

Appendix W

Summary of MRC Conservation Measures



Contents

W. SUMMARY OF MRC CONSERVATION MEASURES	W-1
<i>W.1 Summary of Conservation Measures for Aquatic Habitat</i>	<i>W-1</i>
<i>W.2 Summary of Conservation Measures for Terrestrial Habitat</i>	<i>W-21</i>
<i>W.3 Summary of Conservation Measures for Fish and Wildlife</i>	<i>W-29</i>
<i>W.4 Summary of Conservation Measures for Rare Plants</i>	<i>W-47</i>

W. SUMMARY OF MRC CONSERVATION MEASURES

This appendix contains a summary of all the conservation measures proposed in the HCP/NCCP. The summary has sub-divisions for aquatic habitat, terrestrial habitat, fish and wildlife, and covered rare plants—the four topics of Chapters 8-11.

- Indicates one of the four major sub-divisions in the summary.
- Indicates a conservation table from Chapters 8-11.
- AC Indicates alternative conservation measures (section 7.8).
- LD Indicates limits of deviation from standard conservation measures (see section 8.3.3.1.1).

W.1 Summary of Conservation Measures for Aquatic Habitat

Aquatic Habitat

➤ **Band Widths - Class I and Large Class II AMZ**

C§8.2.3.1.1-1 Establish AMZ widths by watercourse class and slope class.

Watercourse	Slope Class (%)	AMZ Band Widths***		
		Inner	Middle*	Outer
Class I	0-30	0-50	50-100	100-130
	30-50	0-50	50-130	130-150
	>50	0-50	50-150**	150**-190
Large Class II	0-30	0-25	25-50	50-100
	30-50	0-25	25-75	75-130
	>50	0-25	25-100**	100**-150

TABLE NOTES

- * Flood-prone and channel migration zones on Class I watercourses can adjust these dimensions. The middle band starts on the outer edge of the flood prone or channel migration zones.
- ** Adjust 20-25 ft for cable and helicopter yarding operations adjacent to Class I and Class II AMZ, respectively. In effect, as the outer edge of the middle band “shrinks”, the inner edge of the outer band “expands” (see Figure 8-7).
- ***Measured along the slope distance from the bankfull channel or channel migration zone boundary.

➤ **Canopy Retention - Class I and Large Class II AMZ**

C§8.2.3.1.2-1 Develop or retain canopy in the inner, middle, and outer band of the AMZ.

- Inner band: 85% canopy.
- Middle band: 70% canopy.
- Outer band: 50% canopy.

NOTE

MRC will use these AMZ canopy targets during PTHP compliance monitoring to assess canopy cover after harvesting. Timber inventory monitoring, however, will assess canopy cover by planning watershed and will set a target of 70% canopy across all 3 bands rather than stratifying the target by AMZ band. The un-weighted average of the 3 bands is approximately 70%. See Appendix U, *Inventory Strategy*.

➤ **Basal Area Retention for Inner and Middle Bands - Class I and Large Class II AMZ**

Pre-harvest condition for Site Class I: $\geq 300 \text{ ft}^2/\text{ac}$ of conifer basal area

C§8.2.3.1.3-1 Retain in Site Class I, post harvest, $240 \text{ ft}^2/\text{ac}$ or 75% of the pre-harvest basal area, whichever is greater.

Pre-harvest condition for Site Class II or III: ≥ 260 ft²/ac of conifer basal area

- C§8.2.3.1.3-2 Retain in Site Class II or III, post harvest, 200 ft²/ac or 75% of the pre-harvest basal area, whichever is greater.

Pre-harvest condition for Site Class IV or V: ≥ 220 ft²/ac of conifer basal area

- C§8.2.3.1.3-3 Retain in Site Class IV and V, **post harvest**, 160 ft²/ac or 75% of the pre-harvest basal area, whichever is greater.

NOTE

If a pre-harvest condition does not apply, MRC will not harvest in the bands of the AMZ. In addition, these conservation measures only apply to the inner and middle bands of the AMZ; the outer band does not have basal area targets. In most cases, when pre-harvest conditions are met or exceeded, harvest will occur in the middle band rather than the inner band.

➤ Largest Tree Retention - Class I and Large Class II AMZ**Large Tree Retention**

- C§8.2.3.1.4-1 Retain a percentage of the largest trees based on channel sensitivity to LWD.
- High sensitivity: retain 30% in inner band, 15% in middle band.
 - Moderate sensitivity: retain 20% in inner band, 10% in middle band.
 - Low sensitivity: retain 10% in inner band, 5% in middle band.

NOTE

- MRC identifies the sensitivity of stream channels within watershed analysis. For areas in which we have not conducted a watershed analysis, we will identify sensitivity on a site-by-site basis with the assistance of staff hydrologists, geomorphologists, or aquatic biologists.
- MRC will calculate, prior to each entry into an AMZ stand, the percentage of large conifer trees for retention. The percentage applies to trees with at least a 12 in. dbh. Selection of the largest trees will progress systematically through size classes demarcated at 4 in. (dbh) intervals, beginning with the largest size class. For example, if the largest tree retention standard is 20% and 100 trees are ≥ 12 in. dbh within the band, then MRC will retain the 20 largest trees in addition to all other AMZ requirements. In determining the largest trees retained, MRC will start with the largest size class and work backward to the next largest size class and so forth. In addition, MRC will retain all trees leaning across the plane of the channel zone, even if they are not one of the largest trees. In effect, this means that the stem of the tree (from the point where it reaches 6 in. in diameter and above) crosses the plane of the bankfull channel.

Exchanging Retention Trees

- C§8.2.3.1.4-2 Apply the following rules if 2 or more potential retention trees are within the same redwood clonal group:
1. Designate the largest tree within the redwood clonal group as the retention tree, if operationally feasible; otherwise
 2. Substitute another tree outside this redwood clonal group which is the same size class or next available size class as that designated largest tree.

NOTE

The purpose of this conservation measure is to replace any large tree which is harvested and to space out the large retention trees throughout the AMZ.

- C§8.2.3.1.4-3 Substitute a tree for a large retention tree even though it does not meet the standards for large tree retention if (a) the HCP/NCCP or a report from a professional geologist dictates its retention to provide erosion control or mass wasting stability and (b) it meets the eligibility requirements in C§8.2.3.1.4-5.

NOTE

Apart from the prescriptions in C§8.2.3.1.4-2, MRC may only trade a large retention tree with another tree for operational purposes, such as cable line

restrictions (C§8.2.3.1.10-2) or felling and skidding limitations. The limitations on trade trees are (a) 10% of large trees within an AMZ per PTHP during the first 10 years of the HCP/NCCP and (b) 15% of large trees within an AMZ per PTHP from Years 11-20 of HCP/NCCP implementation. After Year 20, MRC may trade up to 20% of large trees per PTHP within an AMZ. Harvesting of a trade tree within an AMZ can only occur if the

1. AMZ meets its requirements for canopy and basal area.
2. Tree is not one of the largest retention trees or within 10 ft of the bankfull channel.
3. AMZ streams, in locations where harvests are occurring, meet their LWD targets.
4. Cumulative number of trade trees during the term of the HCP/NCCP account for no more than 40% of the large trees within an AMZ stand.

C§8.2.3.1.4-4 Mark a smaller tree that becomes a retention tree as part of a trade to ensure it will be retained and is no longer eligible as a trade tree during subsequent harvest entries.

Qualifying as a Trade Tree

C§8.2.3.1.4-5 Follow the rule that a tree is eligible for trade with a retention tree

- If it is the next largest individual tree in sequence after the full complement of trees has been retained.
- If it leans out toward the active channel, is likely to recruit in the near future, and is in the top 50 percentile of tree size for that AMZ band.

› Silviculture - Class I and Large Class II AMZ

Inner Band

C§8.2.3.1.5-1 Apply silvicultural treatments to develop or maintain late seral forest conditions, such as thinning from below or individual tree selection.

C§8.2.3.1.5-2 Use high retention selection that meets basal area and canopy requirements.

C§8.2.3.1.5-3 Maintain or increase conifer dominance—if necessary, by controlling hardwoods.

C§8.2.3.1.5-4 Ensure that redwood clonal groups or “clumps” have no more than 50% of their stems greater than 8 in. dbh removed per entry.

C§8.2.3.1.5-5 Do not harvest trees from the inner band if shelterwood or seed tree removal occurs in the outer band for that rotation.

C§8.2.3.1.5-6 Do not sanitize or salvage LWD that is within the bankfull channel; retain all downed LWD in the AMZ unless the AMZ meets its LWD targets.

C§8.2.3.1.5-7 Harvest snags in the AMZ only with the approval of the wildlife agencies.

C§8.2.3.1.5-8 Leave, as a first priority, LWD previously designated as a large retention tree or wildlife tree.

C§8.2.3.1.5-9 Do not initiate prescribed burning in Small Class II AMZ.

C§8.2.3.1.5-10 Permit fire control lines for controlled burning in Small Class II AMZs only with concurrence of the wildlife agencies.

C§8.2.3.1.5-11 Allow salvage harvest in an AMZ only with concurrence of the wildlife agencies.

C§8.2.3.1.5-12 Allow harvest of a minimum merchantable length log from any LWD that obstructs a road.

C§8.2.3.1.5-13 Avoid damage or destruction to non-commercial vegetation beyond the minimum disturbance required for covered activities.

C§8.2.3.1.5-14 Retain all old-growth trees.

NOTE

If the RPF determines that the inner zone is over-stocked with trees <16 in. dbh and that this is limiting future growth, MRC may request the wildlife agencies to advise the RPF which trees to harvest in order to more quickly reach the objectives of the HCP/NCCP.

Middle Band

C§8.2.3.1.5-15 Apply silvicultural treatments to develop or maintain late seral forest conditions, such as thinning from below or individual tree selection.

C§8.2.3.1.5-16 Use high retention selection that meets basal area and canopy requirements.

C§8.2.3.1.5-17 Maintain or increase conifer dominance—if necessary, by controlling hardwoods.

C§8.2.3.1.5-18 Do not harvest trees from the middle band if shelterwood or seed tree removal occurs in the outer band for that rotation, unless this is an AMZ restoration harvest.

C§8.2.3.1.5-19 Do not sanitize or salvage LWD that is within the bankfull channel; retain all downed LWD in the AMZ unless the AMZ meets its LWD targets.

