

# Chapter 4 Monitoring and Evaluation Plan



4 r o t p a s c



**Chequamegon-Nicolet  
National Forests**



## Chapter 4

# Monitoring and Evaluation Plan

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### Introduction

Monitoring and evaluation are required by the National Forest Management Act (NFMA) regulations (36 CFR 219) to determine how well the Forest Plan is working. Monitoring and evaluation 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.

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### 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 an annual monitoring and evaluation report. The monitoring program must be efficient, practical and affordable, and not duplicate the collection of data already underway for other purposes.

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:

- Minimum legally required monitoring
- Monitoring methods
- Monitoring questions related to implementation, attainment and assumptions

- The annual monitoring plan of operations
- The annual monitoring evaluation report

Minimum legally required monitoring is defined by NFMA. Monitoring methods categorize how precisely and reliably we measure monitoring items. The monitoring questions are developed by an interdisciplinary team to address Forest Plan management goals, objectives, standards, guidelines, assumptions, and science. The annual monitoring plan of operations identifies which items will be measured, and how the monitoring questions will be answered. The monitoring and evaluation report analyzes and summarizes the monitoring results.

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## Minimum Legally Required Monitoring

Minimum monitoring and evaluation requirements have been established through the National Forest Management Act (NFMA) at 36 CFR 219. Some requirements provide guidance for developing a monitoring program, while others include specific compliance requirements. The following NFMA regulations are relevant to Plan monitoring and evaluation:

### 36 CFR 219.7(f).

A program of monitoring and evaluation shall be conducted that includes consideration of the effects of National Forest management on land, resources, and communities adjacent to or near the National Forest and the effects upon National Forest management of activities being planned on nearby lands managed by other Federal or other government agencies or under the jurisdiction of local governments.

### 36 CFR 219.11(d).

The Forest Plan shall contain monitoring and evaluation requirements that will provide a basis for a periodic determination and evaluation of the effects of management practices.

### 36 CFR 219.12(k).

Forest planning—process; monitoring and evaluation. At intervals established in the plan, implementation shall be evaluated on a sample basis to determine how well objectives have been met and how closely management standards and guidelines have been applied. Based upon this evaluation, the interdisciplinary team shall recommend to the Forest Supervisor such changes in management direction, revisions, or amendments to the Forest Plan as are deemed necessary. Monitoring requirements identified in the Forest Plan shall provide for:

1. A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plans.
2. Documentation of the measured prescriptions and effects, including significant changes in productivity of the land.
3. Documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the Forest Plans.
4. A description of the following monitoring activities:
  - a. The actions, effects, or resources to be measured, and the frequency of measurements;

- b. Expected precision and reliability of the monitoring process.
  - c. The time when evaluation will be reported.
5. A determination of compliance with the following standards:
- d. Lands are adequately restocked as specified in the Forest Plan;
  - e. Lands identified as not suited for timber production are examined at least every 10 years to determine if they have become suited; and that, if determined suited, such lands are returned to timber production.
  - f. Maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued.
  - g. Destructive insects and disease organisms do not increase to potentially damaging levels following management activities.

### **36 CFR 219.19(a)(6).**

Population trends of the management indicator species will be monitored and relationships to habitat changes determined. This monitoring will be done in cooperation with State fish and wildlife agencies, to the extent practicable. The Federally listed Bald Eagle and Gray Wolf are also management indicator species. Fassett's Locoweed, another Federally listed species, will also be monitored, although it is not a management indicator species because of its localized occurrences.

### **36 CFR 219.21(g).**

Forest planning shall evaluate the potential effects of vehicle use off roads and, on the basis of the requirements of 36 CFR 295, classify areas and trails of National Forest System lands as to whether or not off-road vehicle use may be permitted.

Table 4-1 displays how the Chequamegon-Nicolet National Forests will address the legally required monitoring items. The specific techniques and protocols to be used are identified in the annual monitoring plan that is developed in conjunction with the annual budget and work planning process.

