



United States  
Department of  
Agriculture

Forest Service

Eastern  
Region

Ottawa National Forest

# Monitoring Guide

## 2006 Forest Plan

July 2007



Caring for the Land and Serving People



## ***Introduction***

Monitoring and evaluation are required by National Forest Management Act (NFMA) regulations to determine how well the 2006 Land and Resource Management Plan (2006 Forest Plan) is working. Monitoring and evaluation is designed to answer the following basic questions:

- Did we do what we said we were going to do in an appropriate timeframe? This question answers how well the direction in the 2006 Forest Plan is being implemented. The collected information from monitoring and evaluation efforts is compared to the goals, objectives, standards, guidelines and management area direction of the 2006 Forest Plan.
- Did the 2006 Forest Plan's direction work how we intended? This question answers whether the application of standards and guidelines is achieving the objectives, and whether objectives are achieving the goals.
- 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 to have the ability to respond to changing conditions, to make appropriate changes based on new information or technology, and to test the effectiveness of the direction in the 2006 Forest Plan.

As indicated in the Revised Forest Plan (page 4-5), the monitoring information collected should be consistent with standardized protocols (where available). The data will be stored and maintained in standard national databases and GIS layers (for example, Natural Resource Information System databases <http://www.fs.fed.us/emc/nris/>). In cases of divergence from national approaches, the Monitoring Guide discloses the reasons for not using such direction.

## ***Monitoring Program Overview***

### **Monitoring and Evaluation 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 2006 Forest Plan implementation. This is performed through the release of an annual monitoring 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 2006 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 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 minimum amount of legally-required monitoring is defined by NFMA. Monitoring and evaluation keeps the 2006 Forest Plan up-to-date and responsive to changing conditions and issues. This process provides the feedback mechanism for adaptive management. The results are used to identify when changes are needed to either the 2006 Forest Plan itself or the way it is implemented.

### **Monitoring Methods and Requirements**

Monitoring methods categorize how precisely and reliably we measure monitoring items. The monitoring questions were developed by an Interdisciplinary (ID) Team to address 2006 Forest Plan management goals, objectives, standards, guidelines, assumptions and science. The annual monitoring plan identifies which items are measured, and how the monitoring questions will be answered. The monitoring report summarizes the monitoring results.

Monitoring is divided into two types of methods or classes: A and B, which are based on their relative precision and reliability.

**Class A:** These methods are well-accepted for modeling or quantitatively measuring the resource or condition. Results have a high degree of repeatability, reliability, accuracy and precision. The cost of conducting these measurements is higher than other methods.

**Class B:** These methods or measurement tools are based on a variety of techniques. Tools include project records, communications, on-site visual estimates or less formal measurements such as informal visitor surveys, aerial photo interpretation and other similar types of assessments. Class B methods is often qualitative in nature, but still provides valuable information on the status of resource conditions. Reliability, accuracy and precision are lower than Class A, as are costs.

### **Monitoring Type**

The 2006 Forest Plan addresses several types of monitoring. These requirements fall into four broad categories:

- Category 1 (Required by NFMA)
- Category 2 (Attainment of Goals and Objectives)
- Category 3 (Implementation of Standards and Guidelines)
- Category 4 (Effects of Prescriptions and Management Practices).

#### Monitoring Framework

Many approaches to 2006 Forest Plan monitoring are currently being used throughout the Forest Service. However, each monitoring chapter must:

1. Meet the legal requirements of the planning regulations
2. Be consistent with corporate data standards and protocols
3. Be developed by an ID Team that addresses the ecological, social and economic dimensions of forest management in an integrated manner.

#### Monitoring Prioritization

Within any agency or institution, necessary or desirable work demands often exceed available funding. Forest Plan monitoring is no exception. Consequently, a prioritization process for monitoring items would be developed to ensure efficient use of limited time, money and personnel. The following list of potential criteria may be used to set monitoring priorities:

- Is monitoring of a particular question or resource mandated by law or regulation?
- How do monitoring items relate to local public, government and tribal resource interests?
- Is there a high degree of uncertainty associated with management assumptions (management significance)?
- Is there a high degree of disparity between existing and desired conditions?
- Are proposed management activities likely to affect resources of concern (ecological significance)?
- How do monitoring items fit into national and regional Forest Service priorities?
- What are the consequences of not knowing resource conditions?
- Will monitoring respond to a key issue?

Monitoring priorities would be established each year utilizing the above criteria, information gained during the past year, and budgets. There would be a great amount of monitoring information collected over time. If this information is not documented, so it can be easily retrieved, shared with the public and other stakeholders, or used by agency managers to foster better decisions, it is of limited value. Information management would consist of: (1) Management of the collection and storage of data; (2) Evaluation and interpretation of data; and (3) sharing information internally and externally.

#### ***Monitoring Matrix from LRMP***

Required and management direction monitoring are outlined in the matrix. The more prescriptive standards and guides will be addressed in the Monitoring Guide. The focal point for each monitoring item is the monitoring question. Each monitoring question is derived from one or more monitoring drivers (legal requirements, desired conditions, objectives, etc.). Not all the monitoring drivers, such as regulations, agency guidance and Forest Plan management direction is required to be monitored each year. Drivers that best answer the monitoring question for each resource area will be identified during the annual monitoring schedule process.

#### ***Monitoring Guide Format***

The goal of the protocol descriptions is to provide sufficient information so that a person other than the author can read and apply the methods. Some particularly complex monitoring items are separated further into sub-items. Where a standardized protocol is used, the protocol description contained in this Guide may only summarize key aspects of that protocol and describe and explain modifications or deviations from the standardized protocol.

## ITEM NUMBERS AND QUESTIONS

Item ID	Item Name	Monitoring Question
01	Comparisons of projected and actual timber outputs and services	How do actual outputs and services compare to those outputs and services projected in the 2006 Forest Plan?
02	Timber - Actual and estimated costs	How close are actual costs compare to projected costs?
03	Social and Economic Vitality	To what extent do output levels and the mix of sawtimber and pulpwood compare to those levels projected
04	Timber - Insects and disease	Are insect and disease population levels compatible with objectives for restoring or maintaining healthy forest conditions
05a	Recreation: Off-Highway Vehicles	What are the effects of OHVs on the physical and social environment?
05b	Recreation: Off-Highway Vehicles	How effective are forest management practices in managing OHV use?
05c	Recreation: Off-Highway Vehicles	To what extent are road and trail closures effective in prohibiting unauthorized motor vehicle use?
06	Timber - Reforestation and Stocking	Are harvested lands adequately restocked after 5 years?
07a	Timber - Harvesting on Suited acres	To what extent are timber management activities occurring on lands suited for timber production?
07b	Timber: Suited Land	To what extent have conditions or information changed the classification of lands "not suited" for timber production to "suitable" for timber production?
08	Timber - Temporary Opening Size	To what extent and under what circumstances are clearcuts, and other openings created by even-aged management, exceeding 40 acres.
09	Soils	Are the effects of Forest management, including prescriptions, resulting in significant changes to productivity of the land?
10a	Wildlife/Botany Management Indicator Species - EPT	To what extent are forest management activities providing habitat for MIS (EPT).
10b	Wildlife/Botany Management Indicator Species - Grouse	To what extent are forest management activities providing habitat for MIS (ruffed grouse).
10c	Wildlife/Botany Management Indicator Species - Marten	To what extent are forest management activities providing habitat for MIS (american marten).
10d	Wildlife/Botany Management Indicator Species - Toothwort	To what extent are forest management activities providing habitat for MIS (cutleaf toothwort).
11	Public Involvement and Coordination	To what extent does the Forest emphasize agency, tribal and public involvement and intergovernmental coordination with federal, state, county governments and agencies?
12a	Non-Native Invasive Species: Plants	To what extent is Forest management contributing or responding to non-native invasive plant species?
12b	Non-Native Invasive Species: Animals	To what extent is Forest management contributing or responding to non-native invasive animal species?

<b>Item ID</b>	<b>Item Name</b>	<b>Monitoring Question</b>
13	Recreation	What amount of road routes and recreation trails are designated open for OHV riding and provide connections to other public trails?
14	Recreation	To what extent is the Forest providing a range of motorized and non-motorized recreation opportunities that incorporate diverse public interests yet achieve applicable management area objectives and desired conditions?
15	Recreation	To what extent are Forest management activities in semi-primitive non-motorized management areas in alignment with the Recreation Opportunity Spectrum Objectives?
16	Heritage	To what extent is Forest management contributing to the preservation, evaluation of and education for heritage resources?
17	Tribal Rights and Interests	Monitor implementation of the 2006 Forest Plan with respect to tribal treaty rights applicable on the Ottawa with respect to the tribal MOU.
18	Wilderness	To what extent is wilderness management contributing to improvement or preservation of wilderness characters and values?
19	Vegetation: Spatial Patterns	To what extent are Forest management activities restoring vegetation composition and spatial landscape patterns and moving toward desired conditions at the Forest, management area and other appropriate landscape scales?
20	Vegetation: Old Growth	To what extent are existing and potential old growth forest conditions being classified consistent with management area objectives?
21	Vegetation: Permanent Openings	To what extent are permanent upland openings being created and maintained to move towards the desired condition at the Forest, management area and landscape scale?
22	Vegetation: Hardwood Management	To what extent are northern hardwoods being managed to work toward the desired mix of even-aged and uneven-aged stands?
23	Vegetation: Aspen/Paper Birch Management	To what extent are aspen forest type acres being maintained through regeneration activities to meet Forestwide and management area objectives?
24	Vegetation: Long-lived Conifer	To what extent are long-lived conifer forest types being increased or maintained through regeneration activities to meet Forestwide and management area objectives?
25	Vegetation: Short-Lived Conifers	To what extent are short-lived conifer forest types being maintained through regeneration activities to meet Forestwide and management area objectives?
26	Vegetation: Natural and Artificial Restoration	To what extent is natural regeneration favored over artificial reforestation to meet Forestwide and management area objectives?
27	Vegetation: Ecological Processes	To what extent is Forest management maintaining or restoring conditions that result from or emulate natural ecological patterns and processes such as fire, wind, flooding, and insect and disease outbreaks?

<b>Item ID</b>	<b>Item Name</b>	<b>Monitoring Question</b>
28	Vegetation: Ecological Processes	To what extent is Forest management utilizing the Ecological Classification System and its components to implement ecosystem based management?
29	Soils	To what extent is Forest management affecting soil quality?
30	Watershed Health and Riparian	To what extent is Forest management affecting riparian and wetland ecosystems?
31	Wildlife and Fish	To what extent has management maintained or restored the diversity and abundance of native aquatic flora and fauna in streams and lakes in a manner consistent with the capability of the water body?
32	Wildlife	To what extent are the key terrestrial and aquatic habitat components (e.g., soft mast, hard mast, snags, down woody material, low dense conifer regeneration) being provided?
33a	Wildlife, Fish and Botany: Native and Desired Non-Native Species - Botany	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (Botany)
33b	Wildlife, Fish and Botany: Native and Desired Non-Native Species - BBC	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (BBC)
33c	Wildlife, Fish and Botany: Native and Desired Non-Native Species - Frogs	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (Frogs)
33d	Wildlife, Fish and Botany: Native and Desired Non-Native Species - Bobcat	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (Bobcat)
34a	Wildlife/Botany: Species of Viability Concern - Botany	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Forester sensitive Species) and moving toward desired habitat conditions for these species? (Botany)
34b	Wildlife/Botany: Species of Viability Concern - BBWP/SPGR	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (BBWP/SPGR)
34c	Wildlife/Botany: Species of Viability Concern - BTBW	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (BTBW)
34d	Wildlife/Botany: Species of Viability Concern - Loon	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Loon)

<b>Item ID</b>	<b>Item Name</b>	<b>Monitoring Question</b>
34e	Wildlife/Botany: Species of Viability Concern - Forest Raptors	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Raptors)
34f	Wildlife/Botany: Species of Viability Concern - Wood Turtles	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Turtles)
34g	Wildlife/Botany: Species of Viability Concern - Osprey	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Osprey)
35	Wildlife: Threatened and Endangered Species	To what extent is forest management contributing to the conservation of threatened and endangered species and moving toward desired habitat conditions and populations trends for these species?
36	Wildlife: Threatened and Endangered Species	To what extent is Forest management affecting the density of open roads within the Remote Habitat Area, and moving toward the Forest density objective of < 1.0 miles/square mile?
37	Wildlife: Threatened and Endangered Species	To what extent is Forest management contributing to the development and maintenance of foraging and denning habitat, and connectivity of habitats for Canada lynx?
38	Wildlife: Off-highway Vehicles	To what extent are OHVs producing impacts to wildlife or wildlife habitats?
39	Minerals	To what extent is the Forest providing minerals and mineral materials to help support economic growth?
40	Land Adjustment	To what extent has land ownership adjustment facilitated forest management activities?
41	Fire	To what extent is forest management meeting hazardous fuels objectives?
42	Fire	To what extent is wildland fire (natural and prescribed) used to maintain or mimic natural processes, and/or restore natural processes and functions to ecosystems?
43	Fire	How have fire suppression tactics been implemented on the Forest relative to the threat posed to human life, property, or threatened resources?
44a	Transportation	To what extent are the unneeded roads being decommissioned?
44b	Transportation	To what extent are road closures on decommissioned roads effective in prohibiting unauthorized motor vehicle use?

