

**APPENDIX C
MONITORING PLAN**

APPENDIX C: PRAIRIE PROJECT AREA MONITORING PLAN

The Forest Plan identifies specific items to be monitored, and the Monitoring Implementation Guide (USDA Forest Service 2001) describes monitoring protocols that have been established for numerous resources, as directed by the Forest Plan. The Monitoring Implementation Guide identifies frequency and methods of data collection, unit of measure, sampling design, expected precision and reliability, reporting frequency, data storage location, and costs for each monitoring item identified by the Forest Plan. For additional information, refer to the Forest Plan (Chapter 4), and the Monitoring Implementation Guide.

The ID Team compiled additional monitoring objectives/items summarized below to provide emphasis and specifics regarding particular resource monitoring needs in the Prairie Project Area. All monitoring objectives/items will be prioritized by the responsible line officer if funding is not available to implement all objectives/items listed or referenced in this Monitoring Plan.

Soil and Water Resource

BMP monitoring will occur during and after management activities. BMP implementation monitoring will occur during management activities. BMP effectiveness monitoring will occur 1-5 years after management activities have ceased and units will be picked randomly from available sample pool. District personnel will conduct monitoring.

The objective of watershed monitoring is to monitor the effects of management on stream health, monitor Forest Plan management requirement implementation and assess management requirement effectiveness.

Monitoring objective/item: Watershed and Stream Health.

Monitoring procedure: BMP implementation and effectiveness, Stream health and water quality assessment.

Frequency/duration of monitoring: Before, during and post harvest activities (1-5 years).

Data storage: GIS/RISORACLE, District watershed files.

Responsible Specialist: District Hydrologist/Soil Specialist.

Silvicultural Resource

The monitoring objectives from a silvicultural resource will be to:

- Ensure that decisions made in the EIS/ROD are implemented.
- Determine the effects of harvest activities and related treatments.
- Identify adverse impacts and mitigate if necessary.

Records of surveys and findings will be recorded and filed in the District stand files located at the Rapid City office of the Mystic Ranger District. Summaries of accomplishments will also be

reported electronically in the Resource Information System (RIS) database on the Black Hills National Forest for upward reporting and district use. The following table summarizes planned silvicultural monitoring.

Monitoring Objective	Monitoring Procedure	Frequency/Duration	Data Storage	Projected cost/revenue Source	Responsible Shop/Specialist
Sale Layout & Marking	Inspection Plots & Reports	Ongoing during Activities	Presale Folder	NF Management funds, Salvage Sale Funds, Pest Management Funds	Presale Shop/Presale Forester
Sale Contract Administration	Timber Sale Inspections	Ongoing during harvesting activities	Timber Sale Folder	National Forest Management funds	FSR, TSA, and SI
Post Sale Review	Walkthroughs and/or Plots	1-2 years post sale	Stand Files	National Forest Management funds	District Silviculturist/Silviculture Tech.
TSI Layout and Administration	Walkthroughs and plots	Ongoing during harvesting activities	TSI Contract Folder/RIS Data Base	Knutson-Vandenberg Funds (KV), National Forest Management funds	TSI Shop/ TSI Forester
Regeneration Survival	Walkthroughs and plots	1, 3, 5 yr post treatment	Stand Files and RIS Data Base	Knutson-Vandenberg Funds (KV)	Silviculture Shop/Silviculturist

Insect and Disease

Monitoring objective/item: Mountain Pine Beetle Outbreak and Hazard Tree Analysis.
 Frequency/duration of monitoring: Yearly after beetle emergence is completed.
 Data storage: Stand Files/RISORACLE/GIS.
 Revenue source: Timber salvage funds/Recreation funds.
 Responsible Specialist: Silviculturist/Pest Management Specialist.

Fire and Fuel Resource

The objective of monitoring for the Fire/Fuels resource is to determine the need to treat fuels in individual stands that are silviculturally treated either by mechanical means or prescribed fire. In addition, long term monitoring of future maintenance of areas for prescribed burning and to monitor effects of prescribed fire based on burn plan objectives to determine if benefits were realized.

Monitoring objective/item: Fuel loading and Prescribed Fire Use
 Monitoring procedure: Dead/down fuel loading transects or ocular measurements.
 Frequency/duration of monitoring: 1-2 years post harvest on site-by-site basis
 Data Storage: GIS/RISORACLE fuels and Silviculture files.
 Revenue source: Brush disposal funds, KV, Fuels force account
 Responsible Specialist: Fire/Fuels Management Specialist

Monitoring objective/item: Prescribed Fire Objectives and Maintenance.

Monitoring procedure: Field reconnaissance by Wildlife Biologist and Fuels Specialist.

Frequency/duration of monitoring: 1-3 years post burn and every 5 - 10 years post harvest.

Data storage: GIS/RISORACLE, Fuels and Silviculture files.