C§8.2.3.1.5-20 Leave, as a first priority, LWD previously designated as a large retention tree or wildlife tree.

C§8.2.3.1.5-21 Allow salvage harvest in an AMZ only with concurrence of the wildlife agencies.

C§8.2.3.1.5-22 Allow harvest of a minimum merchantable length log from any LWD that obstructs a road.

C§8.2.3.1.5-23 Avoid damage or destruction to non-commercial vegetation beyond the minimum disturbance required for covered activities.

C§8.2.3.1.5-24 Retain all old-growth trees.

Outer Band

C§8.2.3.1.5-25 Maintain or increase conifer dominance—if necessary, by controlling hardwoods.

C§8.2.3.1.5-26 Maintain, on average, 50% canopy within 330 ft (100 m) sections.

C§8.2.3.1.5-27 Limit harvest openings to ¼ ac in size.

C§8.2.3.1.5-28 Do not sanitize or salvage LWD that is within the bankfull channel; retain all downed LWD in the AMZ unless the AMZ meets its LWD targets.

C§8.2.3.1.5-29 Leave, as a first priority, LWD previously designated as a large retention tree or wildlife tree.

- C§8.2.3.1.5-30 Allow salvage harvest in an AMZ where an adjacent upslope stand is “no harvest” only with concurrence of CDFG.
- C§8.2.3.1.5-31 Allow harvest of a minimum merchantable length log from any LWD that obstructs a road.
- C§8.2.3.1.5-32 Retain all old-growth trees.

➤ **Flood-prone Zones - Class I AMZ**

- C§8.2.3.1.6-1 Retain 300 ft²/ac of the conifer basal area or retain 75% of the pre-harvest basal area, whichever is greater.
- C§8.2.3.1.6-2 Avoid damage or destruction to non-commercial vegetation in the flood-prone or channel migration zone beyond the minimum disturbance required for covered activities.
- C§8.2.3.1.6-3 Extend the width of the middle band out to the base of a hillslope, if it does not already extend to or beyond that point.
- C§8.2.3.1.6-4 Exclude all equipment, unless on existing roads or for use in road decommissioning.

➤ **Streambank Stability - Class I and Large Class II AMZ**

- C§8.2.3.1.7-1 Retain all trees whose trunks (a) are within 10 ft of the bankfull channel or within 10 ft of a watercourse or lake transition zone where there is no delineated bankfull channel; or (b) have roots visible in the bank; or (c) provide anchor to an over-hanging bank, unless it is necessary to remove trees to create a cable corridor.
- NOTE**
Thinning of a redwood clonal group within 10 ft of a bankfull channel or within 10 ft of a watercourse or lake transition zone may also occur as long as MRC adheres to the guidelines for large tree retention.
- C§8.2.3.1.7-2 Start the 10-ft retention zone at the landward edge of an undercut bank, using visual determination.
- EXAMPLE**
A bank is undercut by 5 ft. The retention zone will measure 10 ft from the depth of the undercut, i.e., 15 ft from the edge of the bank.
- C§8.2.3.1.7-3 Ensure that redwood clonal groups or “clumps” have no more than 50% of their stems greater than 8 in. dbh removed per entry.
- C§8.2.3.1.7-4 Follow 1 of these practices when trees, within the first 10 ft of the watercourse channel, are removed for cable corridors:
- Leave the trees in the AMZ for LWD.
 - Place trees in the active channel as per the instream LWD enhancement guidelines, if feasible.

➤ **Equipment Exclusion - Class I and Large Class II AMZ**

- C§8.2.3.1.8-1 Exclude all equipment in Class I and Large Class II AMZs unless there is an allowable use.
- ALLOWABLE USE**
- *Erosion control or restoration*
MRC may use a skid trail or landing one-time-only to control erosion or conduct restoration. Upon completing operations, we will decommission the skid trail or landing.

- *Existing skid trails, landings, or skid trail crossings*
MRC may use—only rarely (perhaps 4 times a year)—an existing skid trail, landing, or designated skid trail crossing that does not require any reconstruction, if
 - Alternatives would create a greater risk and magnitude of sediment delivery.
 - Perched material is pulled back from landings and the landings shaped to prevent rill erosion by draining them into a rock face outlet.
 - Surface areas >25 ft² are mulched, rocked, or covered in slash compacted by a tractor.

- *New skid trails, landings, or skid trail crossings*
MRC may construct—only rarely (perhaps once every 3 years, lessening over time) and after obtaining approval of the wildlife agencies—a new skid trail, landing, or designated skid trail crossing if
 - Alternatives would create a greater risk and magnitude of sediment delivery.
 - All mitigations, approved by the wildlife agencies, are fully implemented.
 - All trees felled for construction of these new facilities in an AMZ within the inner and middle bands have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or near watercourse sections deficient in LWD.

- *Existing Roads*
MRC may use and maintain existing roads in AMZs.

- *New Roads*
MRC may construct— only rarely (perhaps once every 3 years, lessening over time)—new roads to watercourse approaches within an AMZ if
 - The road does not parallel a watercourse.
 - Each approach on either side of a watercourse does not exceed 200 ft.
 - All trees felled for construction of these new facilities in an AMZ within the inner and middle bands have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or near watercourse sections deficient in LWD.

MRC may construct— only rarely (perhaps once every 3 years, lessening over time) and after obtaining approval of the wildlife agencies—a road segment not associated with a crossing or an approach to a crossing if

- Alternatives would create a greater risk and magnitude of sediment delivery.
- All mitigations, approved by the wildlife agencies, are fully implemented.
- All trees felled in an AMZ for construction of these new facilities have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or near watercourse sections deficient in LWD.

- *Watercourse crossing construction*
MRC may use equipment to construct watercourse crossings.

➤ **Bare Soil - Class I and Large Class II AMZ**

- C§8.2.3.1.9-1 Treat, for erosion control, areas of exposed mineral soil which are (a) at least 100 ft² in size and (b) not on a running surface, with mulch, grass seed, slash, or other appropriate material; for running surfaces, see Appendix E, *Roads, Landings, and Skid Trails*.
- C§8.2.3.1.9-2 Do not initiate prescribed or broadcast burning in the AMZ.

➤ **Cable Corridors - Class I and Large Class II AMZ**

- C§8.2.3.1.10-1 Allow felled trees to remain in the AMZ for LWD or place the trees in the active channel as per instream LWD enhancement guidelines.
- C§8.2.3.1.10-2 Harvest trees in a cable corridor only if the
- AMZ meets requirements for canopy and basal area.
 - Tree is not one of the largest retention trees or within 10 ft of the bankfull channel.
 - Streams meet LWD targets.

➤ **Small Class II AMZ Widths**

- C§8.2.3.2.1-1 Establish AMZ widths.
- 0-30% slope = 50 ft
 - 30-50% slope = 75 ft
 - > 50% slope = 100 ft
- NOTE**
For slopes > 50%, MRC may subtract 25 ft from the AMZ width for cable and helicopter yarding.

➤ **Canopy - Small Class II AMZ**

- C§8.2.3.2.2-1 Maintain, on average, 50% canopy over the width of the AMZ within 330 ft (100 m) segments.

➤ **Silviculture - Small Class II AMZ**

- C§8.2.3.2.3-1 Maintain or enhance uneven-aged conditions.
- C§8.2.3.2.3-2 Harvest so that trees are dispersed in a relatively uniform manner.
- C§8.2.3.2.3-3 Maintain or increase conifer dominance—if necessary, by controlling hardwoods.
- C§8.2.3.2.3-4 Do not sanitize or salvage LWD that is within the bankfull channel; retain all downed LWD in the AMZ unless the AMZ meets its LWD targets.
- C§8.2.3.2.3-5 Leave, as a first priority, LWD previously designated as a large retention tree or wildlife tree.
- C§8.2.3.2.3-6 Do not initiate prescribed burning in Small Class II AMZ.
- C§8.2.3.2.3-7 Permit fire control lines in Small Class II AMZs only with concurrence of the wildlife agencies.
- C§8.2.3.2.3-8 Allow salvage harvest in an AMZ only with concurrence of the wildlife agencies.

- C§8.2.3.2.3-9 Allow harvest of a minimum merchantable length log from any LWD that obstructs a road.
- C§8.2.3.2.3-10 Avoid damage or destruction to non-commercial vegetation beyond the minimum disturbance required for covered activities.
- C§8.2.3.2.3-11 Retain all old-growth trees.

➤ **Streambank Stability - Small Class II AMZ**

- C§8.2.3.2.4-1 Retain all trees whose trunks (a) are within 10 ft of the bankfull channel or within 10 ft of a watercourse or lake transition zone where there is no delineated bankfull channel; or (b) have roots visible in the bank; or (c) provide anchor to an over-hanging bank, unless it is necessary to remove trees to create a cable corridor.

NOTE

MRC may also thin a redwood clonal group within 10 ft of the bankfull channel or within 10 ft of a watercourse or lake transition zone if they follow the large tree retention guidelines.

- C§8.2.3.2.4-2 Start the 10-ft retention zone at the landward edge of an undercut bank, using visual determination.

EXAMPLE

A bank is undercut by 5 ft. The retention zone will measure 10 ft from the depth of the undercut, i.e., 15 ft from the edge of the bank.

- C§8.2.3.2.4-3 Ensure that redwood clonal groups or “clumps” have no more than 50% of their stems greater than 8 in. dbh removed per entry.

- C§8.2.3.2.4-4 Follow 1 of these practices when trees, within the first 10 ft of the watercourse channel, are removed for cable corridors:
- Leave the trees in the AMZ for LWD.
 - Place trees in the active channel as per the instream LWD enhancement guidelines, if feasible.

➤ **Equipment Exclusion - Small Class II AMZ**

- C§8.2.3.2.5-1 Exclude all equipment unless there is an allowable use.

