

Appendix D

HCP/NCCP Report Timelines and Samples



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D. HCP/NCCP REPORT TIMELINES AND SAMPLES

The term of our HCP/NCCP is 80 years. Clearly, during that time period the methods used for surveying species and habitat and reporting on results will change. This is a learning period for both MRC and the wildlife agencies—a period to understand more about the abundance and distribution of species in the plan area and the needs of those species to increase survival and reproduction. Data or statistical analysis that was considered relevant at the commencement of the HCP/NCCP may be superseded by more critical information later on. Media for reporting may change; reports submitted via email, CD, or other electronic media may replace printed reports. The frequency of reports may also change; the wildlife agencies may determine that they need information on a less or more frequent basis. In this appendix, we present sample reports that will provide a starting point for discussions between MRC and the wildlife agencies on information needed to monitor HCP/NCCP conservation measures, establish compliance, determine plan effectiveness, and evaluate take. All reports submitted to the wildlife agencies will include (1) an executive summary that highlights significant findings; (2) a description of QA/QC efforts and their results, including trends and graphs; (3) observations; (4) relevant objectives and conservation measures; (5) hypotheses for validation monitoring; (6) problems encountered; (7) proposed changes and a discussion of how MRC will retain comparability of results; and (8) applications of new or changed methods. MRC will identify whether reports relate to effectiveness, validation, or compliance monitoring or to assessment of take.



The data in the sample reports, even if derived from existing information, is not intended to reflect current or projected conditions in the plan area. The reports simply illustrate the type of data that MRC will submit for review by the wildlife agencies.

D.1 Types of Reports

D.1.1 Reports on effectiveness and validation monitoring

Table D-1 lists all the sample effectiveness and validation monitoring reports in Appendix D, the subsections where the report samples are located, and a monitoring program code (Table 13-1) associated with the report. The reports are in alphabetical order by *Report ID*. These reports provide the wildlife agencies with data on aquatic and terrestrial habitat and species.

Table D-2 lists all the effectiveness and validation monitoring reports not included in Appendix D. MRC will confer with the wildlife agencies to determine the data required for these reports. Finally, MRC will issue monitoring reports either by email or CD, unless the wildlife agencies request a different media, and post a public copy of the reports on our corporate website.

Table D-1 Sample Effectiveness and Validation Monitoring Reports in Appendix D

Sample Effectiveness and Validation Monitoring Reports in Appendix D				
Report ID	Section Number	Report Name	Type	Monitoring Program
AMPHIB_RPT_010	D.3.2.1	Occupancy of Red-legged Frogs in Documented Breeding Sites	E	M§13.6.2.1-2
AMPHIB_RPT_020	D.3.2.1	Baseline Distribution and Habitat Quality of Red-legged Frog Breeding Sites	E	M§13.6.2.1-1
AMPHIB_RPT_030	D.3.2.2	Baseline Distribution of Coastal Tailed Frogs	E	M§13.6.3.1-1

Sample Effectiveness and Validation Monitoring Reports in Appendix D

Report ID	Section Number	Report Name	Type	Monitoring Program
AMPHIB_RPT_040	D.3.2.2	Distribution and Relative Abundance of Coastal Tailed Frogs	E	M§13.6.3.1-2
FISH_RPT_010	D.3.3.1	Anadromous Salmonid Presence: Annual Salmonid Monitoring Basins (ASMB)	E	M§13.6.1.1-1
FISH_RPT_020	D.3.3.2	Chinook Salmon Monitoring Reaches (CSMR)	E	M§13.6.1.1-3
FISH_RPT_030	D.3.3.3	Anadromous Salmonid Distribution	E	M§13.6.1.1-2
FISH_RPT_040	D.3.3.4	Smolt Abundance	E	M§13.6.1.2-1
FOCWSA_RPT_010	D.2.8.1	Focus Watersheds: Riparian Function	V	M§13.5.1.2-2
FOCWSA_RPT_020	D.2.8.2	Focus Watersheds: Stream Sediment	V	M§13.5.4.1-3
HWD_RPT_010	D.4.3.1	Basal Area of Harvest in Timber Stands: Pre-Harvest	E	M§13.8.1-2
HWD_RPT_020	D.4.3.2	Basal Area of Harvest in Timber Stands: Post Harvest	E	M§13.8.1-2
HWD_RPT_030	D.4.3.3	Post Harvest Follow-up on Hardwood Representative Sample Areas	E	M§13.8.1-3
HWD_RPT_040	D.4.3.4	Acreage and Number of Hardwood Representative Sample Areas	E	M§13.8.1-4
ISC_RPT_010	D.4.7	Invasive Species Control	E	M§13.8.3-1
LCM_RPT_010	D.2.5	Longitudinal Profile and LWD Volume	V	M§13.5.1.2-1
LCM_RPT_020	D.2.5.1	Residual Water Depths, Percent Pool and Riffle Depths	V	M§13.5.4.1-2
LCM_RPT_030	D.2.5.2	Cross Section from Longitudinal Profile	V	M§13.5.4.1-2
LCM_RPT_040	D.2.6	Permeability	V	M§13.5.4.1-2
LCM_RPT_050	D.2.6.1	Focus Watersheds: Individual Bulk Gravel Samples	V	M§13.5.4.1-3
LCM_RPT_060	D.2.6.2	V* Observations	V	M§13.5.4.1-2
MAMU_RPT_050	D.5.3.5	Activity Level of Marbled Murrelets in Lower Alder Creek	V	M§13.9.2.1-1

Sample Effectiveness and Validation Monitoring Reports in Appendix D

Report ID	Section Number	Report Name	Type	Monitoring Program
MAMU_RPT_060	D.5.3.6	Murrelet Occupancy in Navarro, Greenwood Creek, Albion River Watersheds	V	M§13.9.2.1-2
MAMU_RPT_070	D.5.3.7	Radar Monitoring in Additional Drainages	V	M§13.9.2.2-3
NAT_COM_010	D.4.5	Common Natural Communities	E	M§13.8.2-1
NAT_COM_050	D.4.6	Uncommon Natural Communities	E	M§13.8.2-2
NSO_RPT_010	D.5.2.1	Northern Spotted Owl Territories by Inventory Blocks	E	M§13.9.1.3-1
NSO_RPT_020	D.5.2.2	10-Year Productivity for Northern Spotted Owls by Inventory Block	E	M§13.9.1.3-1
NSO_RPT_040	D.5.2.4	Summary of Visits to NSO Territories to Determine Reproductive Status	E	M§13.9.1.3-1
NSO_RPT_050	D.5.2.5	Nocturnal Surveys for Northern Spotted Owls	E E	M§13.9.1.3-1 M§13.9.1.3-2
NSO_RPT_060	D.5.2.6	Summary of Nocturnal Surveys for Northern Spotted Owls	E E	M§13.9.1.3-1 M§13.9.1.3-2
NSO_RPT_090	D.5.2.9	Northern Spotted Owls: Distribution and Acreage of Nesting/Roosting Habitat	E	M§13.9.1.3-2
NSO_RPT_100	D.5.2.10	Effect of Harvest within 1000 ft of NSO Territories with Limited Protection	V	M§13.9.1.4-4
NSO_RPT_110	D.5.2.11	Effect of Hardwood Density on Northern Spotted Owls	V	M§13.9.1.4-6
OG_RPT_010	D.4.3.5	Acreage and Number of Old Growth Stands and Trees	E	M§13.8.1-5
PAMB_RPT_040	D.5.4.4	Spatial Extent of Known Burrow Systems of Point Arena Mountain Beaver	E	M§13.9.3.1-1
PAMB_RPT_050	D.5.4.5	Creating Habitat with Timber Harvest within Dispersal Distance of Existing PAMB Burrow Systems	E	M§13.9.3.1-2
PLANT_RPT_010	D.6	Status and Trend of Covered Rare Plant Species	E	M§13.10.3-1
ROCK_RPT_010	D.4.4	Distribution and Acreage of Rocky Outcrops	E	M§13.8.1-6

Sample Effectiveness and Validation Monitoring Reports in Appendix D

Report ID	Section Number	Report Name	Type	Monitoring Program
STRMTEMP_RPT_010	D.2.9	Stream Temperature	E	M§13.5.1.1-5
TIMBRINV_RPT_010	D.2.1.2	Timber Inventory	E	M§13.5.1.1-1
TREE_RPT_010	D.4.2.1	Pre-harvest Assessment of Snags, Wildlife Trees, and Recruitment Trees	E	M§13.5.1.1-2
TREE_RPT_020	D.4.2.2	Pre-harvest Downed Wood Assessment	E	M§13.8.1-1
TREE_RPT_040	D.4.2.4	Trends in Snags, Wildlife Trees, Recruitment Trees, and Downed Wood	E	M§13.8.1-1
WS_RPT_010	D.2.2	Watershed Size: Small Class II Watercourses	V	M§13.5.1.2-3

TABLE NOTES

E = effectiveness monitoring
V = validation monitoring

Table D-2 Effectiveness and Validation Monitoring Reports Not Included in Appendix D

Monitoring Code	Type	Description
M§13.5.1.1-4	E	Watershed Analysis: Shade Conditions
M§13.5.2.1-1	E	Watershed Analysis: Mass Wasting
M§13.5.2.1-2	E	Focus Watersheds: Mass Wasting
M§13.5.2.2-1	V	Forensic Monitoring: Landslide Observations
M§13.5.3.1-1	E	Road Inventory: Sediment Prevention
M§13.5.3.1-2	E	Watershed Analysis: Sediment Prevention
M§13.5.3.2-1	V	Focus Watersheds: Sediment Prevention
M§13.5.4.1-1	V	Focus Watersheds: Sediment Budget
M§13.9.1.4-1	V	Population Trends of Northern Spotted Owls
M§13.9.1.4-2	V	Identification of Nesting/Roosting Habitat for Northern Spotted Owls
M§13.9.1.4-3	V	Benefits of High Protection for Northern Spotted Owls and Their Territories
M§13.9.1.4-4	V	Effect of Harvest within 1000 ft of NSO Territories with Limited Protection
M§13.9.1.4-7	V	Effect of Barred Owl Control on Northern Spotted Owls
M§13.9.2.2-1	V	Murrelet Habitat Distribution in LACMA
M§13.9.2.2-2	V	Methods for Accelerating Growth of Murrelet Habitat
M§13.9.3.2-1	V	Defining Habitat for Point Arena Mountain Beavers
M§13.9.3.2-2	V	Creating Potential Habitat with Timber Harvest

TABLE NOTES

E = effectiveness monitoring
V = validation monitoring

D.1.2 Reports on compliance monitoring

Table D-3 list the sample compliance reports included in Appendix D. In addition, for PTHPs, MRC will submit an annual report to the wildlife agencies detailing the items listed in 13.2.1.1, *Compliance under the PTHP process, #5*. This annual report will summarize harvest operations and post-harvest conditions for all covered species and their habitat. We will consult with the wildlife agencies on the development and design of this report.

Table D-3 Sample Compliance Monitoring Reports in Appendix D

Report ID	Appendix D Section Number	Report Name
MAMU_RPT_010	D.5.3.1	Murrelet Assessments within Harvested THPs
MAMU_RPT_020	D.5.3.2	Current Protections for Occupied and Potential Murrelet Habitat
MAMU_RPT_030	D.5.3.3	Completed THP Surveys with Assessment of Murrelet Habitat
MAMU_RPT_040	D.5.3.4	THPs and Other Projects within LACMA
NSO_RPT_030	D.5.2.3	Protection Levels for Northern Spotted Owl Territories by Inventory Block
NSO_RPT_070	D.5.2.7	Conservation Measures for NSO within 0.7 miles of THPs
NSO_RPT_080	D.5.2.8	NSO Banding
PAMB_RPT_010	D.5.4.1	THPs within PAMB Assessment Area
PAMB_RPT_020	D.5.4.2	Surveys for Potential PAMB Habitat
PAMB_RPT_030	D.5.4.3	Buffers for PAMB Burrow Systems
PROPORTIONALITY_010	D.9	Rough Proportionality Annual Report
TREE_RPT_030	D.4.2.3	Snags and Wildlife Trees Felled for Safety

D.1.3 Reports on assessment of take

Table D-4 lists sample reports for assessment of take. These reports conform to the data tables in Chapter 12, *Potential Impacts and Assessment of Take* (section 12.3).

Table D-4 Sample Assessment of Take Reports

Report ID	Appendix D Section Number	Report Name
AOT_Coho_SONCC AOT_Coho_CCC AOT_Chinook AOT_Steelhead	D.7.1	Assessment of Take: Salmonids
AOT_RLF	D.7.2	Assessment of Take: Red-legged Frogs
AOT_CTF	D.7.3	Assessment of Take: Coastal Tailed Frogs
AOT_NSO	D.7.4	Assessment of Take: Northern Spotted Owls
AOT_MAMU	D.7.5	Assessment of Take: Marbled Murrelets
AOT_PAMB	D.7.6	Assessment of Take: Point Arena Mountain Beaver
AOT_CRP	D.7.7	Assessment of Take: Covered Rare Plants

D.1.4 Report on HCP/NCCP budget

MRC will submit to the wildlife agencies an annual budget approved by our Board of Directors (section 7.10.2). The budget will demonstrate that MRC has authorized sufficient funds for expenditure in the upcoming fiscal year to carry out our commitments under the federal and state permits and the HCP/NCCP.

D.2 Reports on Aquatic Habitat

D.2.1 Report timelines

Table D-5 gives the proposed schedule of reports for aquatic habitat.

