

Chapter 4

Monitoring and Evaluation Plan



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Chequamegon-Nicolet National Forests



Chapter 4

Monitoring and Evaluation Plan

Introduction

Monitoring and evaluation are required by the National Forest Management Act (NFMA) to determine how well this Forest Plan is working. Direction for the monitoring and evaluation of forest plans is found under the 2012 Planning Rule (36 CFR 219.12) and is designed to answer the following basic questions:

1. **Did we do what we said we were going to do?** This question answers how well the direction in the Forest Plan is being implemented. Collected information is compared to Objectives, Standards, Guidelines, and Management Area direction.
2. **Did it work how we said it would?** This question answers whether the application of standards and guidelines is achieving objectives, and whether objectives are achieving goals.
3. **Is our understanding and science correct?** This question answers whether the assumptions and predicted effects used to formulate the goals and objectives are valid.

The aim of monitoring is adaptive management – the ability to respond to current conditions or make appropriate changes based on new information or technology. Depending on the answers to the above questions, the Forest Plan may be amended or revised to adapt to new information and changed conditions. This chapter provides programmatic direction for monitoring and evaluating Forest Plan implementation.

Monitoring Strategy

Monitoring and evaluation are separate activities. Monitoring is the process of collecting data and information. Evaluation analyzes and interprets the information and data collected from monitoring. A key requirement of a monitoring strategy is that the public be given timely, accurate information about Forest Plan implementation. This is done through the release of a biennial monitoring evaluation report (from the 2012 Planning Rule, 36 CFR 219.12(d)). The monitoring program must be efficient, practical and affordable.

Monitoring tasks are scaled to the Forest Plan, program, or project to be monitored. Each of these entails different objectives and requirements. Monitoring is not performed on every single activity, nor does it need to meet the statistical rigor of formal research.

Budgetary constraints will 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 would be given the highest priority.

The components of this monitoring strategy are:

- Monitoring program components
- Monitoring questions and associated indicators related to implementation, attainment and assumptions

- The biennial monitoring evaluation report

The monitoring questions and associated indicators are developed by an interdisciplinary team to address Forest Plan management goals, objectives, standards, guidelines, assumptions, and science. The biennial monitoring and evaluation report analyzes and summarizes the monitoring results.

Monitoring Program Components

Minimum monitoring and evaluation requirements have been established through the 2012 Planning Rule at 36 CFR 219.12, which directs the Forests to implement a monitoring and evaluation program to provide a basis for periodic determination of the effect of management practices.

Under 36 CFR 219.12(a), the responsible official shall develop a monitoring program for the plan area and include it in the plan. Monitoring information should enable the responsible official to determine if a change in plan components or other plan content that guide management of resources on the plan area may be needed. The development of the plan monitoring program must be coordinated with the regional forester, Forest Service State and Private Forestry and Forest Service Research and Development. Responsible officials for two or more administrative units may jointly develop their plan monitoring programs.

The plan monitoring program sets out the plan monitoring questions and associated indicators. Monitoring questions and associated indicators are designed to inform the management of resources within the planning area, including by testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plan's desired conditions or objectives. Questions and indicators are based on one or more desired conditions, objectives, or other plan components in the plan, but not every plan component has a corresponding monitoring question.

Subject to the requirements of paragraph (a)(5) of this section, the responsible official has the discretion to set the scope and scale of the plan monitoring program, after considering:

1. Information needs identified through the planning process as most critical for informed management of resources on the plan area; and
2. The financial and technical capabilities of the Agency.

Under 36 CFR 219.12 (a)(5), each plan monitoring program must contain one or more monitoring questions and associated indicators addressing each of the following elements:

1. The status of select watershed conditions.
2. The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.
3. The status of focal species to assess the ecological conditions required under § 219.9.
4. The status of a select set of the ecological conditions required under § 219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.
5. The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.
6. Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.
7. Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities.
8. The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g)(3)(C)).

Monitoring Questions and Indicators

A series of monitoring questions and associated indicators have been formulated to determine the effectiveness of Forest Plan implementation, attainment, and assumptions. They are displayed in Table 4-1 and organized by the 8 monitoring elements of the 2012 Planning Rule, 36 CFR 219.12 (a)(5). Reference to the components (goal/objective) of the Forest Plan driving the monitoring question is also provided following the question.

Monitoring questions were developed to ensure that the monitoring and evaluation program addresses information essential to evaluating the effectiveness of the Forest Plan. There may be more than one monitoring question for each of the 8 elements and individual monitoring questions may apply to more than one monitoring element. The associated indicators are the quantitative or qualitative measures used to answer monitoring questions.

Biennial Monitoring Evaluation Report

The biennial monitoring evaluation report provides an opportunity to track progress toward the implementation of Forest Plan decisions and the effectiveness of specific management practices. The monitoring evaluation report is the synthesis of monitoring data and trends essential to inform adaptive management of the plan area. The report must indicate whether or not a change to the plan, management activities, or the monitoring program is warranted based on new information.

Comparison of subsequent monitoring evaluation reports provides a means to track trends of management effectiveness and to show the changes that have been made or are still needed.

Key questions to be addressed in the evaluation:

- Are management direction and standards being followed?
- How well are objectives of the Plan being achieved?
- Do management prescriptions respond to issues, concerns, and opportunities?
- Are effects of Plan implementation occurring as predicted?
- Are the Forests progressing toward their long-term goals?