ALLOWABLE USE

- *Erosion control or restoration*
MRC may use a skid trail or landing one-time-only to control erosion or conduct restoration. Upon completing operations, we will decommission the skid trail or landing.
- *Existing skid trails, landings, or skid trail crossings*
MRC may use—only rarely (perhaps 4 times a year)—an existing skid trail, landing, or designated skid trail crossing that does not require any reconstruction, if
 - Alternatives would create a greater risk and magnitude of sediment delivery.
 - Perched material is pulled back from landings and the landings shaped to prevent rill erosion by draining them into a rocked face outlet.
 - Surface areas >25 ft² are mulched, rocked, or covered in slash compacted by a tractor.
- *New skid trails, landings, or skid trail crossings*
MRC may construct—only rarely (perhaps once every 3 years, lessening over time) and after obtaining approval of the wildlife

agencies—a new skid trail, landing, or designated skid trail crossing if

- Alternatives would create a greater risk and magnitude of sediment delivery.
- All mitigations, approved by the wildlife agencies, are fully implemented.
- All trees felled for construction of these new facilities within the inner and middle bands of an AMZ have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or near watercourse sections deficient in LWD.

- *Existing Roads*

MRC may use and maintain existing roads in AMZs.

- *New Roads*

MRC may construct new roads to watercourse approaches within an AMZ if

- The road does not parallel a watercourse.
- Each approach on either side of a watercourse does not exceed 200 ft.
- All trees felled for construction of these new facilities in an AMZ within the inner and middle bands have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or near watercourse sections deficient in LWD.

MRC may construct— only rarely (perhaps once every 3 years, lessening over time) and after obtaining approval of the wildlife agencies—a road segment not associated with a crossing or an approach to a crossing if

- Alternatives would create a greater risk and magnitude of sediment delivery.
- All mitigations, approved by the wildlife agencies, are fully implemented.
- All trees felled in an AMZ for construction of these new facilities have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or near watercourse sections deficient in LWD.

- *Construction of watercourse crossings*

MRC may use equipment to construct watercourse crossings.

➤ **Soil Pipes - Small Class II AMZ**

C§8.2.3.2.6-1 Exclude equipment from the area between a Class II watercourse and a swale when there is evidence of exposed soil pipes or soil pipes transitioning into stream channels, e.g., when areas of soil over a pipe collapse or when “holes” in the floor of the swale reveal flowing sub-surface water.

NOTE

The protection should extend up the swale until there is no more evidence of soil pipe collapse.

C§8.2.3.2.6-2 Use only existing skid trails or roads.

C§8.2.3.2.6-3 Disconnect roads or skid trails hydrologically from the swale, where topographical features allow.

C§8.2.3.2.6-4 Disperse drainage from roads or skid trails throughout the swale, if disconnecting roads or skids trails is not feasible.

➤ **Bare Soil - Small Class II AMZ**

C§8.2.3.2.7-1 Treat, for erosion control, areas of exposed mineral soil which are (a) at least 100 ft² in size and (b) not on a running surface, with mulch, grass seed, slash, or other appropriate material; for running surfaces, see Appendix E, *Roads, Landings, and Skid Trails*.

C§8.2.3.2.7-2 Do not initiate prescribed or broadcast burning in the AMZ.

➤ **Band Widths - Class III AMZ**

C§8.2.3.3.1-1 Establish AMZ widths.

- 0-30% slope = 25 ft
- > 30% slope = 50 ft

➤ **Canopy - Class III AMZ**

C§8.2.3.3.2-1 Maintain, on average, 50% canopy over the width of the AMZ in 330 ft (100 m) sections.

➤ **Silviculture - Class III AMZ**

C§8.2.3.3.3-1 Maintain or enhance uneven-aged conditions.

C§8.2.3.3.3-2 Harvest so that trees are dispersed in a relatively uniform manner.

C§8.2.3.3.3-3 Maintain or increase conifer dominance—if necessary, by controlling hardwoods.

C§8.2.3.3.3-4 Do not sanitize or salvage LWD that is within the bankfull channel; retain all downed LWD in the AMZ unless the AMZ meets its LWD targets.

C§8.2.3.3.3-5 Leave, as a first priority, LWD previously designated as a large retention tree or wildlife tree.

C§8.2.3.3.3-6 Do not initiate prescribed burning in Class III AMZ.

C§8.2.3.3.3-7 Permit fire control lines in Class III AMZs only with concurrence of the wildlife agencies.

C§8.2.3.3.3-8 Allow salvage harvest in an AMZ only with concurrence of the wildlife agencies.

C§8.2.3.3.3-9 Allow harvest of a minimum merchantable length log from any LWD that obstructs a road.

C§8.2.3.3.3-10 Avoid damage or destruction to non-commercial vegetation beyond the minimum disturbance required for covered activities.

C§8.2.3.3.3-11 Retain all old-growth trees.

➤ **Streambank Stability - Class III AMZ**

C§8.2.3.3.4-1 Retain all trees whose trunks (a) are within 10 ft of the bankfull channel, or (b) have roots visible in the bank, or (c) provide anchor to an over-hanging bank, unless it is necessary to remove trees to create a cable corridor or thin a redwood clonal group.

- C§8.2.3.3.4-2 Start the 10-ft retention zone at the landward edge of an undercut bank.

EXAMPLE

A bank is undercut by 5 ft. The retention zone will measure 10 ft from the depth of the undercut—15 ft from the edge of the bank.

- C§8.2.3.3.4-3 Ensure that redwood clonal groups or “clumps” have no more than 50% of their stems > 8 in. dbh removed per entry.

> Equipment Limitation - Class III AMZ

- C§8.2.3.3.5-1 Adhere to the standards in Appendix E, *Roads, Landings, and Skid Trails*, and Appendix T, *Master Agreement for Timber Operations*.

- C§8.2.3.3.5-2 Limit all heavy equipment unless there is an allowable use.

ALLOWABLE USE

- *Existing skid trails and landings*
MRC may use stable, existing skid trails and landings. We will mulch or slash skid trails and landings upon completion of operations or before the winter period, whichever comes first.
- *Existing roads*
MRC may use and maintain existing roads.
- *New roads*
MRC may construct new roads that do not parallel an AMZ.
- *New landings*
MRC may construct—only rarely (perhaps once a year)—a new landing within an AMZ if
 - Alternatives would create a greater risk and magnitude of sediment delivery.
 - All mitigations, approved by the wildlife agencies, are fully implemented.
 - All trees felled in an AMZ for construction of these new facilities have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or in the nearest Class I or Class II watercourse deficient in LWD.
- *New truck road crossings and skid trail crossings*
MRC may construct new truck road and skid trail crossings if
 - Alternatives would create a greater risk and magnitude of sediment delivery.
 - All trees felled in an AMZ for construction of these new facilities have the “key piece size” logs set aside for LWD placement, either in the vicinity of the new facilities or in the nearest Class I or Class II watercourse deficient in LWD.

> Bare Soil - Class III AMZ

- C§8.2.3.3.6-1 Treat, for erosion control, areas of exposed mineral soil which are (a) at least 100 ft² in size and (b) not on a running surface, with mulch, grass seed, slash, or other appropriate material; for running surfaces, see Appendix E, *Roads, Landings, and Skid Trails*.

- C§8.2.3.3.6-2 Do not initiate prescribed or broadcast burning in the AMZ.

- C§8.2.3.3.6-3 Treat the running surfaces of a truck road per Appendix E, *Roads, Landings, and Skid Trails*, section E.2.5.

➤ **Soil Pipes - Class III AMZ**

- C§8.2.3.3.7-1 Apply conservation measures C§8.2.3.3.7-1 through C§8.2.3.3.7-8 only when there is evidence of exposed soil pipes or soil pipes transitioning into stream channels, e.g., when areas of soil over a pipe collapse or when “holes” in the floor of the swale reveal flowing sub-surface water.

NOTE

The protection should extend up the swale until there is no more evidence of soil pipe collapse.

- C§8.2.3.3.7-2 Fell trees so that they do not collapse a soil pipe, thereby prohibiting ground yarding across the collapsed soil pipe.
- C§8.2.3.3.7-3 Use only existing skid trails or roads.
- C§8.2.3.3.7-4 Avoid soil pipes when operating heavy equipment.
- C§8.2.3.3.7-5 Cross soil pipes only at existing crossings when operating equipment.
- C§8.2.3.3.7-6 Disconnect roads or skid trails hydrologically from the swale, where topographical features allow.
- C§8.2.3.3.7-7 Disperse drainage from roads or skid trails throughout the swale, if disconnecting roads or skids trails is not feasible.
- C§8.2.3.3.7-8 Remove all transported fill upon completion of the operation.
- C§8.2.3.3.7-9 Avoid equipment use in the floor of the swale, with the exception of crossing locations, even if there is no evidence of soil pipes.

➤ **AC Restoration Treatments - Class I, Large Class II, Small Class II, and Class III AMZ**

AMZ Restoration

- AC§8.2.3.4-1 Ensure that conservation measures for bank stability applicable within 10 ft of a bankfull channel remain in effect during a restoration treatment.
- AC§8.2.3.4-2 Allow restoration treatments in coho salmon streams where temperatures are at or above the threshold and water flows July through September, with concurrence of the wildlife agencies.
- AC§8.2.3.4-3 Do not use restoration treatment on inner gorge topography or within 25 ft of an inner gorge break in slope.
- AC§8.2.3.4-4 Do not use restoration treatment on historically active mass wasting hazards unless operations are approved by a California Registered Geologist and meet canopy standards of 70%.
- AC§8.2.3.4-5 Retain at least 50% canopy in a restoration treatment on steep streamside slopes or steep dissected topography (i.e., within TSU1, TSU2, or TSU3), unless operations are approved by a California Registered Geologist.
- AC§8.2.3.4-6 Apply equipment exclusion zone (EEZ) provisions during restoration treatments except for brush crushing operations.