Table D-5 Timelines for HCP/NCCP Monitoring Reports on Aquatic Habitat

Timelines for HCP/NCCP Monitoring Reports on Aquatic Habitat						
Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
WS_RPT_010	Summarizes the most recent conclusions from the Small Class II watershed size validation monitoring program.	Summarize findings on Small Class II watershed size (deviation from the assumed 100 ac) for each watershed analysis unit. M§13.5.1.2-3	Annually (estimated to be completed within 5-10 years)	February	Electronic report via email attachment or CD	NMFS USFWS CDFG CGS NCRWQCB
WA_RPT_010	Each watershed analysis report will have at least the following resource assessment modules: <ol style="list-style-type: none"> 1. Mass wasting 2. Surface and point source erosion for roads and skid trails. 3. Hydrology 4. Riparian function 5. Stream channels 6. Fish habitat 7. Amphibian distribution 8. Synthesis 	<ol style="list-style-type: none"> 1. Provide assessment of watershed analysis units for cumulative watershed effects. 2. Provide compilation and interpretation of aquatic habitat information for watershed analysis units over time. 3. Report on objectives in M§13.5.1.1-3 M§13.5.1.1-4 M§13.5.2.1-1 M§13.5.3.1-2 	On average every 20 years	Submitted as each watershed analysis unit is completed	Electronic report via email attachment or CD	NMFS USFWS CDFG CGS NCRWQCB
LCM_RPT_010	A report of the following observations within long term channel monitoring segments: <ol style="list-style-type: none"> 1. Longitudinal profile 2. Cross section profiles 3. Stream substrate particle distribution and D50 4. V-star observations 5. Gravel permeability 6. LWD 	<ol style="list-style-type: none"> 1. Provide stream channel morphology and habitat conditions to assess the effectiveness of conservation measures for sediment reduction and riparian function. 2. Report on objectives in M§13.5.1.2-1 M§13.5.4.1-2 	Once every 10 years When long term channel monitoring is conducted in association with a watershed analysis, observations will be reported in the watershed analysis.	Submitted in the spring following completion of observations of all monitoring segments or when a watershed analysis is completed	Electronic report via email attachment or CD	NMFS USFWS CDFG CGS NCRWQCB

Timelines for HCP/NCCP Monitoring Reports on Aquatic Habitat

Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
FOCWSA_RPT_010	Report will contain results from periodic observations in focus watersheds, including <ol style="list-style-type: none"> 1. LWD. 2. Stream canopy cover. 3. Stream temperature effects. 4. Sediment reduction. 5. Bulk gravel percentage of fine particles. 6. Stream channel condition. 7. Skid trail and road effects. 8. Sediment budget. 9. Suspended sediment and turbidity monitoring. 10. Mass wasting. 	<ol style="list-style-type: none"> 1. Provide summary and interpretation of the intense focus watershed studies occurring during 3-5 year time blocks. 2. Report on objectives in <ul style="list-style-type: none"> • M§13.5.1.2-2. • M§13.5.2.1-2. • M§13.5.3.2-1. • M§13.5.4.1-1. 	Every 3-5 years	Final report submitted a year after the study—on March 1.	Electronic report via email attachment or CD	NMFS USFWS CDFG CGS NCRWQCB
STRMTEMP_RPT_010	Results of stream temperature monitoring across the plan area, including <ol style="list-style-type: none"> 1. Location of temperature observations for that year 2. MWAT, MWMT, and maximum temperatures for each site 3. Graph of continuous temperature versus time 	<ol style="list-style-type: none"> 1. Provide results of annual stream temperature monitoring to assess the effectiveness of conservation measures for riparian function. 2. Report on objectives in M§13.5.1.1-5. 	Annually	January 30	Electronic report via email attachment or CD	USFWS CDFG CGS NCRWQCB

D.2.2 Small class II watershed size

MRC will conduct annual monitoring to test the assumption that 100 ac is the proper size for a Small Class II watercourse (M§13.5.1.2-3). We estimate that this monitoring will be complete 5-10 years after the signing of the HCP/NCCP. A sample report submitted from the 2004 Greenwood Creek Watershed Analysis appears below. The report shows the area for each observed site and indicates if it is spring fed or not. If the observed site had its break of perennial surface water at a confluence of 2 watercourses, this is noted in the table as a maximum area for the watercourse; any additional distance downstream encompasses a different watershed area for a different watercourse. MRC will include maps with this report.

WS_RPT_010
M§13.5.1.2-3

03/15/2016

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Monitoring Report
Validation Monitoring
Watershed Size: Small Class II Watercourses

CalWater Planning Watershed	Site ID	Observation Date	Drainage Area (ac)	Meets waterflow criteria?	Maximum area observed?	Spring fed?	Aspect	Distance from Coast (mi)	Approximate Years since Last Harvested
1113.500705	GW1	09/02/2003	115	Yes	Yes	No	N	4	8
1113.120101	NE3	10/05/2002	63	No	No	Yes	S	18	10
1113.567219	RH5	08/07/2003	87	Yes	No	No	E	2	20

D.2.3 Watershed analysis

The wildlife agencies have on file an MRC watershed analysis report. For HCP/NCCP reporting, MRC proposes to use the Elk Creek Watershed Analysis (MRC 2007) as a format template. These reports contain information on LWD, instream shade, and sediment budgets.

D.2.4 Annual report on instream restoration

This report will include information on instream restoration projects, such as LWD installations, fish passage improvements, and riparian restoration treatments.

D.2.5 Long term channel monitoring

MRC will produce a long term channel monitoring report at least once every 10 years. This single report will include all results for the 60 long term channel monitoring segments, including multiple observations. When MRC conducts watershed analysis, i.e., on average every 20 years, we will report long term channel monitoring by watershed analysis unit. For each monitoring segment we will provide the following information:

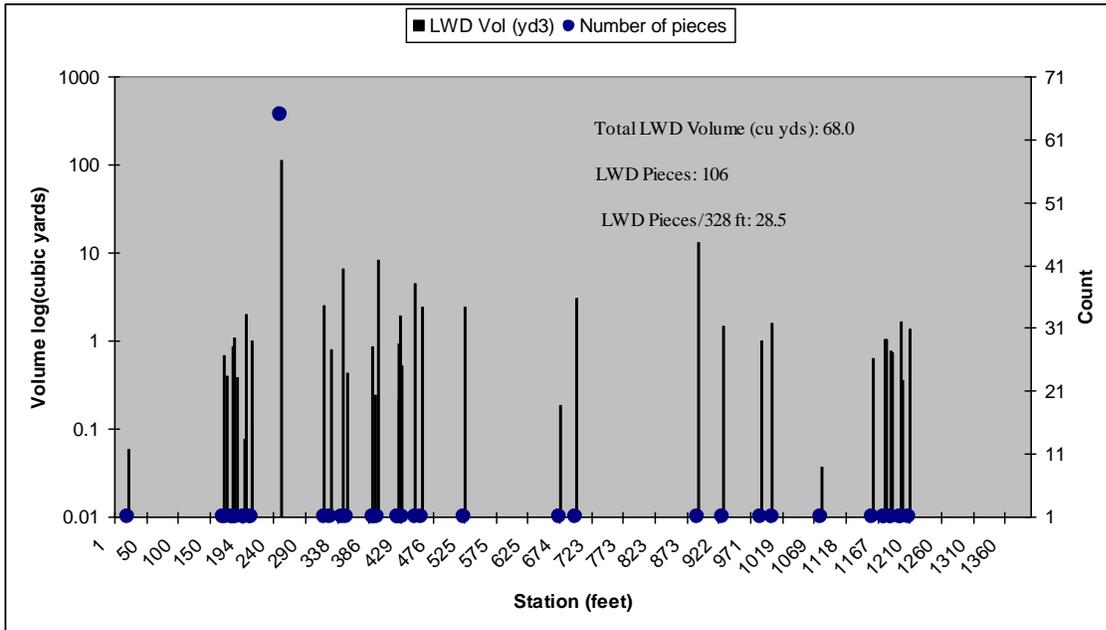
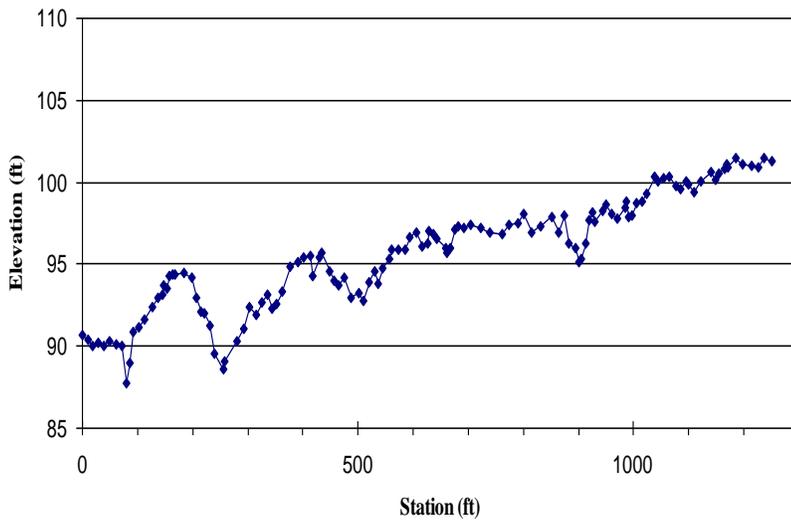
- Graphs of
 - Longitudinal profile.
 - LWD volume in tandem by distance with longitudinal profile.
 - Each cross section.
- Summary of each particle size distribution from pebble counts at each cross section, with D50 calculated (graphs available upon request).
- Mean of residual water depths from longitudinal profile.
- Standard deviation of residual water depths from longitudinal profile.
- Percent pool and riffle lengths from longitudinal profile.
- Individual V-star observations for all pools within each monitoring segment.
- Range and average V-star observations for each monitoring segment.
- Depth and volume of residual pool water.
- Summary of permeability observations within each segment.
- Geometric mean of the median and range of permeability observations within each monitoring segment with calculated survival percentage of anadromous salmonid based on log of geometric mean permeability.
- Discussion of intervening peak flows.
- Synthesis of data.

LCM_RPT_010
M§13.5.1.2-1

04/15/07

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Validation Monitoring Report
Long Term Channel Monitoring
Graph of Longitudinal Profile and LWD Volume

Upper Greenwood Creek



D.2.5.1 Water depths and riffles

LCM_RPT_020

04/15/2007

M§13.5.4.1-2

MENDOCINO REDWOOD COMPANY

Fort Bragg, CA

*HCP/NCCP Validation Monitoring Report***Long Term Channel Monitoring****Residual Water Depths, Percent Pool and Riffle Depths****Upper Greenwood Creek**

Reach Length: 1245.00 ft

Standardized Statistics:

Number of data points in raw data: 127

Number of data points in standardized data: 127

Reach Step Distance: 9.80 ft

Max Residual Depth: 5.84 ft

Mean Residual Depth: 0.85 ft

Standard Deviation: 1.19 ft

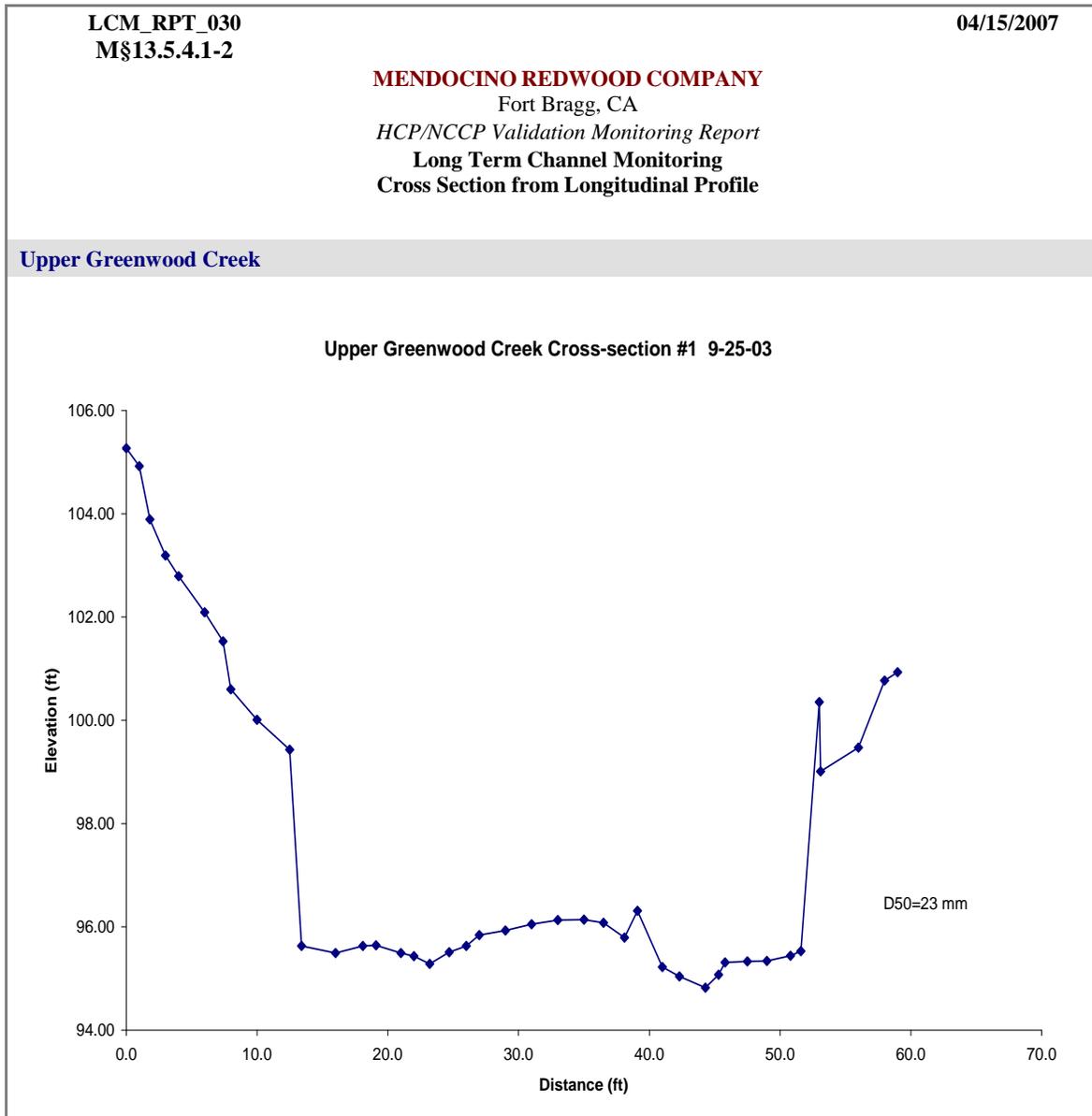
Number of non-zero Residual Depths: 97

Percent of Reach as pool: 76.38 %

Percent of Reach as riffle: 23.62 %

Number of pools greater than 3 ft deep:

D.2.5.2 Cross section



D.2.6 Gravel permeability

LCM_RPT_040 M§13.5.4.1-2		04/15/2007				
MENDOCINO REDWOOD COMPANY Fort Bragg, CA <i>HCP/NCCP Validation Monitoring Report</i> Long Term Channel Monitoring Permeability						
Upper Greenwood Creek						
Geometric Mean of Median Permeabilities	Standard Error of Median Permeabilities	Survival Percentage	Permeability Range		Observations	
			Low	High	#	Median Permeability
357 cm/hr	317 cm/hr	5%	1 cm/hr	5717 cm/hr	1	269
					2	151
					3	165
					4	1
					5	2618
					6	5717
					7	2117

D.2.6.1 Bulk gravel samples (focus watersheds only)

LCM_RPT_050
M§13.5.4.1-3

01/30/2007

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Validation Monitoring Report
Focus Watersheds
Individual Bulk Gravel Samples

Upper Greenwood Creek

Tailout #	Date	% Total	% <50.8 mm	% < 25.4 mm	% < 12.5 mm	% < 6.3 mm	% < 4.75 mm	% < 2.36 mm	% < 0.85 mm
3	9/25/2003	100	85	68	45	26	21	13	5
5	9/25/2003	100	61	50	38	25	20	12	6
6	9/25/2003	100	78	55	37	24	20	13	4
7	9/25/2003	100	76	47	33	22	19	13	6

Tailout #	Geometric Mean (mm)	Fredle Index
3	25	3.1
5	32	2
6	41	0.5
7	30	8

D.2.6.2 V* observations

LCM_RPT_060		04/15/2015				
M§13.5.4.1-2		MENDOCINO REDWOOD COMPANY				
Fort Bragg, CA						
<i>HCP/NCCP Validation Monitoring Report</i>						
Long Term Channel Monitoring						
V* Observations						
South Fork Cottaneva Creek						
Mean V*	Variance of Observations	V* Range		Observations		
		Low	High	Pool #	V*	Pool Volume (cubic meters)
0.14	0.0026	0.08	0.22	01	0.17	3.1
				03	0.10	2.0
				07	0.10	8.5
				09	0.08	6.0
				10	0.13	20.8
				12	0.22	40.9
				13	0.18	125.0

D.2.7 Focus watershed studies—once per decade

MRC will conduct focus watershed studies in 3-5 year blocks of time. Once each decade, a report will detail the results of the studies, methods, and conclusions. In addition, MRC will prepare a status report each year. The status report will summarize (1) methods employed during the previous year; (2) critical evaluations of study progress; and (3) decisions on required changes to the studies. Clearly, however, the reports for the focus watershed studies may change since MRC will develop the actual study protocols 6-12 months after MRC and the wildlife agencies sign the HCP/NCCP.

