

Appendix A Monitoring Plan

Introduction

The following monitoring matrix describes monitoring associated with the Hemlock Elk Fuels Reduction and Forest Health Project and summarizes the purpose, methods, and expected results and uses of the proposed monitoring activities. The Forest Service is currently seeking opportunities for multi-party monitoring of post treatment conditions.

**TABLE A- 1.
SUMMARY OF MONITORING ACTIVITIES**

WHAT	WHERE	WHEN / DURATION	WHY	WHO	EXPECTED RESULTS AND USE
FOREST ROADS					
Monitor and oversee temporary road construction	Temporary roads	Throughout duration of project implementation	Insure road construction activities comply with contract specifications	Contracting Officer, Forest Service Representative, and Timber Sale Administrator	Routinely determine compliance with contract specifications
Monitor and oversee condition of permanent roads	Permanent roads	Throughout duration of project implementation	Insure activities are not negatively affecting road condition and adjoining resources	Contracting Officer, Engineering Representative, and Timber Sale Administrator	Routinely determine road integrity and BMP compliance
SOIL QUALITY					
Extent of detrimental effects.	Units 5b and 12	During and after implementation.	Determine if soil quality standards are met.	Forest Soil Scientist or his designated Representative	Ensure Design Criteria were implemented and determine if they are effective.
WATER RESOURCE					
Clear drainage features through notes to the Sale Administrator	Throughout activity area	Continually	Prevent sediment transport	Sale Administrator	No negative effects on the water resource

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SUMMARY OF MONITORING ACTIVITIES**

WHAT	WHERE	WHEN / DURATION	WHY	WHO	EXPECTED RESULTS AND USE
FOREST VEGETATION					
Develop NEPA to Implementation crosswalk	SLRD	Prior to contract development	Insure layout complies with NEPA decision	Pre Sale Forester	Assure layout complies with NEPA decisions
Review contract prior to advertisement	SLRD	Prior to contact advertisement	Insure contract complies with NEPA decision	TMO, Pre Sale Forester, IDT Members, Line Officer, Contracting Officer, TSA, ER	Assure project implementation complies with the NEPA decision
Monitor and oversee vegetation treatments	All treatment units	Throughout project implementation	Insure treatment activities comply with contract specifications	CO, FSR, TSA, HI, and Silviculturist	Assure compliance with contract specifications
Conduct post treatment surveys to monitor changes in forest structure, composition, insect and disease conditions and to determine if the silvicultural prescription was met	All treatment units	Immediately following treatment and periodically thereafter as specified in the silvicultural prescription	Determine how well objectives were met and gather data needed to assess possible follow-up treatments	Silviculturist, Culturist, or designated representative	Determine the effectiveness of treatments, the need to conduct follow-up treatments, and to make future treatment decisions
Conduct reforestation surveys to determine regeneration success and needs	All regeneration units	First, third, and fifth year after harvest	Determine regeneration success and needs	Silviculturist, Culturist, or designated representative	Assure adequate stocking of desired species occurs
FUELS REDUCTION					
Conduct pre-treatment sampling prior to implementation	Selected treatment units	Prior to implementation	Establish pre-treatment baseline sampling for later comparison	Fuels Manager or designated Representative	Establish baseline for fuels treatment proposals
Conduct post treatment surveys. Monitor the reduction in fuel loads, including changes in canopy cover, structure, ladder fuels, and down woody material	All treatment units	First year after treatment; then every 10 years	Determine how well treatment objectives were met and to gather data as needed for possible follow-up treatment	Silviculturist and Fuels Manager or designated Representative	Determine the effectiveness of the treatments. This information will be used in making future recommendations for similar fuel reduction projects

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SUMMARY OF MONITORING ACTIVITIES**

WHAT	WHERE	WHEN / DURATION	WHY	WHO	EXPECTED RESULTS AND USE
INVASIVE PLANTS					
Survey and monitor for noxious weeds	Project area where ground disturbance and project associated activities have occurred, including slash piles, exposed soil from excavator tracks and skid trails, roads, and temporary roads	After all activities are complete for at least 3 years	To determine the presence and/or spread of noxious weeds and needed containment or eradication measures, and to future direct treatment activities	Surveys and monitoring shall be conducted by the Forest Botanist, Botany Crew, Noxious Weed Specialist, or Weed Crew	Monitor for noxious weed acres of infestation, effectiveness of control, containment, and prevention measures, and spread and existence of new populations of noxious weeds
THREATENED, ENDANGERED, AND SENSITIVE PLANTS					
Monitor occupied and unoccupied water howellia ponds potentially impacted by the Hemlock Elk Project	Ponds 054, 055, 086, 087, 088, 089, 119, 120, u-011, u-012, u-013, u-014, u-015, u-021, u-022, u-049, u-095, u-097	After all activities are complete	Assure populations and habitat have not been impacted by disturbance and noxious weeds have not been introduced	Forest Botanist or Biological Technicians	Modify future Design Criteria to better protect populations, if necessary
Monitor aspen groves	Units 11 and 12	After all activities and prescribed burning is complete, for three years.	Document effectiveness of aspen habitat restoration treatments. Assure populations and habitat have not been impacted by disturbance and noxious weeds have not been introduced. Determine need for fencing.	Forest Botanist or Biological Technicians	Modify restoration prescriptions and Design Criteria for protection if necessary