<b>Item Name</b>	Comparisons of projected and actual timber outputs and services		
<b>Item ID</b>	01	<b>Priority</b>	A
<b>Keywords</b>	ASQ, Outputs, Services, Timber		
<b>Monitoring Question</b>	How do actual outputs and services compare to those outputs and services projected in the 2006 Forest Plan?		
<b>Driver</b>	Legal requirement (36 CFR 219.12(k)(1)), A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan.		
<b>Methods</b>	Volume Sold by product (sawtimber and pulpwood)(Display as CCF and MBF) from PTSAR report Acres harvested by treatment method from FACTS. Acres of Forest treated annually.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1		
<b>Funding Code</b>	NFTM, NFIM		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Salary to query data, summarize and write reports.		
<b>Data Storage Method and Location</b>	Harvest data is stored in FACTS. Volume reports are in I-Web Corporate Data Warehouse (CDW)		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Timber Program Manager		
<b>Who (Cooperators)</b>	Forest Silviculturist, Resource Assistant (Forest level)		
<b>Notes and References</b>	Need to compare projected volumes and acres of timber harvested as displayed in Appendix E of the Forest Plan with actual amounts. Need to track ASQ		

<b>Item Name</b>	Timber - Actual and estimated costs		
<b>Item ID</b>	02	<b>Priority</b>	A
<b>Keywords</b>	Budget, Costs		
<b>Monitoring Question</b>	How close are actual costs compare to projected costs?		
<b>Driver</b>	Legal requirement (36CFR129.12(k)(3)). Goal 14 and Objectives 14a and 14b		
<b>Methods</b>	Documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the Forest Plan		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1&2		
<b>Funding Code</b>	NFTM, NFIM		
<b>Total Cost</b>	700	<b>PFT Cost:</b>	700
<b>Cost Explanation:</b>	Salary to review data and write report.		
<b>Data Storage Method and Location</b>	Use data from Project Workplans and contracting costs.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Timber Program Manager		
<b>Who (Cooperators)</b>	Program managers, Budget and Finance Staff		
<b>Notes and References</b>	Meet Goal 14 Objectives 14a and 14b.		

<b>Item Name</b>	Social and Economic Vitality		
<b>Item ID</b>	03	<b>Priority</b>	A/B
<b>Keywords</b>	NEPA, Socioeconomic		
<b>Monitoring Question</b>	To what extent do output levels and the mix of sawtimber and pulpwood compare to those levels projected		
<b>Driver</b>	Legal requirement (36 CFR 219.7(f)). A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan.		
<b>Methods</b>	Volume Sold by product (sawtimber and pulpwood)(Display as CCF and MBF) from PTSAR report. Payments to counties.		
<b>Frequency of Monitoring</b>	3 - 5 years		
<b>Frequency of Evaluation</b>	3 - 5 years		
<b>Year Scheduled</b>	2009		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1		
<b>Funding Code</b>	NFIM		
<b>Total Cost</b>	0	<b>PFT Cost:</b>	0
<b>Cost Explanation:</b>	Information already being gathered to answer monitoring question #1.		
<b>Data Storage Method and Location</b>	Harvest data is stored in FACTS. Volume reports are in I-Web Corporate Data Warehouse (CDW)		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Timber Program Manager		
<b>Who (Cooperators)</b>	Forest Silviculturist, Resource Assistant (Forest level)		
<b>Notes and References</b>			

<b>Item Name</b>	Timber - Insects and disease		
<b>Item ID</b>	04	<b>Priority</b>	A/B
<b>Keywords</b>	Insects, Disease, timber		
<b>Monitoring Question</b>	Are insect and disease population levels compatible with objectives for restoring or maintaining healthy forest conditions		
<b>Driver</b>	Legal requirement (36CFR219.12(k)(5)(iv)) Goal 37. Destructive insects and disease organisms do not increase to potentially damaging levels following management activities		
<b>Methods</b>	Annual Pest Detection Flight to detect location and severity of insect and disease population levels. Emerald ash borer trap tree monitoring.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 1&2		
<b>Funding Code</b>	NFTM, State & Private funding		
<b>Total Cost</b>	350	<b>PFT Cost:</b>	350
<b>Cost Explanation:</b>	Salary to summarize data and write report		
<b>Data Storage Method and Location</b>	GIS shapefiles and maps from aerial detection flight will be stored electronically and in official files. Results of annual EAB Trap Tree Surveys will be stored in official files.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>	Northern Research Station to conduct the annual Pest Detection Flight. Partnership with Northern Research Station, Michigan Department of Agriculture, and Michigan Technological University to conduct annual EAB Trap Tree Surveys.		
<b>Notes and References</b>			

<b>Item Name</b>	Recreation: Off-Highway Vehicles		
<b>Item ID</b>	05a	<b>Priority</b>	A/B
<b>Keywords</b>	ATVs, Transportation, Recreation		
<b>Monitoring Question</b>	What are the effects of OHVs on the physical and social environment?		
<b>Driver</b>	Forest Plan Goal 1 and Goal 3, Objective 9b and 9c. Travel Management Rule. Off-road vehicle use shall be planned and implemented to protect land and other resources, promote public safety, and minimize conflicts with other uses of NF system lands.		
<b>Methods</b>	Need to develop. All field going personnel document occurrences of cross-country or other unauthorized use (using the MVUM as the reference point) using a short form. Compare between MA's, especially SPNM's. Short form considerations: categories for type and extent of damage, location and other comments. Take photos to go along with the form whenever practicable. Forest m&e person review data for consistency.		
<b>Frequency of Monitoring</b>	Annual		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFRW		
<b>Total Cost</b>		<b>PFT Cost:</b>	
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	Database		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Recreation Program Manager, Forest Engineer		
<b>Who (Cooperators)</b>	Local ATV clubs to monitor designated recreation trail segments.		
<b>Notes and References</b>	Is unacceptable resource damage occurring? What is the general extent of these impacts? Are impacts declining? Are unauthorized areas effectively closed to motor vehicle use? (focus on physical resources).		

<b>Item Name</b>	Recreation: Off-Highway Vehicles		
<b>Item ID</b>	05b	<b>Priority</b>	A/B
<b>Keywords</b>	ATVs, OHVs, Trails		
<b>Monitoring Question</b>	How effective are forest management practices in managing OHV use?		
<b>Driver</b>	Forest Plan Goal 1 and Goal 3, Objective 9b and 9c. Travel Management Rule. Off-road vehicle use shall be planned and implemented to protect land and other resources, promote public safety, and minimize conflicts with other uses of NF system lands.		
<b>Methods</b>	<p>Need to develop.</p> <p>All field going personnel document occurrences of cross-country or other unauthorized use (using the MVUM as the reference point) using a short form. Compare between MA's, especially SPNM's.</p> <p>Short form considerations: categories for type and extend of damage, location and other comments. Take photos to go along with the form whenever practicable. Forest m&amp;e person review data for consistency.</p>		
<b>Frequency of Monitoring</b>	Annual		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFRW		
<b>Total Cost</b>		<b>PFT Cost:</b>	
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	Database		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Lands Program Manager, Forest Engineer		
<b>Who (Cooperators)</b>	Local ATV clubs to monitor designated recreation trail segments. District and Forest engineers, Forest Safety Officer		
<b>Notes and References</b>	Is unacceptable resource damage occurring? What is the general extent of these impacts? Are impacts declining? Are unauthorized areas effectively closed to morot vehicle use? (focus on physical resources).		

<b>Item Name</b>	Recreation: Off-Highway Vehicles		
<b>Item ID</b>	05c	<b>Priority</b>	A/B
<b>Keywords</b>	Recreation, ATV, OHV		
<b>Monitoring Question</b>	To what extent are road and trail closures effective in prohibiting unauthorized motor vehicle use?		
<b>Driver</b>	Travel Management Rule 2006		
<b>Methods</b>	Need to develop. All field going personnel document occurrences of cross-country or other unauthorized use (using the MVUM as the reference point) using a short form. Short form considerations: categories for type and extend of damage, location and other comments. Take photos to go along with the form whenever practicable. Forest m&e person review data for consistency.		
<b>Frequency of Monitoring</b>	Annual		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFRW		
<b>Total Cost</b>		<b>PFT Cost:</b>	
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	Database		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Lands Program Manager		
<b>Who (Cooperators)</b>	Local ATV clubs to monitor designated recreation trail segments. District Recreation staff		
<b>Notes and References</b>	Is unacceptable resource damage occurring? What is the general extent of these impacts? Are impacts declining? Are unauthorized areas effectively closed to morot vehicle use? (focus on physical resources).		

<b>Item Name</b>	Timber - Reforestation and Stocking		
<b>Item ID</b>	06	<b>Priority</b>	A
<b>Keywords</b>	timber, reforestation, stocking		
<b>Monitoring Question</b>	Are harvested lands adequately restocked after 5 years?		
<b>Driver</b>	Legal requirement (36CFR219.12(k)(5)(i)). Lands are adequately restocked as specified in the Forest Plan.		
<b>Methods</b>	Stocking surveys.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1		
<b>Funding Code</b>	NFTM, NFIM		
<b>Total Cost</b>	350	<b>PFT Cost:</b>	350
<b>Cost Explanation:</b>	Salary to query and summarize data and write report.		
<b>Data Storage Method and Location</b>	Stocking surveys and reforestation certifications are entered into FACTS. Reports are stored in I-Web Corporate Data Warehouse.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Meet NFMA restocking requirements and meet resource objectives.		

<b>Item Name</b>	Timber - Harvesting on Suited acres		
<b>Item ID</b>	07a	<b>Priority</b>	A
<b>Keywords</b>	Timber, Suited lands, management		
<b>Monitoring Question</b>	To what extent are timber management activities occurring on lands suited for timber production?		
<b>Driver</b>	Legal requirement (36CFR219.12(k)(5)(iv)),		
<b>Methods</b>	Query FACTS for timber harvest information and GIS stand SDE data for Land Suitability Class (LSC).		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1		
<b>Funding Code</b>	NFTM, NFIM		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Salary to query and summarize data and write report.		
<b>Data Storage Method and Location</b>	FACTS for timber harvest information and GIS stand SDE data for (LSC).		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>	District Silviculture Staff, Forest CDS & FSveg database manager		
<b>Notes and References</b>	Track harvest of suited acres vs unsuited acres. Ensure that treatments done on unsuited acres are to meet objectives other than timber production.		

<b>Item Name</b>	Timber: Suited Land		
<b>Item ID</b>	07b	<b>Priority</b>	A
<b>Keywords</b>	Timber, Suited Land		
<b>Monitoring Question</b>	To what extent have conditions or information changed the classification of lands "not suited" for timber production to "suitable" for timber production?		
<b>Driver</b>	Legal requirement (36CFR219.12(k)(5)(ii)). 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.		
<b>Methods</b>	Stands will be reviewed under each project level analysis to determine if they meet the parameters for suitability under the new Forest Plan, and the GIS stand layer in SDE data base will be updated. 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.		
<b>Frequency of Monitoring</b>	10 years		
<b>Frequency of Evaluation</b>	10 years		
<b>Year Scheduled</b>	2015		
<b>Year Last Accomplished</b>	2005		
<b>Type of Monitoring</b>	Category 1		
<b>Funding Code</b>	NFTM, NFIM		
<b>Total Cost</b>	15000	<b>PFT Cost:</b>	15000
<b>Cost Explanation:</b>	Salary to query and summarize data and write report.		
<b>Data Storage Method and Location</b>	CDS (Land Suitability Class field)		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Timber Program Manager		
<b>Who (Cooperators)</b>	District Silviculture Staff, Timber Program Manager		
<b>Notes and References</b>	Land identified as not suited for timber production are examined at least every 10 years to determine if they have become suited as a result of new information or new logging technology. If these lands are now determined to be suited, they can be returned to timber production.		

<b>Item Name</b>	Timber - Temporary Opening Size		
<b>Item ID</b>	08	<b>Priority</b>	A/B
<b>Keywords</b>	Timber, Aspen, Patch Size, opening		
<b>Monitoring Question</b>	To what extent and under what circumstances are clearcuts, and other openings created by even-aged management, exceeding 40 acres.		
<b>Driver</b>	NFMA. Goal 28 and Objectives 28a and 28b. Legal requirement - CFR219.12(k)5iii		
<b>Methods</b>	Use FACTS and GIS to analyze harvests over 40 acres. Review NEPA documents for rationale for making openings over 40 acres (e.g. for aspen regeneration or Kirtland warbler habitat). Stands will be reviewed under each project level analysis to determine if they meet the parameters for suitability under the new Forest Plan, and the CDS data base will be updated. Maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued.		
<b>Frequency of Monitoring</b>	Years 5 and 10		
<b>Frequency of Evaluation</b>	Years 5 and 10		
<b>Year Scheduled</b>	2011		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1&2		
<b>Funding Code</b>	NFTM, NFIM		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Salary to review NEPA documents, query and summarize data and write report.		
<b>Data Storage Method and Location</b>	Data for timber harvest are stored in FACTS, GIS, and NEPA documents. Use FACTS and GIS to analyze harvests over 40 acres. Review NEPA documents for rationale for making openings over 40 acres (e.g. for aspen regeneration or Kirtland warbler habitat).		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>	Forest Silviculturist, Forest Wildlife Biologist		
<b>Notes and References</b>	Comply with NFMA regs, Forest Plan standards and guidelines, and to determine if maximum size limits for timber harvest areas should be continued.		