In summary, the biennial monitoring evaluation report:

- Reviews the results of monitoring
- Assesses the effectiveness of management practices in achieving goals, objectives and desired conditions (outcomes) specified in the Plan
- Evaluates the data for indicators of trends or effects
- Identifies a need to amend or revise the Plan, change management practices, or change to the monitoring program
- Identifies research needed by the National Forest System

Table 4-1: Chequamegon-Nicolet Forest Plan Monitoring

Monitoring Element Number	Monitoring Question Number	Monitoring Question	Indicator
1 Watershed Conditions	1	What is the current status of sediment control and watershed improvement projects? (Objective 1.3a)	Number of sediment control projects accomplished, including: road and trail stream crossing improvements, road and trail stream crossing eliminations, and fish passage improvements. Number of stream miles re-connected. Number of other watershed restoration projects.
	2	To what extent are roads and trails located within Riparian Management Zones? (Objective 1.3d)	Miles of roads and trails in Riparian Management Zones (RMZ). Miles of roads and trails relocated outside of RMZ or reconstructed inside RMZ.
2 Ecological Conditions	3	What is the current status of stream and lake habitats? (Objective 1.3e)	Miles of streams improved or restored. Acres of lakes improved or restored. Watershed Condition framework score for selected watersheds.
	4	To what extent is forest management maintaining or restoring desired conditions of vegetative communities? (Objective 1.4a)	Acres by vegetative communities in each MA. Acres and volume of forest products harvested. Acres restocked. Compare to LRMP projections and DFCs.
3 Focal Species	5	What is the current status of coldwater stream communities, especially streams with brook trout present? (Objective 1.3g)	Miles of Class I, Class II, and segments of Class III trout streams and their tributaries maintained and restored to free-flowing condition. Population index of brook trout on selected streams
4 Species of Concern	6	Is Forest Plan implementation contributing to the recovery of federally listed threatened and endangered species and improving habitat conditions for RFSS species? (Objective 1.1a/b)	Implementation of conservation strategies for federally listed threatened and endangered species, RFSS species, and their habitat. Acres treated consistent with recovery plans for listed species.
5 Recreation	7	What is the current status of Semi-primitive Non-motorized (SPNM) areas? (Objective 2.1a)	Miles of road open to ORVs and/or vehicles in SPNM areas. Miles of road decommissioned in SPNM areas.
	8	What is the current status of ATV trail construction for the Forest? (Objective 2.1d and 2.1e)	Miles of ATV trail constructed toward the Nicolet NF 85 mile objective. Miles of ATV trail constructed toward the Chequamegon NF 100 mile objective.
	9	What is the status of developed campgrounds? (Objective 2.1i)	Developed campgrounds survey results for Meaningful Measures.
	10	What is the status of remote campsites? (Objective 2.1j)	Number of damaged remote campsites. Number of damaged remote campsites that have been addressed.
	11	What is the status of the 25-mile 4WD ORV trail? (Objective 2.1l)	Miles of 4WD ORV trail closed. Miles of replacement trail constructed.
	12	What is the status of wilderness and potential wilderness? (Objective 2.3)	Percentage of wilderness meeting desired conditions. Annual Wilderness Stewardship Performance rating.

Monitoring Element Number	Monitoring Question Number	Monitoring Question	Indicator
6 Climate Change	13	To what extent is Forest Plan implementation contributing or controlling populations of NNIS? (Objective 1.4g)	Number of patches and patch extent of NNIS. Number of patches and patch extent of NNIS treated.
	14	To what extent are large disturbance events (over 100 acres) occurring on the Forest, including those related to weather, insect outbreaks and disease? (Objective 1.4i)	Acres impacted by large disturbance events. Type of disturbance. Acres salvaged.
7 Desired Future Conditions	15	What are the effects of prescribed burning on Class I and II air sheds? (Goal 1.6)	Acres treated by prescribed fire. Air quality measurements before, during and after prescribed fire. Rainbow Lake Wilderness area air quality measurements.
	16	What is the current status of heritage resources? (Objective 2.4a)	Acres of phase I surveys. Number of sites monitored. Number and description of cooperative heritage resource studies.
	17	To what extent is Forest Plan implementation harvesting forest products and are harvest levels sustainable? (Objective 2.5)	Acres of timber harvested. Acres and volumes of forest products harvested by silvicultural method and product type. Quantity of special forest products harvested. Acres of suitable and non-suitable for timber production.
	18	To what extent is Forest Plan implementation contributing toward satisfying demand for mineral resources and ensuring environmentally sound development of mineral resources? (Goal 2.6)	Number of active plan of operations. Acres developed and successfully reclaimed.
	19	What is the status of hazardous fuels in communities at risk? (Objective 2.8c)	Acres treated for hazardous fuels by method.
	20	Is the Tribal MOU being satisfactorily applied? (Goal 2.9)	Effectiveness of the Tribal MOU.
	21	To what extent is Forest Plan implementation maintaining or reducing road densities? (Objective 3.1a)	Average open and total road densities within areas displayed on the Road Density Map. Forest-wide average road density.
	22	What is the current status of land ownership patterns? (Goal 3.2)	Acres of land conveyances, purchases or exchanges by purpose: 1. Protection of T&E species 2. Consolidating Wilderness 3. Increase public ownership on lakes and rivers 4. Unique ecological, cultural or recreational values 5. More efficient land management
8 Land Productivity	23	To what extent is implementation of the Forest Plan maintaining or improving soil productivity? (Goal 1.7)	Percentage of detrimental soil disturbance after management.
	24	To what extent are off-road and off-trail motorized use causing resource damage? (Objective 2.1c)	Number and miles of unauthorized roads and trails (user created and/or not on MVUM). Number and miles of new unauthorized roads and trails by district.
	25	How effective are management actions to minimize or avoid unacceptable resource damage on the 4WD ORV trail? (Objective 2.1l)	Occurrences of breached closures. Acres of soil/watershed impairment. Miles of unauthorized trail created. Miles and/or acres of damage to adjacent roads.