Revenue source: Fuels force account.

Responsible Specialist: Fire/Fuels Management Specialist and/or Wildlife Biologist.

Range Resource

Monitoring objective/item: Future Pine Encroachment Identification.

Procedure: Key Areas will be selected and photographed,

Frequency/Duration: Photos will be retaken once every 10 years

Data Storage: Associated allotment file.

Revenue source: Range Administration

Responsible shop/Specialist: Range Shop.

Wildlife Resource

Monitoring objective/item: Snag Densities. Objective is to determine effectiveness of snag mitigation measures and compliance with FP objectives for snags.

Monitoring procedure: Snag transects.

Frequency/duration of monitoring: Post treatment.

Data storage: Wildlife snag files.

Revenue source: Wildlife funds or KV.

Responsible Specialist: Wildlife Biologist.

Monitoring objective/item: Raptor Nest Territories (e.g., Northern goshawk). Objective is to determine effectiveness of raptor mitigation measures (protection and security) and determine future needs of the raptor territory.

Monitoring procedure: Field verification.

Frequency/duration of monitoring: Before, during and post treatment activities.

Data storage: GIS, Wildlife files.

Revenue source: Wildlife funds or KV.

Responsible Specialist: Wildlife Biologist.

Monitoring objective/item: Vegetation Structural Stage. Objective is to update structural stage determinations, post treatment, in RISORACLE database.

Monitoring procedure: Field verification.

Frequency/duration of monitoring: 3-5 years post treatment activities.

Data storage: GIS/RIS ORACLE databases.

Revenue source: Planning, Wildlife funds or KV.

Responsible Specialist: Wildlife Biologist, Silviculturist.

Monitoring objective/item: Prescribed burning for browse response.

Monitoring procedure: Field verification.

Frequency/duration of monitoring: 1-3 years post treatment activities.

Data storage: GIS/RIS ORACLE databases.

Revenue source: Wildlife funds or KV.

Responsible Specialist: Wildlife Biologist.

Monitoring objective/item: Down woody material.

Monitoring procedure: Field verification.

Frequency/duration of monitoring: 1-2 years post treatment activities.

Data storage: GIS/RIS ORACLE databases.

Revenue source: Wildlife funds or KV.

Responsible Specialist: Wildlife Biologist.

Travel and Recreation Use and Transportation Resource

District specialist and engineering personnel would continually monitor effectiveness of management implemented in the area, in response to potential effects. Measured and visual monitoring would determine physical effects of activities, effectiveness of mitigation and travel management strategies, success of natural and enhanced revegetation, changes in stream volumes/characteristics and ensuring traffic safety and compliance with state and federal laws. Forest Service Road Damage Guidelines would be adhered to in order to limit soil movement.

Monitoring objective/item: Road reconstruction, Construction and Maintenance Activities.

Monitoring procedure: Field reconnaissance.

Frequency/duration of monitoring: During timber harvest operations and post sale every five years.

Data storage: GIS/RISORACLE databases.

Revenue source: Timber or engineering funds.

Responsible Specialist: South Zone Engineering.

Monitoring objective/item: Road Closure Effectiveness.

Monitoring procedure: Field reconnaissance.

Frequency/duration of monitoring: Every two years or on an as needed basis.

Data storage: GIS/RISORACLE databases.

Revenue source: KV or timber funds.

Responsible Specialist: South Zone Engineering, Wildlife Biologist or Travel Management Specialist.

Monitoring objective/item: Recreation Opportunities (variety)

Monitoring procedure: Field review of management areas and recreation use reports

Frequency/duration of monitoring: ROS Review - annually; Recreation use - annually

Data storage: NEPA documents and Infrastructure

Revenue source: Appropriated funds

Responsible shop/specialist: Recreation

Monitoring objective/item: Off-Road Vehicle Use (acres, location, signing, effectiveness and appropriateness of closures)

Monitoring procedure: GIS/GPS records of use based on field inventory and reviews

Frequency/duration of monitoring: annually

Data storage: Infrastructure, GIS, and other linked databases

Revenue source: Appropriated funds

Responsible shop/Specialist: Recreation/Travel Management, Wildlife, Hydrology

Monitoring objective/item: Trail Opportunities (miles, miles by user group, trail development)

Monitoring procedure: GPS trails, conduct field reviews

Frequency/duration of monitoring: annually

Data storage: Infrastructure, cartographic feature files

Revenue source: Appropriated funds

Responsible shop/Specialist: Recreation

Monitoring objective/item: Effectiveness of travel management restrictions.

Monitoring procedure: Field verification.

Frequency/duration of monitoring: 1-5 years post treatment activities.

Data storage: GIS/RIS ORACLE databases.

Revenue source: Travel Management or KV.

Responsible Specialist: Wildlife Biologist, Travel Management Specialist.