<b>Item Name</b>	Soils		
<b>Item ID</b>	09	<b>Priority</b>	A/B
<b>Keywords</b>	Timber, Soils, Productivity		
<b>Monitoring Question</b>	Are the effects of Forest management, including prescriptions, resulting in significant changes to productivity of the land?		
<b>Driver</b>	Legal requirement (36CFR219.12(k)(2)). Goal 20 and Objective 20a. Documentation of the measured prescriptions and effects, including significant changes in productivity of the land.		
<b>Methods</b>	<p>The study is designed to last a full rotation of the stand type, in this case, aspen, 50 years. Study design calls for measurements to be taken every 5 years. Measurement interval is likely to change after year 15 to every 10 years.</p> <p>The study includes two types of control, one on uncut plots and one on bole only, no compaction. An existing study by George Host which is linked to LTSP has been tracking the plant community in terms of species present and their relative abundance in step with the LTSP measurement intervals. All three of the lake states installations (on sand, loam and clay for aspen clear cutting) have been measured with this protocol.</p>		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1		
<b>Funding Code</b>	NFIM		
<b>Total Cost</b>	15000	<b>PFT Cost:</b>	5000
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	There is a national data base being built for all LTSP data. Currently, data is kept by Grand Rapids office of Northern Research Station.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Soil Scientist, Forest Timber Program Manager		
<b>Who (Cooperators)</b>	This has been a partnership with the research branch of FS. There may be opportunities for partnerships with forest industry, or universities.		
<b>Notes and References</b>	<p>We want to know if the effects of our treatments are changing productivity and we are required through NFMA to be able to answer that question. (This is the first of two clarification questions written for this monitoring question). This study is essential in linking effects of forest management to measured productivity of the land (measured as total biomass). Other soil quality monitoring either directly or more commonly indirectly measures effects to the soil such as ground disturbance, litter and woody debris, rutting or compaction, however it's only the LTSP that provides the link from these soil characteristics and or changes in the actual productivity, as measured by biomass of merchantable trees and also by total above ground biomass every 5 years.</p>		

<b>Item Name</b>	Wildlife/Botany Management Indicator Species - EPT		
<b>Item ID</b>	10a	<b>Priority</b>	A/B
<b>Keywords</b>	MIS, wildlife, EPT		
<b>Monitoring Question</b>	To what extent are forest management activities providing habitat for MIS (EPT).		
<b>Driver</b>	Legal requirement (36 CFR 219.19(a)(6)). Goal 1 and Objectives 1b-1e: Goal 2 and Objectives 2a-2d, 2f: Goal 3 and Objective 3a: Goal 20 and Objective 20e: Goal 23: Goal 27 and Objective 27a: Goal 31 and Objective 31a; Objective 32a and Goal 34.		
<b>Methods</b>	We will track changes in EPT populations and amounts of habitat forest-wide. A habitat model has been developed and will be refined as more sampling is completed. The data collected at each site allows for an estimation of available habitat and EPT population size.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 1&2		
<b>Funding Code</b>	NFIM,NFWF		
<b>Total Cost</b>	3640	<b>PFT Cost:</b>	1510
<b>Cost Explanation:</b>	Salary for 10 days of 2 GS-4 Techs and 5 days of Aquatic ecologist		
<b>Data Storage Method and Location</b>	NRIS Water is a possibility, otherwise MS Access or Excel, MDNR water quality monitoring data		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Aquatic Ecologist		
<b>Who (Cooperators)</b>	MDNR		
<b>Notes and References</b>			

<b>Item Name</b>	Wildlife/Botany Management Indicator Species - Grouse		
<b>Item ID</b>	10b	<b>Priority</b>	A
<b>Keywords</b>	MIS, Wildlife, Grouse		
<b>Monitoring Question</b>	To what extent are forest management activities providing habitat for MIS (ruffed grouse).		
<b>Driver</b>	Legal requirement (36 CFR 219.19(a)(6)). Goal 1 and Objectives 1b-1e: Goal 2 and Objectives 2a-2d, 2f: Goal 3 and Objective 3a: Goal 20 and Objective 20e: Goal 23: Goal 27 and Objective 27a: Goal 31 and Objective 31a; Objective 32a and Goal 34.		
<b>Methods</b>	We need to develop habitat models and protocols for monitoring population changes through time. Relative to ruffed grouse, we intend to use a habitat model developed by Jim Hammill and Richard Moran, Michigan DNR biologists. We may have to adapt it slightly to fit with our existing forest inventory information. As a proxy for grouse population numbers across the Forest, we intend to continue running our spring drumming counts, as has been done under the old Plan.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 1&2		
<b>Funding Code</b>	NFIM		
<b>Total Cost</b>	2000	<b>PFT Cost:</b>	2000
<b>Cost Explanation:</b>	Grouse routes \$1500, data input \$250, and M&E writeup \$100. Eventually a habitat model could be developed \$5000		
<b>Data Storage Method and Location</b>	I anticipate the results of the habitat models will be GIS-type maps that go into our M&E Reports, and the population data will yield trend information over time that can be put into graphs that also go into the M&E Reports.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	MDNR is cooperator on drumming routes and Ruffed Grouse Society does Bes routes.		
<b>Notes and References</b>	According to the Regional Office (Gene DeGayner) we need to monitor both habitat and populations at the Forest-wide level (as opposed to project-level) to ascertain effects of Plan implementation on MIS.		

<b>Item Name</b>	Wildlife/Botany Management Indicator Species - Marten		
<b>Item ID</b>	10c	<b>Priority</b>	A
<b>Keywords</b>	MIS, Wildlife, marten		
<b>Monitoring Question</b>	To what extent are forest management activities providing habitat for MIS (american marten).		
<b>Driver</b>	Legal requirement (36 CFR 219.19(a)(6)). Goal 1 and Objectives 1b-1e: Goal 2 and Objectives 2a-2d, 2f: Goal 3 and Objective 3a: Goal 20 and Objective 20e: Goal 23: Goal 27 and Objective 27a: Goal 31 and Objective 31a; Objective 32a and Goal 34.		
<b>Methods</b>	We need to develop habitat models and protocols for monitoring population changes through time. Relative to marten, there is an existing habitat model developed in northern WI that we intend to adopt and adapt to the Ottawa, with assistance from the CNNF. As a proxy for marten population numbers, we intend to continue obtaining marten trapping harvest data from Michigan DNR. Additionally, we will roll our pre-project tracking surveys into a multi-year geodatabase. Finally, we have established marten transects and intend to run them 2-3x each winter, and put the results into the marten geodatabase.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2005		
<b>Type of Monitoring</b>	Category 1&2		
<b>Funding Code</b>	NFWF, NFTM		
<b>Total Cost</b>	2000	<b>PFT Cost:</b>	2000
<b>Cost Explanation:</b>	Marten routes \$1500, data input \$250, and M&E writeup \$100. Eventually a habitat model could be developed \$5000		
<b>Data Storage Method and Location</b>	I anticipate the results of the habitat models will be GIS-type maps that go into our M&E Reports, and the population data will yield trend information over time that can be put into graphs that also go into the M&E Reports.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	GLIFWC, MDNR, Che-Nic NF		
<b>Notes and References</b>	According to the Regional Office (Gene DeGayner) we need to monitor both habitat and populations at the Forest-wide level (as opposed to project-level) to ascertain effects of Plan implementation on MIS. A related monitoring question on page 4-18 directs the Ottawa to monitor key habitat features for marten, such as large snags and downed logs, so that will not be addressed here.		

<b>Item Name</b>	Wildlife/Botany Management Indicator Species - Toothwort		
<b>Item ID</b>	10d	<b>Priority</b>	A/B
<b>Keywords</b>	Management Indicator Species, MIS, Management Indicator Communities, toothw		
<b>Monitoring Question</b>	To what extent are forest management activities providing habitat for MIS (cutleaf toothwort).		
<b>Driver</b>	Legal requirement (36 CFR 219.19(a)(6)). Goal 1 and Objectives 1b-1e: Goal 2 and Objectives 2a-2d, 2f: Goal 3 and Objective 3a: Goal 20 and Objective 20e: Goal 23: Goal 27 and Objective 27a: Goal 31 and Objective 31a; Objective 32a and Goal 34.		
<b>Methods</b>	Toothwort: Develop a habitat model first (begun 2006). Develop monitoring protocol such as transects or quadrants in treated and nontreated hardwood stands. Follow standard plant sampling techniques. (Elzinga et al.)		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2006		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 1&2		
<b>Funding Code</b>	NFIM, NFWF		
<b>Total Cost</b>	4000	<b>PFT Cost:</b>	4000
<b>Cost Explanation:</b>	Salary for data collection and prep		
<b>Data Storage Method and Location</b>	Toothwort: There may be a place in NRIS for this type of data but unless toothwort is listed as sensitive, we can't use NRIS/TESP. We would likely use Excel for tracking, and GIS for locations. Survey routes could be put in NRIS/TESP under the guise of searching for a target listed species but might be hard to locate in database when needed.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Botanist		
<b>Who (Cooperators)</b>	Toothwort - Univ. WI-Madison, Northern Research Station, Northland College		
<b>Notes and References</b>	We want to be able to document whether cutleaf toothwort populations are stable, increasing, or declining. If declining, we want to know if there is a statistically significant decline in the populations: this could mean a problem in the way we manage the habitats they use or the way we impact their guild.		

<b>Item Name</b>	Public Involvement and Coordination		
<b>Item ID</b>	11	<b>Priority</b>	A/B
<b>Keywords</b>	Tribes, MOU, Treaty Rights, Public, Government		
<b>Monitoring Question</b>	To what extent does the Forest emphasize agency, tribal and public involvement and intergovernmental coordination with federal, state, county governments and agencies?		
<b>Driver</b>	Goal 4, Goal 5, and Goal 6		
<b>Methods</b>	Report on contacts made by Forest Supervisor, Rangers, NEPA folks, Heritage, etc.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	minimal (assumed to be a fixed cost)		
<b>Data Storage Method and Location</b>	Word docs, spreadsheets		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Public Affairs Officer, Tribal Liaison		
<b>Who (Cooperators)</b>	Voigt Task Force, Forest NEPA Coordinator, Forest Supervisor, Rangers		
<b>Notes and References</b>	Lots to report on and write about for 2006.		

<b>Item Name</b>	Non-Native Invasive Species: Plants		
<b>Item ID</b>	12a	<b>Priority</b>	B
<b>Keywords</b>	Non-Native Invasive Species, NNIS, exotic species		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to non-native invasive plant species?		
<b>Driver</b>	Goal 1, Objective 3f, Goal 8 and Objectives 8a-8d; Goal 37 and Objective 37c.		
<b>Methods</b>	Plants: we track acres mapped and acres treated by species and method annually. Evaluation of these data would be used to answer this question.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW		
<b>Total Cost</b>	3000	<b>PFT Cost:</b>	3000
<b>Cost Explanation:</b>	Salary for 10 days of an invasive plant specialist.		
<b>Data Storage Method and Location</b>	Infested acreages are reported in NRIS Terra (may be merged with NRIS TESP this year). Treatments are reported and recorded in FACTS.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Botanist		
<b>Who (Cooperators)</b>	State & Private-SP, GLIFWC. The WUP cooperative weed and pest management area may be a partner for monitoring aquatic infestations.		
<b>Notes and References</b>	We want to know several things: are the infested acres/lakes/streams increasing due to management? Is there and increase in the number of different invasive species occurring on the Forest? Does the Forest respond to infestations in an appropriate way?		

<b>Item Name</b>	Non-Native Invasive Species: Animals		
<b>Item ID</b>	12b	<b>Priority</b>	B
<b>Keywords</b>	Non-Native Invasive Species, NNIS, exotic species		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to non-native invasive animal species?		
<b>Driver</b>	Goal 1, Objective 3f, Goal 8 and Objectives 8a-8d; Goal 37 and Objective 37c.		
<b>Methods</b>	Animals: Track locations (lakes and streams) of known infestations and treatments, if any.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW		
<b>Total Cost</b>	3020	<b>PFT Cost:</b>	3020
<b>Cost Explanation:</b>	Salary for 5 days each of aquatic ecologist and fisheries biologists		
<b>Data Storage Method and Location</b>	There are no existing corporate databases for invasive animals. They could possibly be stored in NRIS Water or Fauna, but they aren't designed for that. Until a database is developed, maintain data locally in a combination of GIS, Access databases or Excel spreadsheets.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Aquatic Ecologist, Forest Fisheries Biologist		
<b>Who (Cooperators)</b>	The Ottawa is currently partnered with the University of Notre Dame and the Nature Conservancy.		
<b>Notes and References</b>	We want to know several things: are the infested acres/lakes/streams increasing due to management? Is there an increase in the number of different invasive species occurring on the Forest? Does the Forest respond to infestations in an appropriate way?		