At a minimum, monitoring in focus watersheds will include the following reports:

- Stream channel observations of LWD, longitudinal profile, cross sections, bulk gravel samples, permeability, V-star, and pebble counts for channel monitoring segments completed during the focus watershed studies will follow the format and example for long term monitoring segments.
- The final report for a 3-5 year block of time will provide comprehensive analysis, integration, and interpretation from ongoing monitoring of turbidity and suspended sediment within the focus watershed studies.
- A sediment budget will provide timed estimates (volume per time period) of sediment delivery from
 - Road surface erosion.
 - Road point source erosion.
 - Skid trail surface and point source erosion.
 - Mass wasting due to roads, skid trails, and hillslopes.
 - Stream bank erosion.
- A report will summarize methods, results, discussions, and conclusions from mass wasting inventory.

D.2.8 Focus watershed studies—annual

MRC will report results from the annual stream surveys as well as observations of turbidity and suspended sediment.

D.2.8.1 Stream channel observations

MRC will prepare an annual report with stream channel observations. The report will include information on LWD (pieces and volume), percent canopy, gravel particle sizes, number of pools, and pool depths. Over time, MRC will compare annual observations using statistical tests and graphs to detect persistent changes in the channel observations.

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Validation Monitoring Report
Focus Watersheds: Riparian Function

Little Fork Navarro

Stream ID	# LWD Pieces	LWD Volume (yd ³)	# Canopy Observations	Mean Canopy (%)	SD Canopy (%)	Particle Size D50 (mm)	# Pools	Mean of Max Residual Pool Depth (ft)	SD of Max Residual Pool Depth (ft)
EN03	10	17.4	4	80	5	56	7	0.9	0.2
EN38	30	14.9	4	74	11	38	6	1.4	0.3
EN04	65	82.9	4	81	6	55	12	1.3	0.3

D.2.8.2 Suspended sediment and turbidity

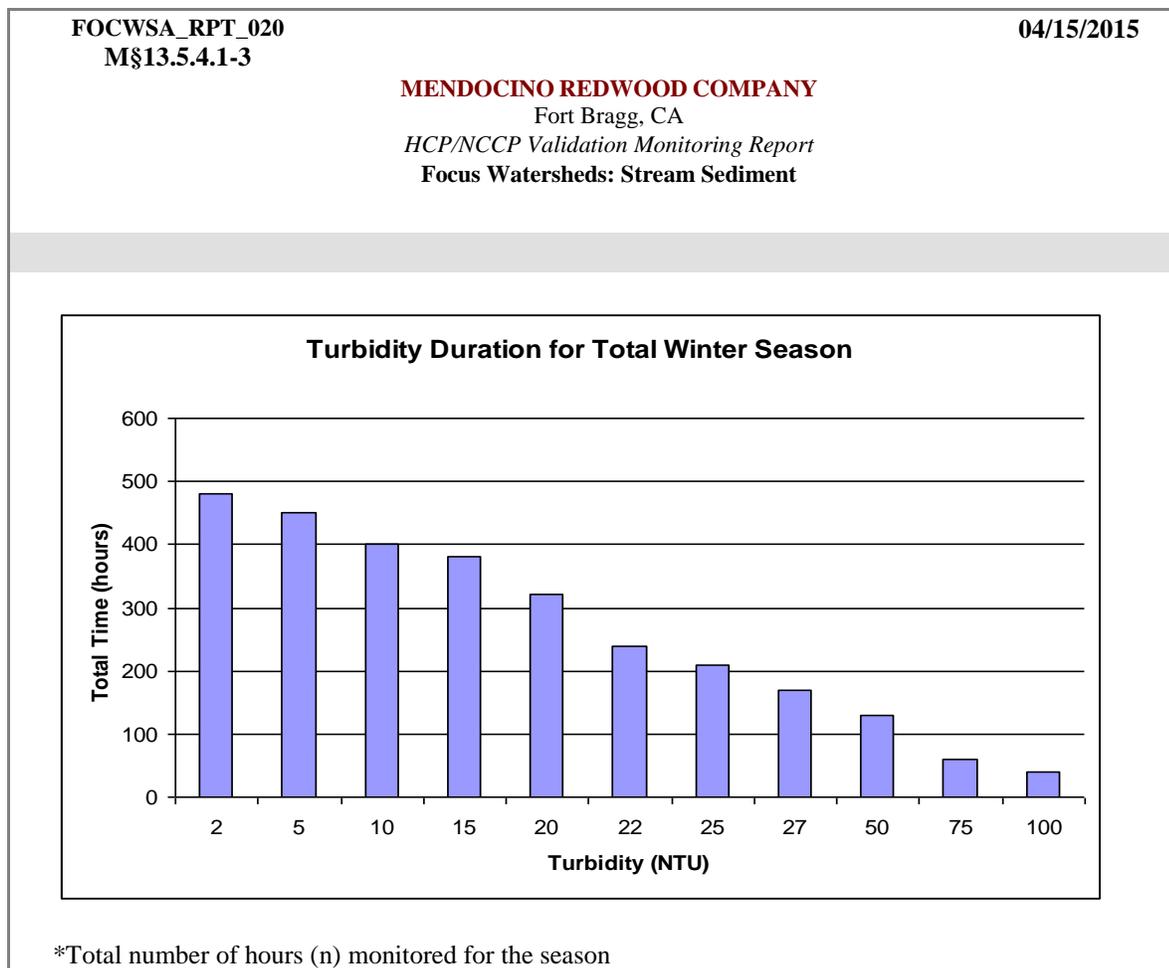
MRC will prepare an annual report with monitoring results for suspended sediment and turbidity. The report will include methods, results, and discussion. We will monitor turbidity and suspended sediment with 2 levels of effort: continuous monitoring and grab sample monitoring.

D.2.8.2.1 Continuous monitoring

For continuous monitoring of turbidity and suspended sediment, MRC will report on the following parameters:

- Updated relationship of turbidity to suspended sediment.
- Current or updated rating curve for stage-versus-stream flow.
- Graph of continuous hydrograph, turbidity, and suspended sediment (as available).
- Time duration relationship between turbidity levels.
- Turbidity, suspended sediment, and hydrology for the season.

In addition to annual reporting for ongoing monitoring of turbidity and suspended sediment, MRC will provide comprehensive analysis, integration, and interpretation in the final report for the 3-5 year block of time.



D.2.8.2.2 Grab sample monitoring

For grab sample monitoring of turbidity and suspended sediment, MRC will report on the following parameters:

- Locations of sampling.
- Date, time, location, turbidity, suspended sediment concentration, and stream flow (table).
- Stream flow versus turbidity relationship for each station (graph).
- Stream flow versus suspended sediment relationship for each station (graph).
- Current or updated turbidity versus suspended sediment relationship from watersheds with grab samples.
- Annual estimate of fine sediment load (tons/yr) from watershed.

D.2.9 Stream temperature

MRC will produce a stream temperature report annually with MWAT, MWMT, and maximum temperature. If requested, we will provide a map of monitoring locations and a graph of continuous temperature observations for each station in the report year.

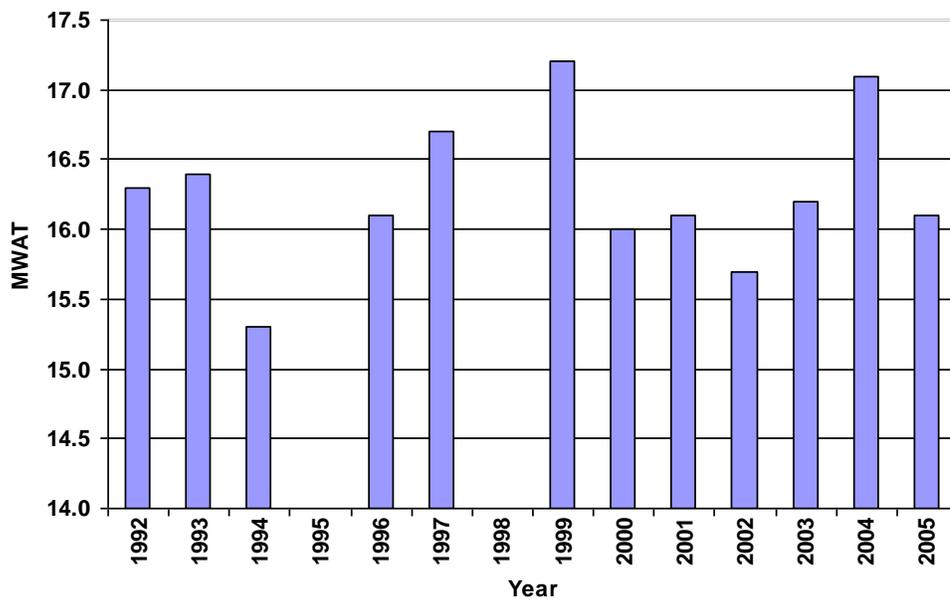
STRMTEMP_RPT_010
M§13.5.1.1-5

01/30/2002

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Effectiveness Monitoring Report
Stream Temperature

Stream	Site ID	Year	Temperature		
			MAX	MWAT	MWMT
Albion	78-1	2001	20.2	15.5	19.8
Deadman Gulch	78-7	2001	14.2	13.3	13.8
Duckpond Gulch	78-10	2001	21.7	16.7	20.5

Figure T78-05M. Maximum Weekly Average Temperature (MWAT) at Albion River (Site T78-05), Mendocino County, California.



D.2.10 Roads

MRC maintains a road inventory in an online database. This database contains both current and historic records about our road network. We will generate a report from this database for the wildlife agencies every 10 years, or upon request. Appendix F, *Road Inventory Protocol*, describes the database dictionaries with codes for roads, culverts, crossing, landings, road slides, erosion sites, controllable erosion, rock pits, spoil piles, water holes, and gates.

In addition, MRC will submit an annual report, based on the road inventory database, outlining the amount of erosion controlled and road work completed during the previous season. Chapter 13, *Monitoring and Adaptive Management*, outlines the monitoring programs for controllable erosion (M§13.5.3.1-1 and M§13.5.3.1-2). Our annual report will also delineate road segments upgraded to standards in Appendix E *Roads, Landings, and Skid Trails*.

D.2.11 Water drafting

MRC will fill out a report for each drafting site within a THP or operational area (Figure D-1). The report will document any impacts to the drafting area and ensure adherence to water drafting guidelines in the Master Agreement for Timber Operations (MATO).

We will also submit a log of water drafting data for each drafting site (Table D-4). This log will include

- Stream flow and velocity.
- Residual pool depth.
- Drafting intake velocity and flow rate (water truck or storage tank).
- Water temperature of stream.
- Water temperature of return water from storage or truck tank.
- Downstream depth of riffle crest.

Mendocino Redwood Company			
Water Drafting Report			
Name of person completing report _____			
Tract _____			
Planning watershed _____			
New ¹ or existing drafting site? (✓ one)		New <input type="checkbox"/>	Existing <input type="checkbox"/>
Location description or site ID _____			
Date drafting commenced (MM/DD/YY) _____			
Cubic feet of flow at commencement _____ cfs			
Date drafting ceased (MM/CC/YY) _____			
Cubic feet of flow at cessation _____ cfs			
Name of Licensed Timber Operator (LTO) _____			
Type of drafting site (✓ all that apply)	Class I	<input type="checkbox"/>	Storage tank <input type="checkbox"/>
	Class II	<input type="checkbox"/>	Pond <input type="checkbox"/>
	Class III	<input type="checkbox"/>	Blocked culvert <input type="checkbox"/>
			Other <input type="checkbox"/>
Any excavation for intake? If yes, list amount			
	Amt _____		
Approximate gallons taken from site			
	Gal _____		
Pesticide mixing?		Yes <input type="checkbox"/>	NO <input type="checkbox"/>
Waterborne pathogens detected within the planning watershed? If yes, list pathogen and methods applied to limit dispersal		Yes <input type="checkbox"/>	NO <input type="checkbox"/>
Pathogen and methods:			

Figure D-1 Sample Water Drafting Report

¹ Please refer to Section VII of MATO (Appendix T) for *General Water Drafting Procedures*.

Table D-6 Sample Water Drafting Log

Date	Location Code or Description	Watercourse Classification (I, II, or III), Pond, Other	Stream Flow (cfs)	Stream Vel. (.ft/sec)	Residual Pool Volume: Average LxWxD (ft ³)	Residual Pool Max Depth (ft)	Intake Vel. (ft/sec)	Intake Flow (cfs or gpm)	Tank Capacity (gals.)	Time to Fill (min.)	Staff Plate (ft)			Source Water Temp (F ^o)	Return Water Temp. (F ^o)	Down-stream Average Riffle Crest Depth (in.)	Notes
											Begin Pump	During Pump	End Pump				
7/1/09	Hole #5 SBNF Navarro	Class I	33	1.2	10 * 8 * 3 = 240	3.8	0.21	265	4000	25				58	60	3.1	Set up stream-flow stakes and installed re-bar in pool

D.2.12 Timber inventory

MRC maintains timber inventory in an online database. From this database, we will generate a summary, every 10 years, on the current average conditions for AMZ stands on our land and projections for future AMZ conditions. Data will include average tree height, current average basal area by planning watershed, average number of trees by diameter and height, and average canopy closure. We will conduct landscape modeling of stand characteristics and associated tree lists with data on species, computed tree height and weight, diameter at breast height (dbh), live crown ratio (i.e., crown height divided by total tree height), density or canopy closure, and site quality. MRC will produce timber inventory reports at the property-wide and planning watershed levels.