AC§8.2.3.4-7	Retain at least 70% canopy within the inner bands of Class I and Large Class II AMZs.
AC§8.2.3.4-8	Retain all conifers > 12 in. dbh.
AC§8.2.3.4-9	Limit the percentage of stream length that can be restored (per rolling 10-year period and per CalWater planning watershed) by the range of stream temperature thresholds for the cold-water species present in the stream length proposed for restoration or downstream of the restoration for up to ¼ mile (see Table 8-12 and Table 8-13).
AC§8.2.3.4-10	Determine stream temperature values within ¼ mile downstream of the proposed treatment site.
AC§8.2.3.4-11	Limit AMZ restoration harvests through monitoring and adaptive management. EXAMPLE If stream temperatures rise above the current range for target species (see Table 8-12 and M§13.5.1.1-5), MRC will adjust the amount of AMZ restoration harvest.
AC§8.2.3.4-12	Phase in AMZ restoration harvests slowly with more intense monitoring in the first 5-10 years of the HCP/NCCP. NOTE During this initial period of intense monitoring, MRC will not conduct AMZ restoration harvests within watersheds on the 303(d) list, i.e., Navarro River, Big River, Garcia River, and South Fork Eel River.
Brush Crushing	
AC§8.2.3.4-13	Perform brush crushing only on slopes < 30%.
AC§8.2.3.4-14	Raise tractor blades when brush crushing.
AC§8.2.3.4-15	Retain at least 95% of ground cover (downed brush, mulch, tree lopping, etc.).
AC§8.2.3.4-16	Do not conduct brush crushing operations within 25 ft of the bankfull channel of a Class I or Class II watercourse or within 10 ft of the bankfull channel of a Class III watercourse.
AC§8.2.3.4-17	Plant brush-crushed areas with redwood and Douglas fir, interspersed no more than 12 ft apart.
AC§8.2.3.4-18	Do not remove any overstory tree within an inner zone of the AMZ, including hardwoods, during brush-crushing operation.
AC§8.2.3.4-19	Retain conifer trees ≥ 6 in. dbh in order to create a spacing of 20 ft between trees.
AC§8.2.3.4-20	Retain conifer trees < 6 in. order to create a spacing of 15-20 ft between trees, unless their removal is required for covered activities.
AC§8.2.3.4-21	Limit brush-crushing operations to 5% of stream length per decade per CalWater planning watershed (see Table 8-13).
AC§8.2.3.4-22	Allow brush-crushing operations only within the first 40 years of the HCP/NCCP.

➤ Wetlands, Wet Areas, and Wet Meadows

- C§8.2.3.5.1-1 Maintain a 25-ft EEZ (excluding existing roads) around wetlands, wet meadows, and wet areas whose surface area is > 10 ft² and < 50 ft².
- C§8.2.3.5.1-2 Maintain a 50-ft EEZ (excluding existing roads) around wetlands, wet meadows, and wet areas that are more than 50 ft² in surface area.
- NOTE**
MRC must obtain approval of our aquatic biologist before equipment can enter the EEZ of a wet area, wetland, or a wet meadow, making them a potential equipment limitation zone (ELZ). C§10.2.2.3-2, C§10.2.2.3-3, C§10.2.2.3-8, C§10.2.3.3-1, and C§10.2.3.3-2 describe the survey methods and criteria for entering the EEZ.
- C§8.2.3.5.1-3 Avoid artificial wetlands, wet areas, and wet meadows created by forest management, except for the use of existing roads or where alternate routes would result in more habitat degradation.
- C§8.2.3.5.1-4 Retain within the EEZ at least 75 ft² of basal area or at least 50% of the pre-harvest basal area, whichever is greater.
- C§8.2.3.5.1-5 Fell trees away from the area, unless this creates a safety hazard.
- C§8.2.3.5.1-6 Leave trees in place that were felled to remediate safety concerns.
- C§8.2.3.5.1-7 Retain old growth trees.
- C§8.2.3.5.1-8 Do not sanitize or salvage harvest.
- C§8.2.3.5.1-9 Retain LWD.
- C§8.2.3.5.1-10 Survey a water drafting site for covered species prior to its development and apply the conservation measures for the covered species present.
- C§8.2.3.5.1-11 Follow water drafting guidelines specified in C§10.2.2.3-4 and Appendix E (section E.7, *Standards for Water Drafting*).
- C§8.2.3.5.1-12 Protect covered wetland plants (see Chapter 11, *Conservation Measures for Rare Plants*).

➤ Seeps and Springs

- C§8.2.3.5.2-1 Protect seeps or springs within Class I or Class II watercourses of AMZs.
- C§8.2.3.5.2-2 Extend the AMZ boundary 50 ft beyond a seep or spring, if the seep or spring is on, near, or draining into the AMZ boundary.
- C§8.2.3.5.2-3 Apply a 50-ft EEZ (excluding existing roads) and a 50% canopy retention requirement to seeps or springs that do not drain into a defined watercourse and are unable to deliver sediment to higher order streams.
- NOTE**
MRC will require a biological consultation with an MRC biologist before equipment can enter the EEZ of a seep or spring, making them a potential ELZ. C§10.2.2.3-2, C§10.2.2.3-3, C§10.2.2.3-8, C§10.2.3.3-1, and C§10.2.3.3-2 describe the survey methods and criteria for entering the EEZ.
- C§8.2.3.5.2-4 Avoid artificial wetlands, wet areas, and wet meadows created by forest management, except for the use of existing roads or where alternate routes would result in more habitat degradation.

- C§8.2.3.5.2-5 Fell trees away from seeps or springs, unless this creates a safety hazard.
- C§8.2.3.5.2-6 Leave felled trees in place that were cut to remediate safety concerns.
- C§8.2.3.5.2-7 Retain within the EEZ at least 75 ft² of basal area or at least 50% of the pre-harvest basal area, whichever is greater.
- C§8.2.3.5.2-8 Retain all old-growth trees.
- C§8.2.3.5.2-9 Do not sanitize or salvage harvest.
- C§8.2.3.5.2-10 Retain LWD.
- C§8.2.3.5.2-11 Survey a new or un-surveyed water drafting site for covered species prior to use and apply the conservation measures relevant to the covered species present.
- C§8.2.3.5.2-12 Follow water drafting guidelines specified in C§10.2.2.3-4 and Appendix E (section E.7, *Standards for Water Drafting*).

➤ **LWD Placement**

- C§8.2.3.6-1 Do not blade a trail to a tree.
- C§8.2.3.6-2 Use existing roads or skid trails rather than building roads or skid trails.
- C§8.2.3.6-3 Ensure that there is minimal soil disturbance in placing LWD, including the stump, into a watercourse.
- C§8.2.3.6-4 Push standing trees into a watercourse with heavy equipment, as long as rootwads remain attached to LWD.
- C§8.2.3.6-5 Ensure that the diameter of any wood placed as LWD in a watercourse is at least 80% of the key piece diameter, if a rootwad is attached, or meets key piece size requirements for diameter and length, if a rootwad is not attached.
- C§8.2.3.6-6 Ensure that LWD, with rootwad attached, is at least as long as the bankfull channel width or 1.5 times the bankfull channel width, if there is no rootwad.
- C§8.2.3.6-7 Place a rootwad within a stream channel provided a rootwad exceeds the volume standard for *key pieces*.
- C§8.2.3.6-8 Do not exceed minimum numbers for “key pieces” by more than 300% when placing LWD “artificially” in order to moderate the amount of LWD in stream channels (see Appendix G, G.3.3.1, *General methods for LWD recruitment*).

Bankfull Width (ft)	Minimum Number of Key LWD Pieces		
	Per 328 ft	Per 1000 ft	Per Mile
<15	6.6	20	106
15-35	4.9	15	79
35-45	3.9	12	63
>45	3.3	10	53

- C§8.2.3.6-9 Do not use downed wood from the AMZ unless the AMZ exceeds its target for LWD.

- C§8.2.3.6-10 Permit the placement as LWD of 1 tree designated for large tree retention within a 330 ft segment of an AMZ, if the watercourse does not meet the target for key piece loading.
- C§8.2.3.6-11 Fell trees into a stream channel provided the length of the tree segment that will interact with the stream channel is at least 1.5 times the width of the bankfull channel.
NOTE
 This primarily refers to trees cut for a cable corridor.
- C§8.2.3.6-12 Retain foliage from trees felled into a stream channel.
- C§8.2.3.6-13 Do not place LWD pieces in one spot (i.e., within 100 ft of each other) without a site-specific plan developed by an MRC fisheries biologist or hydrologist; notify the wildlife agencies in an annual report of the LWD placement.
- C§8.2.3.6-14 Situate LWD to maximize habitat benefit and minimize adverse effects.
- C§8.2.3.6-15 Follow the guidelines in the CDFG *Salmonid Restoration Manual* when designing specific structures; otherwise ensure stability of LWD placement by following size requirements for key pieces (see Appendix G, G.3.3.1, *General methods for LWD recruitment*) and wedging LWD between riparian trees when possible.
- C§8.2.3.6-16 Add LWD only during the course of PTHP activities, unless there is a site-specific plan.
- C§8.2.3.6-17 Tag and mark LWD added to stream channels to allow MRC and the wildlife agencies to track it over time through instream monitoring programs.
- C§8.2.3.6-18 Develop within the first 5 years of the HCP/NCCP and implement within the first 20 years of the HCP/NCCP an LWD placement plan for coho “core” watersheds.
NOTE
 These planning watersheds, and in certain cases, sub-watersheds are: East Branch North Fork Big River; Russell Brook; Ramone Creek; a section of South Daugherty Creek, from the confluence of Gates Creek and Daugherty Creek downstream to the MRC property line; Middle Albion River; South Fork Albion River; John Smith Creek; Little North Fork Navarro River; Cook Creek; Lower South Branch Navarro River; Lower Navarro Drainages (Marsh, Flume, and Murray Gulches); Cottaneva Creek; Hayworth Creek; and the South Fork Garcia River.

 Appendix Z (section Z.1 “*Selecting Coho Core Watersheds for Road Restoration*” and Table Z-1 MRC Coho Core Areas), describes the coho “core” watersheds in more detail. Section 8.3.3.2.2 outlines MRC plans for controllable erosion in these areas. The elevated LWD implementation schedule will, at a minimum, ensure that the watersheds contained within Table S-11 (*Future LWD Targets within the Plan Area by Planning Watershed*) will meet half of their target for “% of Segments with Low or Moderate Demand for LWD” by Year 10 of the HCP/NCCP and meet their full target by Year 20. Since the target date is actually Year 80, the coho “core” watersheds will cut their timeline by 75%.
- C§8.2.3.6-19 Conduct LWD placement in coho “core” watersheds without equipment access during the first entry into the area under the HCP/NCCP.

- C§8.2.3.6-20 Reduce, if necessary, the basal area harvest retention standards by the amount of basal area felled for LWD placement while still maintaining minimum shade requirements.

➤ **TSU 1 and TSU 2 - Inner Gorge**

Roads

- C§8.3.3.1.2-1 Do not construct or reconstruct roads or landings.

- C§8.3.3.1.2-2 Do not construct watercourse crossings.

- C§8.3.3.1.2-3 Decommission existing roads and landings when they are no longer needed.

