MBRTB Proposed Monitoring Plan

INTRODUCTION ON FOREST PLAN MONITORING UNDER THE 2012 RULE

INTRODUCTION

The 2012 Planning Rule includes a requirement that all Forests that are not in plan revision update their forest plan monitoring within four years, or as soon as is practicable (36 CFR 219.12c). This document updates our forest plan monitoring to meet this requirment of the 2012 rule.

THE ROLE OF MONITORING UNDER THE 2012 PLANNING RULE

The National Forest Management Act (NFMA) requires "continuous monitoring and assessment in the field" to evaluate "the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land" (16 USC 1604(g)(3)(C)). The 2012 Planning Rule includes a three-part iterative cycle of assessment, planning, and monitoring in a continuous feedback loop. Monitoring is meant to support the assessment process and evaluate plan implementation over time. This planning framework is designed to "inform integrated resource management and allows the Forest Service to adapt to changing conditions, including climate change, and improve management base on new information and monitoring" (§ 219.5 (a)).

SPECIFIC REQUIREMENTS FOR MONITORING UNDER THE 2012 RULE

A monitoring plan will consist of "monitoring questions and associated indicators" which "must be designed to inform the management of resources on the plan area, including by testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plan's desired conditions or objectives" (219.12 (a)(2)). The monitoring program must also be "coordinated with the regional forester and Forest Service State and Private Forestry and Research and Development" (§ 219.12 (a)(1)) and support and align with a broader-scale monitoring program, to be developed at the regional level, that will address monitoring questions at a geographic scale broader than one plan area (§ 219.12 (b)). Furthermore, in developing the monitoring plan, the responsible official should also provide opportunities for public participation, "taking into account the skills and interests of affected parties", as well as the scope, methods, forum and timing of those opportunities (§ 219.4 (a)).

Monitoring may involve evaluating: a) if standards and guidelines are implemented (implementation monitoring); b) if management actions and standards and guidelines are effective in achieving goals and objectives (effectiveness monitoring); and c) the long term trend and condition of key resources (condition or surveillance monitoring). <u>At a minimum, the plan monitoring program must contain one or more monitoring questions and associated indicators addressing the following eight items (see §219.12[a][5][i-viii]):</u>

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

A monitoring evaluation report is to be produced and made available to the public every two years (§ 219.12 (d)). It "must indicate whether or not a change to the plan, management activities, or the monitoring program, or a new assessment, may be warranted based on the new information… [and] must be used to inform adaptive management of the plan area" (§ 219.12 (d)(2)). The monitoring program and evaluation report are part of the administrative record (§ 219.14 (b)) and the Forest Supervisor must document "how the best available scientific information was used to inform planning, the plan components, and other plan content, including the plan monitoring program" (§219.13 (a)(4)). Forests will also have to document how Best Available Scientific Information (BASI) is used to develop the monitoring plan and specific monitoring items.

MONITORING PLAN COMPONENTS

The following section details the specific components of the proposed Monitoring Plan. Specific monitoring items are organized by the required categories of monitoring questions identified in the planning rule (§ 219.12), with at least one monitoring question and indicator for each category. Each question presented in the final Monitoring Plan will include a brief description of the desired condition or objective each monitoring item is associated with, followed by the question, a description of the specific indicator or metric used to answer or evaluate the monitoring question, the data source or measurement protocol associated with the monitoring item, and finally, a rationale or justification for the specific monitoring indicator and protocol. This will ensure that the requirements for best available science are met. ***The proposed Monitoring Plan contains monitoring questions and indicators only; protocols and other relevant information are currently being developed.***

Monitoring Question	Indicators
i. Status of select watershed conditions	
1. What are watershed conditions and trends on the planning unit?	• Condition class: Number and percent of watersheds in each condition class • Water quality: Number of streams on state threatened or impaired lists and state monitoring and evaluation lists; macroinvertebrate sampling • Presence/absence of native fish species • Stream flows: Current versus historic flows; number of water developments with stream flow or water body level protection provisions • Watershed projects: number and acres of watershed improvement projects completed or other projects that meet watershed improvement criteria as reported in the US Forest Service (USFS) Watershed Improvement Tracking (WIT) database. • Implementation and effectiveness of best management practices to protect water quality
ii. Status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems	
2. How are major vegetation types on the planning unit changing over time?	• Cover type, ecological site conditions, age class, size class, structural stages of forest, shrubland, and grassland vegetation.
3. Are riparian and wetland conditions in the planning unit meeting or moving towards desired conditions as described in the Forest and Grassland Plans?	• Riparian ecosystems monitoring data • Presence/absence data for select aquatic and amphibian species • Groundwater dependent ecosystem monitoring data (i.e., springs, fens)
4. How are environmental stressors and management activities affecting ecological function and integrity of sagebrush ecosystems on the planning unit?	• Reference Sage-grouse Record of Decision, Implementation Plan and associated monitoring • Diversity, species richness, distribution, and trends of sagebrush bird communities