<b>Item Name</b>	Recreation		
<b>Item ID</b>	13	<b>Priority</b>	A/B
<b>Keywords</b>	ATVs, Transportation, Recreation, OHV		
<b>Monitoring Question</b>	What amount of road routes and recreation trails are designated open for OHV riding and provide connections to other public trails?		
<b>Driver</b>	Goal 9 and Objective 9c. One of the Chief's four key threats		
<b>Methods</b>	Compare miles of trails designated vs previous year.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	CMRD		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Query and report on miles of trails/road routes designated in INFRA/ATM.		
<b>Data Storage Method and Location</b>	INFRA and the ATM module.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Recreation Program Manager, Forest Engineer		
<b>Who (Cooperators)</b>	Engineering, Recreation		
<b>Notes and References</b>	Number of miles of roads open for motor vehicle travel by type. Number of miles of recreation trail connectors (not all OML 1 roads as defined by ATM, but the number of miles of trail specifically designated as connectors to other public trails)		

<b>Item Name</b>	Recreation		
<b>Item ID</b>	14	<b>Priority</b>	A/B
<b>Keywords</b>	ATVs, Non-Motorized Recreation, SPNM, OHV		
<b>Monitoring Question</b>	To what extent is the Forest providing a range of motorized and non-motorized recreation opportunities that incorporate diverse public interests yet achieve applicable management area objectives and desired conditions?		
<b>Driver</b>	Goal 9, Objectives 9a-9b and Goal 10		
<b>Methods</b>	Compare acres of SPM vs SPNM. Report miles of roads/trails taken off the system. Report violations for riding in SPNM areas. Could establish photo points to show revegetation.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Query and report from INFRA. Gather and report LEMARS data.		
<b>Data Storage Method and Location</b>	LEO database (LEMARS). "providing" = acres and/or miles of roads/trails by management area, MVUM "achieving" = Number of incident reports, warning tickets, or violations of motor vehicle use in unauthorized areas defined by management area desired conditions.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Recreation Program Manager		
<b>Who (Cooperators)</b>	Law Enforcement Officer		
<b>Notes and References</b>			

<b>Item Name</b>	Recreation		
<b>Item ID</b>	15	<b>Priority</b>	A/B
<b>Keywords</b>	Recreation, SPNM, ROS		
<b>Monitoring Question</b>	To what extent are Forest management activities in semi-primitive non-motorized management areas in alignment with the Recreation Opportunity Spectrum Objectives?		
<b>Driver</b>	Goal 9 and Objective 9a		
<b>Methods</b>	Could combine w/ Monitoring Item #14		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM		
<b>Total Cost</b>	0	<b>PFT Cost:</b>	0
<b>Cost Explanation:</b>	Same information as Item 14		
<b>Data Storage Method and Location</b>			
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Recreation Program Manager		
<b>Who (Cooperators)</b>	District recreation staff		
<b>Notes and References</b>	Could combine w/ previous question - the "achieving" part could address this.		

<b>Item Name</b>	Heritage		
<b>Item ID</b>	16	<b>Priority</b>	A
<b>Keywords</b>	Heritage Resources		
<b>Monitoring Question</b>	To what extent is Forest management contributing to the preservation, evaluation of and education for heritage resources?		
<b>Driver</b>	Goal 5 and Objectives 5a-5c; Goal 12 and Objectives 12a, 12b-12b1 and 12c-12c2		
<b>Methods</b>	Manage heritage priority assets to standard (Bergland Heritage Center, Nancy Jean, Camp Nesbit, Tepee and Imp Lookout Towers, etc). Insure proposed forest projects are evaluated or reviewed by heritage resources program for protection of heritage resource properties. Summarize annual reports for five year review into monitoring report.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2004		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFRW		
<b>Total Cost</b>	600	<b>PFT Cost:</b>	600
<b>Cost Explanation:</b>	Salary for 2 days Forest Archaeologist.		
<b>Data Storage Method and Location</b>	Infra Heritage Module Database; reports of investigation; Annual Report to Congress (compiled by the Regional Office and Washington Office, and submitted to the Department of Interior).		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Archaeologist		
<b>Who (Cooperators)</b>	NEPA analysts and coordinators, THPO's		
<b>Notes and References</b>	Forest Archaeologist must notify State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer (THPO) regarding proposed undertakings that may affect heritage resources, and initiate consultation in accord with NHPA section 106 direction. Additionally, NHPA section 106 directs federal agencies to notify interested parties, i.e., those who may have interest or concerns regarding the management of heritage resources. Interested parties include tribal governments, local governments, historical societies and others. Following notification to interested parties, Forest Supervisor/Forest Supervisor's representative is compelled to initiate consultation if requested by the interested party. Reference National Historic Preservation Act of 1966, as amended, section 106 (Public Law 89-665).		

<b>Item Name</b>	Tribal Rights and Interests		
<b>Item ID</b>	17	<b>Priority</b>	B
<b>Keywords</b>	Tribal, MOU,		
<b>Monitoring Question</b>	Monitor implementation of the 2006 Forest Plan with respect to tribal treaty rights applicable on the Ottawa with respect to the tribal MOU.		
<b>Driver</b>	Goal 5, and Objectives 5a-5c,		
<b>Methods</b>	Assess whether Forest Plan objectives, standards and guidelines are barriers to implementation of the tribal MOU.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFRW		
<b>Total Cost</b>	600	<b>PFT Cost:</b>	600
<b>Cost Explanation:</b>	Salary for 2 days Tribal Liason		
<b>Data Storage Method and Location</b>	Word documents on server.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Tribal Liason		
<b>Who (Cooperators)</b>	tribal governments, OMT, Forest Archeologist		
<b>Notes and References</b>			

<b>Item Name</b>	Wilderness		
<b>Item ID</b>	18	<b>Priority</b>	A/B
<b>Keywords</b>	Wilderness, Preservation		
<b>Monitoring Question</b>	To what extent is wilderness management contributing to improvement or preservation of wilderness characters and values?		
<b>Driver</b>	Goal 10, Objectives 10a-10c		
<b>Methods</b>	Follow wilderness character monitoring as outlined in the 10-Year Wilderness Stewardship Challenge. See: Monitoring selected conditions related to wilderness character: a national framework. Gen. Tech. Rep. RMRS-GTR-151. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 38 p. Values = Untrammled, Natural, Undeveloped, Outstanding opportunities for solitude or a primitive and unconfined type of recreation.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFRW		
<b>Total Cost</b>	700	<b>PFT Cost:</b>	700
<b>Cost Explanation:</b>	Salary for 2 days of a rec employee to generate report.		
<b>Data Storage Method and Location</b>	INFRA Wilderness module		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Recreation Program Manager		
<b>Who (Cooperators)</b>	Yes, see referenced paper in Protocol section.		
<b>Notes and References</b>	Target to manage 1 wilderness to standard. Values = Untrammled, Natural, Undeveloped, Outstanding opportunities for solitude or a primitive and unconfined type of recreation.		

<b>Item Name</b>	Vegetation: Spatial Patterns		
<b>Item ID</b>	19	<b>Priority</b>	A/B
<b>Keywords</b>	Ecosystem Restoration		
<b>Monitoring Question</b>	To what extent are Forest management activities restoring vegetation composition and spatial landscape patterns and moving toward desired conditions at the Forest, management area and other appropriate landscape scales?		
<b>Driver</b>	Goal 1		
<b>Methods</b>	Query GIS stand layer in SDE for Forest Type by MA and link to GIS to do spatial analysis. Review NEPA documents for vegetation composition changes by MA as a result of silvicultural treatments.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	2000	<b>PFT Cost:</b>	2000
<b>Cost Explanation:</b>	Salary to review data and write report.		
<b>Data Storage Method and Location</b>	FSVeg database. Forest Type is stored in GIS stand layer in SDE. Vegetation composition changes are analyzed in NEPA documents.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Baseline will be established in 2007 and then scheduled again in 2010. Meet Goal 1 in Forest Plan and desired condition percentages by Forest Type by MA.		

<b>Item Name</b>	Vegetation: Old Growth		
<b>Item ID</b>	20	<b>Priority</b>	A/B
<b>Keywords</b>	Old growth, Vegetation		
<b>Monitoring Question</b>	To what extent are existing and potential old growth forest conditions being classified consistent with management area objectives?		
<b>Driver</b>	Goal 1, Objective 1e		
<b>Methods</b>	Existing protocol tracks in a Forest GIS layer: Stand ID, MA, acres, NEPA Decision Document Name, NEPA Decision Date, Old Growth Classification (Existing or potential OG). Project links to GIS stand layer in SDE to obtain Forest Type, Suitability Class, and OG Classification from 1986 Plan.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2006		
<b>Year Last Accomplished</b>	2011		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	350	<b>PFT Cost:</b>	350
<b>Cost Explanation:</b>	Salary to review data and write report.		
<b>Data Storage Method and Location</b>	Data is stored in Forest GIS stand layer in SDE. Data is stored in FACTS?		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Baseline will be established in 2007 and then scheduled again in 2010. Meet Goal 1, Objective 1E and move towards meeting desired condition percentages for old growth by MA.		

<b>Item Name</b>	Vegetation: Permanent Openings		
<b>Item ID</b>	21	<b>Priority</b>	A/B
<b>Keywords</b>	Ecosystem Restoration, Upland openings, DFC, vegetation		
<b>Monitoring Question</b>	To what extent are permanent upland openings being created and maintained to move towards the desired condition at the Forest, management area and landscape scale?		
<b>Driver</b>	Goal 1, Objective 1f		
<b>Methods</b>	Query FACTS for acres of upland openings created and maintained by MA and compare to desired condition numbers. Use GIS to determine ELTP to track permanent openings on xeric sites.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Salary to query data, analyze in GIS and write report.		
<b>Data Storage Method and Location</b>	Data is stored in FACTS		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>	Forest Wildlife Biologist		
<b>Notes and References</b>	Determine if we are working towards meeting Ojectives 1f, 2e, and 26f		

<b>Item Name</b>	Vegetation: Hardwood Management		
<b>Item ID</b>	22	<b>Priority</b>	A/B
<b>Keywords</b>	Timber, Hardwood, Even-Aged, Vegetation		
<b>Monitoring Question</b>	To what extent are northern hardwoods being managed to work toward the desired mix of even-aged and uneven-aged stands?		
<b>Driver</b>	Goal 15		
<b>Methods</b>	Query FACTS for acres of northern hardwoods harvested by silvicultural cutting methods. Link with GIS to determine acres by MA and ELTP. Query GIS stand layer in SDE for Silvicultural long-term objectives. (Should review to make sure all entries for silvicultural long-term objectives had NEPA decisions)		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Salary to query data, analyze in GIS and write report.		
<b>Data Storage Method and Location</b>	Silvicultural cutting methods are stored in FACTS layer. Long term silvicultural objectives are stored in GIS stand layer, and attributes from MA and ELTP layers.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Are we working towards meeting Goal 15 of the Forest Plan by managing northern hardwoods based on their ecological capability, and providing a mix of uneven-aged and even-aged conditions.		

<b>Item Name</b>	Vegetation: Aspen/Paper Birch Management		
<b>Item ID</b>	23	<b>Priority</b>	A/B
<b>Keywords</b>	Ecosystem Restoration, Aspen, Birch, DFC, Vegetation		
<b>Monitoring Question</b>	To what extent are aspen forest type acres being maintained through regeneration activities to meet Forestwide and management area objectives?		
<b>Driver</b>	Goal 16, Objectives 16a and 16b		
<b>Methods</b>	Query FACTS for acres of aspen regenerated. Query FSVEG for aspen age class distribution to determine if we are meeting ruffed grouse habitat requirements.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	700	<b>PFT Cost:</b>	700
<b>Cost Explanation:</b>	Salary to query and summarize data and write report.		
<b>Data Storage Method and Location</b>	Acres of aspen and paper birch regenerated are stored in FACTS. Age class info is stored in FSveg.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>	Forest Wildlife Biologist		
<b>Notes and References</b>	Are we working towards meeting Goal 16 Objective 16a and Goal 27 Objective 27a.		