NOTE

If relocation of a road poses a higher risk of sediment delivery than maintenance and use of an existing road, MRC will maintain the road to the design standards specified in Appendix E, *Roads, Landings, and Skid Trails*.

Tractor Trails

- C§8.3.3.1.2-4 Do not construct tractor trails.

Tractor Yarding

- C§8.3.3.1.2-5 Exclude equipment.

Timber Harvest

- C§8.3.3.1.2-6 Do not harvest timber.

- C§8.3.3.1.2-7 Maintain $\geq 50\%$ canopy on slopes which contribute surface or subsurface flow to the inner gorge.

Site Preparation and Burning

- C§8.3.3.1.2-8 Do not permit site preparation or burning.

➤ **LD TSU 1 and TSU 2 - Inner Gorge**

- C§8.3.3.1.2-9 Retain at least 70% canopy (averaged throughout the inner gorge) and at least 15 ft² of conifers ≥ 18 in. dbh per acre.

- C§8.3.3.1.2-10 Ensure that trees are evenly dispersed across the slope after a timber harvest, unless an assessment reveals, from the presence of competent bedrock, that the inner gorge is in fact stable, in which case MRC will retain more trees on the least stable areas.

- C§8.3.3.1.2-11 Allow construction and reconstruction of roads, skid trails, and landings within inner gorges only after notification to the wildlife agencies and review by a geologist.

➤ **TSU 1 and TSU 2 - Steep Streamside Slopes**

Roads

- C§8.3.3.1.2-12 Do not construct new roads or landings.

- C§8.3.3.1.2-13 Do not construct watercourse crossings.

- C§8.3.3.1.2-14 Adhere to the standards in Appendix E, *Roads, Landings, and Skid Trails*, for reconstructed roads.

- C§8.3.3.1.2-15 Decommission existing roads and landings when they are no longer needed.
- NOTE**
If relocation of a road poses a higher risk of sediment delivery than maintenance and use of an existing road, MRC will maintain the road to the design standards specified in Appendix E, *Roads, Landings, and Skid Trails*.

Tractor Trails

- C§8.3.3.1.2-16 Do not construct tractor trails.

Tractor Yarding

- C§8.3.3.1.2-17 Permit equipment on existing stable trails where other yarding methods could pose a greater risk of sediment delivery to a watercourse or where one-time entry into the TSU is required to control erosion.

Timber Harvest

- C§8.3.3.1.2-18 Retain at least 50% overstory canopy in those portions of the unit that extend above the AMZ.

- C§8.3.3.1.2-19 Retain at least 15 ft² of conifers ≥18 in. dbh per acre, with trees evenly distributed across the slope in those portions of the unit that extend above the AMZ.

NOTE

The 20 ft reduction on the middle band of the AMZ for helicopter or cable yarding applies only when the AMZ extends beyond TSU1 and TSU2 and not when the AMZ is within these TSU units.

Expected regeneration harvest for even-aged stands on TSU1: 123 ac (Years 0-15); 82 ac (Years 15-30).

Expected regeneration harvest for even-aged stands on TSU2: 642 ac (Years 0-15); 254 ac (Years 15-30).

Site Preparation and Burning

- C§8.3.3.1.2-20 Do not permit site preparation or burning.

> LD TSU 1 and TSU 2 - Steep Streamside Slopes

- C§8.3.3.1.2-21 Permit new construction of roads, skid trails, and landings only after a review and site specific design by a PG or CEG.

- C§8.3.3.1.2-22 Permit reconstruction of roads, skid trails, and landings across unstable areas within TSU1 or TSU2 (i.e., steep streamside slopes) only after obtaining approval of the wildlife agencies as well as a review and site specific design by a PG or CEG.

- C§8.3.3.1.2-23 Ensure that trees are evenly dispersed across the slope after a timber harvest in TSU1 and TSU2.

- C§8.3.3.1.2-24 Permit a one-time use of shelterwood and seed-tree removal steps outside the inner and middle bands of an AMZ, as long as MRC retains 50% overstory canopy.

NOTE

1. Seed-tree removal will not be a deviation from default conservation measures if it retains 50% overstory canopy and at least 15 ft² of conifers ≥ 18 in. dbh per acre, with the trees evenly distributed across the slope.
2. Use of shelterwood or seed-tree removal steps does not preclude the requirement for wildlife trees in the AMZ. MRC will not retain, for this one time entry, 15 ft² of conifers ≥18 in. dbh per acre.

> TSU 3 - Steep Dissected Topography

Roads

C§8.3.3.1.3-1 Do not construct or reconstruct a road to extend more than 50 ft across a headwall swale, excluding watercourse crossings.

C§8.3.3.1.3-2 Decommission existing roads and landings when they are no longer necessary.

NOTE

If relocation of a road poses a higher risk of sediment delivery than maintenance and use of an existing road, MRC will maintain the road to the design standards specified in Appendix E, *Roads, Landings, and Skid Trails*.

Tractor Trails

C§8.3.3.1.3-3 Do not construct or reconstruct tractor trails.

Tractor Yarding

C§8.3.3.1.3-4 Permit equipment on existing stable trails where other yarding methods could pose a greater risk of sediment delivery to a watercourse or where one-time entry into a TSU is required to control erosion.

Timber Harvest

C§8.3.3.1.3-5 Retain 50% overstory canopy and, per acre, 15 ft² of conifers ≥ 18 in. dbh, distributed evenly across the TSU.

C§8.3.3.1.3-6 Emphasize tree retention in the axis of headwall swales where pore water pressures are typically greatest.

Expected regeneration harvest for even-aged stands on TSU3: 3156 ac (Years 0-15); 1339 ac (Years 15-30).

Site Preparation and Burning

C§8.3.3.1.3-7 Do not permit site preparation or broadcast burning.

> LD TSU 3 - Steep Dissected Topography

C§8.3.3.1.3-8 Permit a one-time use of shelterwood and seed-tree removal steps outside the inner and middle bands of an AMZ.

NOTE

1. Seed-tree removal will not be a deviation from default conservation measures if it retains 50% overstory canopy and at least 15 ft² of conifers ≥ 18 in. dbh per acre, with the trees evenly distributed across the slope.
2. Use of shelterwood or seed-tree removal steps does not preclude the requirement for wildlife trees in the AMZ. MRC will not retain, for this one time entry, 15 ft² of conifers ≥ 18 in. dbh per acre.

C§8.3.3.1.3-9 Retain 50% overstory canopy on headwall swales.

C§8.3.3.1.3-10 Permit new construction of roads, skid trails, and landings only after a review and site specific design by a PG or CEG.

C§8.3.3.1.3-11 Permit reconstruction of roads, skid trails, and landings across unstable areas within TSU1 or TSU2 (i.e., steep streamside slopes) only after obtaining approval of the wildlife agencies as well as a review and site specific design by a PG or CEG.

> TSU 4 and TSU 5 - Non-dissected, Low Relief Topography**Roads**

C§8.3.3.1.4-1	Construct and maintain roads and landings to the design standards set out in Appendix E, <i>Roads, Landings, and Skid Trails</i> .
Tractor Trails	
C§8.3.3.1.4-2	Construct and maintain tractor trails to the design standards set out in Appendix E, <i>Roads, Landings, and Skid Trails</i> .
Tractor Yarding	
C§8.3.3.1.4-3	Limit tractor yarding to the fewest number of trails necessary to conduct yarding operations.
<p>➤ TSU 6 - Earthflow Complexes</p>	
Roads	
C§8.3.3.1.5-1	Do not construct new roads on an earthflow complex.
C§8.3.3.1.5-2	Maintain roads and landings so that water is not concentrated on slide materials.
C§8.3.3.1.5-3	Do not increase or create cuts into a slide body or place fill material on a slide body, except for normal road maintenance.
Tractor Yarding	
C§8.3.3.1.5-4	Minimize new tractor trails and avoid disruption from equipment to the natural drainage of the earthflow.
Timber Harvest	
C§8.3.3.1.5-5	Retain $\geq 50\%$ canopy, distributed across the TSU.
	Expected regeneration harvest of even-aged stands on TSU6: 42 ac (Years 0-15); 63 ac (Years 15-30).
Site Preparation and Burning	
C§8.3.3.1.5-6	Do not disturb the existing overstory canopy or disrupt drainage with heavy equipment for site preparation.
<p>➤ TSU 7 - Accelerated Creep Terrain</p>	
Roads	
C§8.3.3.1.6-1	Avoid water concentration on soils in order to prevent gully erosion.
Tractor Trails	
C§8.3.3.1.6-2	Maintain, construct, and reconstruct tractor trails so that they do not increase the risk of mass wasting.
Tractor Yarding	
C§8.3.3.1.6-3	Avoid water concentration on soils in order to prevent gully erosion.
Timber Harvest	
C§8.3.3.1.6-4	Retain, on average, 50% canopy that is evenly distributed across the forested portion of the TSU.
Site Preparation and Burning	
C§8.3.3.1.6-5	Do not disturb existing overstory or disrupt drainage with heavy equipment during site preparation.
<p>➤ TSU 8 - Ohlsen Ranch Formation</p>	
Roads and Tractor Trails	
C§8.3.3.1.7-1	Manage all roads and skid trails with a risk of sediment delivery as “extreme” erosion hazards regardless of their slope gradient.

C§8.3.3.1.7-2	Reduce the spacing between waterbars and rolling dips to 50 ft in order to minimize the concentration of water on a traveled surface.
C§8.3.3.1.7-3	Slash pack or mulch outlets of waterbars and rolling dips to dissipate the energy of concentrated surface run-off and minimize the likelihood of gully development.
‣ Historically Active Landslides	
Roads	
C§8.3.3.1.8-1	Do not construct or reconstruct roads or landings.
C§8.3.3.1.8-2	Maintain existing roads so that excessive water is not concentrated onto slide materials.
Tractor Trails	
C§8.3.3.1.8-3	Do not construct tractor trails.
C§8.3.3.1.8-4	Avoid concentration of excessive water drainage from skid trails on rockslide materials.
Tractor Yarding	
C§8.3.3.1.8-5	Limit equipment to existing stable trails or roads.
Timber Harvest	
C§8.3.3.1.8-6	Do not harvest timber.
Site Preparation and Burning	
C§8.3.3.1.8-7	Do not permit heavy equipment for site preparation.
C§8.3.3.1.8-8	Limit equipment on dormant landslides to existing stable trails or roads.
‣ LD Historically Active Landslides	
C§8.3.3.1.8-9	Retain at least 50% canopy with trees evenly dispersed across the historically active landslide.