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## **Monitoring Methods**

Monitoring is divided into two methods, A and B, based on their relative precision and reliability.

### **Method A**

Methods generally are well accepted for modeling or measuring the resource or condition. The cost of conducting these measurements is higher than other methods. These methods are often quantitative in nature.

### **Method B**

Methods or measurement tools are based on a variety of techniques. Tools include project records, communications, on-site ocular estimates, or less formal measurements like pace transects, informal visitor surveys, air photo interpretation, and other similar types of assessments. Reliability, accuracy, and precision are good, but usually less than with Method A. Method B monitoring is often qualitative in nature, but still provide valuable information on the status of resource conditions.

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## Monitoring Questions

A series of monitoring questions have been formulated to determine the effectiveness of Forest Plan implementation, attainment, and assumptions. These questions are displayed in Table 4-2(a, b and c). They address the forest-wide goals and objectives found in Chapter 1. Monitoring methods used to gather information about each question will be identified in the annual monitoring plan of operations.

The purpose of monitoring questions is to determine what type of information to gather and how often to gather it in order to address the goals and objectives. Some resources need to be monitored annually to produce trend data. Annually gathered data may be analyzed periodically (3, 5 or 10-year cycle), depending upon the time frame specified by each objective.

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## Annual Monitoring Plan of Operations

A monitoring plan of operations will be prepared each year. Its purpose is to identify specific items that will be monitored in the coming year, as well as the methods to be used. Each year, the interdisciplinary team will review the minimum legally required monitoring items and the monitoring questions. In development of the annual monitoring plan of operations and prioritization of monitoring activities, the following items will be considered:

- Additional data needs identified from previous monitoring activities
- Methods and measures to provide consistent information to determine trends
- Assessment of benefits versus the cost of collecting data
- The amount of process and statistical rigor needed to obtain usable results
- The intensity, detail and type of data needed to achieve the monitoring purpose
- The importance of the item or activity being monitored (potential for long-term or irreversible damage, local versus national risk, risk of not monitoring, etc.)
- Emerging issues and concerns that may be addressed through monitoring

The annual monitoring plan of operations will identify and schedule various site-specific, on-the-ground monitoring activities. It describes the purpose, methods, locations, responsible persons, and estimated costs. Each annual plan will be submitted for consideration under the budget and work planning process.

The Forest Supervisor then will determine the appropriate funding for monitoring and approve implementation of the monitoring plan.

Specific components included in the annual monitoring plan of operations are:

**Forest Plan Goal:** as identified in Chapter 1

**Forest Plan Objectives:** as identified in Table 4-2.

**Monitoring Questions:** an interdisciplinary team reviews specific monitoring questions from Table 4-2. This review ensures that information gathered answers the questions that are essential to measuring Forest Plan accomplishment and effectiveness, and is consistent with budget and work plans.

**Monitoring Items:** A monitoring item, or data element, is a quantitative or qualitative parameter that can be measured or estimated. One or more monitoring items are associated with each monitoring question. Monitoring items provide the foundation to answer the monitoring questions.

**Monitoring Purpose:** This component indicates the purpose for the monitoring item. It notes whether it is a legal requirement, and/or whether it provides information for better land management decisions.

**Methods:** The precision and reliability, and specific techniques are described.

**Scale:** Describes the level of analysis with respect to land size. This measure is important in describing habitat heterogeneity and viability issues, as well as describing cumulative effects of management actions.

**Frequency of Monitoring:** Describes how often information is gathered or measured. May be annually, every three-five years, or every ten years.

**Frequency of Evaluation:** Defines how often the information is analyzed and reported. Depending upon the question being answered, analysis of the information may occur at longer time intervals than the frequency of monitoring.

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## Annual Monitoring and Evaluation Report

Developed by the interdisciplinary team, the annual monitoring and evaluation report summarizes the results of completed monitoring and evaluates 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. It makes recommendations to the Forest Supervisor, who would use these findings either to certify the Forest Plan as sufficient for management in the coming year, or to decide that the Plan needs to be amended.

