.

Common project-level decisions include whether or not, and if so, in what way, timber will be harvested in a given area, a campground will be constructed, or a fisheries structure will be installed. The form of documentation for such analysis will be consistent with the Council of Environmental Quality NEPA Regulations [40 CFR 1500-1508], and Forest Service Manual and Handbook procedures.

The Forest Plan does not contain a commitment to the selection of any specific project. Instead, it determines what types of projects are permissible and under what conditions on different portions of the Forest. For instance, the Forest Plan may determine that portions of specific management areas are suitable for timber production. It does not make decisions on the specifics of any particular timber sale that could occur on lands suitable for timber production. Such decisions must be based on appropriate site-specific analysis and appropriate disclosure during project-level analysis.

The projects chosen to implement this Forest Plan should be those which lead to achieving goals, objectives, and the desired future conditions described in Chapters 2, 3, and 4. There is, however, no specific requirement that a project must contribute to achievement of the goals, objectives, and desired future conditions. Any project that complies with the standards in Chapters 2, 3, and 4 of this document may be selected for implementation. Project-level environmental analyses will tie to the Forest Plan and Final Environmental Impact Statement (FEIS). The FEIS for the Forest Plan is an aid to project-level NEPA compliance.

As described in the Monitoring and Evaluation section of this Chapter, the Interdisciplinary Team will evaluate how the selection of projects is achieving the goals, objectives, and desired future conditions of the Forest Plan.

IMPLEMENTATION

BUDGET**BUDGET****MONITORING &
EVALUATION**

The Forest Plan provides the basis for developing multi-year program budget proposals. The budget is used for requesting and allocating the funds needed to carry out the planned management direction. Accomplishment of the annual program is the incremental implementation of the management direction in the Forest Plan. Depending on final budgets, outputs and activities in individual years may be significantly different from the objectives in Chapters 2 and 4. Cost and accomplishment data will be utilized to update and revise databases and modify budget proposals.

The Forest program development and budget process consists of evaluating fixed and variable cost activities, and capital investment projects. Fixed cost activities include those necessary to ensure public safety and environmental protection, and to maintain existing capital assets at certain levels of service and availability. Additionally, long-term management planning and resource inventories, general administration (overhead) costs, and other costs that cannot be assessed on a per-unit basis are included in fixed cost activities.

Variable cost activities generally include those with outputs or uses that can be controlled or changed. For instance, certain costs may vary relative to the miles of trail construction proposed in an alternative. Capital investments entail monies spent to provide or improve a facility or product for continued or future use.

In 1995, the George Washington and Jefferson National Forests were administratively combined. The annual budget received is for both National Forests. The estimated budget for this revised Forest Plan is available in Chapter 3 of the FEIS under the Social/Economic section and in the Process Records.

MONITORING AND EVALUATION

Monitoring and evaluation provide information to determine whether programs and projects are meeting Forest Plan direction, and whether the cost anticipated to implement the Forest Plan coincides with actual costs. Monitoring and evaluation is required by NFMA implementing regulations (36 CFR 219.12(k)) to determine whether requirements of the regulations and Forest Plan are being met.

This Chapter establishes Monitoring Questions that are to be answered over the course of Forest Plan implementation. Monitoring questions address whether the desired conditions, goals and objectives of the Forest Plan are being met and whether Forest Plan standards are effective. Monitoring Questions are part of the Forest Plan and are stated in terms that will direct *what* will be monitored, but are not so specific as to address *how* monitoring will be accomplished.

Monitoring Questions will be further refined during Forest Plan implementation into Monitoring Elements and Task Sheets, which are more detailed, specific and measurable than the Monitoring Questions themselves. Monitoring Elements and Task Sheets may be modified and prioritized to guide monitoring activities over the course of Forest Plan implementation. The Monitoring Summary Table and sample Task Sheet (Appendix G) demonstrate the relationships between Forest Plan Goals, Objectives, Standards and Monitoring Questions, and indicate the nature of Monitoring Elements and monitoring details that are to be further developed during Forest Plan implementation. The Monitoring Summary Table and sample Task Sheet are presented here only for information and may be modified as needed to address changes in needs, priorities, availability of personnel and funding.

The concept of adaptive management is foundational for planning and Forest Plan implementation in a dynamic environment. Regulations require that Forest Plans be revised periodically (36 CFR 219.10(g)). However, Forest Plans may need to be more dynamic to account for changed resource conditions (such as large storms or insect outbreaks), new information or findings of science, or new regulations or policies. An effective monitoring and evaluation program is essential for determining when these needs may exist and for leading to quick resolution of a need for change.

**MONITORING
QUESTIONS**

The Monitoring Questions were developed to address three types of monitoring:

- x Implementation monitoring: addressing whether the Forest Plan is being carried out.
- x Effectiveness monitoring: dealing with whether desired conditions are resulting.
- x Validation monitoring: determining if information used in developing the Forest Plan has changed.

Monitoring and evaluation provide information that can be used to keep Forest Plans current. Key results and findings will be used to determine if changes are needed in goals, objectives, standards, the monitoring questions themselves or research needs.

Monitoring and evaluation are distinct activities. The monitoring phase generally includes the collection of data and information, either by observation, direct measurement or compiling data from appropriate sources. Evaluation is the analysis of this data and information, and is used to assess if the Forest Plan is being implemented correctly and whether it needs to be changed. Forest Plan Monitoring and Evaluations will be reported annually in the Forest Monitoring and Evaluation Report.

Monitoring and evaluation may lead to adjustments of programs, projects or activities, changes or amendment to the Forest Plan itself or used to recommend changes in laws, regulations, and policies that affect both the Forest Plan and project implementation (FSM 1922.7).