<b>Item Name</b>	Vegetation: Long-lived Conifer		
<b>Item ID</b>	24	<b>Priority</b>	A/B
<b>Keywords</b>	Ecosystem Restoration, conifer, long-lived, vegetation		
<b>Monitoring Question</b>	To what extent are long-lived conifer forest types being increased or maintained through regeneration activities to meet Forestwide and management area objectives?		
<b>Driver</b>	Goal 17		
<b>Methods</b>	Query GIS stand layer in SDE for acres of long-lived conifers in year 5 and compare with year 1. Query FACTS for acres of long-lived conifers regenerated through natural and artificial reforestation.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	350	<b>PFT Cost:</b>	350
<b>Cost Explanation:</b>	Salary to query and summarize data and write report.		
<b>Data Storage Method and Location</b>	Silvicultural cutting methods are stored in FACTS. Forest type is stored inGIS stand layer in SDE database.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Are we working towards meeting Goal 17		

<b>Item Name</b>	Vegetation: Short-Lived Conifers		
<b>Item ID</b>	25	<b>Priority</b>	A/B
<b>Keywords</b>	Ecosystem Restoration, Short-Lived Pine, Jack Pine, Spruce, vegetation		
<b>Monitoring Question</b>	To what extent are short-lived conifer forest types being maintained through regeneration activities to meet Forestwide and management area objectives?		
<b>Driver</b>	Goal 17		
<b>Methods</b>	Query GIS stand layer for acres of short-lived conifers in year 5 and compare with year 1. Query FACTS for acres of short-lived conifers regenerated through natural and artificial reforestation.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	350	<b>PFT Cost:</b>	350
<b>Cost Explanation:</b>	Salary to query and summarize data and write report.		
<b>Data Storage Method and Location</b>	Silvicultural cutting methods are stored in FACTS. Forest type is stored in GIS stand layer in SDE database.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>	Forest Wildlife Biologist		
<b>Notes and References</b>	Determine if we are working towards meeting Goal 17, Goal 28 Objective 28a and 28b, and Goal 29 Objective 29a.		

<b>Item Name</b>	Vegetation: Natural and Artificial Restoration		
<b>Item ID</b>	26	<b>Priority</b>	A/B
<b>Keywords</b>	Natural regeneration, Artificial regeneration, DFC, vegetation		
<b>Monitoring Question</b>	To what extent is natural regeneration favored over artificial reforestation to meet Forestwide and management area objectives?		
<b>Driver</b>	Goal 18		
<b>Methods</b>	Query FACTS for acres planted species planted, and acres of natural regeneration. Query GIS stand layer for forest type.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	350	<b>PFT Cost:</b>	350
<b>Cost Explanation:</b>	Salary to query and summarize data and write report.		
<b>Data Storage Method and Location</b>	Acres planted, species planted, and acres of natural regeneration are stored in FACTS. Forest type is stored in GIS stand layer in SDE database.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Meet Goal 18 and objectives 18a and 18b.		

<b>Item Name</b>	Vegetation: Ecological Processes		
<b>Item ID</b>	27	<b>Priority</b>	B
<b>Keywords</b>	Restoration, Disturbance, Ecological Patterns, vegetation		
<b>Monitoring Question</b>	To what extent is Forest management maintaining or restoring conditions that result from or emulate natural ecological patterns and processes such as fire, wind, flooding, and insect and disease outbreaks?		
<b>Driver</b>	Goal 1, Objectives 1a-1e; Goal 2, Objectives 2a-2d; Goals 13, 14, 15, 16, 17, 18, 20, 26, Objectives 39c and 39e		
<b>Methods</b>	Include in a narrative in the annual or 5 year monitoring report. Review VMP's .		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	3500	<b>PFT Cost:</b>	3500
<b>Cost Explanation:</b>	Salary to review NEPA documents and write reports.		
<b>Data Storage Method and Location</b>	N/A. Won't have data to quantify most of this information.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist		
<b>Who (Cooperators)</b>	Forest Wildlife Biologist, Forest Soil Scientist, Forest FMO, Timber Program Manager		
<b>Notes and References</b>	Determine if we are meeting Goal 1, Objectives 1a-1e; Goal 2, Objectives 2a-2d; Goals 13, 14, 15, 16, 17, 18, 20, 26, Objectives 39c and 39e		

<b>Item Name</b>	Vegetation: Ecological Processes		
<b>Item ID</b>	28	<b>Priority</b>	B
<b>Keywords</b>	ECS, Ecological Classification System, Ecosystems, vegetation		
<b>Monitoring Question</b>	To what extent is Forest management utilizing the Ecological Classification System and its components to implement ecosystem based management?		
<b>Driver</b>	Goal 1, Objectives 1a-1e; Goal 2, Objective 2a-2e; Goals 13, 14, 15, 16, 17, 18, 20 and 26		
<b>Methods</b>	<p>Include a narrative in the annual or 5 year monitoring report. State how we use ECS for determining where land management activities take place, mitigation measures or design criteria used based on ECS information. There is no existing protocol to answer this question. There are a number of potential approaches to this question, and many various GIS analysis could design or be used to show the ways that the management prescriptions align with the ecological types. These could be simple or complex, and could graphically depict these concepts.</p> <p>Another and simpler approach might be to simply discuss in a paragraph or two of text within the annual monitoring and evaluation report some examples or samples of utilizing the ECS for ecological management.</p>		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2010		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2&3		
<b>Funding Code</b>	NFVW, NFIM		
<b>Total Cost</b>	5000	<b>PFT Cost:</b>	5000
<b>Cost Explanation:</b>	Salary to review NEPA documents and write reports.		
<b>Data Storage Method and Location</b>	N/A Won't have data to quantify most of this information.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Silviculturist, Forest Soil Scientist		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Determine if we are meeting Goal 1, Objectives 1a-1e; Goal 2, Objective 2a-2e; Goals 13, 14, 15, 16, 17, 18, 20 and 26		

<b>Item Name</b>	Soils		
<b>Item ID</b>	29	<b>Priority</b>	B
<b>Keywords</b>	Soils		
<b>Monitoring Question</b>	To what extent is Forest management affecting soil quality?		
<b>Driver</b>	Goal 1; Goal 20, Objectives 20a-20d; Goals 21, 22 and 23		
<b>Methods</b>	<p>The Ottawa has a protocol in place which is a two step approach to soil quality monitoring.</p> <p>Step 1: Each year, a comprehensive listing of all cutting units operated are gathered and organized by:</p> <ul style="list-style-type: none"> <li>season of operation (Spring, summer, fall and winter)</li> <li>Type of stand</li> <li>Type of management activity( clear cut, selection or thinning, shelterwood, etc)</li> <li>LTA grouping</li> </ul> <p>Each year there has been an emphasis on a particular combination of these features, example: selection or thinnings of hardwoods on till LTAs. Those types are selected from the list, and within that, a percentage are randomly selected for monitoring (usually between 10 to 20%). Additionally, a smaller representation of the other type combinations that were cut is also randomly chosen for monitoring. Step one is a comprehensive visual estimate of surface disturbance factors, based on 4 categories of disturbance. This protocol was an appendix to the first draft of the R 9 soil quality handbook, and was originally from the Wallowa Whitman NF. That appendix was later removed from the R 9 guide, to imply greater flexibility to the forests in choosing a protocol for soil quality monitoring, however the protocol has worked for the Ottawa and can continue to be used.</p> <p>Step two:</p> <p>Any units that were monitored in step 1 and showed possible concerns are transected to get a more quantified measure of surface disturbance.</p> <p>Over the last 3 years the soils folks have followed this approach to soil quality monitoring. The protocol and results have been presented to the Veg team, the Management team, and to a meeting of all R 9 watershed folks including the WO soil scientist, Randy Davis.</p>		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM		
<b>Total Cost</b>		<b>PFT Cost:</b>	
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	Not an official database as of yet. Would track in spreadsheets and word documents as well as paper data collection forms.		
<b>Hyperlink to data location</b>			

<b>Responsibility</b>	Forest Soil Scientist
<b>Who (Cooperators)</b>	Possibly with universities.
<b>Notes and References</b>	We want to know if the effects of our treatment affecting soil quality (directly linked to R9 Soil Quality Handbook, which discusses veg management and fire effects to soil)

<b>Item Name</b>	Watershed Health and Riparian		
<b>Item ID</b>	30	<b>Priority</b>	B
<b>Keywords</b>	Riparian Areas, Transportation, Watershed Improvement		
<b>Monitoring Question</b>	To what extent is Forest management affecting riparian and wetland ecosystems?		
<b>Driver</b>	Goal 3 and Objectives 3a-3f; Goal 20 and Objectives 20b-20f; Goals 21, 22, 23; Goal 24 and Objectives 24a-24c		
<b>Methods</b>	<p>Should wait for MET and will probably result in a national protocol. We recommend using a BMP effectiveness monitoring protocol developed by NE Area Research Station. The monitoring could occur every other year on perhaps 10% of that year's timber sales. In the off year, implementation monitoring could occur, either with the old timber sale monitoring technique the Forest had been using or through documentation of Sale Administrator's daily diaries. The effectiveness monitoring could be accomplished by a small group of people and may include a water person, a soils person, and a timber person. After 5 effectiveness monitoring years have occurred, the frequency may be re-evaluated if BMPs have been shown to be effective. Then we may not need to monitor as much unless we change techniques. Implementation monitoring would then become the focus.</p> <p>Because of the concern with BMP effectiveness monitoring, the NE Area Research Station has been working with eastern NFs, eastern states, FS State and Private, and US EPA to develop a BMP effectiveness monitoring protocol that is scientific, repeatable, truly effectiveness and not implementation monitoring, and has broad applicability. Michigan has not participated with the protocol but Wisconsin has.</p> <p>The FS Washington office may require that all NFs must follow one BMP effectiveness monitoring protocol and has focused attention on the California protocol which is lengthy, has some elements that are not actually effectiveness monitoring but implementation monitoring, and has some elements that are anecdotal and not repeatable. It also monitors every single NF activity from timber management to undeveloped recreation, which broadens the scope of the original concern. NE Research believes their protocol is easier to implement, is more time efficient, focuses on timber management BMPs, can be adapted for any situation on any NF (they work directly with each Forest or state to tweak questions or develop new ones when needed), is objective rather than subjective and is repeatable. NE Research actually trains the Forests on how to do the monitoring. The WO has been taking into consideration the value of some of the other monitoring techniques, including NE Area's protocol and may allow the Forests to stay with proven techniques instead of the CA protocol, although this is still unresolved.</p> <p>Questions in the protocol are in the form of a dichotomous key, largely with quantitative or objective answer choices. Rather than focusing on specific BMPs, this protocol is grounded in the physical and chemical principles from which BMPs have been developed and it focuses on the outcomes of BMPs, such as evaluating whether in-stream sedimentation occurred. The protocol contains multiple sections: (1) general information, which includes socially focused questions, such as landowner types, harvest unit acreage, etc.; (2) water body crossings (i.e., haul roads and skidder crossings) and associated approaches; (3) haul roads located within a riparian or buffer area; (4) chemical pollution prevention; and (5) riparian or buffer areas. Where relevant, each section (e.g., a water body crossing) has a subsection with questions about site attributes, such as slope of the land and specific soil information.</p>		

Timber sales are divided into sample units with sample areas so the monitoring is focused only where forest operations are most likely to contribute or control sediment or act as a conduit for sediment delivery to water bodies, influence shading of water bodies, or alter the hydraulics of water. Consequently, the focus (sample area) is on the water bodies themselves or areas in close proximity to water bodies – the area immediately outside the riparian buffer, the riparian buffer, and the water body crossing.

<b>Frequency of Monitoring</b>	1 to 5 years	
<b>Frequency of Evaluation</b>	1 to 5 years	
<b>Year Scheduled</b>	2010	
<b>Year Last Accomplished</b>		
<b>Type of Monitoring</b>	Category 1	
<b>Funding Code</b>	NFVW	
<b>Total Cost</b>	<input type="text"/>	<b>PFT Cost:</b> <input type="text"/>
<b>Cost Explanation:</b>	<input type="text"/>	
<b>Data Storage Method and Location</b>	Spreadsheet format or database but no home known of in NRIS at this time or any other national database. However, monitoring site locations can be entered in NRIS water. BMP monitoring done with palm pilots set up by research.	
<b>Hyperlink to data location</b>	<input type="text"/>	
<b>Responsibility</b>	Forest Hydrologist	
<b>Who (Cooperators)</b>	State of Michigan - BMP monitoring program, Soil Scientist	
<b>Notes and References</b>	Are activities associated with timber management affecting streams, wetlands, lakes ponds and riparian areas, etc (all aquatic resources)? What is the level of ATV's illegally crossing streams and wetlands within NF ownership?	