The monitoring and evaluation report may provide summaries of data collected, but is primarily written to display evaluation of the data, conclusions, and recommendations. 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 questions to be addressed in the evaluations are:

- 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 annual monitoring and 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
- Compares the actual outputs, services and costs with those estimated in the Plan
- Evaluates the data for indicators of trends or effects
- Identifies a need to amend or revise the Plan
- Identifies research needed by the National Forest System

**Table 4-1. Minimum legally required monitoring items.**

Action, effect or resource to be measured	Scale	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
Lands are adequately restocked (36 CFR 219.12(k)5(i))	Forest	Annual	Annual	A
Lands not suited for timber production (36 CFR 219.12(k)5(ii))	Management Area	Decadal	Decadal	A
Maximum opening from even-aged management (36 CFR 219.12(k)5(iii))	Site	Years 5 & 10	5 years	B
Control of destructive insects and disease (36 CFR 219.12(k)5(iv))	Forest	Annual	Annual	B
Population trends of the seven Management Indicator Species in relation to habitat changes (36 CFR 219.19(a)(6))	Forest	Annual	5 years	A
Effects of off-road vehicles (36 CFR 219.21)	Forest, MA, Site	Annual	5 years	B
Effects to lands and communities adjacent to or near national forest and effects to the Forest from land managed by government entities (36 CFR 219.7(f))	Forest	Years 5 & 10	5 years	B
Comparison of projected and actual outputs and services (36 CFR 219.12(k)(1))	Forest	Annual	Annual	A
Prescriptions and effects (36CFR219.12(k)(2))	Forest, MA, Site	Years 5&10	5 years	B
Comparison of actual and estimated costs (36CFR129.12(k)(3))	Forest	Annual	5 years	A
Effects of management practices (36CFR219.11(d))	Forest, MA	Years 5 & 10	5 years	B

**Table 4-2a: Chequamegon-Nicolet Forest Plan Monitoring Questions:  
Goal 1 – Ensure Sustainable Ecosystems**

Goal	Objective	Monitoring Question	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
<b>1.1 – Threatened, Endangered &amp; Sensitive Species</b> Conserve or restore populations of T, E & S species.	1.1a: Under the Endangered Species Act, implement established recovery or conservation strategies.	Have recovery or conservation strategies for T&E species been implemented?  What are the population trends for T/E species known to occur as reproducing populations on the Forest?	Every 5 years  Annually	Every 5 years  Every 5 years	B  A
	1.1b: Improve habitat conditions for RFSS.	Are habitat conditions for RFSS improving?	Every 5 years	Every 5 years	B
<b>1.2 – Ecological Communities of Special Concern</b> Protect ecological communities of special concern that represent the best examples of those found naturally on the Forest.	1.2: Conserve special environmental, cultural, social and/or scientific values in protected areas including Wilderness, wild and scenic rivers, research natural areas, special management areas and old growth areas.	Is the integrity of communities of special concern being protected?	Every 10 years	Every 10 years	B
<b>1.3 – Aquatic Ecosystems</b> Provide for ecologically healthy streams, riparian areas, lakes, and wetlands including a decline in the occurrence of exotics such as carp, zebra mussels, rusty crayfish, Eurasian milfoil, and purple loosestrife.	1.3a: Reduce the number of road and trail stream crossings. Reduce sedimentation and improve fish passage in existing road and trail stream crossings.	What is the current number of road & trail stream crossings? How many of these have been eliminated?  How many fish passages have been improved?  How many sedimentation projects have been completed?	Annually	Every 5 years	A
	1.3b: Reduce off-road & off-trail motorized vehicle use within wetlands, meadows, and riparian areas.	Is off-road or off-trail motorized vehicle use within wetlands, meadows, and riparian areas decreasing?	Every 5 years	Every 5 years	B
	1.3c: Restore large woody debris by annually treating some lakes with tree drops and/or cribs. Consult with the Native American Tribes when proposing this treatment on lakes where spear fishing occurs.	How many lakes were treated with tree drops or cribs?  Was consultation effective?	Every 5 years	Every 5 years	B
	1.3d: Relocate some existing roads and trails out of Riparian Management Zones. Where relocation is not feasible, reconstruct road and trail segments as needed to minimize erosion, sedimentation, and hydrologic impacts.	How many miles of road and trails are currently in Riparian Management Zones?  How many miles of these roads and trails have been relocated or reconstructed?	Every 5 years	Every 5 years	A
	1.3e: Improve or restore habitat in streams and lakes.	How many miles of stream, and acres of lakes have been treated to improve/restore habitat?	Annually	Every 5 years	A
	1.3f: Apply lime to some lakes to improve productivity or make pH suited for desired species.	How many lakes have been limed to reduce acidity and promote desired species?	Annually	Every 5 years	A
	1.3g: Protect and restore coldwater stream communities by maintaining Class I, Class II, and segments of Class III trout streams and their tributaries in a free-flowing condition.	How many miles of Class I & II trout streams are in a free-flowing condition?	Every 5 years	Every 5 years	B