Forest Plan amendments and revisions should be responsive to changes that affect the Forest Plan, and may be needed at any time if a Forest Plan becomes out of date in some way. Within an adaptive management framework, the need to amend or revise the Forest Plan may result from:

- x Recommendations of an interdisciplinary team, based on evaluation and monitoring results;
- x Changes in agency policy and regulations;
- x Planning errors found during Forest Plan implementation;
- x Changes in physical, biological, social, or economic conditions.

The evaluation of findings under the following Monitoring Questions will lead forest managers to these determinations.

MONITORING QUESTIONS**1. Are rare ecological communities being protected, maintained, and restored?**

A Forest Plan goal, along with related objectives and standards, is designed to maintain and restore rare communities. To monitor accomplishment of these provisions and the effects

**MONITORING AND
EVALUATION**

that overall Forest Plan implementation will have on rare communities, trends in number of occurrences, locations, and conditions, and effects of maintenance and restoration activities will be tracked.

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2. Are landscape and stand level composition, structure, and function of major forest communities within desirable ranges of variability?

Success in maintaining and restoring composition, structure, and function of forest ecosystems within desired ranges of variability is reflected by both changes in forest condition and by levels of management and other effects that are shaping these communities. Monitoring will include tracking the abundance of major forest cover/community types and levels of management activities conducted to maintain and restore desired conditions. Population trends and habitats of Management Indicator Species will be monitored to help indicate effects of national forest management within selected communities.

Table 5-1. Management Indicator Species Selected For Monitoring Question 2

Management Indicator Species	Reasons for Selection
Hooded warbler	Changes in presence and abundance of hooded warblers in mature mesic deciduous forests will be used to help indicate the effectiveness of management at providing dense understory and midstory structure within these forest communities.
Pine warbler	Trends in presence and abundance of these species in mature pine forest will be used to help indicate effectiveness of management at
Scarlet Tanager	Trends in presence and abundance of these species in drier mid- and late-successional oak and oak-pine forests would be used to help indicate effectiveness of management at establishing desired conditions in these forest communities.

Table 5-2. Management Indicator Species Selected For Monitoring Question 3

Management Indicator Species	Reasons for Selection
Eastern Towhee	Trends in presence and abundance of this species in early-successional forests will be used to help indicate the effectiveness of
Chestnut-sided warbler	Changes in presence of this species in areas that provide high elevation early-successional habitats will be used to indicate effectiveness of management in achieving desired conditions within these sites.
Acadian flycatcher	Trends in presence and abundance of this species in mature riparian forests will be used to help indicate the effectiveness of management
Ovenbird	Trends in presence and abundance of this species in mature deciduous forests will be used to help indicate the effectiveness of management in maintaining desired condition relative to forest interior habitats.

3. Are key successional stage habitats being provided?

Forest goals, objectives, and standards have been established for maintaining a balance between the early, mid-, and late-successional habitat conditions. Some wildlife species

depend on early successional forests, while others depend on late-successional forests. Trends in successional conditions and abundance of key successional habitats, such as high-elevation early successional habitat, mature forest interiors, old growth, and permanent wildlife openings, will be monitored. Population trends of Management Indicator Species selected to help indicate effects of management on successional habitats will be monitored.

4. How well are key terrestrial habitat attributes being provided?

Special habitat attributes such as hard and soft mast, den trees, snags, and downed wood are necessary elements for certain species. A variety of Forest Plan goals, objectives, and standards provide for the protection, restoration, and maintenance of these elements. Trends in the abundance and condition of key terrestrial habitat attributes and associated Management Indicator Species will be monitored.

Table 5-3. Management Indicator Species Selected For Monitoring Question 4

Management Indicator Species	Reasons for Selection
Pileated woodpecker	Trends in presence and abundance of this species across the forest will be used to help indicate the effectiveness of management in

5. What is the status and trend in aquatic habitat conditions in relationship to aquatic communities?

The Forest Plan provides for protection and restoration of riparian ecosystems, wetlands, and aquatic systems and for assuring that aquatic habitat conditions are suitable to maintain native aquatic communities. Water quantity and quality, atmospheric deposition, in-stream large woody debris, and aquatic species passage will be monitored. Population trends for aquatic MIS in relation to the habitat conditions they are selected to represent will be monitored.

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

Table 5-4. Management Indicator Species Selected For Monitoring Question 5

Management Indicator Species	Reasons for Selection
Wild trout	Trends in presence and abundance of wild trout will be used to indicate the effects of acidification of stream systems, and the

Measures designed to control or mitigate negative effects of insects, disease, non-native invasive species, air pollution, and high fuel levels are important aspects of this Forest Plan. Trends in occurrence and effects of air pollutants, wildland fire, insects and diseases, and non-native invasive species will be monitored.

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

Contribution to conservation and recovery of federally listed threatened and endangered species is an important goal of this Forest Plan. Trends in occurrence or abundance of these species will be monitored along with levels of management activities implemented for the purpose of achieving recovery. Some threatened and endangered species have been selected as Management Indicator Species because of their critical dependence on

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national forest management for recovery.

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Maintaining habitat capable of supporting viable populations of native and desired non-native species is also an important goal of the Forest Plan. Many objectives and standards are designed to meet this goal. Monitoring will focus on trends for populations and/or habitats of species of viability concern. Where feasible, species monitoring will often be accomplished by monitoring communities of species (e.g., fish, bats, birds). Individual Management Indicator Species have been selected because their viability is critically dependent on national forest management.