W.2 Summary of Conservation Measures for Terrestrial Habitat

Terrestrial Habitat	
‣ Snags and Wildlife Trees within a THP	
C§9.2.3.1-1	Retain in Class I and Large Class II AMZ a minimum of <ul style="list-style-type: none"> • 1 hard snag or recruitment tree <i>on average per acre</i> that is ≥ 16 in. dbh and ≥ 30 ft tall. • 2 hard snags or recruitment trees <i>on average per acre</i> that are ≥ 24 in. dbh and ≥ 40 ft tall. • 1 wildlife tree or recruitment tree <i>on average per acre</i> that is ≥ 16 in. dbh and ≥ 30 ft tall.
C§9.2.3.1-2	Retain in general forested areas a minimum of <ul style="list-style-type: none"> • 1 hard snag or recruitment tree <i>on average per acre</i> that is ≥ 16 in. dbh and ≥ 30 ft tall. • 1 hard snag or recruitment tree <i>on average per acre</i> that is ≥ 24 in. dbh and ≥ 40 ft tall. • 1 wildlife tree or recruitment tree <i>on average per acre</i> that is ≥ 16 in. dbh and ≥ 30 ft tall.

- C§9.2.3.1-3 Retain, if present, 1 additional hard snag ≥ 16 in. dbh and ≥ 30 ft tall per acre during sanitation/salvage operations; do not retain additional recruitment trees if a hard snag is not present.
- C§9.2.3.1-4 Fell snags only when they (a) present safety hazards to workers, (b) create excessive fuel loads, or (c) are part of a sanitation/salvage PTHP or exemption:
- **Safety hazards**
 - If MRC determines after a thorough review that we must cut a very large hard snag (i.e., >36 in. dbh and more than 20 ft tall), we will provide written notification to the wildlife agencies about (a) our intent to fell the tree, (b) our reasons, and (c) other alternatives considered. If we do not receive a response within 5 business days, we will fell the tree. MRC may fell other snags and wildlife trees for safety reasons without obtaining approval of the wildlife agencies; in those instances, we will include the number of felled trees in an annual report (see D.4.2.3).
 - If a snag which is > 16 in. dbh and > 30 ft tall presents a safety hazard, MRC will attempt to cut the tree at least 4 ft above the ground (always consistent with safe harvest operations) and leave the felled snag in place unless it is blocking a road right-of-way, an existing road, or skid trail. In that case, it will be necessary to move the felled snag but place it near the location where it originally was felled. MRC will notify the wildlife agencies of all such incidences in a yearly compliance report (see D.4.2.3).
 - **Fuelwood**
 - If a snag which is < 16 in. dbh and < 30 ft tall presents a safety hazard along a road or landing, a Licensed Timber Operator (LTO) can cut it for fuelwood.
- C§9.2.3.1-5 Do not leave trees harvested within LACMA (at the discretion of the wildlife agencies) to meet the retention goals for downed wood (see O§9.2.2-1 and O§9.2.2-2).
- C§9.2.3.1.6 Prevent, as feasible, the loss of snags and wildlife trees during preparation and execution of prescribed burning.
- C§9.2.3.1-7 Choose for recruitment those trees with the most characteristics valuable for wildlife (see 9.2.2.1.1).
- NOTE**
MRC will tally snags, wildlife trees, and recruitment trees within forested areas separately from Class I and Large Class II AMZs and from core areas for northern spotted owls. If MRC cannot meet the objective for snags or wildlife trees, we may choose recruitment trees that also meet the minimum size requirement for retained trees. MRC will paint a “W” on the tree trunk for a snag or wildlife tree, and an “R” for a recruitment tree.
- C§9.2.3.1-8 Harvest, in subsequent entries, trees marked with an “R” only if there is a tree within the same acre more likely to recruit to a snag in a shorter time.

- C§9.2.3.1-9 Assess snags within a silvicultural unit using only contiguous silvicultural units; exclude Class I and Large Class II AMZs and core areas for northern spotted owls.
- NOTE**
If a PTHP consists of 6 non-contiguous silvicultural units, MRC will assess each unit separately.
- C§9.2.3.1-10 Ensure that no more than 50% of snag recruitment trees for each silvicultural unit are hardwoods.
- C§9.2.3.1-11 Permit firewood cutting only in amounts that still allow MRC to meet snag or LWD objectives.
- C§9.2.3.1-12 Provide to the wildlife agencies, in an annual report, maps and tables showing the number of old-growth trees, wildlife trees, and recruitment trees within each silvicultural unit (see Appendix D, section D.4.2.1).
- C§9.2.3.1-13 Retain all wildlife trees.
- NOTE**
- MRC will permit the harvest of trees > 24 in. dbh with basal hollows that “heal over” as long as they do not otherwise fall into one of the protection categories.
 - MRC will permit the harvest of stump sprouts growing over the basal hollows of previously harvested trees as long as this does not diminish the basal hollow characteristics of the original stump.
 - MRC will permit the harvest of a former raptor-nest tree once the nest is no longer evident as long as the tree does not otherwise fall into one of the protection categories.
 - MRC will retain trees that support nests with structural deformities (e.g., broken tops and forked tops) whether or not a raptor nest is present.
 - MRC will obtain approval of the wildlife agencies on alternative conservation measures for protection of the characteristics most valuable to wildlife in a stand that is exceedingly dense with wildlife trees which, in many cases, appear limited in their actual wildlife value. These alternative conservation measures will not include harvesting old-growth trees. In any case, MRC will retain a minimum of 3 wildlife trees, snags, or recruitment trees per acre.

➤ **Downed Wood within a PTHP**

- C§9.2.3.2-1 Retain the requisite number and size of logs per acre, if harvesting hard downed wood in the stand:
- In Class I and Large Class II AMZs and in extended protection areas for northern spotted owls, 6 pieces of downed wood *on average* per acre, each \geq 16 in. average diameter, \geq 6 ft long, and derived from at least 3 trees.
 - In general forested areas, 5 pieces of downed wood *on average* per acre, each \geq 16 in. average diameter, \geq 6 ft long, and derived from at least 3 trees.
- C§9.2.3.2-2 Do not harvest downed wood embedded in the bed or bank of any watercourse.
- C§9.2.3.2-3 Leave downed logs where they fall, if possible; otherwise place them so that they follow the contours of a hillslope, if possible.
- C§9.2.3.2-4 Retain all hollow logs and hollow standing trees for future recruitment as downed wood.

- C§9.2.3.2-5 Permit cutting of firewood only on roads and landings.
- NOTE**
This requirement does not apply to commercial harvest of firewood.
- C§9.2.3.2-6 Leave non-commercial pieces of downed wood ≥ 16 in. average diameter and ≥ 6 ft long on the forest floor, if possible.
- C§9.2.3.2-7 Return to the forest floor, before completing landing operations, any piece of wood that is > 24 in. average diameter.

➤ **Hardwood Retention - AMZs**

- C§9.3.3.1-1 Do not manage hardwoods in riparian stands (AMZs) unless this management enhances riparian or instream habitats; establishes cable corridors for harvesting operations; or creates safer working conditions.
- C§9.3.3.1-2 Retain the boles of felled hardwoods to provide instream and terrestrial woody debris.

➤ **Hardwood Retention - General Areas**

- C§9.3.3.2-1 Retain, after harvest, $15 \text{ ft}^2/\text{ac}$ of hardwoods > 6 in. dbh, if such hardwoods comprised at least $15 \text{ ft}^2/\text{ac}$ of the total basal area of a silvicultural unit prior to harvest.
- C§9.3.3.2-2 Prohibit treatment of hardwoods > 6 in. dbh if they comprise $< 15 \text{ ft}^2/\text{ac}$ basal area in a silvicultural unit prior to harvest.
- C§9.3.3.2-3 Retain all hardwood trees ≥ 24 in. dbh when these hardwoods constitute $\leq 20\%$ of the basal area of the harvest unit, unless it is necessary to remove them for safety, road right-of-way, or yarding corridors.
- C§9.3.3.2-4 Retain clusters of mast-producing hardwoods.
- C§9.3.3.2-5 Retain true oaks and madrones > 18 in. dbh unless it is necessary to remove them for safety, road right-of-way, or yarding corridors.
- C§9.3.3.2-6 Leave true oaks and madrones > 18 in. dbh—felled for safety, road right-of-way, or yarding corridors—on the ground as downed wood, unless it is necessary to move them to clear a road or road right-a-way.
- C§9.3.3.2-7 Retain trees, regardless of size, that show evidence of significant wildlife use (e.g., whitewash, acorn granaries of woodpeckers, nests of raptors or other birds) and that provide valuable structural complexity or decay elements (e.g., cavities, broken or dead tops, or loose bark).
- C§9.3.3.2-8 Retain hardwoods, when possible, in clumps that include a variety of size classes and that surround large individual trees or those with significant wildlife value.
- C§9.3.3.2-9 Place priority on retaining hardwood clumps where they enhance connectivity between wildlife habitats, such as in AMZs, atop ridgelines, and in low spots between two large drainages.
- C§9.3.3.2-10 Retain aggregate hardwood patches in variable retention units for the life of the HCP/NCCP.

C§9.3.3.2-11 Harvest oak woodlands and true oak forests only to remove invasive conifers.

C§9.3.3.2-12 Exclude Class I hardwood stands (Appendix B, *HCP/NCCP Atlas*, MAPS 4A-C) from harvesting.

NOTE

MRC will not harvest native hardwood stands that we type as Class I (288 ac); we may harvest Class II hardwood stands (333 ac) if we re-classify them as Class III in future on-the-ground assessments.

➤ **Hardwood Representative Sample Areas**

C§9.3.3.3-1 Maintain a mixed-age stand of hardwoods, representative of an early seral hardwood stand.

C§9.3.3.3-2 Maintain the relative proportion of conifers to hardwoods.

C§9.3.3.3-3 Meet the minimum stocking standards of the Timber Management Plan (TMP).

➤ **Type I Old Growth**

C§9.4.3.1-1 Do not harvest in previously un-harvested stands of old growth.