TIMBRINV_RPT_010		01/30/20012				
M§13.5.1.1-1						
M§13.5.1.1-2						
MENDOCINO REDWOOD COMPANY						
Fort Bragg, CA						
<i>HCP/NCCP Effectiveness Monitoring Report</i>						
Timber inventory						
Canopy Cover in Class I and Large Class II AMZ						
by Planning Watershed						
Years since HCP/NCCP Initiation						
Planning Watershed	0	20	40	60	80	
Cottaneva Creek	77%	79%	80%	83%	85%	
Dutch Henry Creek	73%	79%	83%	85%	86%	
East Branch North Fork Big River	69%	81%	82%	85%	86%	
Flynn Creek	77%	83%	84%	86%	85%	
Canopy Cover in Class I and Large Class II AMZ						
Number of Trees and Average Tree Height						
Class I and Large Class II AMZ						
	dbh (in.)				Average Tree Height (>24 in.)	
	24-32		>32			
	Average Height	Trees per Acre	Average Height	Trees per Acre		
2000	111	7	112	2	111	
2005	115	8	117	3	116	
2010	119	9	121	3	119	

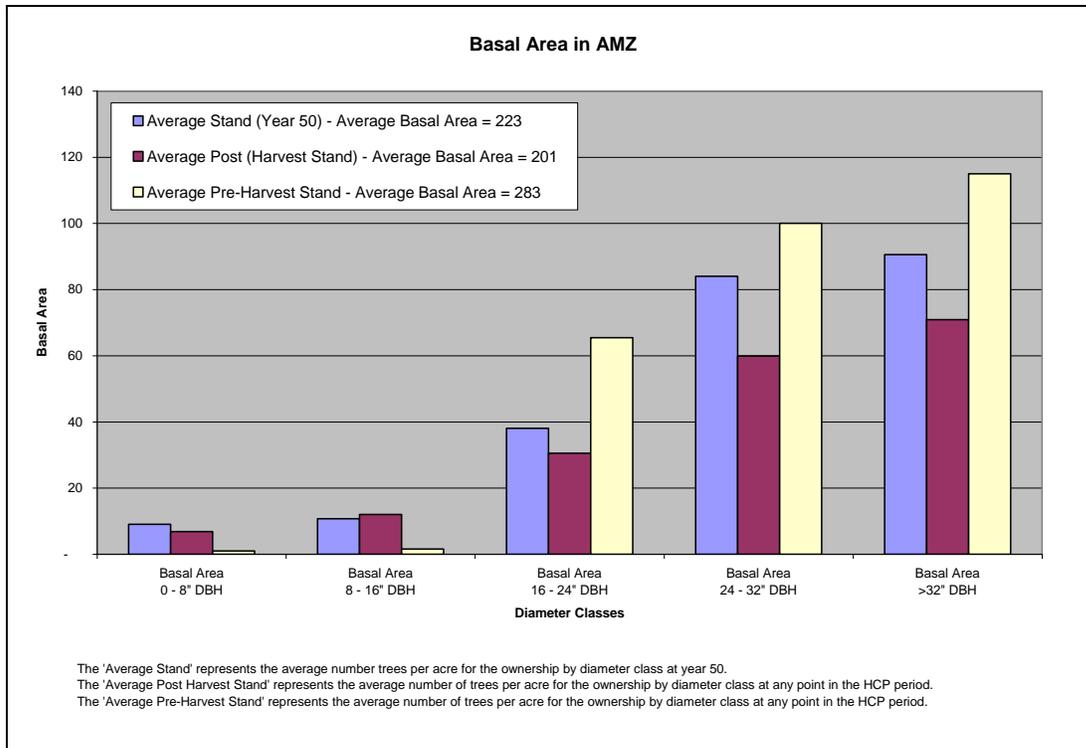


Figure D-2 Basal Area in Class I and Large Class II AMZ

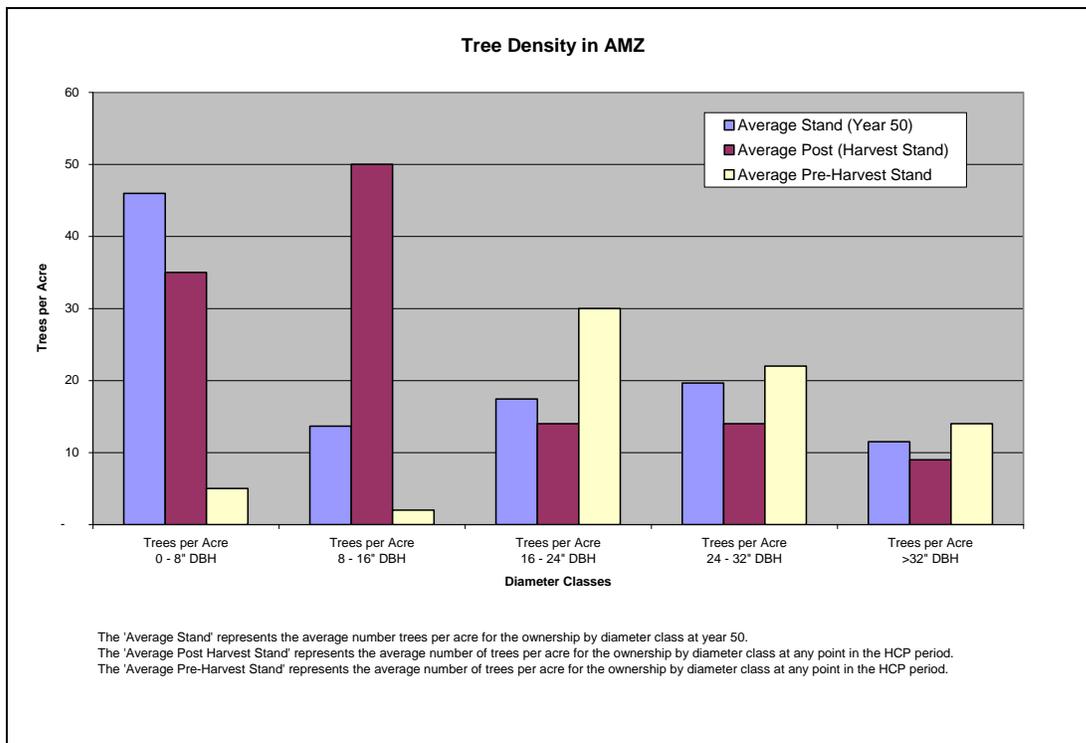


Figure D-3 Tree Density in Class I and Large Class II AMZ

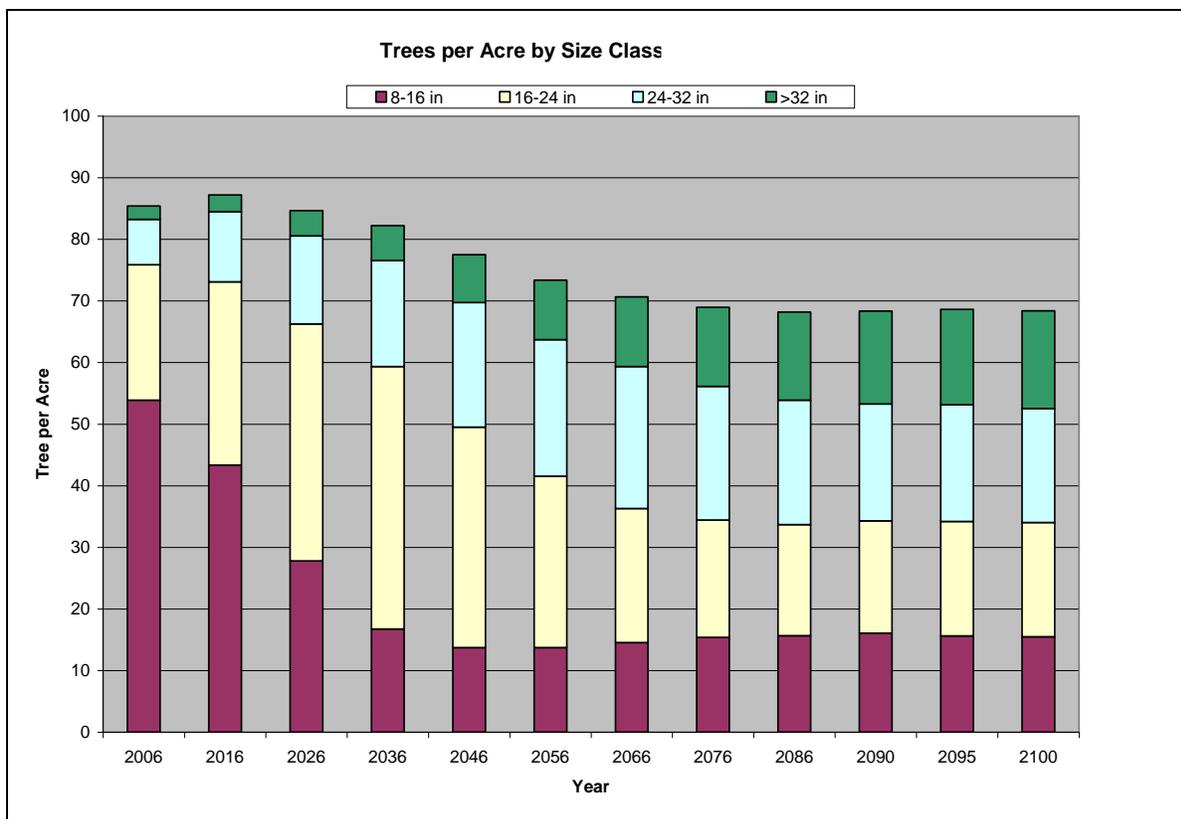


Figure D-4 Trees per Acre by Size Class in Class I and Large Class II AMZ

D.2.13 Mass wasting

MRC will conduct watershed analysis every 20 years. Focus watershed studies will be every 5 years. Forensic monitoring reports will be ongoing throughout the term of the HCP/NCCP. We will submit these reports to the agencies as they are completed.

Information on mass wasting will be part of 3 reports:

- Mass wasting inventory updates in watershed analysis.
- Mass wasting inventory in focus watershed studies.
- Forensic monitoring.

The agencies have on file an MRC watershed analysis report. Future updates, as well as focus watershed studies, will be in this same format. Forensic monitoring will follow the guidelines in the California Geological Survey Note 45.

D.3 Reports on Aquatic Species

D.3.1 Report timelines

D-6 gives the proposed schedule of reports for aquatic species.

Table D-7 Timelines for HCP/NCCP Monitoring Reports on Aquatic Species

Timelines for HCP/NCCP Monitoring Reports on Aquatic Species						
Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
Amphibians						
AMPHIB_RPT_010	Percent of documented breeding sites occupied within each red-legged frog management unit.	Report on objectives in M§13.6.2.1-2	Annually	15 September	Electronic report via email attachment or CD	USFWS CDFG
AMPHIB_RPT_020	Habitat quality measurements to determine if habitat quality is being maintained or improved.	Report on objectives in M§13.6.2.1-3	Every 5 years	15 September	Electronic report via email attachment or CD	USFWS CDFG
AMPHIB_RPT_030	Surveys to determine baseline distribution of coastal tailed frogs	Report on objectives in M§13.6.3.1-1	One time only	Complete by Year 2 of HCP/NCCP	Electronic report via email attachment or CD	USFWS CDFG
AMPHIB_RPT_040	Surveys to monitor the spatial distribution and relative abundance of coastal tailed frogs.	Report on objectives in M§13.6.3.1-2	Every year	30 December	Electronic report via email attachment or CD	USFWS CDFG
Salmonids						
FISH_RPT_010	Provide data regarding the presence of coho salmon and steelhead in all major basins owned.	Report on objectives in M§13.6.1.1-1	Annually	30 December	Electronic report via email attachment or CD	NMFS CDFG
FISH_RPT_020	Provide results of Chinook salmon monitoring reaches (CSMR)	Report on objectives in M§13.6.1.1-NEW	Annually	30 December	Electronic report via email attachment or CD	NMFS CDFG
FISH_RPT_030	Provide results of surveys to determine distribution of salmonids throughout watercourses.	Report on objectives in M§13.6.1.1-2	Every 12 years	30 December	Electronic report via email attachment or CD	NMFS CDFG
FISH_RPT_040	Provide estimates of outmigrating smolts (coho salmon and steelhead).	Report on objectives in M§13.6.1.2-1	Annually	30 December	Electronic report via email attachment or CD	NMFS CDFG

D.3.2 Amphibians

D.3.2.1 Red-legged frogs

Potential breeding sites

At the commencement of the HCP/NCCP, MRC will identify those planning watersheds in which there are both potential and documented breeding sites for red-legged frogs. These surveys will establish our baseline number of red-legged frog management units with documented breeding sites. Our objective is to ensure that 100% of red-legged frog management units retain their breeding sites. An annual monitoring report will show whether the breeding sites remain in the baseline watersheds.

Documented breeding sites

If MRC determines that a potential breeding site has evidence of red-legged frog reproduction, we consider that site a documented breeding site. We will monitor documented breeding sites annually for presence of red-legged frogs or evidence of reproduction. Our objective is to ensure that 100% of red-legged frog management units retain their breeding sites. In addition, there should be no more than 1 documented breeding site in a planning watershed that is occupied by bullfrogs. An annual monitoring report will show the number of baseline sites in each red-legged frog management unit and planning watershed, the percentage of breeding sites in each red-legged frog management unit that are still occupied by red-legged frogs, and the number of breeding sites with bullfrogs present.

AMPHIB_RPT_010 M§13.6.2.1-2			06/15/2010				
MENDOCINO REDWOOD COMPANY Fort Bragg, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Occupancy of Red-legged Frogs in Documented Breeding Sites							
			% of Documented Sites Occupied				
Planning Watershed	RLF Management Unit	Baseline Breeding Sites	2005	2006	2007	2008	2009
AL	AL1	4	100	100	75	100	75
AL	AL2	3	100	100	100	100	100
AL	AL3	1	100	100	100	100	100
CU	CU1	2	100	100	100	100	100
CU	CU2	2	100	100	100	50	100
EU	EU1	3	100	100	100	100	100
REPORT NOTES AL=Lower Albion; AR=Russian Gulch; CG=Lower Greenwood Creek; CU=Upper Greenwood Creek; CM= Mallo Pass Creek; EU= Upper South Branch North Fork Navarro River							

5-year report on quality of red-legged frog habitat

After baseline data has been collected for all areas, MRC will measure the quality of potential red-legged frog habitat every 5 years. We will compare this collected data to baseline measurements to ensure that habitat quality and quantity remain stable. Our objective is to ensure that a breeding site maintains at least 75% of its maximum depth and surface area. In addition, at least 90% of the breeding sites must meet this requirement.

AMPHIB_RPT_020					09/15/2015			
M§13.6.2.1-1								
MENDOCINO REDWOOD COMPANY								
Fort Bragg, CA								
<i>HCP/NCCP Effectiveness Monitoring Report</i>								
Baseline Distribution and Habitat Quality of Red-legged Frog Breeding Sites								
Baseline					2010		2015	
Planning Watersheds	# Sites	Site ID	Max Depth (ft)	Surface Area (ft ²)	% Max Depth	% Surface Area	% Max Depth	% Surface Area
EU	6	EU 1001	2.5	1880	95	94	95	94
		EU 1002	3.0	10,200	100	88	100	88
		EU 1003	7.0	800	86	92	86	92
		EU 1004	3.0	555	92	79	92	79
		EU 1005	3.0	780	98	100	98	100
		EU 1005	3.0	780	98	100	98	100
		EU 1006	6.0	1000	100	99	100	99
Total Sites Meeting Objectives:								

D.3.2.2 Coastal tailed frogs

Distribution and relative abundance of coastal tailed frogs

Within 3 years of HCP/NCCP implementation, MRC will provide an initial report with baseline data on the distribution of coastal tailed frogs in the plan area. As we encounter new populations, we will update this data. Every year, we will issue a report on the distribution and relative abundance of coastal tailed frogs. Our objective is to maintain (a) larval coastal tailed frogs in at least 95% of the sites where initial distribution surveys detected their presence and (b) relatively stable abundance estimates.

AMPHIB_RPT_030		09/22/2015	
M§13.6.3.1-1			
MENDOCINO REDWOOD COMPANY			
Fort Bragg, CA			
<i>HCP/NCCP Effectiveness Monitoring Report</i>			
Baseline Distribution of Coastal Tailed Frogs			
Site ID	Coastal Tailed Frogs Present?		
RC-1002	Y		
RC-1004	Y		
RC-1006	N		
RC-1007	Y		
RC-1009	Y		
% Sites Occupied: 80%			

AMPHIB_RPT_040		09/22/2015	
M§13.6.3.1-2			
MENDOCINO REDWOOD COMPANY			
Fort Bragg, CA			
<i>HCP/NCCP Effectiveness Monitoring Report</i>			
Distribution and Relative Abundance of Coastal Tailed Frogs			
Site ID	Minutes for Initial Detection	Total Number of CTF's Collected	CTF's per Cubic Meter of Water Searched
Cottaneva Creek			
RC-1002	2	45	3.75
RC-1004	5	56	3.90
RC-1005	4	34	2.75
RC-1007	7	89	7.90
Sites occupied from baseline 100%			

D.3.3 Salmonids

D.3.3.1 Presence of anadromous salmonid in major drainage basins

MRC will conduct annual surveys within each of the 18 major drainage basins to determine which species of salmonids are present and submit a report to the wildlife agencies.