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

The Jefferson National Forest provides large public ownership with opportunities for

Table 5-5. Management Indicator Species Selected For Monitoring Question 7

Management Indicator Species	Reasons for Selection
Peaks of Otter salamander	Trends in populations of this species will be used to indicate effectiveness of management activities designed specifically to meet

hunting, fishing, wildlife viewing, and collection of special forest products. Monitoring of some game species populations and/or harvest levels will be done in coordination with the Virginia Department of Game and Inland Fisheries (VDGIF) and West Virginia Department of Natural Resources (WVDNR). Some of these species are selected as Management Indicator Species where effects of national forest management are important to meeting public demand, and monitoring assistance from VDGIF and WVDNR is available. Some species that are collected as special forest products will be monitored through management of the permitting process.

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

Table 5-6. Management Indicator Species Selected For Monitoring Question 8

Management Indicator Species	Reason for Selection
Black bear	Trends in harvest levels and hunting demand will be used to help indicate effectiveness of management in meeting public demand for
Wild turkey	Trends in harvest levels and hunting demand will be used to help indicate effectiveness of management in meeting public demand for
White-tailed deer	Trends in harvest levels and hunting demand will be used to help indicate effectiveness of management in meeting public demand for
Wild trout (brook trout, rainbow trout, brown trout)	Trends in harvest levels and fishing demand will be used to help indicate effectiveness of management in meeting public demand for

The Jefferson National Forest offers a unique combination of nature based dispersed recreation, including undeveloped settings, built environments reinforcing natural character, and wildland settings that complement enjoyment of special places. This Forest Plan aims to provide for safe, natural, well designed, accessible, and well-maintained recreational opportunities for all visitors. Monitoring visitor experiences and

the condition of facilities will help gauge the effectiveness in meeting this commitment.

10. What is the status and trend of wilderness character?

Wilderness character is comprised of both human and biophysical elements. Monitoring the human elements requires monitoring trends in the human experiences, i.e. solitude, crowding, etc., as well as trends in the use patterns and visitor impacts. User monitoring and surveys will allow for tracking trends among visitors to wilderness, while trailhead use and identification of sites with impacts will allow us to track movement and activities within wilderness and relationships to biophysical effects. Monitoring biophysical elements is important for tracking changes to the natural systems due to natural and human influences within and outside the wilderness. Although there are many components to the biophysical element, air quality is viewed as a basic indicator of wilderness health. Additionally, changes that are occurring in wilderness due to the fire regime, especially in fire dependent communities, will be monitored.

11. What are the status and trend of Wild and Scenic River conditions?

The two main elements in determining the eligibility and suitability of a river for inclusion in the National Wild and Scenic Rivers System are a free-flowing condition and the presence of Outstandingly Remarkable Values. Rivers determined to be eligible, or eligible and suitable, that have not yet been designated by Congress must have those elements protected until a further designation is assigned. Monitoring changes to these elements will help us evaluate our management of these rivers on our forests.

12. Are the scenic and aesthetic values being protected and enhanced?

Scenery is managed by establishing Scenic Integrity Objectives (SIO) consistent with a variety of landscape character themes. Management of scenery is essential in the management of recreational experiences and the quality of the environment. Changes in scenic quality and landscape character of the forest will be monitored.

13. Are heritage sites being protected?

Compliance with the National Historic Preservation Act is essential during implementation of this Forest Plan. The requirement that sites eligible for the National Register of Historic Places be identified and protected before ground disturbing activities occur must be met. Monitoring will be done to assess how well sites are being identified for protection and whether site protection measures are effective in preventing site loss.

14. Are watersheds maintained (and where necessary restored) to provide resilient and stable conditions to support the quality and quantity of water necessary to protect ecological functions and support intended beneficial uses?

This Forest Plan provides for management of watersheds to provide resilient and stable conditions to support the quality and quantity of water necessary to protect ecological functions and support intended beneficial water uses. Numerous best management practices are established as standards for practices to be carrying out during implementation of the Forest Plan. Watershed condition, improvement needs, water quality, and implementation of best management practices will be monitored.

15. What are the conditions and trends of riparian area, wetland and floodplain functions and values?

Riparian ecosystems restoration and management is important to maintain aquatic resources and values. Desired conditions, including the composition and structure of vegetation, equipment limitations, maintaining ground cover and stable stream-banks are

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established in the Forest Plan. Floodplains and wetlands are to be protected. Riparian management practices and standards, ground cover, stream-bank stability, wetland and floodplain status will be monitored.

16. How do actual outputs and services compare with projected?RESEARCH
NEEDS

The 1982 NFMA implementing regulations require that outputs and services will be monitored and compared to those projected in the Forest Plan. Trends in forest product, mineral leasing and surface rights, access and road conditions, and Forest Plan implementation costs will be tracked and compared to projections made at the time the Forest Plan was developed.

17. Are silvicultural requirements of the Forest Plan being met?

The 1982 NFMA implementing regulations also require monitoring of specific silvicultural requirements. Silvicultural practices, harvest methods, harvest unit size, regeneration establishment, and land suitability for timber productions will be monitored and evaluated to determine if and when changes may be needed.

18. Are Forest Plan objectives and standards being applied and accomplishing their intended purpose?

Periodic review of objectives and standards established in the Forest Plan is called for to assure that desired condition are being achieved and that these requirements will stay current given Forest Plan modifications, changed conditions and new information that accumulate over time. Implementation and effectiveness of best management practices and other standards will be tracked and periodically evaluated.

19. What is the impact of climate change on the planning area?

Evaluation of several monitoring questions in the light of climate variability will help identify any trends that may be occurring in the Forest.

20. What changes are occurring in the social, cultural, and economic conditions in the areas influenced by national forests in the region?**21. How has climate variability changed and how is it projected to change across the region?****22. How is climate variability and chance influencing the ecological, social, and economic conditions and contributions provided by plan areas in the region?****23. What effects do national forests in the region have on a changing climate?**

Monitoring questions 20, 21, 22, and 23 will be addressed and evaluated through the Region 8 Broader-Scale Monitoring Strategy as provided in the 2012 Planning Rule.