C§9.4.3.1-2 Pursue conservation easements to permanently protect old-growth stands.

C§9.4.3.1-3 Protect a 150-ft buffer that retains at least 75% of the basal area of conifers in the Type I old-growth stand.

NOTE

A Type I stand with a basal area of 200 ft², for example, will have a 150-ft wide buffer with a minimum basal area of 150 ft².

C§9.4.3.1-4 Obtain the approval of the wildlife agencies before initiating any burning in old-growth stands.

C§9.4.3.1-5 Cooperate if the wildlife agencies, on their own initiative, decide to re-introduce ecological burns in old-growth stands.

➤ **Type II Old Growth**

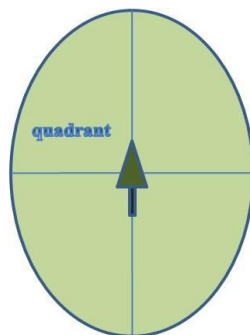
C§9.4.3.2-1 Harvest using single-tree selection to maintain and increase mean stand diameter.

C§9.4.3.2-2 Maintain screen trees for old-growth trees and mark them with an “R” so that they are retained during harvest.

DEFINITION

A **screen tree** creates a barrier of protection, e.g., from wind, for an adjacent tree and for wildlife that might be occupying it. Its limbs must intermingle above or at the height of the canopy of the tree to be screened, while its tree top must be at least half the height of the tree to be screened.

- C§9.4.3.2-3 Follow these procedures, if a tree to be screened does not have at least 4 screen trees, in order to assess and retain screen recruitment trees:
- Use 2 times the canopy spread as the distance within which to assess and retain potential screen trees.
 - Ensure that a potential screen tree is the tallest tree in the assessment quadrant and at least ½ the height of the tree to be screened.



Tree To Be Screened

NOTE

If there are no trees which meet the criteria in C§9.4.3.2-3, do not retain additional trees.

- C§9.4.3.2-4 Permit harvesting of a screen tree only if (a) there are at least 6 screen trees with intermingling limbs; (b) felling will not damage the tree to be screened; and (c) removing the harvested tree will not damage the tree to be screened.
- C§9.4.3.2-5 Preserve all individual old-growth trees identified by size, characteristics, and dbh.
- C§9.4.3.2-6 Obtain the approval of the wildlife agencies before initiating any burning in old-growth stands.
- C§9.4.3.2-7 Cooperate if the wildlife agencies, on their own initiative, decide to re-introduce ecological burns in old-growth stands.

➤ **Residual Old-growth Trees**

- C§9.4.3.3-1 Protect and preserve individual old-growth trees, both conifers and hardwoods.

NOTE

If MRC determines that we must cut a very large hard snag (i.e., >36 in. dbh and more than 20 ft tall) or an old-growth tree, we will provide written notification to the wildlife agencies about (a) our intent to fell the tree, (b) our reasons based on a thorough review, and (c) alternatives considered. If we do not receive a response from the wildlife agencies within 5 business days, we will fell the tree. MRC may fell other snags and wildlife trees for safety reasons without obtaining the approval of the wildlife agencies; in those instances, we will leave the felled trees on the forest floor and include the number of felled trees in an annual report (see C§9.2.3.1-4).

- C§9.4.3.3-2 Retain all screen trees around individual old-growth trees per the guidelines in C§9.4.3.2-2 and C§9.4.3.2-3.

➤ **Rocky Outcrops**

- C§9.5.3-1 Survey for peregrine falcon when timber operations occur within ½ mile of rocky outcrops or within 1 mile of any proposed helicopter yarding.
- C§9.5.3-2 Survey newly discovered rocky outcrops for sensitive species if there are plans to convert them to quarries.
- If sensitive species are not present, MRC may convert the site to a quarry.
 - If sensitive species are present, MRC will obtain approval of the wildlife agencies prior to any conversion of the site to a quarry.
- C§9.5.3-3 Coordinate with adjacent landowners, as appropriate, to determine the status of adjacent peregrine falcon eyries.
- C§9.5.3-4 Consult with the wildlife agencies for operations within ¼ mile of a peregrine falcon nest in order to determine site-specific conservation measures, including disturbance measures.

➤ **Common Natural Communities**

- C§9.6.1.3-1 Restore coastal redwoods and Douglas fir.
- C§9.6.1.3-2 Restore a balance of conifers-to-hardwoods.
- C§9.6.1.3-3 Maintain Class I hardwood stands (section 9.3.1.2).
- C§9.6.1.3-4 Maintain existing stand dominance of native conifers other than redwood and Douglas fir where this occurs.
- C§9.6.1.3-5 Follow all other conservation strategies related to common natural communities:
- *Riparian areas and wetlands*
Protect distinct habitat features, such as watercourses, marshes, seeps, and springs.
 - *Sediment and mass wasting*
Limit the anthropogenic sources of mass wasting, thereby maintaining more ground in the forest and less sediment impairment of watercourses.
 - *Wildlife trees, snags, and downed wood*
Retain and recruit habitat elements necessary to maintain a diverse habitat structure.
 - *Hardwoods*
Maintain hardwood tree species within MRC conifer forests, as well as representative hardwood stands across the plan area.
 - *Old-growth trees*
Retain old-growth trees, a significant habitat element.
 - *Northern spotted owl*
Create and retain older and denser forest stands; this, in turn, increases the diversity of seral stages throughout the natural community.
 - *Marbled murrelet*
Retain large, uncommon trees with significant structural elements for nesting, such as platform branches or broken tops.

- *Point Arena mountain beaver*
Retain existing burrow systems.
- *Rare plants*
Protect and conserve covered rare plants.

➤ **Uncommon Natural Communities – Closed Cone Forest**

- C§9.6.2.3.1-1 Follow all conservation measures for rare plants detailed in Chapter 11.
- C§9.6.2.3.1-2 Avoid conducting covered activities in closed-cone forest, if feasible.
- C§9.6.2.3.1-3 Conduct covered activities in closed-cone forest to allow access to adjacent timber stands only if no other routes are feasible.
- C§9.6.2.3.1-4 Conduct road maintenance and construction in accordance with the prescribed protections and take limitations on rare plants in Chapter 11.
- C§9.6.2.3.1-5 Do not disturb, over the 80-year term of the plan, more than 5 ac of pygmy forest for construction of new facilities, such as roads, landings, and skid trails; obtain approval of the wildlife agencies if the proposed construction will impact additional acres.
- C§9.6.2.3.1-6 Request technical assistance from USFWS, if necessary, to prevent take of the Lotis Blue Butterfly.
- C§9.6.2.3.1-7 Apply surrogates for natural disturbance agents (e.g., fire) within natural communities, if the wildlife agencies concur.
- C§9.6.2.3.1-8 Decommission, close, and re-vegetate historic roads (see Appendix E, *Roads, Landings, and Skid Trails*, section E.2.1)

➤ **Uncommon Natural Communities – Oak Woodlands and Natural Grasslands**

- C§9.6.2.3.2-1 Follow all conservation measures for rare plants detailed in Chapter 11.
- C§9.6.2.3.2-2 Avoid conducting covered activities in oak woodlands and natural grasslands, if feasible.
- C§9.6.2.3.2-3 Conduct covered activities in oak woodlands and natural grasslands to allow access to adjacent timber stands only if no other routes are feasible.
- C§9.6.2.3.2-4 Conduct road maintenance and construction in accordance with the prescribed protections and take limitations on rare plants in Chapter 11.
- C§9.6.2.3.2-5 Apply surrogates for natural disturbance agents (e.g., fire) within natural communities, if the wildlife agencies concur.
- C§9.6.2.3.2-6 Decommission, close, and re-vegetate historic roads (see Appendix E, *Roads, Landings, and Skid Trails*, section E.2.1)
- C§9.6.2.3.2-7 Harvest encroaching Douglas fir and avoid replanting the harvested area with conifers, if feasible and cost-efficient.

➤ **Salt Marsh**

- C§9.6.2.3.3-1 Map, within 5 years of HCP/NCCP commencement, the boundaries of any salt marsh in the plan area with ground surveys, extending out at least as far as the dominant species identified, including *Zostera* spp.
- C§9.6.2.3.3-2 Prohibit water drafting within the boundaries of the salt marsh.
- C§9.6.2.3.3-3 Maintain a 50-ft EEZ (excluding existing roads) around a salt marsh.
- C§9.6.2.3.3-4 Provide AMZ Class I protections around watered areas of the marsh.

› Invasive Species

- C§9.7.3-1 Develop, within the first 5 years of HCP/NCCP implementation, an *Invasive Plant Control Program* and *Invasive Animal Control Program* for the plan area.
- C§9.7.3-2 Incorporate applicable elements of the *Invasive Plant Control Program* and *Invasive Animal Control Program* into individual PTHPs and other site-specific projects.
- C§9.7.3-3 Evaluate and revise the *Invasive Plant Control Program* and *Invasive Animal Control Program* as needed, with a formal evaluation and revision at least every 5 years.
- C§9.7.3-4 Continue current control efforts on invasive plants and animals in the plan area during development of the *Invasive Plant Control Program* and *Invasive Animal Control Program*

W.3 Summary of Conservation Measures for Fish and Wildlife

Fish and Wildlife

› Coho Salmon, Chinook Salmon, and Steelhead

- C§10.2.1.3-1 See 8.2, *Riparian and Wetland Areas*.
- C§10.2.1.3-2 See 8.3, *Sediment Inputs*.
- C§10.2.1.3-3 See 8.4, *Hydrologic Change*.
- C§10.2.1.3-4 See Appendix E, *Roads, Landings, and Skid Trails*.
- C§10.2.1.3-5 See Appendix T, *Master Agreement for Timber Operations*

› Red-legged Frogs

Disturbance Minimization

- C§10.2.2.3-1 Follow these standards in maintaining documented red-legged frog breeding sites (both natural and man-made):
- Maintain and manage vegetation after July 1.
 - Do not conduct vegetation management more than once every 3 years.
 - Limit vegetation management to 50% of the breeding site's perimeter.
- C§10.2.2.3-2 Maintain a 25 to 50 ft equipment limitation or exclusion zone (ELZ or EEZ) around wetlands, wet areas, wet meadows, seeps, and springs, excluding existing roads (see C§8.2.3.5.1-1, C§8.2.3.5.1-2, and C§8.2.3.5.2-3).