**Chequamegon-Nicolet National Forests**

Goal	Objective	Monitoring Question	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
	1.3h: Maintain and/or enhance the quantity and ecological health of wild rice beds.	Has the quantity and ecological health of wild rice beds been maintained or enhanced?	Every five years	Every five years	A
<b>1.4 – Terrestrial Ecosystems</b> Provide terrestrial ecosystems in healthy, diverse, and productive conditions that support the diversity of plant and animal communities and tree species, and have a high likelihood of supporting the viability of native and desired non-native vertebrates and vascular plants well distributed in their ranges within the planning area over time.	1.4a: Maintain or restore vegetation communities to their desired conditions. Emphasize restoration/maintenance in MA 2B, 4B, and 8C.	How many acres of vegetative communities have been maintained in their desired condition each MA?  How many acres of vegetative communities have been restored to their desired condition in each MA?	Every 5 years	Every 10 years	B
	1.4b: Restore and/or emulate natural disturbance regimes Pine Barrens.	How many acres of Pine Barrens have natural disturbance regimes?	Every 5 years	Every 10 years	B
	1.4c: Restore and/or emulate disturbance regimes that were historically present within pine communities.	What percentage of pine communities have recent natural disturbance?  What percentage of pine communities have recent man-made disturbance?	Every 5 years	Every 10 years	B
	1.4d: Maintain or expand existing dwarf bilberry populations.	How many dwarf bilberry patches (or acres) have been maintained?  How many acres of dwarf bilberry habitat have been created?	Annually	Every 5 years	A
	1.4e: Increase average vegetative patch size.	What is the average patch size of important vegetation communities on the forest?  How has the average patch size changed since the beginning of the planning period?	Every 5 years	Every 10 years	A
	1.4f: Permit some early successional forest to succeed naturally toward late successional forest types, as well as meeting desired conditions within designated Old Growth areas (MA 8G).	How many acres of early successional forest are succeeding toward late successional forest types in MA8G?  To what extent have conditions in MA 8G progressed towards DFC?	Every 10 years	Every 10 years	B
	1.4g: Annually treat non-roadside and roadside NNIS sites. Develop an NNIS strategy to guide amounts and locations of treatment.	How many NNIS sites occur on the Forest? How many were treated?  Has a treatment strategy been developed/implemented?	Annually	Annually	A
	1.4h: Increase use of prescribed fire as a management tool within fire-adapted Land Type Associations. Reintroduce fire disturbance within RNA's where establishment records allow.	How many acres within fire-adapted Land Type Associations were treated by prescribed fire?  How many acres of RNA's were treated by prescribed fire? How many RNA's were involved?	Annually	Every 5 years	A
	1.4i: When large disturbance events (over 100 acres) occur within forested areas, maintain a portion of the damaged vegetation to provide additional site level structure and coarse woody debris.	How many acres were affected by large disturbance events? How many acres were salvaged?	Annually	Every 5 years	A
	1.4j: Increase the long-lived conifer component in transition zones between upland and lowland.	To what extent have white pine and hemlock been planted/regenerated in upland/lowland transition zones?	Every 5 years	Every 5 years	A