RESEARCH NEEDS

Research and monitoring are related activities that help to meet information needs for adaptive management of national forests. Research involves rigorous study under controlled conditions, following the scientific method. Research activities include study planning, design, quality control, peer review and relatively rigid publication standards. Monitoring is generally conducted under less controlled conditions and results are often more general in contrast with research.

Research needs for management of the National Forests are to be identified during planning and periodically reviewed during monitoring and evaluation of implemented Forest Plans (36 CFR 219.28).

AMENDMENTS**REVISION**

The Forest Service Research Branch is the largest forestry research organization in the world and a national and international leader in forest conservation. Agency research contributes to the advancement of science and the conservation of many of our Nation's most valuable natural resources, both on private lands and the National Forests. Research needs identified during planning, monitoring and evaluation are to be included in formulating overall research programs and plans for Forest Service Research to support or improve management of the National Forests.

Research needs identified during development of this Forest Plan are listed in Appendix I. Research needs identified while monitoring the implementation of the Forest Plan will be reported in Annual Monitoring and Evaluation Reports.

AMENDMENTS

The Forest Plan can be amended at any time during its existence. Such amendments are necessary to ensure that the Plan remains a viable, flexible document for managing the Forest.

Errata sheets may be issued if necessary to correct spelling or grammatical errors, which may lead to confusion in the Forest Plan. Such changes are not considered amendments.

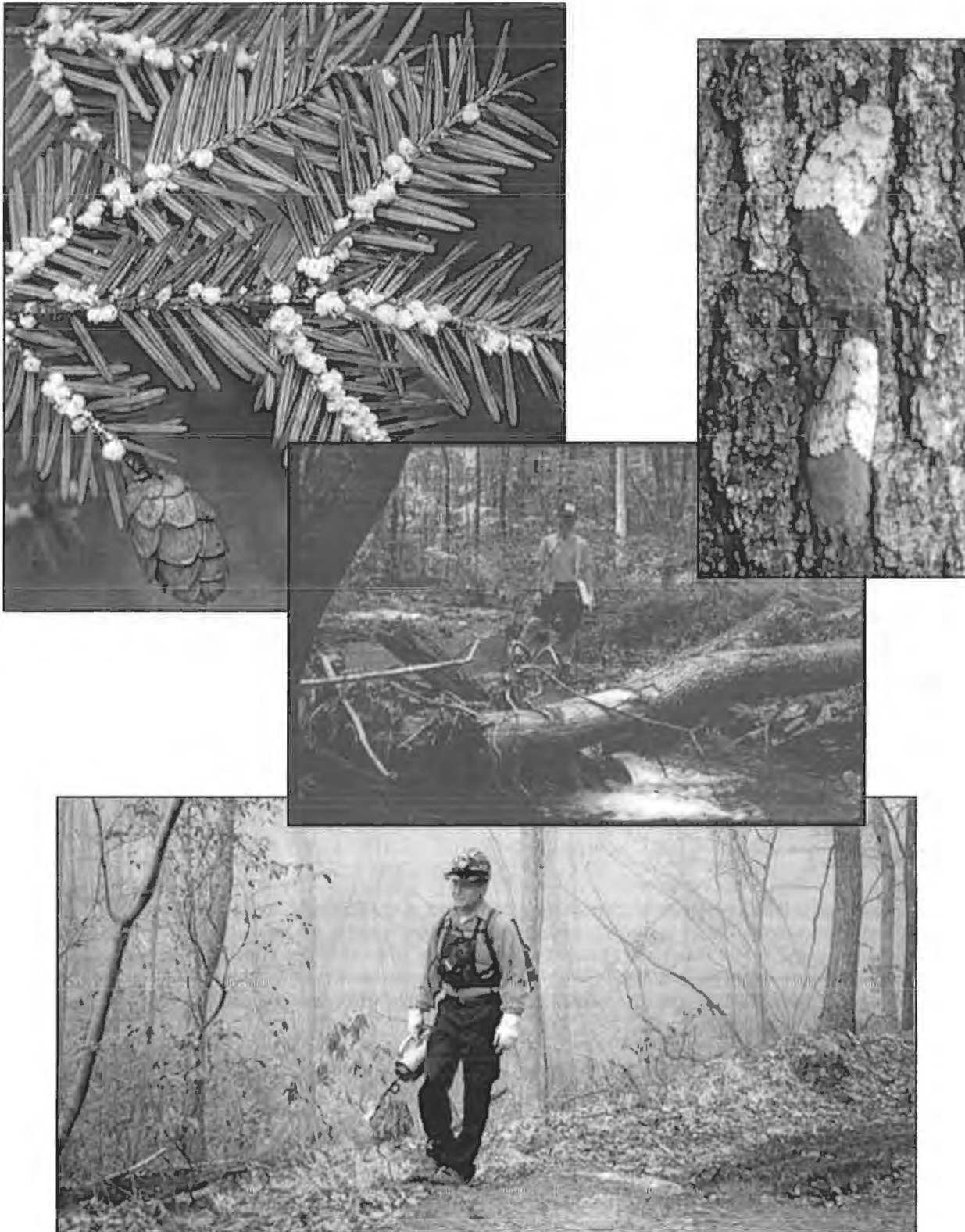
The Forest Plan may also be amended as part of a project-level decision where a change or adjustment in the Forest Plan is appropriate for that project but is not applicable to the entire Forest. Examples of such changes might be adjustments to, or waivers of, standards, or modifications of management area boundaries.

If it is determined during project design that the best method of meeting the management area goals of the Forest Plan is in conflict with either Forest or management area standards, the Forest Supervisor may approve a project-specific amendment to the Forest Plan.