FISH_RPT_010
M§13.6.1.1-1

12/30/2008

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Effectiveness Monitoring Report
Anadromous Salmonid Presence: Annual Salmonid Monitoring Basins (ASMB)

Major Basin	Sampling Effort (minutes)	Stream MWAT (C°)	Stream Conductivity (ppm and µS)	PH	Baseline		2006		2007		2008	
					Coho	STH	Coho	STH	Coho	STH	Coho	STH
Hollow Tree	5	18.1	350/175	6.97	X	X	X	X				
Cottaneva	10	14.9	400/201	7.09	X	X	X	X				
Hardy Creek	25	16.2	302/151	8.04		X		X				
Juan Creek	12	15.3	152/077	7.55		X		X				
NF Noyo River	1	19.0	100/049	7.44	X	X	X	X				
Big River	2	22.3	124/062	7.92	X	X	X	X				

REPORT NOTE

STH = steelhead

D.3.3.2 Chinook salmon monitoring reaches (CSMR)

MRC has identified 2 watersheds where Chinook salmon are encountered most frequently for monitoring purposes: Hollow Tree Creek and the North Fork of the Noyo River. We will monitor 1 CSMR in both Hollow Tree Creek and the North Fork Noyo River every year to determine the presence and relative abundance of juvenile Chinook salmon. In addition, we will randomly select 2 other CSMR to monitor every year. This would be a total of 4 CSMR surveys per year, rotating through all 8 historic or potential streams roughly every 4 years.

FISH_RPT_020
M§13.6.1.1-3

12/30/2010

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Effectiveness Monitoring Report
Chinook Salmon Monitoring Reaches (CSMR)

CSMR	Chinook present?	Estimated Number of Chinook Observed	Date of Survey	Stream Flow (cfs)	Other Salmonids Observed		Length of Reach (mi)
					Coho	STH	
Hollow Tree	Yes	300	03/01/2010	34.2	X	X	1.00
Cottaneva	No	0	03/21/2010	4.5	X	X	0.70
NF Noyo River	Yes	150	04/03/2010	7.44	X	X	1.00
Albion River	Yes	5	04/08/2010	13.0	X	X	0.85

REPORT NOTE

STH = steelhead

D.3.3.3 Anadromous salmonid distribution

MRC will conduct extensive distribution surveys across the entire plan area and sample approximately 450 sites. We will submit reports every 12 years. A report will show the percentage of streams currently occupied by steelhead and coho salmon as compared to baseline data.

FISH_RPT_030
M§13.6.1.1-2

12/30/2015

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Effectiveness Monitoring Report
Anadromous Salmonid Distribution

Site ID	Sampling Effort (minutes)	Sampling Method	Stream Temperature (C°)	Stream PH	Baseline		2012		2013		2014	
					Coho	STH	Coho	STH	Coho	STH	Coho	STH
78-15	11	E	17.4	6.71	X	X	X	X	X	X	X	X
78-14	9	E	15.2	7.11	X	X	X	X	X	X	X	X
78-13	5	E	21.2	7.21		X		X	X	X	X	X
78-12	3	E	20.1	6.99		X		X		X		X
78-11	18	E	19.2	6.87		X		X		X		X
78-10	11	E	15.0	6.55	X	X	X	X	X	X	X	X

SUMMARY TOTALS

% of coho sites remaining occupied: 100%

% steelhead (STH) sites remaining occupied: 100%

D.3.3.4 Outmigration of anadromous salmonid smolts

MRC will submit to the wildlife agencies an annual report with cumulative statistics on outmigrant smolts. To calculate the range of salmonid numbers, we will use DARR (Darroch Analysis with Rank Reduction).

FISH_RPT_040				
M§13.6.1.2-1		12/30/2015		
<p>MENDOCINO REDWOOD COMPANY Fort Bragg, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Smolt Abundance</p>				
Focus Watershed	Stream MWAT (C°)	Year	Coho Salmon	Steelhead
S.F. Albion	16.8	2010	13,178 ± 1678	5,789 ± 985
S.F. Albion	16.2	2011	12,578 ± 2026	1,875 ± 247
S.F. Albion	15.7	2012	13,890 ± 1990	7,981 ± 1209
L.N.F. Navarro	17.4	2013	5,789 ± 985	13,178 ± 1678
L.N.F. Navarro	16.9	2014	1,875 ± 247	12,578 ± 2026
L.N.F. Navarro	16.7	2015	7,981 ± 1209	13,890 ± 1990

D.4 Reports on Terrestrial Habitat

D.4.1 Report timelines

Table D-8 gives the proposed schedule of reports for terrestrial habitat. All terrestrial reports will include an executive summary (a) detailing unique findings and abnormal results and (b) highlighting the results of each monitoring program.

Table D-8 Timelines for HCP/NCCP Monitoring Reports on Terrestrial Habitat

Timelines for HCP/NCCP Monitoring Reports on Terrestrial Habitat						
Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
Monitoring Reports						
TREE_RPT_010	Number of snags, wildlife trees, and recruitment trees within each THP unit prior to harvest	Report on objectives in M§13.8.1-1	Annually	1 March	Electronic report via email attachment or CD	USFWS CDFG
TREES_RPT_020	Number of pieces of downed wood within THP units proposed for harvest of downed wood.	Report on objectives in M§13.8.1-1	Annually	1 March	Electronic report via email attachment or CD	USFWS CDFG
TREES_RPT_030	Number of snags and wildlife trees felled for safety reasons.	Compliance	Annually	1 March	Electronic report via email attachment or CD	USFWS CDFG
TREES_RPT_040	Mean number of snags, snag recruitment trees, and pieces of downed wood on covered lands inventoried over a 10-year period	Report on objectives in M§13.8.1-1	Every 10 years	1 March	Electronic report via email attachment or CD	USFWS CDFG
HDWD_RPT_010	Basal area of hardwoods pre-harvest	Report on objectives in M§13.8.1-2	Annually	1 March	Electronic report via email attachment or CD	USFWS CDFG
HDWD_RPT_020	Basal area of hardwoods post-harvest	Report on objectives in M§13.8.1-2	Annually	1 March	Electronic report via email attachment or CD	USFWS CDFG
HDWD_RPT_030	Post harvest follow-up on hardwood representative sample areas	Report on objectives in M§13.8.1-3	Annually	1 March	Electronic report via email attachment or CD	USFWS CDFG
HDWD_RPT_040	Acreage and number of hardwood representative sample areas	Report on objectives in M§13.8.1-4	Every 10 years	1 March	Electronic report via email attachment or CD	USFWS CDFG

Timelines for HCP/NCCP Monitoring Reports on Terrestrial Habitat

Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
OG_RPT_010	Acreage and number of old growth stands	Report on objectives in M§13.8.1-5	Every 10 years	1 March	Electronic report via email attachment or CD	USFWS CDFG
ROCK_RPT_010	Distribution and abundance of rocky outcrops	Report on objectives in M§13.8.1-6	Every 10 years	1 March	Electronic report via email attachment or CD	USFWS CDFG
NAT_COM_010	Planting efforts and species distribution planted in harvested conifer stands	Report on monitoring program M§13.8.2-1	Annual	1 March	Electronic report via email attachment or CD	USFWS CDFG
NAT_COM_020	Acres and distribution of structure classes on covered lands	Report on monitoring program M§13.8.2-1	Every 10 years	1 March	Electronic report via email attachment or CD	USFWS CDFG
NAT_COM_030	Reforestation efforts in conifer stands not dominated by redwood or Douglas-fir	Report on monitoring program M§13.8.2-1	Annual	1 March	Electronic report via email attachment or CD	USFWS CDFG
NAT_COM_040	Ecological process re-introduced in uncommon natural communities	Report on monitoring program M§13.8.2-2	Every 5 years	1 March	Electronic report via email attachment or CD	USFWS CDFG
NAT_COM_050	Acres and distribution of uncommon natural communities	Report on monitoring program M§13.8.2-2	Every 10 years	1 March	Electronic report via email attachment or CD	USFWS CDFG
INV_SPE_010	Known invasive species population on covered lands	Report on monitoring program M§13.8.3-1	Annual	1 March	Electronic report via email attachment or CD	USFWS CDFG
INV_SPE_020	Efforts to control invasive species	Report on monitoring program M§13.8.3-1	Annual	1 March	Electronic report via email attachment or CD	USFWS CDFG

D.4.2 Snags, wildlife trees, recruitment trees, and downed wood

The annual reports on snags, wildlife trees, recruitment trees, and downed wood will include compliance and effectiveness monitoring in the plan area. Compliance monitoring consists of pre-harvest marking and tallying of snags, wildlife trees, and recruitment trees to ensure that MRC meets retention targets. Effectiveness monitoring consists of long-term trend monitoring of snags, wildlife trees, recruitment trees, and pieces of downed wood. Since wildlife trees include old growth trees, we will track the number of individual old growth trees through these processes as well.

On rare occasions, MRC may harvest pieces of downed wood; in these instances, we will complete pre-harvest surveys to ensure there are enough pieces of downed wood to meet objectives. Copies of surveys and maps will be available to the wildlife agencies upon request.

D.4.2.1 Pre-harvest² snags, wildlife trees (including old growth trees), and recruitment trees

TREE_RPT_010 M§13.8.1-1					03/01/2006															
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Pre-harvest Assessment of Snags, Wildlife Trees, and Recruitment Trees																				
Inventory Block	THP #	Unit	General forest or special?	Acres	Wildlife Trees and Snags						Recruitment Trees				Total (wildlife trees, snags, and recruitment trees)					
					Old Growth		Snags		Other WT		Conifer		Hardwood		Snags +WT		RT		Total	
					CO	HW	L	S	L	S	L	S	L	S	L	S	L	S	L	S
Big River	1-05-034	A	General forest	25	2	5	9	6	15	5	0	25	0	15	31	11	0	40	31	51
Big River	1-05-034	B	General forest	50	0	1	10	8	19	13	6	40	6	39	38	21	12	79	50	100
Big River	1-05-034	C	General forest	90	10	1	15	20	14	9	50	105	10	52	40	29	60	157	100	186
Big River	1-05-034	D	General forest	100	7	8	25	40	20	30	25	75	15	60	60	70	40	135	100	205
Big River	1-05-034	F	Class I AMZ	10	7	4	10	15	5	4	0	19	0	8	26	19	0	27	26	46

REPORT NOTE
 Acronyms: CO = conifer HW = hardwood L = large S = small WT = wildlife trees RT = recruitment trees

² MRC assesses and marks snags, wildlife trees, and recruitment trees prior to harvest. At that time we complete initial counts and recruitment tallies. Our inventory system will track overall trends in numbers of snags and wildlife trees to determine if recruitment strategies are working.

D.4.2.2 Pre-harvest downed wood assessment

TREE_RPT_020						01/15/2007
M§13.8.1-1						
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Pre-harvest Downed Wood Assessment*</p>						
Inventory Block	THP #	Unit	Acres	General Forest or Other	Number of Hard Logs	Required Pieces from Felled Trees (recruitment)
Big River	1-05-034	A	25	general forest	100	25
Big River	1-05-034	B	50	general forest	210	40
Big River	1-05-034	C	90	general forest	502	0
Big River	1-05-034	D	100	general forest	650	0
Big River	1-05-034	F	10	Class I AMZ	58	2
*Number of pieces of downed wood within units proposed for harvest of downed wood						

D.4.2.3 Snags and wildlife trees felled for safety

TREE_RPT_030						01/15/2007
M§13.8.1-1						
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Pre-harvest Downed Wood Assessment*</p>						
Inventory Block	THP #	Unit	Area Type	Tree Type	Large	# of Additional Recruitment Trees Small
Big River	1-05-034	A	general forest	1 large snag 1 old growth	2	0

D.4.2.4 Trends in snags, wildlife trees, recruitment trees, and downed wood

TREE_RPT_040 M§13.8.1-1		03/01/2016							
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Trends in Snags, Wildlife Trees, Recruitment Trees, and Downed Wood									
Inventory Block	Mean Number of Snags per Acre	SD	Mean Snag Recruitment Trees per Acre	SD	Mean Pieces of Downed Wood per Acre	SD	Previous Mean Snags per Acre (2006)	Previous Mean Snag Recruitment Trees per Acre (2006)	Previous Mean Pieces of Downed Wood per Acre (2006)
Albion	3.5	0.2	10.1	0.6	7.5	0.7	3.4	10.1	6.8
Big River	6.7	0.2	11.2	0.9	8.3	0.1	6.4	11.1	8.2
Garcia	4.4	0.4	12.3	0.1	6.5	0.2	4.4	11.1	6.3
Navarro East	2.3	0.2	8.6	0.3	7.8	0.3	2.1	10.7	6.3
Navarro West	3.4	0.1	5.6	0.1	3.4	0.2	3.3	5.4	3.5
Noyo	4.8	0.2	8.6	0.2	4.9	0.1	4.5	8.4	4.4
Rockport	6.7	0.5	8.3	0.4	5.1	0.5	6.3	7.8	4.9
South Coast	5.0	0.3	12.3	0.3	6.7	0.2	4.4	12.5	6.9
Ukiah	5.1	0.2	9.6	0.5	4.9	0.4	4.8	8.9	4.8
Total	5.1	0.3	9.6	0.4	6.1	0.3	4.4	9.6	5.8

D.4.3 Hardwoods

The annual report on hardwoods will include compliance and effectiveness monitoring. MRC is not proposing validation monitoring for hardwoods. Copies of survey and maps of plots will be available to the wildlife agencies upon request.

D.4.3.1 Pre-harvest hardwoods

HWD_RPT_010 M§13.8.1-2					03/01/2010
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA HCP/NCCP Effectiveness Monitoring Report Basal Area of Hardwoods in Timber Stands: Pre-Harvest</p>					
Inventory Block	THP #	Unit	Basal Area (BA) > 15 ft ² Pre THP?	Ratio of Hardwood BA to Conifer BA Pre-harvest	
Big River	1	A	Y	N/A	
Big River	1	B	Y	N/A	
Big River	1	E	Y	N/A	
Big River	1	F	N	N/A	

D.4.3.2 Post-harvest hardwoods

HWD_RPT_020 M§13.8.1-2					03/01/2010
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA HCP/NCCP Effectiveness Monitoring Report Basal Area of Hardwoods in Timber Stands: Post-Harvest</p>					
Inventory Block	THP #	Unit	Acres	Plots	Basal Area (ft ²) or Ratio of Hardwood BA to Conifer BA Post Harvest
Big River	1-05-034	A	25	25	25
Big River	1-05-034	B	50	50	.0013

D.4.3.3 Hardwood representative sample areas

HWD_RPT_030						03/01/2010	
M§13.8.1-3							
MENDOCINO REDWOOD COMPANY							
Ukiah, CA							
<i>HCP/NCCP Effectiveness Monitoring Report</i>							
Post Harvest Follow-up on Hardwood Representative Sample Areas							
Inventory Block	THP	Unit	Acres	Plots	Proportion of Hardwoods: Conifers Pre-harvest (BA %)	Proportion of Hardwoods: Conifers Post-harvest (BA %)	
Big River	1-05-034	A	25	25	65	65	
Big River	1-05-034	B	50	50	55	55	

D.4.3.4 Acres and number of hardwood representative sample areas

HWD_RPT_040			03/01/2010	
M§13.8.1-4				
MENDOCINO REDWOOD COMPANY				
Ukiah, CA				
<i>HCP/NCCP Effectiveness Monitoring Report</i>				
Acreage and Number of Hardwood Representative Sample Areas				
Acres	Acres Last 10 Years	Number	Number (Last 10 Years)	
1400	1400	25	25	

D.4.3.5 Old growth

MRC will submit a report every 10 years on the effectiveness of old growth protection measures. If any THPs have been harvested that contain Type I or Type II old growth, MRC will also include a compliance report for those THPs. Copies of surveys and maps will be available to the wildlife agencies upon request.