<b>Item Name</b>	Wildlife and Fish		
<b>Item ID</b>	31	<b>Priority</b>	A/B
<b>Keywords</b>	Fisheries, Habitat Improvement, Lakes, Streams		
<b>Monitoring Question</b>	To what extent has management maintained or restored the diversity and abundance of native aquatic flora and fauna in streams and lakes in a manner consistent with the capability of the water body?		
<b>Driver</b>	Objectives 2b and 2c; Goal 3 and Objectives 3a-3e; Goal 8 and Objectives 8a-8d; Goal 20 and Objectives 20a-20f; Goals 21, 22, 23; Goal 24 and Objectives 24a-24c, Goals 26, 27, 30, 32, Objective 33a, Goal 34, and Objective 35a		
<b>Methods</b>	Need baseline data. Lots of aquatic organisms and aquatic environments that all require different protocols, although there are lots available, depending on what you want to accomplish. For plants, there is a grid survey method established by Army Corps of Engineers that we could use or modify. There are some other lake methods available, little for streams.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2009		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM, NFWF		
<b>Total Cost</b>		<b>PFT Cost:</b>	
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	Put aquatic animals into NRIS Water, but not plants. Putting it into NRIS would require maintaining a spatial link in GIS. Downside is that it would be clunky to get a summary out of NRIS. May need to maintain data locally too, in Access or Excel. We can put plant data into TESP, for polygons, under the guise of rare plant surveys. Presence/absence only I think, no percent composition.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Fisheries Biologist		
<b>Who (Cooperators)</b>	State monitors water quality using fish and macroinvertebrates. They monitor the entire state so only get up here on a periodic basis. There may be partnership opportunities with GLIFWC or tribes, as well as USF&WS. Volunteer program?		
<b>Notes and References</b>	Is aquatic biodiversity increasing, decreasing or remaining stable in the lakes, streams, and wetlands? Are Ottawa water bodies populated with appropriate species or are we missing components that should be there?		

<b>Item Name</b>	Wildlife		
<b>Item ID</b>	32	<b>Priority</b>	A/B
<b>Keywords</b>	Fisheries, Large Woody Debris, Habitat Improvement, Tribes		
<b>Monitoring Question</b>	To what extent are the key terrestrial and aquatic habitat components (e.g., soft mast, hard mast, snags, down woody material, low dense conifer regeneration) being provided?		
<b>Driver</b>	Goal 1 and Objectives 1a-1f, Goal 2 and Objectives 2a-2e, Objectives 3b and 3d; Objectives 15c and 15e, Objectives 16a and 16b, Goal 17, Objectives 20b and 20f, Goals 21 and 22, Objectives 26a and 26f, Objective 32a and Objective 33a		
<b>Methods</b>	<p>Terrestrial                      Protocol: New protocol – acquire FIA (Forest Inventory Analysis) data, formulate data into usable form, summarize data for report. Use Ottawa NF database for some habitat components. Extrapolate our Forest data to show habitat component trends.                      Approach: Track the acreage and distribution of the various forest types by age and structure. Relate FIA data to forest types/age/structure. Compare the results of the management activities on a fine scale (project level) to the coarse scale (Forest level) of the FIA data. This comparison will be more meaningful as the Forest completes more projects (VMP's). We may be able to do this using our own stand exam data. It's much more accurate at the Forest scale than the FIA data. If we use our own data, we would have to infer the changes to the habitat components. I still haven't received the FIA data summary from the Northern Research station. We may be able to use the FIA data as back-up to our own data (if we ever get a summary).</p> <p>Aquatic                      Use the same protocol and approach for terrestrial habitat using MDNR Data and Ottawa DB (stream/lake inventories).</p>		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>			
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2&3		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>		<b>PFT Cost:</b>	
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	FIA: National DB for FIA, Queries may be stored on the , ONF Wildlife Database; Habitats: Vegetation database reports stored at k:web (??).		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Potential opportunities exist with USFS researchers, State, Universities, and other non-government organizations. May need to request data queries from NC Research Station.		

**Notes and  
References**

What are the trends for key wildlife habitat components on the Forest, and how are we responding to those trends through habitat management?  
Baseline data needs to be established soon. Data may not change dramatically in 5 year intervals that it is collected, therefore once the baseline is established , the data should only need to be onitored intensely every 5 years.

<b>Item Name</b>	Wildlife, Fish and Botany: Native and Desired Non-Native Species - Botany		
<b>Item ID</b>	33a	<b>Priority</b>	B
<b>Keywords</b>	Ecological Conditions, Habitat Improvement,		
<b>Monitoring Question</b>	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (Botany)		
<b>Driver</b>	Goal 1 and Obj 1a-1f; Goal 2 and Obj 2a-2f; Goal 3 and Obj 3a-3f; Goal 8 and Objs 8a-8d; Obj 15a, 15c, 15e; Obj 16a-16b; Goal 17, Goal 20 and Obj 20a-20c, 20e-20f; Goal 22; Goal 22; Goal, Obj 26 26a, 26c, 26f; Obj 27a, Goal 35 and Obj 35a		
<b>Methods</b>	There are existing protocols for measuring plant presence or abundance. We would need to modify and determine which species in particular to look at. Tracking how many once common species become rare is also part of this, which we do this as part of maintaining the RFSS list. The literature gives examples of methods to look for loss of diversity (eg Rooney, Waller)		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2009		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM, NFVW		
<b>Total Cost</b>	5000	<b>PFT Cost:</b>	5000
<b>Cost Explanation:</b>	2 weeks data collection to compare to other sites and to be baseline. 1 wk project setup, evaluation. Outyears, repeat in 5 yr increments.		
<b>Data Storage Method and Location</b>	Probably local storage in Excel or Access. LTSP data may also be useful.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Botanist, Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Waller lab at University of WI-Madison, Tom Rooney (now in Ohio), Jim Meeker (Northland) and GLIFWC. Northern Research Station. FIA		
<b>Notes and References</b>	Are the common and historically present native plants still present on the ONF and not becoming rare? Or has management changed ecological conditions to the point these plants are disappearing (biotic homogenization)?		

<b>Item Name</b>	Wildlife, Fish and Botany: Native and Desired Non-Native Species - BBC		
<b>Item ID</b>	33b	<b>Priority</b>	B
<b>Keywords</b>	Ecological Conditions, Habitat Improvement, BBC		
<b>Monitoring Question</b>	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (BBC)		
<b>Driver</b>	Goal 1 and Obj 1a-1f; Goal 2 and Obj 2a-2f; Goal 3 and Obj 3a-3f; Goal 8 and Objs 8a-8d; Obj 15a, 15c, 15e; Obj 16a-16b; Goal 17, Goal 20 and Obj 20a-20c, 20e-20f; Goal 22; Goal 22; Goal, Obj 26 26a, 26c, 26f; Obj 27a, Goal 35 and Obj 35a		
<b>Methods</b>	We propose to use the complement of bird species monitored each year through the Ottawa Breeding Bird Census (BBC). Some trends in numbers of these species are already apparent from the existing 16-year data set. Habitat information on the permanent plots censused will need to be updated within the next few years to allow us to make habitat inferences in the future. Avian SVC: Vegetation measurements have not been conducted at BBC plots since 1995. The vegetation composition and structure within these plots may have changed substantially since then, and it could therefore be reflected in bird detection trends. Therefore, change in vegetation within these plots should probably be monitored at least every ten years. This work would probably be done by wildlife staff in the late summer and fall, until snow accumulates. NFWF funding of about \$5000 in FY2008.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	5000	<b>PFT Cost:</b>	3000
<b>Cost Explanation:</b>	Conducting annual BBC effort @ Camp Nesbit, 40 volunteer birders \$3500 personnel, \$1500 contract for meals. Remeasure vegetation at 103 BBC plots in 2009 \$5000.		
<b>Data Storage Method and Location</b>	Spreadsheet in K:\web\BBC		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Volunteer Birders,		
<b>Notes and References</b>	Are the common and historically present native animals still present on the ONF and not becoming rare? Or has management changed ecological conditions to the point these plants are disappearing (biotic homogenization)?		

<b>Item Name</b>	Wildlife, Fish and Botany: Native and Desired Non-Native Species - Frogs		
<b>Item ID</b>	33c	<b>Priority</b>	B
<b>Keywords</b>	Ecological Conditions, Habitat Improvement, frogs		
<b>Monitoring Question</b>	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (Frogs)		
<b>Driver</b>	Goal 1 and Obj 1a-1f; Goal 2 and Obj 2a-2f; Goal 3 and Obj 3a-3f; Goal 8 and Objs 8a-8d; Obj 15a, 15c, 15e; Obj 16a-16b; Goal 17, Goal 20 and Obj 20a-20c, 20e-20f; Goal 22; Goal 22; Goal, Obj 26 26a, 26c, 26f; Obj 27a, Goal 35 and Obj 35a		
<b>Methods</b>	Baseline data on frogs is available from the Michigan Frog and Toad Survey, as there are several survey routes within the Ottawa National Forest.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	1400	<b>PFT Cost:</b>	1400
<b>Cost Explanation:</b>	3 frog routes on forest, run 3 times each per year. Reported to MDNR non-game program.		
<b>Data Storage Method and Location</b>	Data sent to MDNR annually.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife biologist		
<b>Who (Cooperators)</b>	MDNR		
<b>Notes and References</b>	Are the common and historically present native animals still present on the ONF and not becoming rare? Or has management changed ecological conditions to the point these plants are disappearing (biotic homogenization)?		

<b>Item Name</b>	Wildlife, Fish and Botany: Native and Desired Non-Native Species - Bobcat		
<b>Item ID</b>	33d	<b>Priority</b>	B
<b>Keywords</b>	Ecological Conditions, Habitat Improvement, Bobcat		
<b>Monitoring Question</b>	To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species? (Bobcat)		
<b>Driver</b>	Goal 1 and Obj 1a-1f; Goal 2 and Obj 2a-2f; Goal 3 and Obj 3a-3f; Goal 8 and Objs 8a-8d; Obj 15a, 15c, 15e; Obj 16a-16b; Goal 17, Goal 20 and Obj 20a-20c, 20e-20f; Goal 22; Goal 22; Goal, Obj 26 26a, 26c, 26f; Obj 27a, Goal 35 and Obj 35a		
<b>Methods</b>	Baseline data on bobcats is available through trapping records maintained by MDNR, which require trappers to register bobcats and indicate the location where the animal was trapped.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2009		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Biologist and GIS time for data input		
<b>Data Storage Method and Location</b>	Probably local storage in PGDB.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	MDNR		
<b>Notes and References</b>	Are the common and historically present native animals still present on the ONF and not becoming rare? Or has management changed ecological conditions to the point these plants are disappearing (biotic homogenization)?		

<b>Item Name</b>	Wildlife/Botany: Species of Viability Concern - Botany		
<b>Item ID</b>	34a	<b>Priority</b>	A/B
<b>Keywords</b>	Regional Forester Sensitive Species, RFSS, habitat, populations		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Forester sensitive Species) and moving toward desired habitat conditions for these species? (Botany)		
<b>Driver</b>	Goal 26 and Objective 26b; Goal 30 and Objectives 30a-30b; Goal 31 and Objectives 31a-31b; Objective 34a; Goal 35 and Objective 35b-35c		
<b>Methods</b>	Botany: One protocol developed for NRIS TESP, consisting of element occurrence re-visits. Recommend 5 year rotation through Forest occurrences so that each site is checked every 5 yrs. Critical sites may require more frequent re-visit. Stable robust sites may be suitable for less frequent re-visits.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM, NFWF		
<b>Total Cost</b>	8000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Would likely contract \$8000 plus 3 days COR time (\$1000) or have a STEP/Intern do for \$8000.		
<b>Data Storage Method and Location</b>	MNFI database, NRIS TESP and/or ArcMap. SVC Habitats: Vegetation database reports stored at k:\web\habitats.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Botanist		
<b>Who (Cooperators)</b>	Limited opportunities, but some with MNFI, DNR perhaps.		
<b>Notes and References</b>	Are there increases in numbers of plants listed as SVC? This translates to keeping track of our element occurrences and their status through time.		

<b>Item Name</b>	Wildlife/Botany: Species of Viability Concern - BBWP/SPGR		
<b>Item ID</b>	34b	<b>Priority</b>	A/B
<b>Keywords</b>	Regional Forester Sensitive Species, RFSS, habitat, populations, Black Backed		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (BBWP/SPGR)		
<b>Driver</b>	Goal 26 and Objective 26b; Goal 30 and Objectives 30a-30b; Goal 31 and Objectives 31a-31b; Objective 34a; Goal 35 and Objective 35b-35c		
<b>Methods</b>	BBWP and SPGR surveys would be conducted concurrently as they share similar habitats, and should be surveyed approximately every 3-5 years. These surveys would be conducted in the late spring-early summer. The protocol used by Kaplan and Tischler (2002) to model habitat and conduct surveys on the Forest would be used as the foundation for constructing the monitoring design of these species.		
<b>Frequency of Monitoring</b>	5 years		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2009		
<b>Year Last Accomplished</b>	2002		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	2500	<b>PFT Cost:</b>	0
<b>Cost Explanation:</b>	This would cost about \$2500 for field work and a written report, to be conducted every 5 or so years.		
<b>Data Storage Method and Location</b>	Vegetation database reports stored at k:\web\tes\.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Common Coast Research		
<b>Notes and References</b>	What are the population trends for individual SVC on the Forest, and how are we responding to those trends through habitat management? Citation for report Kaplan and Tischler 2002.		