REVISION

This Forest Plan will be revised on a 10-year cycle or at least every 15 years. It may also be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Forest Plan have changed significantly or when changes in policies, goals, or objectives would have a significant effect on the Forest-level programs. In the monitoring and evaluation process, the interdisciplinary team may recommend a revision of the Forest Plan at any time.

Future revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a Forest Plan. The Forest Supervisor will review the conditions on the land covered by the Forest Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.



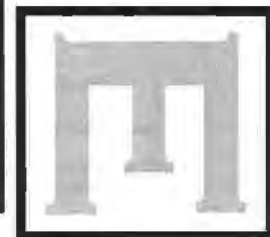
Forest specialists work with researchers to develop solutions to forest health risks.

Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
10, 11		1, 19	Trends in the numbers, locations, abundance and conditions of rare community occurrences by type	1	Annually schedule site visits to map and track locations, composition and condition of selected sample of rare communities utilizing standard GIS coverage and NRIS Terra, FSveg and Fauna databases. Utilize standard reports for Annual M&E reporting. Use the assigned values to determine cave classification and to determine cave significance under the implementation regulations of the Federal Cave Resources Protection Act of 1988.	5 Year Intervals	Moderate	Forest Ecologist or Botanist
10, 11		1	Acres and/or number of occurrences of rare communities treated to maintain or restore desired conditions	2	Track annual accomplishments with standard tracking systems and compare with changing occurrences and conditions as determined in task #1	Annual	Moderate/High	Forest Botanist
12	12.01, 12.02, 12.03, 12.04, 12.05	2, 19	Status and trend in forest cover acreage by major forest and woodland community type and successional stage	3	Map and update changes through annual routine inventories. Monitor acres by major forest and woodland community type and trends?	5 Year Intervals	Moderate	Forest Silviculturist
12	12.01, 12.02, 12.03, 12.04, 12.05	2	Acres of silvicultural treatments implemented by activity type and forest type	4	Summarize acres of treatments by major community type utilizing established activity tracking systems.	Annual	Moderate	Forest Silviculturist
17	17.01, 17.02, 17.03	2	Acres burned (wildland and prescribed fire) by forest type and season of burn compared to desired fire regimes	5	Acres burned (wildland and prescribed) by major forest community type. Maps of prescribed burn units are incorporated into the GIS data base annually, by the end of the burning season. Total acres are determined from a GIS query.	Annual	Moderate	Forest Ecologist
6, 12	12.01, 12.02, 12.03, 12.04, 12.05	2	Trends in MIS populations in relationship to the to major forest community/condition MIS was selected to indicate. (See Tables 5-1 in Chapter 5).	6	Annual Breeding Bird Survey occurrence trends for selected MIS compared to status and trends in forest cover acreage in Task #3.	5 Year Intervals	Moderate	Forest Ecology Group

MONITORING TASKS

MONITORING TASKS

APPENDIX



MONITORING TASKS

Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
6, 12	12.01, 12.02, 12.03, 12.04, 12.05	3, 19	Trends in early, mid-, and late-successional forests by prescription group	7	Map and update changes through annual routine inventories. Monitor acres by successional stage and trend.	5 Year Intervals	Moderate	Forest Silviculturist
6, 7	7.02	3	How many acres of high-elevation early-successional habitats exist and what are the trends in their abundance and condition	8	Map and update changes through periodic routine inventories. Monitor acres and trends.	5 Year Intervals	Moderate	Forest Silviculturist
6		3	Trends in MIS populations in relationship to the successional stage habitat condition MIS was selected to indicate. (See Tables 5-2 in Chapter 5).	9	Annual Breeding Bird Survey occurrence trends for selected MIS compared to successional stage habitat trends in Task #8.	5 Year Intervals	Moderate	Forest Ecology Group
6, 7, 8	7.01, 8.01	3	Trend in the abundance and distribution of landscapes important for forest interior birds	10	Rerun IMI analysis periodically or as needed	10 Year Intervals	Moderate	Forest Biologist
12	12.01	3, 19	Acreage of existing and potential old growth by forest community class	11	Rerun IMI and CISC analysis periodically or as needed	5 Year Intervals	Moderate	Forest Silviculturist
6	12.05	4, 19	Trends in hard mast production capability	12	Map and update changes in forest composition and condition through annual routine inventories. Infer mast production capability from the status of older age classes of oak forest community types	5 Year Intervals	Moderate	Forest Silviculturist
6	12.01, 12.02, 12.03, 12.04, 12.05	4	Trends in MIS populations in relationship to the terrestrial habitat attributes MIS was selected to indicate. (See Tables 5-3 in Chapter 5).	13	Annual Breeding Bird Survey occurrence trends for Pileated woodpeckers compared to snag abundance as indicated by trends in late-successional forest communities. See Task #14.	Annual	Moderate	Forest Ecology Group
6, 12, 14	12.01, 12.02, 12.03, 12.04, 12.05, 14.01, 14.02	4	Abundance of snags and downed wood	14	Map and update changes in forest successional conditions and area impacted by insect and disease through routine annual inventories. Infer snag and downed wood by the acres of late-successional stage forests and mortality due to insects and disease	Annual	Moderate	Forest Silviculturist

Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
2, 6, 12	12.01, 12.03, 12.05	4, 19	Trend in riparian area acreage by forest type and successional stage	15	Map and update changes in riparian areas, forest community type and successional conditions through	5 Year Intervals	Moderate	Forest Silviculturist
2, 6, 12	12.01, 12.03, 12.05	4	Acres of vegetation management implemented in riparian areas by activity type	16	Track annual accomplishments with standard tracking system	Annual	Moderate	Forest Silviculturist
2, 3, 5	2.01, 3.01, 3.02, 5.01	5, 19	Conditions and trends in the overall health of streams including trends in water quality parameters and physical habitat conditions in relationship to aquatic communities	17	Water quality sampling, emphasis on nitrogen, sulfur, and mercury compounds. Aquatic macroinvertebrate sampling (EPA's Rapid Bioassessment Protocol II (EPA 1989) with modifications by Smith & Voshell (1997)). Systematic stream fish community inventories, stream stability, streambed structure and large woody debris as appropriate. Sample selected streams on a periodic basis and use fixed sampling points - coordinate locations with other aquatic monitoring.	Annual	High to Moderate	Forest Ecology Group
3, 5	5.01	5, 19	Trends in presence and abundance of wild trout in relation to acidification of stream systems and the application of mitigating measures.	18	Sample selected streams on a periodic basis for wild trout and pH in high elevation streams using systematic stream fish community inventories.	As Available	High	Forest Aquatic Biologist
5	5.01	6, 19	Trends in air pollution effects on forest soil and vegetation.	19	Complete assessment of watersheds at risk from acid deposition. Sample soil water and vegetation in high risk areas.	As Available	High to Moderate	Forest Ecology Group & Silviculturist
5	5.01	6, 19	Trends in air pollutants (ozone, fine particulates, and acid deposition).	20	Summarize air quality monitoring data from sites on or near the Forest, especially acid deposition and ozone.	Annually	High to Moderate	Zone Air Specialist

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Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
12, 18	18.04	6	Conditions and trends of forest fuels and acres of hazardous fuels treated through wildland fire use, prescribed fire, and mechanical treatment	21	Fuel monitoring following Regional protocol. Acres of hazardous fuels treated through wildland fire use, prescribed fire, and mechanical treatment mapped into the GIS data base reports generated through GIS/	Annual	Moderate	Forest Fire Management Group
19	19.01	6, 19	Coordinate with State & local air quality agencies to track emissions from NF lands for compliance with NAAQS, with emphasis on PM2.5 emissions from prescribed fires. Ensure NF prescribed fire emissions are considered when they fall within PM2.5 non-attainment areas. [36 CFR 219.27(a)(12)]	22	Monitor fine particulate from a select portion of prescribed fires using filter or optical based monitors.	Annual	High	Zone Air Specialist & Fire Managers
14	14.01, 14.02	6, 19	What are the trends in insect and disease effects? [36 CFR 219(k)(5)(iv), 36 CFR 219.20(b)]	23	Map and update trends in insect and disease outbreaks and epidemics using routine inventory methods as part of Forest Health Monitoring Program.	Annual	High	Forest Health Program
12	12.01, 12.02, 12.03, 12.04, 12.05	6, 19	What are the trends in forest composition and condition that have been associated with these insects and diseases? Are planned measures to control destructive insects and disease being achieved? [36 CFR 219.12(k)5 (iv)]	24	Task #22 in relation to Task #3.	5 Year Intervals	Moderate	Forest Health Program
3	3.02	7, 19	Population status of Blackside dace and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	25	Follow recovery plan	Annual	Moderate	Forest Aquatic Biologist
3	3.02	7, 19	Population status of James River spiny mussel and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	26	Follow recovery plan	Annual	Moderate	Forest Aquatic Biologist
9	9.01	7, 19	Population status of Northern flying squirrel and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	27	Follow recovery plan	Annual	Moderate	Forest Biologist

Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
9	9.02	7, 19	Population status of Indiana bat and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	28	Follow recovery plan and protocols of Indiana bat Recovery Team. Biennial surveys of all Indiana bat hibernacula. Yearly surveys for 3 years on newly gated hibernacula, then biennial.	2 Year Intervals	Moderate	Forest Ecologist
9	9.04	7, 19	Population status of northeastern bulrush and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	29	Follow recovery plan	Annual	High	Forest Botanist
9	9.04	7, 19	Population status of Virginia spirea and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	30	Follow recovery plan	Annual	High	Forest Botanist
9	9.04	7, 19	Population status of small-whorled pogonia and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	31	Follow recovery plan	Annual	High	Forest Botanist
9	9.05	7, 19	Population status of Virginia round-leaf birch and progress towards recovery. [MIS - 36 CFR 219.19(a)(6)]	32	Follow recovery plan	Annual	High	Forest Botanist
9	9.03	7, 19	Population trends in Peaks of Otter Salamander as an indicator of effectiveness of management on conservation of the species [MIS - 36 CFR 219.19(a)(6)]	33	Follow Conservation Plan	5 Year Intervals	Moderate	Forest Ecology Group
7	7.01	7, 19	Presence/absence of cerulean warblers in suitable habitats.	34	Using standardized survey methods (CEWAP) determine presence/absence of cerulean warbler in optimal habitats. If present, determine habitat relationships.	5 Year Intervals	High	Forest Ecology Group
7	7.02	7, 19	Presence/absence of golden-winged warblers in suitable habitats.	35	Standardized surveys for Golden-winged warblers using transects and playback in high-elevation early-successional habitats. Habitat characterized at occupied sites.	5 Year Intervals	High	Forest Ecology Group
6		7, 19	Trends in recovery of T&E species, and status and distribution of some viability concern species that are not specifically identified under other elements. Species targeted under this element will be determined through periodic review of each species' status and conservation priority. [36 CFR 219.19 (a)(7)]	36	Various methods will be used as appropriate to the species or species group to monitor status, trends and distribution (refer to the PETS Inventory and Monitoring Handbook)	As Available	Moderate	Forest Ecology Group