OG_RPT_010						03/01/2016
M§13.8.1-5						
MENDOCINO REDWOOD COMPANY						
Ukiah, CA						
<i>HCP/NCCP Effectiveness Monitoring Report</i>						
Acree and Number of Old Growth Stands and Trees						
Inventory Block	Stand ID	Assessor(s)	Acres	Ref Photo #	Aerial Photo	
Type I						
Big River	BRXXX	SCB, RR	31	1	BR01	
Big River	BRXXY	RBD, MJ	10	2	BR02	
TOTAL			41	3	BR03	
Type II						
Big River	BRXXZ	SCB, RR	05	4	BR04	
Big River	BRXXW	RBD, MJ	06	5	BR05	
TOTAL			11			

D.4.4 Rocky outcrops

MRC will submit a report every 10 years on effectiveness of conservation measures for rocky outcrops. If any THPs have been harvested that contain or are within 1000 ft of rocky outcrops, we will also include a compliance report for those THPs. Copies of surveys, maps, and aerial photos will be available to the wildlife agencies upon request.

ROCK_RPT_010						03/01/2016
M§13.8.1-6						
MENDOCINO REDWOOD COMPANY						
Ukiah, CA						
<i>HCP/NCCP Effectiveness Monitoring Report</i>						
Distribution and Acree of Rocky Outcrops						
Inventory Block	Stand ID	Assessor(s)	Acres	Maintains characteristics?		
Big River	BRXYY	TB	24	Yes		
Big River	BRXYZ	TB	10	Yes		
TOTAL			34			

D.4.5 Common natural communities

NAT_COM_010 M§13.8.2-1		03/01/2016		
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Common Natural Communities</p>				
Inventory Block	Natural Community	Current	Acres	Previous

NAT_COM_015 M§13.8.2-1		03/01/2016			
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA Reforestation Efforts in Conifer-dominated Stands</p>					
Inventory Block	Unit ID	Silviculture	Acres	Planted trees	
				RW	DF
Big River	BR001	Variable retention	24	5119	750
Big River	BR002	Group selection	10	900	100
TOTAL			34	6019	850

NAT_COM_020 M§13.8.2-1		03/01/2016		
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA Acres and Distribution of Structure Classes in the Plan Area</p>				
Inventory Block	Structure Class I (previous decade)	Structure Class I (current decade)	Difference	
Big River	5400	5000	-7%	
Garcia	3500	3600	+3%	
TOTAL	8900	8600	-3%	

NAT_COM_030		03/01/16	
MENDOCINO REDWOOD COMPANY Ukiah, CA Reforestation Efforts in Conifer Stands Not Previously Dominated by Redwood or Douglas-fir			
Inventory Block	Stand ID	Previous Dominant Conifer Species (Proportional Breakdown)	Planting (Proportional Breakdown)
Big River	BR023	60% Sugar pine, 40% Douglas-fir	10% RW, 30% DF, 60% SP

D.4.6 Uncommon natural communities

NAT_COM_040		03/01/16		
MENDOCINO REDWOOD COMPANY Ukiah, CA Ecological Process Re-introduced in Uncommon Natural Communities				
Inventory Block	Stand ID	Natural Community Type	Acres Managed	Ecological Process*
Ukiah	UK001	Oak woodland	24	Fire
*Final report will include extensive follow-up data with concurrence of MRC and the wildlife agencies.				

NAT_COM_050		03/01/16		
M§13.8.2-2				
MENDOCINO REDWOOD COMPANY Ukiah, CA HCP/NCCP Monitoring Report Uncommon Natural Communities				
Inventory Block	Grassland (acres)		Oak Woodland (acres)	
	Current	Previous	Current	Previous
Navarro East	35	35	1400	1400

D.4.7 Invasive species

ISC_RPT_010 M§13.8.3-1				03/01/16	
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Known Invasive Species Population in Plan Area					
Inventory Block	Stand ID	Invasive Species	UTM Coordinates	Acres	
Ukiah	UK004	Harding grass	432000, 4323444	1	

ISC_RPT_010 M§13.8.3-1				03/01/16	
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Invasive Species Control					
Inventory Block	Stand ID	Exotic Treated	Chemical Applied	Acres	Pounds
Ukiah	UK004	Harding grass	Imapazapyr	1	4

D.5 Reports on Terrestrial Species

D.5.1 Report timelines

Table D-9 gives the proposed schedule of reports for terrestrial species. All terrestrial species reports will include an executive summary (a) detailing unique findings and abnormal results and (b) highlighting the results of each monitoring program.

Table D-9 Timelines for HCP/NCCP Reports on Terrestrial Species

Timelines for HCP/NCCP Reports on Terrestrial Species and Habitat						
Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
Monitoring Reports						
NSO_RPT_010	11-section report: 1. NSO territories by inventory block	Report on objectives in M§13.9.1.3-1	Annually (NSO habitat report every 10 years)	1 March	Electronic report via email attachment or CD	USFWS CDFG
NSO_RPT_020	2. 10-year NSO productivity by inventory block	M§13.9.1.3-1				
NSO_RPT_030	3. Protection levels for territories by inventory block	Compliance				
NSO_RPT_040	4. Summary of visits to NSO territories to determine reproductive status	M§13.9.1.3-1				
NSO_RPT_050	5. Nocturnal surveys for NSOs	M§13.9.1.3-1 M§13.9.1.3-2 Compliance				
NSO_RPT_060	6. Summary of nocturnal surveys	M§13.9.1.3-1 M§13.9.1.3-2 Compliance				
NSO_RPT_070	7. Conservation measures for NSO within 0.7 miles of THPs	Compliance				
NSO_RPT_080	8. NSO banding	Compliance				
NSO_RPT_090	9. NSO habitat	M§13.9.1.3-2				
NSO_RPT_100	10. Effect of harvest on NSO	M§13.9.1.4-4				
NSO_RPT_110	11. Effect of hardwood on NSO	M§13.9.1.4-6				

Timelines for HCP/NCCP Reports on Terrestrial Species and Habitat

Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
MAMU_RPT_010	7-section report: 1. Murrelet assessment within harvested THPs	Compliance	Annually	1 March	Electronic report via email attachment or CD	USFWS CDFG
MAMU_RPT_020	2. Current protections for occupied murrelet habitat and unsurveyed potential habitat	Compliance				
MAMU_RPT_030	3. Summary of murrelet surveys in harvest areas	Compliance				
MAMU_RPT_040	4. Harvest plans and other projects within LACMA	Compliance				
MAMU_RPT_050	5. Radar surveys in Lower Alder Creek	M§13.9.2.1-1				
MAMU_RPT_060	6. Radar surveys in Navarro, Greenwood, and Albion	M§13.9.2.1-2				
MAMU_RPT_070	7. Radar surveys in additional drainages	M§13.9.2.2-3				
PAMB_RPT_010	5-section report: 1. THPs within assessment areas of Point Arena Mountain Beaver	Compliance	Annually (part 4 produced every 5 years)	1 March	Electronic report via email attachment or CD	USFWS CDFG
PAMB_RPT_020	2. Surveys for potential habitat of Point Arena Mountain Beaver	Compliance				
PAMB_RPT_030	3. Buffers for PAMB burrow systems	Compliance				

Timelines for HCP/NCCP Reports on Terrestrial Species and Habitat

Report ID	Report Description	Purpose of Report	Report Frequency	Submission Date	Form of Submission	Receiving Agencies
PAMB_RPT_040	4. Spatial extent of burrow systems of Point Arena Mountain Beaver	M§13.9.3.1-1				
PAMB_RPT_050	5. Creating Point Arena Mountain Beaver habitat with timber harvest	M§13.9.3.1-2				

D.5.2 Northern spotted owls (NSO)

The annual report on northern spotted owls will include compliance, effectiveness, and validation monitoring. Copies of actual surveys and maps showing nocturnal survey points and activity centers for spotted owls will be available upon request of the wildlife agencies. The full annual report consists of 11 sections:

- Section 1: Northern spotted owl territories by inventory block
- Section 2: 10-year productivity of northern spotted owls by inventory block
- Section 3: Protection levels for territories by inventory block for the upcoming year
- Section 4: Summary of visits to NSO territories to determine reproductive status
- Section 5: Nocturnal surveys for northern spotted owls
- Section 6: Summary of nocturnal surveys for management projects or validation monitoring
- Section 7: Conservation measures applied to THPs in the previous year
- Section 8: Banding report
- Section 9: Habitat report
- Section 10: Required validation monitoring: effect of harvest
- Section 11: Required validation monitoring: effect of hardwood on NSOs

D.5.2.1 NSO by inventory block

NSO_RPT_010 M§13.9.1.3-1		03/01/2006						
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Northern Spotted Owl Territories by Inventory Blocks								
Inventory Block	Level 1		Level 2		Level 3		Totals	
	NSOs	% of NSOs	NSOs	% of NSOs	NSOs	% of NSOs	NSOs	% of NSOs
Albion	4	29%	6	42%	4	29%	14	100%
Big River	1	8%	11	84%	1	8%	13	100%
Garcia	0	0%	3	50%	3	50%	6	100%
Navarro East	1	8%	9	56%	6	38%	16	100%
Navarro West	11	52%	7	33%	3	14%	21	100%
Noyo	1	8%	8	67%	3	25%	12	100%
Rockport	0	0%	13	65%	7	20%	20	100%
South Coast	10	45%	10	45%	2	10%	22	100%
Ukiah	0	0%	0	0%	0	0%	0	100%
Total	28	23%	67	54%	29	23%	124	100%

D.5.2.2 NSO 10-year productivity

NSO_RPT_020
M§13.9.1.3-1

03/01/2006

MENDOCINO REDWOOD COMPANY
Ukiah, CA
HCP/NCCP Effectiveness Monitoring Report
10-Year Productivity for Northern Spotted Owls
by Inventory Block

Albion

DFGID	Survey Years										Total Production	Years of Data	Mean Annual Production	Productivity Level	Protection Level
	95	96	97	98	99	00	01	02	03	04					
MD100	U	1	X	U	U	U	1	A	X	0	2	5	0.40	4	Moderate
MD110	0	U	A	U	1	U	0	1	1	2	5	6	0.83	1	High
MD120	A	1	1	U	0	U	2	U	1	1	6	6	1.00	1	Moderate
MD130	0	1	0	0	2	0	2	X	U	1	6	9	0.66	2	Moderate
Total										4					

Survey Years: Codes and Data
 A = not monitored during the year
 U = reproductive status unknown
 X = absent
 # = number of young produced

D.5.2.3 NSO protection levels

NSO_RPT_030		03/01/2010	
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Compliance Report</i> Protection Levels for Northern Spotted Owl Territories By Inventory Block			
DFGID	Mean Annual Production	Productivity Level	Protection Level
ROCKPORT			
MD210	0.50	4	Limited
MD220	0.78	2	Moderate
MD230	1.10	1	High
MD240	0.89	2	Moderate

D.5.2.4 NSO reproductive status

NSO_RPT_040		03/01/2010							
M§13.9.1.3-1									
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Summary of Visits to NSO Territories to Determine Reproductive Status									
Territory ID	Survey Type	Begin	End	Contact Time	Status	Survey Points	UTME	UTM	Survey to protocol?
MD005	Walk-in	08:01	10:00	N/A	X	N/A			
MD005	Nocturnal	20:00	20:40	20:30	F-NU-0U	BS01, BS02, BS03	471740	4346850	Y
MD005	Walk-in	07:00	09:00	07:15	P-NN-OR	N/A	471785	4346990	
MD005	Walk-in	07:00	0:900	08:00	P-NE-2J	N/A	471900	4346856	

D.5.2.5 NSO nocturnal surveys

NSO_RPT_050 M§13.9.1.3-1 M§13.9.1.3-1							01/15/2007			
<p>MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Nocturnal Surveys for Northern Spotted Owls</p>										
Inventory Block	Planning Watershed	Station	Date	Begin	End	Contact	Azimuth	Distance	Sex	Behavior
Big River	THP_AA	BT16	3-10	22:20	22:30					NC
		BT15	3-10	22:35	22:45					NC
		BT21	3-10	22:50	23:00	22:55	160	400	F	4-note
		BT22	3-10	23:10	23:20					NC
Big River	Rice Creek	BI01	3-12						SDTC	
Behavior Codes										
NC = no contact		4- note = 4 note location call		3-note = 3-note location call						
C = contact call		W = fledge whistle		A = agitated location						
SDTC = skipped due to contact at nearby stations		DDTAC = dropped due to location of an activity center within 0.5 miles								

D.5.2.6 Summary of NSO nocturnal surveys

NSO_RPT_060
M§13.9.1.3-1
M§13.9.1.3-2

01/15/2007

MENDOCINO REDWOOD COMPANY
Ukiah, CA
HCP/NCCP Effectiveness Monitoring Report
Summary of Nocturnal Surveys for Northern Spotted Owls

Inventory Block	THP or Planning Watershed	THP # or Project ID	Station	Survey 1	Survey 2	Survey 3	Survey 4	Survey 5	Survey 6
Big River	THP_AAA	1-05-034	BT16	3-10 NC	3-20 NC	6-1 NC			
			BT15	3-10 NC	3-20 NC	6-1 NC			
			BT21	3-10 FV	3-20 NC	6-1 NC			
			BT22	3-10 NC	3-20 NC	6-1 NC			
Big River	Rice Creek		BI01	3-12 SDTC	5-12 SDTC	7-12 DDTAC			
			BI02	3-12 NC	5-12 NC	7-12 NC			
			BI03	3-12 NC	5-12 NC	7-12 NC			
			BI04	3-12 NC	5-12 NC	7-12 NC			
			BI05	3-12 NC	5-12 NC	7-12 NC			
Behavior Codes									
NC = no contact			F = female			M = male			
V = vocal			O = observed						
SDTC = skipped due to contact at nearby stations			DDTAC = dropped due to location of an activity center within 0.5 miles						
Note: Surveys are for THPs, projects, and watershed planning									

D.5.2.7 Conservation measures for NSO within 0.7 miles of THPs

NSO_RPT_070		MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Compliance Report</i> Conservation Measures for Northern Spotted Owl Territories within 0.7 miles of THPs								03/01/2006
Inventory Block	THP #	Territories within 0.7 Miles	DFGID	Protection Level	500 ac of habitat within 0.7 miles?	Core Area (ac)	Distance from AC to Edge of Core Area (ft)	Extended protection area?	Disturbance Buffer (ft)	
Big River	1-05-056	2	MD605	High	Yes	80	1000	Yes	1000	
			MD900	Limited	No	N/A		No	500	

D.5.2.8 NSO banding

NSO_RPT_080		MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Compliance Report</i> NSO Banding								03/01/2006
Inventory Block	DFGID	Sex	Age	Re-sight or new?	USFWS Band # (Leg)	Color Band (Leg)	Pattern	Weight	UTM	
Big River	MD301	Female	Adult	New	346505 (Left)	WHI-ORN (Right)	Dot	550 g	44604 E 434505 N	
Navarro East	MD047	Male	Adult	Re-sight	445606 (Right)	YEL-BLK (Left)	Str2	510 g	44516 E 455605 N	