Goal	Objective	Monitoring Question	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
	1.4k: Increase the quantity of boreal forest on the Ashland Lake-Modified Till Plain LTA emphasizing mature and older age classes and larger patch size.	To what extent has boreal forest been added to the LTA and what is the age-class distribution of these areas?  What are the patch sizes of these areas?	Every 5 years	Every 5 years	B
	1.4l: Maintain or enhance existing pockets of pine barrens and oak savanna habitat and restore characteristics described in the desired future condition of MA 8C.	How many pockets of pine barrens and oak savanna habitat were maintained/enhanced?  Have features in these areas progressed toward the DFC of MA 8C?	Every 5 years	Every 5 years	A  B
	1.4m: Increase aspen clearcut average patch size toward 25 acres, excluding ruffed grouse management areas.	What is the average patch size of aspen clearcuts?	Every 5 years	Every 5 years	A
	1.4n: Restore Canada yew within Northern Hardwood ecosystem in MA 2B where feasible.	How many patches of Canada yew were maintained?  How many new patches were established?	Every 5 years	Every 5 years	A
<b>1.5 – Wildlife and Fish Habitat</b> Conserve habitat capable of supporting viable populations of existing native and desired non-native species and retain the integrity and function of key habitat areas.	1.5a: Retain potential nest trees by reserving supercanopy pines within ½ mile of lakes greater than 10 acres that sustain a fishery desired by osprey.	To what extent have supercanopy pines been reserved near suitable osprey fisheries?  How many acres in these areas were silviculturally treated?	Every 5 years	Every 10 years	A
	1.5b: Cooperate with the Wisconsin DNR, to establish a population and distribution of beaver across the forest that provides the desired amount of flooding and vegetative disturbance important to ecosystem sustainability. At the same time, negative effects on critical resource values such as cold-water fisheries, rare species, roads, and trails are avoided.	Is beaver disturbance and flooding adequate to provide for ecosystem sustainability?  Is beaver disturbance adversely affecting cold water fisheries, rare species, roads, and trails?	Every 5 years	Every 10 years	B
<b>1.6 – Air Quality</b> Forest ecosystems are not adversely affected by air pollution; forest management activities are conducted to protect or maintain air quality.		What effects are prescribed burns having on Class I and II air sheds?	Annually	Every 5 years	B
		Is the quality of the Rainbow Lake Wilderness Area air shed being maintained?	Annually	Every 5 years	A
<b>1.7 – Soils</b> Provide desired physical, chemical, and biological soil processes and functions on the Forests to maintain and/or improve soil productivity.		Are ecological land type phases mapped adequately to predict needed mitigation measures?  Are desired processes and functions maintained?	Annually	Every 5 years	B