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Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
6		7	Trends in harvest data for demand MIS in relationship to habitat improvement activities for those animals? [MIS - 36 CFR 219.19(a)(6)]. (See Table 5-6 in Chapter 5).	37	Collect harvest data from Cooperating State Agency related to annual accomplishments for habitat improvement tracked with standard tracking systems	5 Year Intervals	High	Forest Biologist
20	20.01, 20.02, 20.03, 20.04	9	Results and trends in user satisfaction ratings [36 CFR 219.21(a)]	38	Analysis of NVUM customer satisfaction data for Day Use, Overnight General Forest Area, and Wilderness programs and local Customer Satisfaction survey tools.	5 Year Intervals	Low/Moderate	SO-Recreation Staff
20	20.01	9, 20	Are semi-primitive recreation settings and backcountry recreation opportunities maintained or increased?	39	Analysis of road construction, reconstruction, and maintenance activities in relation to semi-primitive (SPNM, SPM, & SP2) ROS settings through review of site-specific projects.	Annual	High	Forest Recreation Staff
20		9, 20	User impacts, conflicts and effects within the AT Corridor	40	Analysis of NVUM data, Customer Satisfaction survey, GIS mapping of shelter sites, trailhead registration data	As needed	Moderate	Forest Recreation Staff
20	20.02, 20.04	9, 20	Are the following recreation opportunities being increased: wildlife/bird viewing, photography, interpretive opportunities, nature trails, day use and group facilities, water-based facilities, nonmotorized trails, OHV routes, ATV systems, Special Interest Areas?	41	Review of construction, reconstruction, and maintenance of facilities plans and accomplishments. Check of INFRA inventory.	Annual	High	Forest Recreation Staff
20	20.02, 20.03	9, 20	Are motorized and nonmotorized trails being maintained?	42	Analysis of INFRA Deferred Maintenance Report and reporting of per cent change in backlog.	Annual	High	Forest Recreation Staff
21	21.01	10, 20	Is wilderness visitor use within limits that do not impair the values for which the wilderness was established? [36 CFR 219.18(a)]	43	Analyze trends in wilderness visitor use and compile summary report using GIS mapping (number and location of concentrated use areas) and use of visitor satisfaction results using NVUM and wilderness trailhead registration data.	5 Year Intervals	Moderate	Forest Recreation Staff
21	21.03	10	Trends in fire regimes and effects on fire dependent communities in Wilderness	44	Annual summary report of number of Wildland Fire Use Fires and acres and number of management ignited fires and season of burn.	Annual	Moderate	Forest Fire Management Group

Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
22	22.01	10, 20	Trends in air quality related values in Class 1 Wilderness areas [36 CFR 219.27(a)(12)]	45	IMPROVE national aerosol monitoring network, water quality sampling for acid deposition, vegetation sampling for ozone & long-term trends, soil water sampling.	As Available	High to Moderate	Zone Air Specialist & National data analysis
23		11, 20	Are free-flowing conditions and Outstandingly Remarkable Values being protected?	46	Implement annual program review at the forest level to track number and types of projects implemented along the river corridor.	5 Year Intervals	High	Forest Recreation Group
23	23.01	11, 20	Have suitability studies for North Creek and Roaring Branch been completed?	47	5 year review	5 Year Intervals	High	
25	25.01, 25.02	12, 20	Acres of National Forest land that meet or exceed established scenic quality objectives [36 CFR 219.27(c)(6), 36 CFR 219.27(d)(1)]	48	Treatment and location data entered in activity tracking system at time treatment completed. Summary report of project acres that meet or exceed the assigned SIO.	Annual	Low/ High	Forest Landscape Architect
26		12, 20	Are landscape character themes changing and why?	49	Annual routine inventory through Scenery Management System. Summary report of acres by landscape character theme.	5 Year Intervals	Low/ High	Forest Landscape Architect
27	27.01	13, 20	Are heritage sites being identified for protection? Are protection measures effective? [36 CFR 219.24(a)(4)]	50	Heritage inventories and surveys pursuant to 106 for all ground disturbing projects are reviewed by SHPO/THPO per Regional PA and Forest MOUs. Sample field condition assessment of sites eligible or listed in National Register. Review of preservation/maintenance plans completed.	Annual	High	Forest Archeologist

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Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
1	1.01	14, 19	Stream stability in reference watersheds compared to stability of streams in watersheds where projects are occurring	51	Conduct pebble count sampling on a subset sample of projects once per year (September – October or following a major storm event) using procedure described by Kappesser (2002). Utilize Riffle Stability Index, Relative Bed Stability (Kauffman, 1999) and percent finer than 4 millimeters to determine acceptable levels of variability or thresholds of concern. Evaluate project watersheds before, during, and after projects and compare with reference watershed data.	Annual	Moderate/High	Forest Hydrologist
1	1.01	14, 19	Stream water temperatures in reference watersheds compared to watersheds where projects are occurring (maximums and minimums)	52	Install data loggers in all reference watershed streams and use data from them to compare with data from managed watersheds. Once a year, conduct statistical analysis to evaluate occurrence and significance of differences.	Annual	Moderate/High	Forest Hydrologist
1	1.01	14, 19	Condition and trend of chemical resilience of watersheds across the Forest as indicated by chemical parameters	53	Water quality sampling protocol	Periodic	Moderate/High	Forest Hydrologist
4		14, 19	Effect of management activities on soil quality and productivity [36 CFR 219.12 (k)(2), 36 CFR 219.27(a)(1)]	54	Sample projects for soil loss. Actual soil movement may sometimes be determined by techniques such as fabric dams.	Periodic or at random	Moderate/High	Forest Soil Scientist
4	4.01	14	Are temporary roads being revegetated within 10 years of contract or permit termination? [36 CFR 219.27(a)(11)]	55	Sample projects during program reviews to determine and document that standard is being met.	Annual	Moderate	Forest Soil Scientist and Forest Engineer

Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
29	29.03	14	Did reclamation of mineral sites occur at the appropriate stage of the mineral operation? Was reclamation effective? Is follow-up needed?	56	Field inspection of project sites following established monitoring protocol. Review of sample of project documents and related NEPA documents for compliance with laws, BMPs and standards. Followup field inspections annually after reclamation operations for five years. Summarize findings and recommend	As Appropriate	High	Forest Geologist
2		15	Are State BMPs and Forest Standards being implemented to protect and maintain soil and water resources? [36 CFR 219.27(a)(4), 36 CFR 219.12(k)(2)]	57	Field inspection of project sites following established monitoring protocol. Review of sample of project documents and related EAs/EISs for compliance with BMPs and standards.	Annual	Moderate/High	Forest Hydrologist and Soil Scientist
2		15	Are Standards (BMPs) Effective minimizing non-point source pollution?	58	Sample project activities related to BMPs to for effectiveness of BMPs and standards. 1) Visual inspection of implemented standards, 2) Measured effects of standards, and/or 3) Aquatic biota inventories.	Periodic or at random	Moderate	Forest Hydrologist and Soil Scientist
2	2.01	15, 19	Are riparian areas or corridors providing necessary shade and cover for aquatic habitats?	59	Stream surveys in selected sample of project areas of shade and cover of aquatic habitats. Measurements taken	Annual	Moderate	Forest Hydrologist or Aquatic Biologist
15, 16	15.01, 16.01, 16.02	16, 20	Are forest products being produced within predicted ranges? [36 CFR 219.27 (c)(2)]	60	Sales Tracking and Reporting System	Annual	High	Forest Timber Management Staff
28	28.02	5	Are livestock management systems and improvements adequately protecting riparian areas and aquatic habitats?	61	Pastures monitored annually for livestock damage.	Annual	High	Forest Soil Scientist
29	29.01, 29.02, 30.02	16, 20	Were mineral authorizations processed in a timely manner?	62	Review of requests received and process time elapsed to decision for energy and nonenergy minerals as well as requests from private mineral holders.	5 Year Intervals	High	Forest Geologist

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Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
32, 33, 35	32.01, 32.02, 32.03, 33.01, 35.01	16, 20	Are roads being maintained, constructed or reconstructed to reduce sediment delivery to water bodies and to provide a transportation system that supplies safe and efficient access for forest users while protecting forest resources. [36 CFR 219.27 (a)(10)]	63	Miles of National Forest System Roads (NFSR) exist compared to miles maintained to their objective maintenance level. Miles of road improved. Routine condition surveys on 25-33% of roads per year. Miles of road decommissioned (classified and unclassified) with reasons for decommissioning. Miles of right-of-way settled and acres of National Forest land accessed as a result.	Annual	Moderate	Forest Engineer
34		16, 20	Were special use authorizations processed in a timely manner?	64	Review of requests received and process time elapsed to decision.	5 Year Intervals	High	Forest Lands Staff
36, 37, 38	36.01, 37.01, 38.01	16, 20	Are National Forest System lands being managed to improve management effectiveness and enhance public benefits?	65	Miles of boundary surveyed. Title claims and encroachments resolved. Acres of lands acquired and reasons for acquisition. Lands conveyed and reasons for conveyance.	Annual	High	Forest Lands Staff
NFMA Requirement		16, 20	How do estimated and actual costs of plan implementation compare? [36 CFR 219.12(k)(3)]	66	Review of projected forest plan costs compared to actual costs and annual budgets.	5 Year Intervals	Moderate	Forest Planning Staff
NFMA Requirement		17	Are lands being adequately restocked within 5 years of regeneration treatments? [36 CFR 219.27(c)(3)]	67	Routine regeneration examinations following standard protocols.	Annual	High	District Silviculturists
NFMA Requirement		17	Are lands not suited for timber production classified as such? [36 CFR 219.12(k)(5)(ii)] Have lands identified as not suitable for timber production become suitable? [36 CFR 219.14 (a) (d), 36 CFR 219.27(c)(1)]	68	Routine timber stand inventory and prescription documented in CISC. Review changes every ten years.	10 Year Intervals	Moderate	District Silviculturists and Forest Silviculturist
NFMA Requirement		17	Are harvest unit sizes within the allowable limits? [36 CFR 219.12(k)(5)(iii)] Should maximum harvest unit size limits be continued? [36 CFR 219.27(d)]	69	Annual field inspection of selected site-specific projects. Document needs for change in annual Monitoring and Evaluation Report if appropriate.	As Appropriate	Moderate	Forest Silviculturist, Planning IDT

Goal #	Objective #	MQ #	Element	Task #	Method of Collection	Reporting Frequency	Precision/Reliability	Responsibility
	NFMA Requirement	17	Are appropriate harvest methods used on the Forest. [36 CFR 219.27]	70	Annual field inspection of selected site-specific projects. Document needs for change in annual Monitoring and Evaluation Report if appropriate.	As Appropriate	Moderate	Forest Silviculturist, Planning IDT
	NFMA Requirement	18	Determine whether standards, guidelines, and management requirements are being met and are effective in achieving expected results. [36 CFR 219.27 (a)(6)]	71	Annual field inspection of selected site-specific projects. Document needs for change in annual Monitoring and Evaluation Report if appropriate.	As Appropriate	Moderate	Planning IDT
	NFMA Requirement	18	Determine when changes in GPRA, policies, or other direction would have significant effects on Forest Plans. [36 CFR 219.10(g)]	72	5 year review	5 Year Intervals	Moderate	Forest Planning Staff
	NFMA Requirement	18	Determine if planning information or physical conditions have changed. [36 CFR 219.10(g)]	73	5 year review	5 Year Intervals	Moderate	Forest Planning Staff
	NFMA Requirement	18	During monitoring determine research needs. [36 CFR 219.28]	74	Document research needs in annual Monitoring and Evaluation Report if appropriate.	As Appropriate	Moderate	Planning IDT

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The Jefferson National Forest is the source of the purest streams, rivers, and lakes.