Monitoring Question	Indicators
iii. Status of focal species to assess the ecological conditions required under 219.9	
5. What is the status of black-tailed prairie dog populations as an indicator for short-grass prairie ecosystem integrity?	• Prairie dog town extent, density, and occupancy • Current vs. historic population levels • Associated species occupancy (mountain plover, burrowing owl, swift fox, raptors) • Sylvatic plague extent/changes
6. What do red squirrel, golden-crowned kinglet, pygmy nuthatch, and common flicker populations tell us about the extent and condition of mid to late successional forested ecosystems on the planning unit?	• Extent, density and occupancy of red squirrels • Change in occupancy and density of monitored bird species • Diversity, species richness, distribution, and trends of mid to late successional forest bird communities.
7. What is the status of American pika, American pipit, and brown-capped rosy finch populations as indicators for alpine ecosystem integrity?	• Extent, density and occupancy of American pika • Change in occupancy and density of monitored bird species • Diversity, species richness, distribution, and trends of alpine bird communities
8. What is the status of amphibian assemblages on the planning unit?	• Diversity, abundance, and distribution of amphibian species • Presence/absence of chytrid fungus
iv. Status of a select set of the ecological conditions required under 219.0 to contribute to the recovery of federal listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.	
9. What is the status and trend of suitable habitat to support the recovery of the black-footed ferret on the planning unit?	• Prairie dog town extent, density, and occupancy • Sylvatic plague extent/changes
10. What is the availability of early successional conifer and late seral spruce-fir forests to promote recovery of Canada lynx?	• Extent and condition of early successional and late seral spruce-fir forests • Habitat connectivity • Dense horizontal cover

Monitoring Question	Indicators
v. Status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives	
11. What are the status and trends of visitor satisfaction for recreational visits on the planning unit?	• Visitor satisfaction • Number of visitors • Changes in demand
12. What level of access to and across the planning unit is provided to the public?	• Change in miles of trail by trail type • Change in miles of road by road type • Change in number of developed recreation sites. • Change in number of sites accessible for people with disabilities. • Change in acres that are open to public access (no longer landlocked by private land) TBNG and Laramie Peak unit
vi. Measureable changes on the plan area related to climate change and other stressors that may be affecting the plan area.	
13. What stressors are impacting the planning unit? Can any trends in these stressors be related to climate change?	• Timing, type and amount of precipitation (rain vs. snow) • Snowpack depth and persistence • Changes in air temperature • Changes in stream/lake temperature • Extent of insect and disease outbreaks • Extent of invasive species infestations • Extent and severity of wildfires (for fires >100 acres) • Dozer fire line constructed (type/miles) • Habitat fragmentation (roads and infrastructure per square mile) • Number of visitors by activity type • Population trends • Unauthorized OHV use

Monitoring Question	Indicators
vii. Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities	
14. How are management activities on the planning unit affecting local employment and income?	• Range contributions and effects to local employment and income • Timber contributions and effects to local employment and income • Recreation and effects to local employment and income • Minerals developments and effects to local employment and income
15. To what extent have we managed our heritage assets?	• Number of stewardship activities conducted • Monitoring of priority heritage assets
viii. Effects of each management system to determine that they do not substantially and permanently impair the productivity of the land	
16. What changes in soil properties have been observed in the planning unit?	• Extent of soil disturbance: o Detrimental soil compaction o Detrimental displacement o Detrimental erosion
17. To what extent has regeneration been successful following timber harvest on the planning unit?	• % of harvest areas restocked after 5 years
18. How is the productivity of rangelands changing on the planning unit?	• Animal Unit Months permitted for each allotment (AUMs) • Extent of invasive species infestations in capable rangelands (acres/species)