**Table 4-2b. Chequamegon-Nicolet Forest Plan Monitoring Questions:  
Goal 2 – Provide Multiple Benefits for People**

Goal	Objective	Monitoring Question	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
<b>2.1 – Recreation Opportunities</b> Maintain or enhance the diversity and quality of recreation experiences within acceptable limits of change to ecosystem stability and condition.	2.1a: Improve the quality of Semi-primitive, Non-motorized (SPNM) areas by increasing the opportunity for quiet and remote experiences and by promoting activities which provide natural appearing vegetation.	Has the feeling of quiet and remoteness increased in SPNM areas?  Where activities have occurred in SPNM areas, does the resulting vegetation appear more natural?	Every 5 years	Every 10 years	B
	2.1b: Within each MA 6B area (polygon), generally complete the harvesting planned for the decade during a consecutive 3-year period.	Was harvesting completed within a 3-year period?	Every 5 years	Every 5 years	A
	2.1c: Reduce, and strive to eliminate, unacceptable changes in resource conditions due to off-road, off-trail motorized use.	Is unacceptable resource damage occurring from off-road or off-trail vehicle use?	Every 5 years	Every 10 years	B
	2.1d: Construct up to 85 miles of ATV trail on the Nicolet NF.	How many miles of trail have been constructed?	Annually	Every 5 years	A
		Is the ATV trail system on the Nicolet NF adequate to meet the desired diversity of recreation experience?	Every 5 years	Every 10 years	B
	2.1e: Construct up to 100 miles of ATV trail on the Chequamegon NF.	How many miles of trail have been constructed?	Annually	Every 5 years	A
		Is the ATV trail system on the Chequamegon NF adequate to meet the desired diversity of recreation experience?	Every 5 years	Every 10 years	B
	2.1f: On the Nicolet, collaborate with town governments to provide opportunities to enhance existing town-designated ATV routes by designating specific existing classified roads.	Have the Forest Service and town governments collaborated on designating ATV routes?	Every 5 years	Every 5 years	B
	2.1g: On the Chequamegon, designate and sign all classified roads as ATV routes unless specifically removed from this status by local District Action.	Have system roads been designated and signed for ATV use?	Every 5 years	Every 5 years	B
	2.1h: Close and rehabilitate one ATV "intensive use area."	Has an ATV intensive use area been closed and rehabilitated?	Every 5 years	At 10 years	B
2.1i: Provide well-maintained developed campgrounds that meet Forest Service guidelines.	Do developed campgrounds meet the guidelines of Meaningful Measures?	Annually	Every 5 years	B	
2.1j: Inventory and manage remote campsites to minimize environmental impacts of recreation use.	What percentage of damaged, remote campsites has been identified?	Annually	Every 5 years	B	
	What percentage of damaged sites has been addressed?				

Goal	Objective	Monitoring Question	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
	2.1k: Close unsurfaced primitive access roads to some lakes to provide a more primitive recreation experience. Emphasize lakes with documented RFSS sites.	How many lakes have had access roads closed? How many RFSS sites were affected?	Every 5 years	Every 5 years	A
	2.1l: If maintenance methods prove ineffective and monitoring confirms unsafe conditions or unacceptable resource damage, close and rehabilitate the existing 25-mile 4WD ORV trail. Then construct a replacement trail up to 25 miles long elsewhere on the Forest providing an agreement with a non-Forest Service entity is developed to maintain and monitor trail conditions.	Is the 4WD ORV trail safe? Is unacceptable resource damage occurring?  If the trail is unsafe or unacceptable damage is occurring, is a non-Forest Service entity being sought to develop a replacement trail?	Annually	Annually	B
<b>2.2 – Scenic Values</b> Maintain or enhance the quality of scenic resources to provide desired landscape character.		Are management practices meeting scenery management standards?  Are scenery management standards providing for the maintenance or enhancement of scenic quality?	Every 5 years	Every 5 years	B
<b>2.3 – Wilderness Opportunities</b> Provide opportunities for recreational, aesthetic, and educational experiences within Wilderness and Wilderness Study Areas that are consistent with the value of those areas.	2.3: Allow decommissioning of roads that divide Wilderness areas or that occur between Wilderness and Wilderness study areas to improve the wilderness experience.	How many roads (miles of road) that divide wilderness areas were decommissioned?  What percentage of wilderness and potential wilderness acres meet desired conditions?	Every 5 years  Every 5 years	At 10 years  At 10 years	A  B
<b>2.4 – Heritage Resources</b> Manage cultural heritage to provide future generations an opportunity to appreciate and experience the Forests' diversity of human history, American heritage, and the delicate ecological relationship between people and the land.	2.4a: Promote the scientific study of a selected heritage resource, primarily through public participation and institutional/governmental partnerships.	What heritage resource was studied and through what cooperative participation?	Annually	Annually	B
	2.4b: Consult with tribal governments, institutions, and other interested parties to ensure the protection and preservation of areas, objects, and records that are culturally important to them.	What consultations have occurred with tribal governments, institutions and/or other interested parties? What objects or areas were protected through the consultations?	Annually	Annually	B
	2.4c: Conduct scientific studies to further our understanding of human adaptation and influences on the landscape and to provide important information for NEPA analysis.	How many scientific studies were initiated/completed?	Annually	Every 5 years	A
	2.4d: Increase awareness and appreciation of cultural heritage through educational programs, university-sponsored archaeology field schools or other programs.	How many programs were conducted?  How many people participated?	Annually	Every 5 years	A