<b>Item Name</b>	Wildlife/Botany: Species of Viability Concern - BTBW		
<b>Item ID</b>	34c	<b>Priority</b>	A/B
<b>Keywords</b>	Regional Forester Sensitive Species, RFSS, habitat, populations		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (BTBW)		
<b>Driver</b>	Goal 26 and Objective 26b; Goal 30 and Objectives 30a-30b; Goal 31 and Objectives 31a-31b; Objective 34a; Goal 35 and Objective 35b-35c		
<b>Methods</b>	The BTBW would continue to be monitored via the annual BBC. A detailed analysis of BBC data should be conducted at least every ten years. This would include comparing ONF BBC trend data with that of other Forests in the region that collect such data. The last such effort was in 2003. BBC costs the Forest about \$5000 annually, though the volunteer labor is worth more than that. We intend to continue monitoring all the BBC plots annually for the foreseeable future. A detailed analysis in 2003 cost the Forest about.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	0	<b>PFT Cost:</b>	0
<b>Cost Explanation:</b>	Covered under #33b BBC. 5 year data analysis \$1500, though the contractor did far more work than we were able to pay for.		
<b>Data Storage Method and Location</b>	SVC: k:\web: ONF BBC database;		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Volunteer birders		
<b>Notes and References</b>	Are SVC animals recovering? Are there increases in numbers of animals listed as SVC? This translates to keeping track of our element occurrences and their status through time.		

<b>Item Name</b>	Wildlife/Botany: Species of Viability Concern - Loon		
<b>Item ID</b>	34d	<b>Priority</b>	A/B
<b>Keywords</b>	Regional Forester Sensitive Species, RFSS, habitat, populations, loon		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Loon)		
<b>Driver</b>	Goal 26 and Objective 26b; Goal 30 and Objectives 30a-30b; Goal 31 and Objectives 31a-31b; Objective 34a; Goal 35 and Objective 35b-35c		
<b>Methods</b>	The common loon would continue to be monitored annually through partnership efforts. The protocol for this survey was established some years ago. Through the survey, information is gathered on territory occupancy by adult loons and production of chicks. This information can be used to help determine trends in loon productivity over time, as well as to help identify lakes where adverse impacts of some type may be causing nest failure.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	8000	<b>PFT Cost:</b>	4000
<b>Cost Explanation:</b>	Costs are about \$4000 for a contract with CommonCoast Research and another \$4000 for our personnel doing field work and data management.		
<b>Data Storage Method and Location</b>	Forest GIS library in PGDB		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Common Coast Research and volunteer loon rangers		
<b>Notes and References</b>	Are SVC animals recovering? Are there increases in numbers of animals listed as SVC? This translates to keeping track of our element occurrences and their status through time		

<b>Item Name</b>	Wildlife/Botany: Species of Viability Concern - Forest Raptors		
<b>Item ID</b>	34e	<b>Priority</b>	A/B
<b>Keywords</b>	Regional Forester Sensitive Species, RFSS, habitat, populations		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Raptors)		
<b>Driver</b>	Goal 26 and Objective 26b; Goal 30 and Objectives 30a-30b; Goal 31 and Objectives 31a-31b; Objective 34a; Goal 35 and Objective 35b-35c		
<b>Methods</b>	Pre-project presence/absence surveys for raptor SVC are conducted for most all Forest projects. These projects tend to be quite large in scale and widely distributed across the Forest, so a substantial portion of available nesting habitat on the Forest is being monitored to some extent, and this will continue to expand with each subsequent project. All known and newly found active raptor SVC nests will be GPS'd and monitored for use on an annual basis by Forest personnel and/or volunteers until such nests are determined to be no longer active. Fledging success will be monitored whenever possible.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFTM, NFWF		
<b>Total Cost</b>	22000	<b>PFT Cost:</b>	22000
<b>Cost Explanation:</b>	Forest-wide, we spend \$15,000-\$20,000 annually on pre-project raptor surveys, most of which is funded by Timber codes.		
<b>Data Storage Method and Location</b>	PGDB and Excel spd in k:\web\tes		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Limited oportunites, but some with MNFI, DNR perhaps.		
<b>Notes and References</b>	Are SVC animals recovering? Are there increases in numbers of animals listed as SVC? This translates to keeping track of our element occurences and their status through time		

<b>Item Name</b>	Wildlife/Botany: Species of Viability Concern - Wood Turtles		
<b>Item ID</b>	34f	<b>Priority</b>	A/B
<b>Keywords</b>	Regional Forester Sensitive Species, RFSS, habitat, populations, turtles		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Turtles)		
<b>Driver</b>	Goal 26 and Objective 26b; Goal 30 and Objectives 30a-30b; Goal 31 and Objectives 31a-31b; Objective 34a; Goal 35 and Objective 35b-35c		
<b>Methods</b>	Wood turtle surveys would be conducted annually with cooperation from researchers and volunteers. In-depth data analyses and reports would likely be conducted every 5 years by external parties. A current monitoring protocol exists for determining nest success. Nest predation of wood turtle eggs can be exceedingly high. Predation of hatchlings and juveniles can also be high, but it would be difficult to monitor. The rate of nest predation can be determined through this effort, and when possible, the predominant predator species.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	15000	<b>PFT Cost:</b>	8500
<b>Cost Explanation:</b>	Contract costs approx \$5000 annually 2004-2006 (NFWF), included field work, data analysis and training of our staff and volunteers. Volunteer expenses = \$1500. About \$8500 of additional NFWF funds to pay our staff to do field work and data management.		
<b>Data Storage Method and Location</b>	Excel spd's etc in K:\web\tes		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Limited oportunitites, but some with MNFI, DNR perhaps.		
<b>Notes and References</b>	Are SVC animals recovering? Are there increases in numbers of animals listed as SVC? This translates to keeping track of our element occurences and their status through time. Report citations Casper and Beuch 2005; Casper and Beuch 2006		

<b>Item Name</b>	Wildlife/Botany: Species of Viability Concern - Osprey		
<b>Item ID</b>	34g	<b>Priority</b>	A/B
<b>Keywords</b>	Regional Forester Sensitive Species, RFSS, habitat, populations, osprey		
<b>Monitoring Question</b>	To what extent is Forest management contributing or responding to the conservation of species of viability concern (such as Regional Foresters Sensitive Species) and moving toward desired habitat conditions for these species? (Osprey)		
<b>Driver</b>	Goal 26 and Objective 26b; Goal 30 and Objectives 30a-30b; Goal 31 and Objectives 31a-31b; Objective 34a; Goal 35 and Objective 35b-35c		
<b>Methods</b>	Osprey nest surveys would be conducted annually with cooperation from volunteers. Roll annual data into eagle, loon, osprey PGDB.		
<b>Frequency of Monitoring</b>	Annually		
<b>Frequency of Evaluation</b>	Annually		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	1500	<b>PFT Cost:</b>	1500
<b>Cost Explanation:</b>	Majority of field data collection contributed by volunteers. Costs are for tech field work and data input.		
<b>Data Storage Method and Location</b>	PGDB and Excel spd in k:\web\tes		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Volunteers		
<b>Notes and References</b>	Are SVC animals recovering? Are there increases in numbers of animals listed as SVC? This translates to keeping track of our element occurrences and their status through time.		

<b>Item Name</b>	Wildlife: Threatened and Endangered Species		
<b>Item ID</b>	35	<b>Priority</b>	A/B
<b>Keywords</b>	Threatened and Endangered Species, TES, habitat, populations, Eagle, Kirtlands		
<b>Monitoring Question</b>	To what extent is forest management contributing to the conservation of threatened and endangered species and moving toward desired habitat conditions and populations trends for these species?		
<b>Driver</b>	Objective 18b, Objectives 26b and 26d; Goal 28		
<b>Methods</b>	<p>Eagle: we will be dependant upon other parties to gather reproductive data for our Ottawa eagle nesting territories. Getting these data from the other parties in a timely manner will be critical. In addition, we will probably have to implement some sort of on-Forest reporting system to capture events that result in reproductive failures, and to report illegal activities. This reporting system will be far from complete, and dependant upon a Forest employee being in the right place at the right time, and then reporting that event to the biologists.</p> <p>Lynx: see separate monitoring question. Furthermore, implementation monitoring of eagle nest protections may be warranted, and protocols would need to be developed. The other 2 MI Forests have the same set of protections for eagle, for example, so there may be a common set of monitoring protocols that we could develop across Michigan Forests.</p> <p>Kirtland's warbler: Monitoring implementation of stand management measures is merely a FACTS query exercise. Monitoring effectiveness of our actions will involve annual Kirtland's warbler census in suitable nesting stands. The USFWS organizes this event each year, and has a protocol developed.</p>		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF		
<b>Total Cost</b>	1800	<b>PFT Cost:</b>	1800
<b>Cost Explanation:</b>	Annually obtain eagle flight data from Clemson Univ and FWS. Incorporate these data in Forest PGDB \$1500. FACTS queries for JP harvest activities. \$300		
<b>Data Storage Method and Location</b>	<p>Eagle: we'll have to archive the annual reports submitted to FWS. There may be something we want to put in the M&amp;E Report too (we always have).</p> <p>Lynx: see separate monitoring question for lynx.</p> <p>Kirtland's warbler: we will want to put the results of our FACTS queries in the M&amp;E Report. If/when we begin participating in the annual KW census, our results will get rolled up into the annual FWS report on KW numbers and distribution.</p>		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Eagle: Obviously, close interaction with FWS will be required. Furthermore, interaction with MDNR, university researchers and others. Kirtland's Warbler: MDNR Forest Management Division and the Wildlife Division		

**Notes and  
References**

This is a 2-part question: Programmatically speaking, are we implementing the Goals and Objectives (and Standards and Guidelines) for federally-listed species as we plan and implement our projects (i.e. compliance monitoring; did we do what we said we were going to do?). Also, are these measures EFFECTIVE in attaining desired habitat conditions and contributing to recovery of listed species?

Specifically, we have 3 listed species at this time, with different monitoring requirements for each.

Eagle: For eagle, we owe USFWS an annual monitoring reports (due January 31st of each year) that satisfy the specifics detailed in page 95 of the Biological Opinion (for eagles). Because we do not have documented occurrence of lynx or Kirtland's warbler at this time, we do not have USFWS-imposed monitoring requirements per the Biological Opinion for those species.

Lynx: We have a lynx-specific monitoring question contained in our Plan (see page 4-20 of Plan), which will be addressed under separate monitoring template.

Kirtland's Warbler: Relative to Kirtland's warbler, Goal 28, with Objectives 28(a) and 28(b), specifically directs the Forest to manage 4,000-5,000 acres of jack pine for KW, and to regenerate 1-3 patches of jack pine of 300-550 acres each every decade, specifically to meet nesting needs of KW. Therefore, we will be expected to do this, and we can use our forest database and GIS tools to monitor these objectives.

<b>Item Name</b>	Wildlife: Threatened and Endangered Species		
<b>Item ID</b>	36	<b>Priority</b>	A/B
<b>Keywords</b>	Open road density, RHA, Habitat		
<b>Monitoring Question</b>	To what extent is Forest management affecting the density of open roads within the Remote Habitat Area, and moving toward the Forest density objective of < 1.0 miles/square mile?		
<b>Driver</b>	Objectives 31a and 31b		
<b>Methods</b>	Existing GIS database exercise. The roads layer is updated annually to reflect open/closed road status due to Vegetative Management Projects and other NEPA decisions affecting road densities.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFWF, NFIM		
<b>Total Cost</b>	350	<b>PFT Cost:</b>	350
<b>Cost Explanation:</b>	Intersect roads w/ MA's and calculate road densities.		
<b>Data Storage Method and Location</b>	The annual monitoring report would serve as the record of storage.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		
<b>Who (Cooperators)</b>	Forest Engineer		
<b>Notes and References</b>	Self explanatory. We want to monitor the progress towards meeting the objective of less than 1.0 mile/mi sq of National Forest lands in the area delineated as remote habitat.		

