SECTION J
MONITORING

INTRODUCTION

Aquatic resources monitoring will be conducted in the Elk Creek WAU. This monitoring is to assist Mendocino Redwood Company to assess its policies and prescriptions toward aquatic resources.   The monitoring suggested in this plan is monitoring that MRC conducts across all its lands including the Elk Creek WAU. However, other monitoring efforts not mentioned here may be conducted by MRC in the Elk Creek WAU. Currently a comprehensive monitoring plan is being developed for the MRC lands as described in MRCs proposed Habitat Conservation Plan. Once that plan is finalized it will supercede the monitoring presented here.

The monitoring is a combination of hillslope and in-stream assessments. Forest harvesting and related activities can influence or alter inputs of sediment, wood, and heat (solar radiation). It is these inputs that are the focus of the monitoring. Methods to evaluate factors that could alter the input of sediment, heat, or wood are the hillslope monitoring portion of this plan. Evaluation of factors which could influence the stream channel, water or fish habitat are the focus of the in-stream monitoring.

The monitoring matrix (Table J-1) outlines the hillslope and in-stream monitoring MRC will be conducting in the Elk Creek WAU. The monitoring will be performed periodically. MRC will be developing a property wide aquatic monitoring strategy. Once that monitoring strategy is complete, the precise timing of the monitoring in the Elk Creek WAU will be finalized. The information collected in this monitoring effort will be used as part of an adaptive management approach to the Elk Creek WAU. The monitoring results will be compared to the baseline information generated in this watershed analysis to discover if aquatic habitat or water quality concerns are improving, staying the same or degrading. If aquatic habitat or water quality concerns are not improving then the land management prescriptions will be altered to better protect those impaired resources.

Table J-1. Monitoring Matrix for Mendocino Redwood Company Lands Including the Elk Creek Watershed Analysis Unit.

Monitoring Objectives	Reasoning, Comments	Technique
1. Determine effectiveness of measures to reduce management created mass wasting.	Management created mass wasting is significant contributor of sediment delivery.	Evaluation of mass wasting following a large storm event or after approximately 20 years.
2. Determine effectiveness of erosion control practices on high and moderate surface erosion hazard roads and landings.	Roads provide sediment delivery in the Elk Creek WAU.	Evaluation of watercourse crossings, landings, and road lengths for erosion evaluation.
3. Determine in-stream large woody debris amounts over time.	Large woody debris is needed for stream channel and aquatic habitat improvement in the Elk Creek WAU.	Stream LWD inventories and mapping of LWD designation areas in select stream reaches and long term channel monitoring sites.
4. Determine if stream temperatures are staying within properly functioning range for salmonids.	Stream temperature can be a limiting factor for salmonid growth and survival.	Stream temperature probes and assessment conducted in strategic locations.
5. Determine if fine sediment in stream channels is creating effects deleterious to salmonid reproduction.	Many forest practices can produce high fine sediment amounts. Need to ensure fine sediments are not impacting salmonid reproduction.	Permeability measurements on select stream reaches (bulk gravel samples if necessary).
6. Determine long-term channel morphology changes from coarse sediments.	Channel morphology can be altered from sediment increases, possibly affecting aquatic habitat.	Thalweg profiles and cross section surveys on select stream reaches.
7. Determine presence and absence of fish species in Class I watercourses.	Management practices and resource protections can affect distribution of aquatic organisms.	Electro-fishing and snorkeling observations at select locations to determine species composition and presence.