**Chequamegon-Nicolet National Forests**

<b>Goal</b>	<b>Objective</b>	<b>Monitoring Question</b>	<b>Monitoring Frequency</b>	<b>Evaluation Frequency</b>	<b>Precision/Reliability</b>
<b>2.5 – Forest Commodities</b> Contribute toward satisfying demand for wood products and special forest products through environmentally responsible harvest on National Forest System lands.	2.5: Ensure that harvest levels of special forest products are within sustainable levels.	How much of each product was harvested?  How have populations/quantities of special forest products changed over time?	Annually	Every 5 years	A
<b>2.6 – Mineral and Energy Resources</b> Contribute toward satisfying demand for mineral and energy resources through environmentally sound, responsible development on NFS lands.	2.6: Ensure that reclamation provisions and environmental protection measures of operating plans and surface use plans of operations are completed to standard in field operations.	Are established mineral and energy standards and guidelines ensuring environmentally sound development of mineral and energy resources?	Annually	Every 5 years	B
<b>2.7 – Wildlife and Fish Resources</b> Conserve habitat capable of supporting state population objectives for appropriate wildlife and fish species.	2.7: Cooperate with Wisconsin and Michigan DNR for wildlife and fish population management to support the achievement of desired population objectives through appropriate habitat management.	Is management of National Forest habitats consistent with meeting Wisconsin and Michigan State DNR's wildlife and fish population objectives?	Every 5 years	Every 5 years	B
	Strive to maintain a deer herd in balance with its range and compatible with existing social and economic conditions.	Is management of national forest habitats acting to maintain deer herds in balance with its range? Is management of national forest habitats acting to maintain deer herds compatible with existing social and economic conditions?	Every 5 years	Every 5 years	B
<b>2.8 – Fire Management</b> Safely implement the Fire and Fuels Management Program within the Forest Service Protection area of the Chequamegon-Nicolet National Forests.	2.8a: The safety of employees and the public is the highest priority during any fire or fuels management incident.	What activities have been done to promote safe fire and fuels management?	Annually	Every 5 years	B
	2.8b Expedite safe extinguishments of wildfires by the use of ground and/or air resources.	How many wildfires exceeded 1 acre in size?	Annually	Annually	A
	2.8c: Reduce hazardous fuels within communities at risk, in cooperation with local, Federal, and State agencies.	Within communities at risk, how many acres of hazardous fuels reduction activities were accomplished?	Annually	Annual	A
	2.8d: Apply fire management as part of natural ecological disturbance regime.	How have fire management activities met desired goals?	Annually	Annually	B
<b>2.9 – Treaty Rights</b> Honor the U.S. Government trust responsibility and treaty obligations toward Indian tribes within a government-to-government relationship.	Nothing in this plan or its implementation is intended to modify, abrogate, or otherwise adversely affect tribal reserved or treaty guaranteed rights applicable within the CNNF.	Is the Tribal M.O.U. being satisfactorily applied?	Annually	Annually	B