<b>Item Name</b>	Wildlife: Threatened and Endangered Species		
<b>Item ID</b>	37	<b>Priority</b>	A/B
<b>Keywords</b>	Wildlife, Habitat, Canada lynx		
<b>Monitoring Question</b>	To what extent is Forest management contributing to the development and maintenance of foraging and denning habitat, and connectivity of habitats for Canada lynx?		
<b>Driver</b>	Objectives 1b-1e, Objectives 2a-2c, Objectives 16a-16b, Goal 17, Objectives 20b-20c; Objectives 26a-26c, Objective 27a, Objectives 28a-28b, Goal 29, Objectives 31a-31b and Objectives 39c-39d		
<b>Methods</b>	<p>Monitoring for lynx occurrence: We will continue with a modest effort, following our winter mammal tracking protocol, to look for lynx sign in high-quality hare habitat, irrespective of projects. These areas have already been identified by the biologist cadre, and include: Primary areas: 1. Pomeroy area 2. Matchwood area 3. Baltimore area 4. Baraga Plains Secondary areas (smaller concentrations of high quality hare habitats): 5. Thrush Lake area 6. FR690/Norwich Road area</p> <p>Foraging: We would have to design a FACTS query to get at the key habitat parameters. There is a well-developed habitat model for hares that we could readily adopt to get a handle on hare use in the treated stands, as a means of ground-truthing our FACTS assumptions.</p> <p>Denning: This is a FACTS query for over-mature conifer stands and events that have caused significant tree mortality in conifer stands of any size/density class.</p> <p>Connectivity: We would have to develop a query as described above.</p>		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	NFIM, NFTM		
<b>Total Cost</b>	13000	<b>PFT Cost:</b>	13000
<b>Cost Explanation:</b>	Forest-wide tracking surveys \$8000, pre-project surveys \$4000, and data mngmgt, analysis and writeup \$1000		
<b>Data Storage Method and Location</b>	<p>Lynx presence: We retain our tracking reports on the K:\web\lynx\Forest-wide_survey_reports folder.</p> <p>Foraging: We have the initial baseline results of the hare and squirrel HIS models in our Plan project file. We would periodically re-run the HIS models to compare results, and discuss changes in the M&amp;E Report.</p> <p>Denning: Discuss results in M&amp;E Report</p> <p>Connectivity: Discuss results in M&amp;E Report.</p>		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist		

**Who (Cooperators)** Foraging: GLIFWC. Denning: Again, since GLIFWC has shown strong interest in our lynx and hare proposals, we should involve them in the denning analysis as well.  
Connectivity: Same thing....

**Notes and References** This is a multi-part question, with varying levels of effort needed to answer it entirely.  
Monitoring for lynx occurrence: We are expected to continue looking for lynx at a Forest-wide scale under the new Plan. The level of pre-project snow tracking is expected to decrease, however.  
Foraging habitat: This is essentially a timber management issue- we have guidance in the Plan to recruit young stands of dense conifer cover for snowshoe hares. Monitoring this issue can be satisfied with a FACTS query of silvicultural treatments and stocking surveys in those same stands, with some ground-truthing to ensure stocking densities are adequate for hares, document hare use, etc.. We could incorporate our snowshoe hare habitat model to add credence to the ground-truthing effort. Of the 3 facets to this question, foraging habitat development is far and away the priority.  
Denning habitat: with this monitoring question, we are essentially trying to track dense tangles of downed conifer trees. Between the unsuitable lands aging and the blowdown events and insect/disease events going on across the Forest, denning habitat is not expected to be limiting in the foreseeable future. Monitoring this facet could be satisfied via a FACTS query.  
Connectivity: There are few areas where the forest cover is fragmented to the point that lynx movement across the Ottawa landscape is inhibited. We could design a time-series GIS analysis that reveals whether or not we are exacerbating fragmentation issues in these few areas.

<b>Item Name</b>	Wildlife: Off-highway Vehicles		
<b>Item ID</b>	38	<b>Priority</b>	A/B
<b>Keywords</b>	OHV's, ATV's, Wildlife, Habitats		
<b>Monitoring Question</b>	To what extent are OHVs producing impacts to wildlife or wildlife habitats?		
<b>Driver</b>	Objectives 8a-8c, Goals 9 and 26; Objective 26b, Goals 30 and 31		
<b>Methods</b>	<p>Protocol: New protocol – use road density data (routes and trails open to OHVs), track changes in data, and summarize data for report. We also need actual use data.</p> <p>Approach: Track the changes in route density (mi/mi<sup>2</sup>). Relate route density data to potential impacts to wildlife or wildlife habitat. (See also OHV Impacts to WL write-up in FP FEIS, MIS and SVC sections). What are the trends for impacts to wildlife or wildlife habitats? What are the impacts? And how do we measure them? How will we change our management activities to minimize impacts?</p>		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>			
<b>Total Cost</b>		<b>PFT Cost:</b>	
<b>Cost Explanation:</b>			
<b>Data Storage Method and Location</b>	National Database for NVUM (ATM), Ottawa NF roads data, national rec user DB		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Wildlife Biologist, Forest Recreation		
<b>Who (Cooperators)</b>	Potential opportunities exist with USFS researchers, State, Universities, and other non-government organizations. There are opportunities to partner with OHV clubs, MDNR, watershed health monitoring, and rec user studies.		
<b>Notes and References</b>	What are the trends for impacts to wildlife or wildlife habitats? What the impacts? And how do we measure them? How will we change our management activities to minimize impacts?		

<b>Item Name</b>	Minerals		
<b>Item ID</b>	39	<b>Priority</b>	A
<b>Keywords</b>	Minerals, Economic growth		
<b>Monitoring Question</b>	To what extent is the Forest providing minerals and mineral materials to help support economic growth?		
<b>Driver</b>	Goal 36		
<b>Methods</b>	Federal Minerals: summarize number of NEPA decisions that resulted in approved operating plans for prospecting or consent for actual prospecting. Private minerals: count number of concurrence letters and permits issued for exploration. Mineral Materials: Use SUDS DB to determine number of permits issued. Count number of pit development and expansion plans completed.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2007		
<b>Type of Monitoring</b>	Category 2&3		
<b>Funding Code</b>	NFMG		
<b>Total Cost</b>	2000	<b>PFT Cost:</b>	2000
<b>Cost Explanation:</b>	Salary for 6-8 hrs to track information		
<b>Data Storage Method and Location</b>	NEPA documents, SUDS		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Lands Program Manager		
<b>Who (Cooperators)</b>	Forest Geologist		
<b>Notes and References</b>	This information would be of interest to the mining industry and perhaps local governments as well as tribes and environmental groups.		

<b>Item Name</b>	Land Adjustment		
<b>Item ID</b>	40	<b>Priority</b>	A/B
<b>Keywords</b>	Lands, Ownership,		
<b>Monitoring Question</b>	To what extent has land ownership adjustment facilitated forest management activities?		
<b>Driver</b>	Goal 40		
<b>Methods</b>	Land through purchase as tracked by LWCF submission to RO or from Critical Inholding request. Land acquired or conveyed through exchange as tracked through Feasibility Analysis and NEPA documents. For 2007 land conveyed through conveyance authority. Would likely be presented as a narrative.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2&3		
<b>Funding Code</b>	NFLM		
<b>Total Cost</b>	300	<b>PFT Cost:</b>	300
<b>Cost Explanation:</b>	Salary cost to pull information from project folders and case packages.		
<b>Data Storage Method and Location</b>	LWCF reports, Critical Inholding requests, NEPA documents, and feasibility analysis.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Lands Program Manager		
<b>Who (Cooperators)</b>	Realty Specialist		
<b>Notes and References</b>	Would be a relatively easy narrative to prepare to show the public the benefits of land adjustments.		

<b>Item Name</b>	Fire		
<b>Item ID</b>	41	<b>Priority</b>	A/B
<b>Keywords</b>	Ecosystem Restoration, Fire, Hazardous Fuels		
<b>Monitoring Question</b>	To what extent is forest management meeting hazardous fuels objectives?		
<b>Driver</b>	Goal 39, Objectives 39a-39b and 39d, one of the Chiefs 4 threats.		
<b>Methods</b>	The "Interagency Fire Regime Condition Class" protocol should be applicable for this question. Need the condition class of the pine dominated ecosystems described by Cleland et.al. as FR1 and represented on the Ottawa by the Baraga Sand Plains, (212 Jn 14) approximately 9,100 acres and the landscape ecosystems characterized as FR2, Sidnaw Outwash Plains (212 Jn 11) and the Vilas-Oneida Outwash Plains (212 Jn 01) approximately 38,500 acres.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>	2006		
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	WFHF		
<b>Total Cost</b>	600	<b>PFT Cost:</b>	600
<b>Cost Explanation:</b>	Salary to pull report and other info.		
<b>Data Storage Method and Location</b>	FACTS database and the annual monitoring report would be the record of storage. CIS coverage of Fire Regime classes.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Fire Management Officer		
<b>Who (Cooperators)</b>	Fire Management Officer		
<b>Notes and References</b>	We need to identify the extent and severity of hazardous fuels on the Forest and how we are managing them.		

<b>Item Name</b>	Fire		
<b>Item ID</b>	42	<b>Priority</b>	A/B
<b>Keywords</b>	Fire, Fuel Reduction, Ecosystem Restoration		
<b>Monitoring Question</b>	To what extent is wildland fire (natural and prescribed) used to maintain or mimic natural processes, and/or restore natural processes and functions to ecosystems?		
<b>Driver</b>	Goal 8, Goal 10 and Objectives 10a-10b, Goal 26, Goal 28 and Objectives 39c and 39e		
<b>Methods</b>	Track the number of burn plans for natural and/or pre-scribed fire/acres treated. The "Interagency Fire Regime Condition Class" protocol is applicable for determining how many acres are suitable to monitor for this question. Need the condition class of the pine dominated ecosystems described by Cleland et.al. as FR1 and represented on the Ottawa by the Baraga Sand Plains, (212 Jn 14) approximately 9,100 acres and the landscape ecosystems characterized as FR2, Sidnaw Outwash Plains (212 Jn 11) and the Vilas-Oneida Outwash Plains (212 Jn 01) approximately 38,500 acres. The acres described above which are condition class 3 would be eligible for ecosystem restoration through fire.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	WFHF		
<b>Total Cost</b>	600	<b>PFT Cost:</b>	600
<b>Cost Explanation:</b>	Salary to pull report and other info.		
<b>Data Storage Method and Location</b>	FACTS database and the annual monitoring report would be the record of storage.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Fire Management Officer		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	On an annual basis, how many acres were allowed to burn from either natural or prescribed ignitions in order to promote natural processes? How many acres of Condition Class 3 lands were restored through natural or prescribed fire.		

<b>Item Name</b>	Fire		
<b>Item ID</b>	43	<b>Priority</b>	A/B
<b>Keywords</b>	Fire, Fuel Reduction		
<b>Monitoring Question</b>	How have fire suppression tactics been implemented on the Forest relative to the threat posed to human life, property, or threatened resources?		
<b>Driver</b>	Goal 39		
<b>Methods</b>	Summarize the fires occurring any given year categorized by management area, ownership, size, suppression versus WFU, resource damages/loss, etc. Need annual report that describes each fire including; size, location, habitat, date/time of discovery, estimated date/time of ignition, source of ignition, cost to suppress, value of resources lost, etc.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	WFHF		
<b>Total Cost</b>	2000	<b>PFT Cost:</b>	2000
<b>Cost Explanation:</b>	Salary to do a GIS exercise to summarize fires as outlined in Methods		
<b>Data Storage Method and Location</b>	If not chosen as annual monitoring record to be part of annual monitoring report, should be annual internal report to be available as records for next revision.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Fire Management Officer		
<b>Who (Cooperators)</b>			
<b>Notes and References</b>	Summarize the fires occurring any given year categorized by management area, ownership, size, suppression vs WFU, resource damages/loss, etc.		

<b>Item Name</b>	Transportation		
<b>Item ID</b>	44a	<b>Priority</b>	B
<b>Keywords</b>	Roads, Decommission		
<b>Monitoring Question</b>	To what extent are the unneeded roads being decommissioned?		
<b>Driver</b>	Goal 41		
<b>Methods</b>	Report on the # of acres being inventoried each year for projects and whether the appropriate management decisions are being made for all the roads inventoried. Assumption is that unneeded roads are being decommissioned.		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2007		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	CMRD		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Salary to assess project area road inventories. Check to see if designations being made in NEPA documents are carried through to INFRA database.		
<b>Data Storage Method and Location</b>	INFRA Travel Routes, NEPA project files, GIS layer for project areas.		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Engineer		
<b>Who (Cooperators)</b>	NEPA ID Teams		
<b>Notes and References</b>	Total miles/year that are being decommissioned as reported through NEPA projects are not necessarily a measure of whether unneeded roads are being decommissioned.		

<b>Item Name</b>	Transportation		
<b>Item ID</b>	44b	<b>Priority</b>	B
<b>Keywords</b>	Roads, closures, decommission		
<b>Monitoring Question</b>	To what extent are road closures on decommissioned roads effective in prohibiting unauthorized motor vehicle use?		
<b>Driver</b>	Goal 41		
<b>Methods</b>	Reports of closures being compromised. Can use LEMARS DB if incidents being reported. Monitor w/ KV in FACTS?		
<b>Frequency of Monitoring</b>	1 to 5 years		
<b>Frequency of Evaluation</b>	1 to 5 years		
<b>Year Scheduled</b>	2008		
<b>Year Last Accomplished</b>			
<b>Type of Monitoring</b>	Category 2		
<b>Funding Code</b>	CMRD		
<b>Total Cost</b>	1000	<b>PFT Cost:</b>	1000
<b>Cost Explanation:</b>	Salary to gather and report data.		
<b>Data Storage Method and Location</b>	LEMARS database		
<b>Hyperlink to data location</b>			
<b>Responsibility</b>	Forest Engineer		
<b>Who (Cooperators)</b>	LEO's, District Rec teams,		
<b>Notes and References</b>			