D.5.2.9 NSO habitat

NSO_RPT_090 M§13.9.1.3-2		03/01/2009		
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Northern Spotted Owls: Distribution and Acreage of Nesting/Roosting Habitat				
Inventory Block	Total Acres	Forestland	Current Nest/Roost	Previous Nest/Roost
Albion	14,797	14,526	6800	6604
Big River	33,479	33,058	4000	3852
Garcia	14,906	14,434	2700	2535
Navarro East	30,863	30,508	2400	2367
Navarro West	23,549	23,120	8000	7951
Noyo	19,350	19,318	2300	2156
Rockport	38,427	38,272	7800	7579
South Coast	34,281	33,446	11200	11,094
Ukiah	3,591	2,466	100	0
Total	213,233	209,148	45,300	44,138

D.5.2.10 Effect of harvest on NSO

NSO_RPT_100 M§13.9.1.4-4		03/01/2007			
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Validation Monitoring Report</i> Effect of Harvest within 1000 ft of NSO Territories with Limited Protection					
Inventory Block	Territory ID	Occupancy	Pair Status	Productivity	Harvest Distance
Albion	MD069	X	X	X	100 ft
Big River	MD079	M	Single	0 FL	700 ft
Garcia	MD130	Pair	Nesting	1 FL	200 ft
Navarro East	MD160	X	X	X	500 ft

D.5.2.11 Effect of hardwood on NSO

NSO_RPT_110 M§13.9.1.4-6		03/01/2007			
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Validation Monitoring Report</i> Effect of Harwood Density on Northern Spotted Owls					
Inventory Block	Territory ID	Occupancy	Pair status	Productivity	BA/ac
Albion	MD069	X	X	X	
Big River	MD079	M	Single	0 FL	85 sq. ft
Garcia	MD130	Pair	Nesting	1 FL	15 sq. ft
Navarro East	MD160	X	X	X	10 sq. ft

D.5.3 Marbled murrelets (MAMU)

Marbled murrelet sample report

The annual report on marbled murrelet will include compliance, effectiveness, and validation monitoring. Copies of actual surveys and maps showing survey points and detections for murrelets will be available upon request of the wildlife agencies. The full annual report consists of 5 sections:

- Section 1: Murrelet assessment within harvested THPs
- Section 2: Current protections for occupied murrelet habitat and unsurveyed potential habitat
- Section 3: Completed THP surveys with murrelet assessment
- Section 4: Radar surveys in Lower Alder Creek
- Section 5: Additional validation monitoring completed

D.5.3.1 Murrelet assessments within harvested THPs

MAMU_RPT_010		MENDOCINO REDWOOD COMPANY				03/01/2006
Ukiah, CA						
<i>HCP/NCCP Compliance Report</i>						
Murrelet Assessments within Harvested THPs						
THP	THP #	Inventory Block	Murrelet Zone	MAMU trees within 100 ft?	Protection Level or Survey Status	
THP_AAA	1-05-056	Big River	2	3	Moderate	
THP_AAB	1-05-077	Albion	1	5	Surveys completed	
THP_AAC	1-05-086	Rockport	1	1	Limited	
THP_AAD	1-05-099	Navarro East	3	1	No protection	

D.5.3.2 Current protections for occupied and potential murrelet habitat

MAMU_RPT_020		MENDOCINO REDWOOD COMPANY				03/01/2006
Ukiah, CA						
<i>HCP/NCCP Compliance Report</i>						
Current Protections for Occupied and Potential Murrelet Habitat						
THP	THP #	Inventory Block	Protection Level	Disturbance Buffer (ft)	Habitat Buffer (ft)	
THP_AAA	1-05-056	Big River	Moderate	400	200	
THP_AAC	1-05-086	Rockport	Limited	N/A	N/A	

D.5.3.3 Completed THP surveys with assessment of murrelet habitat

MAMU_RPT_030		MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Compliance Report</i> Completed THP Surveys with Assessment of Murrelet Habitat					03/01/2006
THP	THP #	Inventory Block	Date	Station	Start	End	Detections
THP_AAB	1-05-077	Albion	4/26/05	CH1	06:15	08:15	0
			5/15/05	CH2	05:45	07:45	0
			6/10/05	CH1	05:35	07:35	0
			6/25/05	CH2	05:15	07:15	0
			7/06/05	CH1	05:00	07:00	0
			4/26/06	CH2	06:15	08:15	0
			5/15/06	CH1	05:45	07:45	0
			6/10/06	CH2	05:35	07:35	0
			6/25/06	CH1	05:15	07:15	0
			7/06/06	CH2	05:00	07:00	0

D.5.3.4 THPs and other projects within LACMA

MAMU_RPT_040		MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Compliance Report</i> THPs and Other Projects within LACMA			03/01/2006
THP	THP #	Area	Silviculture	Acres	Agency Concurrence Date
THP_AAL	1-05-056	LACHA	Selection	25	03/01/05

D.5.3.5 Surveys in Lower Alder Creek

MAMU_RPT_050 M§13.9.2.1-1		MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Validation Monitoring Report</i> Activity Level of Marbled Murrelets in Lower Alder Creek					03/01/2006
Station ID	Date	Ground/Radar	Meets protocol?	Total Detections	Inbound Detections	Outbound Detections	Unknown Detections
CH1	06/15/2005	Radar	Yes	25	15	9	1
CH1	07/05/2005	Radar	Yes	15	5	5	5
CH2	07/06/2005	Radar	Yes	45	35	10	0
CH2	07/15/2005	Radar	Yes	40	25	10	5

D.5.3.6 Radar surveys in Navarro River, Greenwood Creek, and Albion River drainages

MAMU_RPT_060 M§13.9.2.1-2								03/01/2006
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Validation Monitoring Report</i> Murrelet Occupancy in Navarro, Greenwood Creek, Albion River Watersheds								
Station ID	Date	Ground/Radar	Meets protocol?	Total Detections	Inbound Detections	Outbound Detections	Unknown Detections	
NAV1	06/15/05	Radar	Yes	0	0	0	0	
NAV2	07/05/05	Radar	Yes	3	0	3	0	
GW1	07/06/05	Radar	Yes	0	0	0	0	
GW2	07/15/05	Radar	Yes	0	0	0	0	

D.5.3.7 Radar surveys in other drainages

MAMU_RPT_070 M§13.9.2.2-3								03/01/2006
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Validation Monitoring Report</i> Radar Monitoring in Additional Drainages								
Station ID	Date	Ground/Radar	Meets protocol?	Total Detections	Inbound Detections	Outbound Detections	Unknown Detections	
COT1	06/15/2005	Radar	Yes	0	0	0	0	
COT2	07/05/2005	Radar	Yes	0	0	0	0	
GAR1	07/0620/05	Radar	Yes	0	0	0	0	
GAR2	07/15/2005	Radar	Yes	0	0	0	0	

D.5.4 Point Arena mountain beaver (PAMB)

The annual report on Point Arena Mountain Beaver will include compliance, effectiveness, and validation monitoring. Copies of actual surveys and maps showing survey points and detections of burrow systems will be available upon request of the wildlife agencies. The full annual report consists of 5 sections:

- Section 1: THPs within Assessment Area of Point Arena Mountain Beaver.
- Section 2: Surveys for Potential Habitat of Point Arena Mountain Beaver.
- Section 3: Buffers for Burrow Systems of Point Arena Mountain Beaver.
- Section 4: Survey Results for Burrow Systems of Point Arena Mountain Beaver.
- Section 5: Additional validation monitoring for Point Arena Mountain Beaver.

D.5.4.1 THPs within PAMB assessment areas

PAMB_RPT_010		MENDOCINO REDWOOD COMPANY			03/01/2006
Ukiah, CA <i>HCP/NCCP Compliance Report</i> THPs within PAMB Assessment Areas					
THP	THP #	Potential habitat?	Potential Acreage	Burrow Systems	
THP_AA	1-05-034	No	N/A	N/A	
THP_AB	1-05-024	Yes	5	3	
THP_AC	1-05-033	Yes	1	0	

D.5.4.2 Surveys for potential PAMB habitat

PAMB_RPT_020		MENDOCINO REDWOOD COMPANY			01/15/2007
Ukiah, CA <i>HCP/NCCP Compliance Report</i> Surveys for Potential PAMB Habitat					
THP	THP #	Survey Dates	Surveyor(s)	Habitat completely covered?	Burrow Systems Located
THP_AB	1-05-024	5/5/05	Billig, S.	No	1
		6/6/05	Holley, M.	Yes	2
THP_AC	1-05-033	5/5/05	Douglas, R.	Yes	0

D.5.4.3 Buffers for PAMB burrow systems

PAMB_RPT_030		MENDOCINO REDWOOD COMPANY			03/01/06
Ukiah, CA <i>HCP/NCCP Compliance Report</i> Buffers for PAMB Burrow Systems					
THP	THP #	Burrow System ID	100-ft timber management?	400-ft herbicide buffer?	500-ft disturbance buffer?
THP_AB	1-05-024	PAMB008	Yes	Yes	Yes
		PAMB009	Yes	Yes	Yes
		PAMB010	Yes	Yes	Yes

D.5.4.4 Surveys for spatial extent of PAMB burrow systems

PAMB_RPT_040 M§13.9.3.1-1						03/01/2006
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Spatial Extent of Known Burrow Systems of Point Arena Mountain Beaver						
Burrow System ID	Active?	Habitat measured?	Acres	Canopy Cover	Basal Area of Trees (>4 in. dbh)	
PAMB008	Yes	Yes	0.05	30%	5.4	
PAMB009	Yes	Yes	0.07	20%	0.3	
PAMB010	Yes	Yes	0.02	5%	1.3	

D.5.4.5 Creating habitat for PAMB

PAMB_RPT_050 M§13.9.3.1-2					03/01/06
MENDOCINO REDWOOD COMPANY Ukiah, CA <i>HCP/NCCP Effectiveness Monitoring Report</i> Creating Habitat with Timber Harvest within Dispersal Distance of Existing PAMB Burrow Systems					
THP ID	THP Name	Acres Created	Method	Burrows after 1 year?	
1-06-501MEN	Garcia 2 mile	0.05	Group selection	N	
1-06-502MEN	Mill Creek	0.07	Group selection	N	
1-06-110MEN	Owl Creek	0.02	Group selection	N	

D.6 Rare Plants

MRC will submit an annual summary report to the wildlife agencies. This report will help determine whether conservation measures or implemented revisions have been successful. The report will also note any recent changes in statewide rarity and threat levels, as well as changes in timber harvesting methods in the plan area. MRC will include cumulative data on effectiveness monitoring organized first by inventory block, THP, or other covered activity, and then by species and occurrence. The report will evaluate the current status and trend of all covered rare plant species known to occur in the plan area and disclose annual levels of take.

Below is a sample *Rare Plant Survey Report*. For the sake of brevity, we have not included the THP species list or the list of references with this sample report.

MENDOCINO REDWOOD COMPANY
Fort Bragg, CA
HCP/NCCP Effectiveness Monitoring Report
Status and Trend of Covered Rare Plant Species
Nursey '08 THP

Summary Information

Project name: Nursey '08 Timber Harvest Plan (THP)
Legal description: Sections 15 & 22, T16N, R16W, MDBM
USGS 7.5' Quad: Elk and Navarro
Date of survey: May 30, 2006
Surveyed by: Elicia Wise
Project size: 119 acres
Time spent conducting survey: 6 hours

Communities/habitats within project area

North Coast Coniferous Forest (NCFr) Floristic

Rare plants identified (CNPS List 1-3)

No rare plants were identified during this survey. The sensitive lichen, *Usnea longissima*, was identified within the plan boundaries.

Methods

Rare plant scoping lists were generated from a 9-quad search using the California Native Plant Societies *Inventory of Rare and Endangered Plants* (CNPS, 2001) as well as querying species using the California Natural Diversity Database (CNDDDB). The results of the rare plant scoping and associated habitats are presented in Table 1.

A meandering, floristic survey was conducted on May 30th, 2006 which focused on areas likely to provide habitat for rare species and/or potentially affected (directly or indirectly) by timber harvest operations. These areas include existing roads and skid trails, meadows or openings (landings), culvert inlets and outlets, springs, and areas adjacent to watercourses. Approximately 6 hours were spent conducting the survey.

Plants were identified to the lowest taxonomic level necessary to ensure that it was not a species of concern. Additionally, pendulous lichens in the genus *Usnea* were identified when present. If a species could not be identified on site, it was keyed using the references attached to this report. Refer to the attached map for the survey route.

Survey Results and Discussion

The predominant habitat of the plan area is north coast coniferous forest (NCFr) with a floristic composition best described by the Redwood Series (Sawyer and Keeler-Wolf, 1995). The canopy is largely composed of scattered second-growth redwood (*Sequoia sempervirens*), Douglas-fir (*Pseudotsuga menziesii*) and tanoak (*Lithocarpus densiflorus*). The variable retention units (VR) are dominated by tanoak and few species compose the herbaceous, understory layer. The portion of plan area designated as group selection hosts a slightly more robust understory layer, however residual slash and sprouting tanoak continue to limit herbaceous

MENDOCINO REDWOOD COMPANY

Fort Bragg, CA

Rare Plant Survey Report

Nursey '08 THP

species diversity. As is to be expected, the number of species increased on roads, in openings, and near watercourses. No rare plants were identified in the plan area. A species list is attached with this report.

The sensitive lichen, *Usnea longissima*, was observed in the group selection unit on the east side of the ridge, below the existing haul road. This epiphytic lichen, which was once known from around the world, has declined over the past several decades (Keon and Muir, 2002). Currently, the Pacific coast continues to host populations of *U. longissima* from Alaska to northern California, with no known occurrences south of Sonoma county (Doell 2004; Keon and Muir 2002). Increased interest and survey efforts have revealed that there are over 200 occurrences of *U. longissima* and the species has recently been sponsored for a listing that would be equivalent to a CNPS List 4 (Peterson 2005).

The dominant source tree is a second-growth Douglas-fir with approximately 30% live crown. A source tree is defined as the dominant structure (live tree or snag) which contains the core population of *U. longissima*. The source tree, as well as two adjacent redwoods and one adjacent Douglas-fir, were marked for retention. This retention mark, in addition to the prescribed group selection silviculture, should provide adequate recruitment of potential future source trees. A CNDDDB field survey form has been prepared (copy attached) and submitted.