**Table 4-2c. Chequamegon-Nicolet Forest Plan Monitoring Questions:  
Goal 3 – Ensure Organizational Effectiveness**

Goal	Objective	Monitoring Question	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
<b>3.1 – Capital Infrastructure</b> Build and maintain safe, efficient, and effective infrastructure that supports public and administrative uses of National Forest System lands.	3.a: Reduce average open and total road density on the Chequamegon-Nicolet National Forest. Use Appendix BB and Road Density Map to focus efforts.	Are average open road densities at or below Guides listed in Appendix BB within areas displayed on Road Density Map?  What is the Forestwide total road density?	Every 5 years	Every 5 years	A
<b>3.2 – Land Ownership</b> Consolidate land ownership patterns to facilitate restoration, protection and management.	3.2: Convey, purchase or exchange lands where needed. High priority areas for acquisition include those lands that: <ul style="list-style-type: none"><li>• Protect Threatened, Endangered, or Regional Forester Sensitive Species;</li><li>• Consolidate federal ownership within Wilderness;</li><li>• Increase public ownership on lakes and rivers;</li><li>• Provide unique ecological, scientific, heritage, or recreational qualities; and</li><li>• Consolidate land ownership for efficient resource management purposes.</li></ul>	Where is land consolidation needed to: <ul style="list-style-type: none"><li>• Protect T&amp;E or RFS species?</li><li>• Consolidate wilderness?</li><li>• Increase public ownership on lakes and rivers?</li><li>• Acquire unique ecological, scientific, cultural, or recreational tracts?</li><li>• Manage efficiently?</li></ul> What land conveyances, purchases, or exchanges have occurred for these reasons?	Annually	At 10 years	B
<b>3.3 – Public and Organization Relations</b> Cooperate with individuals, organizations, and local, state, tribal and federal governments to promote ecosystem health and sustainability across landscapes.	3.3a: Consult with Tribes and intertribal agencies during decision-making processes. Consider effects of natural resource management decisions on the ability of tribes to exercise gathering rights. Site-specific project analyses address how project proposals might protect or impact the ability of tribes to exercise gathering rights.	Are project-level natural resource decisions affecting the ability of tribes to exercise treaty rights on ceded lands?  Are project level consultations taking place?  Do project analyses address project relationship to tribal treaty rights?	Annually	Every 5 years	B
	3.3b: Through partnerships, encourage, establish, and sustain a diverse and well-balanced range of recreational services and facilities on the Forests.	Is an adequate diversity of recreational services and facilities being provided on the forest?	Annually	Every 5 years	B
	3.3c: Cooperatively work with federal, state, and county agencies, and other non-governmental organizations to control NNIS.	What cooperative management actions have occurred with local governments, other federal agencies and with non-governmental groups to control NNIS?	Annually	Every 5 years	B

**Chequamegon-Nicolet National Forests**

Goal	Objective	Monitoring Question	Monitoring Frequency	Evaluation Frequency	Precision/Reliability
	3.3d: Cooperatively work with federal, state, and county agencies and non-governmental organizations to integrate fire prevention programs and suppression resources. Cooperatively work across agencies to develop and implement hazardous fuels reduction projects that will reduce the risk of wildfire.	What cooperative management actions have occurred with local governments, other federal agencies and with non-governmental groups to integrate fire prevention and suppression programs/resources?	Annually	At 10 years	B
	3.3e: Work collaboratively with other agencies and the public to protect and restore watersheds. Conduct assessments of all 5 <sup>th</sup> level watersheds with more than 25 percent federal ownership.	<p>What collaborative management actions have been taken to protect and restore watersheds?</p> <p>What percentage of the Chequamegon-Nicolet land base has had 5<sup>th</sup> level watersheds assessed?</p>	<p>Annually</p> <p>Annually</p>	<p>Every 10 years</p> <p>Every 5 years</p>	B
	3.3f: Collaborate with the US Fish and Wildlife Service in the collection and dissemination of information indicating the possible presence of Canada Lynx and Kirtland's Warbler.	What collaborative actions have been taken to collect or disseminate information relating to Canada Lynx and Kirtland's Warbler?	Upon occurrences	As appropriate	B