Rare Plant Scoping List for NCFrs Dominated Habitat
Albion Tract

Scientific Name	Common Name	Habitat†	Elevation	Blooming Period								
				Mar.	April	May	June	July	Aug	Sept	Oct	
<i>Astragalus agnicidus</i>	Humboldt milkvetch											
<i>Kopsiopsis hookeri</i>	small groundcone	NCFrs, BUFRs (disturbed)	195- 750 m									
<i>Calystegia purpurata</i> ssp. <i>saxicola</i>	coastal bluff morning glory	NCFrs, CCFrs (coastal)	90-885 m									
<i>Campanula californica</i>	swamp harebell	NCFrs, CoDn, CoScr	15-105 m									
<i>Carex californica</i>	California sedge	NCFrs, CCFrs, BgFn, CoPrr, MshSw (fir), Mdws	1-405 m									
<i>Carex viridula</i> var. <i>viridula</i>	green sedge	BgFn, CCFrs, Mdws, CoPrr, MshSw (edge)	90-335 m									
<i>Hesperocyparis pygmaea</i>	pygmy cypress	NCFrs, MshSw, BgFn	3-230 m									
<i>Erigeron biolettii</i>	streamside daisy	NCFrs, CCFrs (podzol soils)	30-500 m									
<i>Erythronium revolutum</i>	coast fawn lily	NCFrs, BUFRs, CmWld	30-1100 m									
<i>Horkelia tenuiloba</i>	thin-lobed horkelia	NCFrs, BUFRs, BgFn	0-1065 m									
<i>Lilium maritimum</i>	coast lily	CoScr, CCFrs, BUFRs, Chprl, VFGr	50-500 m									
<i>Lycopodium clavatum</i>	running-pine	BUFRs, CCFrs, CoScr, CoPrr, MshSw, NCFrs	5-335 m									
<i>Mitella caulescens</i> (LIST 4)	leafy-stemmed mitrewort	MshSw, NCFrs (mesic)	60-790 m									
<i>Monardella villosa</i> ssp. <i>globosa</i>	robust monardella	BUFRs, LCFrs, Mdws, NCFrs	<1700 m									
<i>Pleuropogon hooverianus</i>	Hoover's semaphore grass	Chprl, CmWld, BUFRs, CoScr	185-600 m									
<i>Sanguisorba officinalis</i>	great burnet	NCFrs, BUFRs, MshSw, VFGrs	10-635 m									
<i>Senecio bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	BgFn, MshSw, BUFRs, Mdws, NCFrs, RpFRs (often serp.)	60 - 1400 m									
<i>Sidalcea malachroides</i> (LIST 4)	maple-leaved checkerbloom	CoScr, NCFrs	30-650 m									
<i>Trifolium buckwestiorum</i>	Santa Cruz clover	BUFRs, CoPrr, CoScr, NCFrs	2-700 m									
<i>Usnea longissima</i>	long-beard lichen	BUFRs, CmWld, CoPrr	105-610 m									
<i>Viola palustris</i>	marsh violet	NCFrs, BUFRs, CCFrs	<656 m									
†Key to Habitat Types		CoScr, MshSw, BgFn (coastal)	0-150 m									

TABLE NOTES

BgFn=Bog, fen
 BUFRs=Broadleaf upland forest
 CBSCr=Coastal bluff scrub

CoScr=Coastal scrub
 LCFrs=Lower montane coniferous forest
 Mdw=Meadow

Rare Plant Scoping List for NCFrs Dominated Habitat
Albion Tract

Scientific Name	Common Name	Habitat†	Elevation	Blooming Period
CCFrS=Closed-cone coniferous forest	MshSw=Marsh, swamp			
Chpl=Chaparral	NCFrs=North coast coniferous forest			
CmWld=Cismontane woodland	RpFrS=Riparian forest			
CoDu=Coastal dune	RpWld=Riparian woodland			
CoPrr=Coastal prairie	UCFrS=Upper montane coniferous forest			
VFGrs=Valley foothill grassland				

D.7 Assessment of Take

Previous monitoring programs address effectiveness and validation monitoring, as well as compliance. MRC also tracks potential take of covered species. Our reports will document whether MRC has created a greater impact on covered species than our permit allows. The numbers in the following sample reports do not correspond to existing or expected data.

D.7.1 Assessment of take: salmonids

AOT_Coho	Acres Harvested Within Class I Habitat HCP/NCCP Implementation					
	Coho in Southern Oregon/Northern California Coast ESU					
WAU	Total Acres Harvested (2020)	Cumulative Acres Harvested (2010-2020)	Allowable Harvest Limit (2010-2020)	% Allowable Harvest Limit (2010-2020)	Gallons of Water Diverted for Drafting (2010-2020)	# Watercourse Crossings Installed or Maintained (2010-2020)
Hollow Tree Creek	0	0	0	0%	8000	8
Noyo River	0	0	0	0%	4000	5
Big River	0	0	0	0%	3000	4
Albion River	1	10	21	48%	7500	6
Garcia River	0	4	17	24%	5200	3

AOT_Steelhead	Acres Harvested Within Class I Habitat HCP/NCCP Implementation					
	Coho in Central California Coast ESU					
WAU	Total Acres Harvested (2020)	Cumulative Acres Harvested (2010-2020)	Allowable Harvest Limit (2010-2020)	% Allowable Harvest Limit (2010-2020)	Gallons of Water Diverted for Drafting (2010-2020)	Number of Watercourse Crossings Installed or Maintained (2010-2020)
Albion River	1	10	21	0%	3500	6
Alder Creek/Schooner Gulch	0	0	0	0%	2100	3
Big River	0	0	0	0%	4400	5
Cottaneva Creek	0	0	0	0%	1800	2
Elk Creek	0	0	5	24%	800	1
Garcia River	0	4	17	0%	3000	4
Greenwood Creek	0	0	0	0%	1300	2
Hollow Tree Creek	0	0	0	48%	5600	7
Navarro River	1	10	21	0%	8500	9
Noyo River	0	0	0	0%	2800	4
Rockport Small Coastal Streams	0	0	0	0%	3900	5

AOT_Chinook	Acres Harvested Within Class I Habitat HCP/NCCP Implementation					
	Chinook in California Coastal ESU					
WAU	Total Acres Harvested (2020)	Cumulative Acres Harvested (2010-2020)	Allowable Harvest Limit (2010-2020)	% Allowable Harvest Limit (2010-2020)	Gallons of Water Diverted for Drafting (2010-2020)	# Watercourse Crossings Installed or Maintained (2010-2020)
Hollow Tree Creek	0	0	0	0%	8000	8
Noyo River	0	0	0	0%	4000	5
Big River	0	0	0	0%	3000	4
Albion River	1	10	21	48%	7500	6
Garcia River	0	4	17	24%	5200	3

AOT_Steelhead	Acres Harvested Within Class I Habitat HCP/NCCP Implementation					
	Steelhead in Northern California Coast ESU					
WAU	Total Acres Harvested (2020)	Cumulative Acres Harvested (2010-2020)	Allowable Harvest Limit (2010-2020)	% Allowable Harvest Limit (2010-2020)	Gallons of Water Diverted for Drafting (2010-2020)	Number of Watercourse Crossings Installed or Maintained (2010-2020)
Albion River	1	10	21	0%	3500	6
Alder Creek/Schooner Gulch	0	0	0	0%	2100	3
Big River	0	0	0	0%	4400	5
Cottaneva Creek	0	0	0	0%	1800	2
Elk Creek	0	0	5	24%	800	1
Garcia River	0	4	17	0%	3000	4
Greenwood Creek	0	0	0	0%	1300	2
Hollow Tree Creek	0	0	0	48%	5600	7
Navarro River	1	10	21	0%	8500	9
Noyo River	0	0	0	0%	2800	4
Rockport Small Coastal Streams	0	0	0	0%	3900	5

D.7.2 Assessment of take: red-legged frogs

AOT_RLF Inventory Block	Area of impact	Annual and Cumulative Acres of Potential Habitat for Red-legged Frogs HCP/NCCP Implementation			
		Measure	Annual	Cumulative Acres Harvested (2010-2020)	Allowable Harvest Limit (2010-2020)
Albion	In AMZ	Acres	2	2	72
		Proportion	3%	3%	
	Outside AMZ	Acres	5	10	1042
		Proportion	< 1%	1%	
	Total	Acres	7	12	1114
		Proportion	1%	1%	
Big River	In AMZ	Acres	0	0	50
		Proportion	0%	0%	
	Outside AMZ	Acres	50	100	2404
		Proportion	2%	4%	
	Total	Acres	50	100	2454
		Proportion	2%	4%	
Garcia River	In AMZ	Acres	0	4	67
		Proportion	0%	6%	
	Outside AMZ	Acres	50	50	1167
		Proportion	< 1%	< 1%	
	Total	Acres	50	54	1233
		Proportion	< 1%	< 1%	
Navarro East	In AMZ	Acres	0	0	61
		Proportion	0%	0%	
	Outside AMZ	Acres	50	105	2371
		Proportion	2%	4%	
	Total	Acres	50	105	2431
		Proportion	2%	< 1%	
Navarro West	In AMZ	Acres	1	1	111
		Proportion	1%	1%	
	Outside AMZ	Acres	50	100	1393
		Proportion	4%	7%	
	Total	Acres	51	101	1515
		Proportion	3%	7%	

REPORT NOTE
Proportion = Proportion of allowable limit for decade

D.7.3 Assessment of take: coastal tailed frogs

AOT_CTF Inventory Block	Area of Impact	Annual and Cumulative Acres of Potential Habitat for Coastal Tailed Frogs HCP/NCCP Implementation				Allowable Harvest Limit (2010-2020)
		Measure	Annual	Cumulative Acres Harvested (2010-2020)		
Albion	In	Acres	7	20	49	
	AMZ	Proportion	14%	41%		
	Outside	Acres	60	100	451	
	AMZ	Proportion	13%	22%		
	Total	Acres	67	120	500	
		Proportion	13%	24%		
Big River	In	Acres	12	12	50	
	AMZ	Proportion	24%	24%		
	Outside	Acres	100	100	2404	
	AMZ	Proportion	4.1%	4.1%		
	Total	Acres	112	112	2454	
		Proportion	4.6%	4.6%		
Garcia River	In	Acres	0	1	67	
	AMZ	Proportion	0%	1.5%		
	Outside	Acres	5	10	1167	
	AMZ	Proportion	0.4%	0.9%		
	Total	Acres	5	11	1233	
		Proportion	0.4%	0.9%		
Navarro East	In	Acres	6	15	61	
	AMZ	Proportion	10%	24%		
	Outside	Acres	24	500	2371	
	AMZ	Proportion	1.0%	21%		
	Total	Acres	30	515	2431	
		Proportion	1.0%	21%		
Navarro West	In	Acres	0	0	111	
	AMZ	Proportion	0%	0%		
	Outside	Acres	0	0	1393	
	AMZ	Proportion	0%	0%		
	Total	Acres	0	0	1515	
		Proportion	0%	0%		
Noyo	In	Acres	0	10	34	
	AMZ	Proportion	0%	29%		
	Outside	Acres	5	128	1279	
	AMZ	Proportion	0.4%	10%		
	Total	Acres	5	138	1313	
		Proportion	0.4%	11%		

REPORT NOTE
Proportion = Proportion of allowable limit for decade

D.7.4 Assessment of take: northern spotted owls

AOT_NSO	Disturbances and Acres Impacted in NSO territories ³ Entire Term of HCP/NCCP Implementation			
Inventory Block	Number of Disturbance Events ⁴ (to date)	Number of Allowable Silviculture Events (for term)	< 500 ac Units of Habitat Harvested (to date)	Allowable Limits on < 500 ac Units of Habitat Harvested
Albion	2	184	50	946
Big River	1	88	0	422
Garcia River	2	121	25	676
Navarro East	3	215	75	1194
Navarro West	2	115	5	641
Noyo	5	135	0	682
Rockport	10	350	80	1616
South Coast	3	116	0	578
Total	28	1324	10	6754

D.7.5 Assessment of take: marbled murrelet

AOT_MAMU	Acres Disturbed in Marbled Murrelet Habitat					
Area Assessed	Number of Limited Protection Areas Assessed (to date)	Predicted Limited Protection Areas	Acres of Potential Disturbance Take ⁵ (to date)	Acres of Allowable Disturbance Take	Acres Potential Habitat Take ⁶	Acres of Allowable Habitat Take
Plan Area	50	1000	100	15,162	40	6406

³ In these disturbance events, harvest comes within 1000 ft of an activity center of a northern spotted owl with limited protection during breeding season. The table shows the acres of habitat affected within that buffer.

⁴ This is the number of times a harvest event occurs within an individual stand which is within 1000 ft of an activity center of a northern spotted owl.

⁵ Acres within a 500-ft buffer surrounding a potential murrelet tree affected by silvicultural events during marbled murrelet breeding season

⁶ Acres within a 300-ft buffer surrounding a potential murrelet tree affected by silvicultural events during marbled murrelet breeding season

D.7.6 Assessment of take: Point Arena mountain beaver

AOT_PAMB Acres Harvested within Burrow Systems of Point Arena Mountain Beaver (PAMB)				
Area	HCP/NCCP Implementation			
	Total Acres Harvested (2020)	Cumulative Acres Harvested (2010-2020)	Allowable Harvest Limit (2010-2020)	% Allowable Harvest Limit (2010-2020)
PAMB assessment area	1	1	1.4	71%

D.7.7 Assessment of take: covered rare plants

AOT_CRP Take Analysis for Covered Plants with Known Occurrences in the Plan Area					
Common Name	Scientific Name	MC	Core Area Radius (ft)	Allowable Potential Take (ac)	Acres of Potential Take (as of 2011)
Humboldt milk-vetch	<i>Astragalus agnicidus</i>	na	50	51.1	10
small groundcone	<i>Kopsiopsis hookeri</i>	1	150	0.0	0
swamp harebell	<i>Campanula californica</i>	3	50	1.68	0
Oregon goldthreads	<i>Coptis laciniata</i>	2	50	0.0	0
pygmy cypress	<i>Hesperocyparis pygmaea</i>	4	50	0.76	0
coast lily	<i>Lilium maritimum</i>	1	150	0.59	0
Bolander's beach pine	<i>Pinus contorta</i> ssp. <i>bolanderi</i>	4	50	0.0	0
white-flowered rein orchid	<i>Piperia candida</i>	2	50	0.07	0
North Coast semaphore grass	<i>Pleuropogon hooverianus</i>	1	150	2.77	0.1

D.8 Finances

The President of MRC will deliver to the wildlife agencies a letter verifying that we have established or maintained an accounting reserve in an amount adequate to implement the HCP/NCCP for that fiscal year. In addition, we will provide a report from an independent auditor confirming that MRC has established or maintained such reserve. The amount of the accounting reserve will reflect the amount shown in the annual budget. In no event will the amount be less than \$2,000,000. MRC may draw from the accounting reserve to implement the HCP/NCCP.

D.9 Rough Proportionality

The number of acres on which MRC implements conservation and mitigation each year will meet or exceed the number of acres on which we conduct timber harvest and other covered activities (see section 7.10.1). MRC will include in each annual report the number of acres on which timber harvest occurs and the number of acres on which we implemented HCP/NCCP conservation measures, as well as other conservation efforts. We will deliver the report to the wildlife agencies electronically on or before January 31st of each year of the HCP/NCCP.

Proportionality-010		01/31/2013	
MENDOCINO REDWOOD COMPANY			
Ukiah, CA			
<i>HCP/NCCP Compliance Report</i>			
Proportionality of Impacts to Conservation Efforts			
Impact	Level	Conservation	Level
•Volume harvested	30 mmbf	•Annual growth inventory	95 mmbf
•Acres harvested	7,500 ac	•Acres retained in NSO cores	5,000
•Miles of new road construction	4.1	•Acres – uncommon communities	4,500
•Number of new stream crossings	22	•Number of wildlife trees retained	4,500
▪Class I	1		
▪Large Class II	4		
▪Small Class II	7		
▪Class III	10		
•Miles of stream with wood added	5	•Volume of controlled sediment	30,000 yd ³
•Miles of fish habitat opened up	3		
		•Cost of sediment control	\$1 million
		•Number of trees planted	400,000
		•Acres preserved in LACMA	1,237
		•Acres maintained in MHRS	122
		•Pieces of wood added to streams	50
		•Number of fish barriers removed	20
		•Miles of road decommissioned	4.1
		•Miles of road upgraded to HCP standards	15.2