- C§10.2.2.3-3 Maintain a 50 ft equipment exclusion or limitation zone (EEZ or ELZ) around all potential and documented red-legged frog breeding sites excluding existing roads.

NOTE

If MRC needs to enter an EEZ with equipment, we will conduct pre-project surveys as described in section 10.2.2.3.

- C§10.2.2.3-4 Limit water drafting on documented red-legged frog breeding sites (both natural and man-made):
- Do not draft more than 50% of pond volume before July 1.
 - Do not draft more than 80% of pond volume after July 1.
 - Do not draft when egg masses are present.
 - Use a screen with a mesh size less than 1/8 in. and an approach velocity of 0.33 ft/sec or less.

- C§10.2.2.3-5 Ensure that all pump intakes are screened and, if feasible, are at least 6 in. off the bottom of the waterbody; follow the water-drafting prescriptions in Appendix E, *Roads, Landings, and Skid Trails*, E.7.

Bullfrog Control Plan

- C§10.2.2.3-6 Construct new ponds with drain fixtures, where topographically possible.

NOTE

MRC will do this as the opportunity arises during covered activities with the concurrence of the wildlife agencies.

- C§10.2.2.3-7 Control bullfrog populations if they are present in 1 or more documented red-legged frog breeding sites in a planning watershed, according to the following order of priority:
1. Remove bullfrog egg masses from the site.
 2. Attempt to remove (e.g., gig, shoot, trap, and seine) metamorphic bullfrogs (i.e., frogs with legs) at least once a week until the CPUE (catch per unit effort of time) declines to < 1 bullfrog per hour—evidence that the bullfrog population has been reduced.
 3. Drain a pond manually or mechanically during bullfrog invasion if there is no drain fixture.

NOTE

MRC will not drain ponds to control bullfrogs if there are larval forms of red-legged frogs in the pond. Moreover, it is not possible to drain some large ponds manually.

Take Minimization

- C§10.2.2.3-8 Conduct pre-project surveys to determine the presence of covered aquatic species when proposing that heavy equipment enter into an EEZ or ELZ of any wet feature (wet areas, seeps, springs, wet meadows, and wetlands), including potential and documented red-legged frog breeding sites.

Habitat Conservation

- C§10.2.2.3-9 Maintain at least 75% of both maximum depth and maximum total surface area of potential breeding sites as measured during baseline distribution surveys.
- C§10.2.2.3-10 Construct new ponds with drain fixtures, where topographically possible.

NOTE

MRC will do this as the opportunity arises during covered activities with the concurrence of the wildlife agencies.

- C§10.2.2.3-11 See 8.2, *Riparian and Wetland Areas*.
- C§10.2.2.3-12 See 8.3, *Sediment Inputs*.
- C§10.2.2.3-13 See 8.4, *Hydrologic Change*.
- C§10.2.2.3-14 See Appendix E, *Roads, Landings, and Skid Trails*.
- C§10.2.2.3-15 Prohibit herbicide use within 150 ft of habitat occupied by red-legged frogs or within an AMZ of a Class I or Class II stream unless the wildlife agencies concur.

► Coastal Tailed Frogs

Disturbance Minimization

- C§10.2.3.3-1 Maintain a 25 to 50-ft equipment limitation or exclusion zone (ELZ or EEZ) around wetlands, wet areas, wet meadows, seeps, and springs, excluding existing roads.

Take Minimization

- C§10.2.3.3-2 Conduct pre-project surveys to determine the presence of covered aquatic species when proposing that heavy equipment enter into the EEZ or ELZ of any wet feature (wet areas, seeps, springs, wet meadows, and wetlands).

Habitat Conservation

- C§10.2.3.3-3 Designate and manage all basins or sub-basins with breeding coastal tailed frogs present as Large Class II regardless of their drainage area size (see Table 8-1).

NOTE

If MRC finds only an adult life stage of coastal tailed frog, we will conduct a second survey for larval forms to evaluate if the sub-basin supports breeding frogs. If we find larvae, we will manage the sub-basin as a Large Class II.

- C§10.2.3.3-4 See 8.2, *Riparian and Wetland Areas*.
- C§10.2.3.3-5 See 8.3, *Sediment Inputs*.
- C§10.2.3.3-6 See 8.4, *Hydrologic Changes*.
- C§10.2.3.3-7 See Appendix E, *Roads, Landings, and Skid Trails*.
- C§10.2.3.3-8 See Appendix T, *Master Agreement for Timber Operations*.
- C§10.2.3.3-9 Prohibit herbicide use within an AMZ of a Class I or Class II stream unless the wildlife agencies concur.

► NSO Territories with High Protection

Habitat

- C§10.3.1.3.1-1 Provide, on covered lands, a core area of at least 80 contiguous ac (32 ha) which is 500 ft (153 m) from the initial activity center and off-limits to harvest.

- C§10.3.1.3.1-2 Adhere to MRC guidelines for selecting a core area in the order of priority given below:
1. Create a circular buffer around the initial activity center with a 500-ft radius.
 2. Select 80 ac of contiguous nesting/roosting habitat, if available.
 3. Supplement any deficiencies in the desired 80 ac with the next-best contiguous habitat.
 4. Locate the habitat on same side of a topographic divide, such as a ridge, if possible.
- C§10.3.1.3.1-3 Protect core areas that are within both covered lands and state parks in proportion to the amount of core area acreage on covered lands.
- EXAMPLE**
A core area adjoins both the plan area and Navarro River Redwoods State Park, such that 60 ac are in the plan area and 20 ac on park land. MRC will protect the 60 ac of the core area that are in the plan area.
- C§10.3.1.3.1-4 Retain suitable habitat (a) within 1000 ft of the initial activity center and (b) within the extended protection area (i.e., 267 ft beyond the periphery of the core area) and ensure that any harvests maintain or increase the pre-harvest mean stand diameter (MSD).
- C§10.3.1.3.1-5 Maintain at least 500 ac of suitable habitat within 0.7 miles of the activity center or maintain the existing suitable habitat if, prior to harvest, it is already less than 500 ac.
- NOTE**
The forester will ensure that MRC meets the minimum habitat criteria post-harvest. Additionally, the forester will confirm via air photos or past harvest plans that the habitat typing is correct and current. If there is a disagreement about the habitat typing before, during, or after harvest, the forester will meet with the disputant at the stand in question to resolve the concern. If there is still disagreement, the disputing agency will work with MRC to agree upon a sampling intensity and protocol to determine canopy cover and habitat typing of the stand.
- C§10.3.1.3.1-6 Permit fire control lines for prescribed burning within a core area only with approval of the wildlife agencies.
- C§10.3.1.3.1-7 Mark and retain all known nest trees of northern spotted owls and protect them, if possible, with 4 screen trees.

DEFINITION

A screen tree creates a barrier of protection (e.g., from wind) for an adjacent tree and for wildlife that might be occupying it. It must have intermingling limbs above or equal to the height of the canopy of the tree to be screened. Its tree tops must be at least half the height of the tree to be screened.

NOTE

Conservation measures C§10.3.1.3.1-7 through C§10.3.1.3.1-9 still apply when a spotted owl has abandoned its core area and moved into another core area.

C§10.3.1.3.1-8 Follow this procedure if a tree to be screened does not have at least 4 screen trees:

- Use 2 times the canopy spread as the distance within which to assess and retain potential screen trees.
- Select, as the screen tree, the tallest tree in the assessment quadrant which is, at minimum, ½ the height of the tree to be screened.

NOTE

If no trees meet this criterion, do not retain additional trees.



- Select screen trees in open non-screened quadrants, if possible.

C§10.3.1.3.1-9 Permit harvesting of a screen tree only if (a) there are at least 6 screen trees; (b) felling will not damage the tree to be screened; and (c) removing the harvested tree will not damage the tree to be screened.

C§10.3.1.3.1-10 Restrict construction of new roads to locations outside of the core area.

Breeding Season

C§10.3.1.3.1-11 Conduct only the following operations within 1000 ft (305 m) of a current spotted owl activity center:

- Use of mainline haul roads and maintenance of mainline haul roads as designated in the *HCP/NCCP Atlas* (MAPS 14A-C).

NOTE

Maintenance includes actions necessary to use the roads, e.g., knocking down water bars, grading, and watering.

Maintenance does not include actions that would be considered reconstruction of roads under the California Forest Practice Rules (CDF 2006, p. 14), such as changing the prism of the road. MRC will retain any trees felled for maintenance in forest adjacent to roads within the core area.

- Use of public roads.
- Use and maintenance of existing MRC roads which are at least the same distance from the current AC as a public road or mainline haul road.
- Use of pickups and ATVs on existing roads.

C§10.3.1.3.1-12 Permit helicopter operations, including service landings, only 2640 ft (805 m) or more from a spotted owl activity center, measured and marked according to map distance.

- C§10.3.1.3.1-13 Allow a logging vehicle to stop only for safety reasons when within 1000 ft (305 m) of a nest site known to be currently active, unless the vehicle is on a mainline road.
- C§10.3.1.3.1-14 Permit prescribed burning within ¼ mile of an occupied activity center only with the approval of the wildlife agencies.
- C§10.3.1.3.1-15 Survey for spotted owls when operations could result in disturbance or reduction of suitable habitat (see Appendix K, *Northern Spotted Owl Data and Protocol*, section K.5.1.8).

Non-breeding Season

- C§10.3.1.3.1-16 Prohibit harvest or forest management within the core area.
- C§10.3.1.3.1-17 Conduct only the following operations within the core area:
- Use and maintenance of existing roads.
 - Reconstruction of any truck road only if MRC has exhausted all other alternative measures that might result in less impact.
 - Use of cable corridors and tailholds:
 - Fell only trees that may hang up cable lines.
 - Leave all trees felled for the cable corridor on the forest floor for woody debris.
 - Yard logs only outside the core area.
 - Exclude nest or screen trees from felling.
 - Fell trees for cable corridors away from nest or roost trees so that no damage can occur to nest trees, screen trees, or roost trees.
- C§10.3.1.3.1-18 Permit helicopter operations—including service landings—that are at least 1000 ft (305 m) from an activity center, measured and marked according to map distance.
- C§10.3.1.3.1-19 Survey for spotted owls when operations could result in reduction of suitable habitat (see Appendix K, *Northern Spotted Owl Data and Protocol*, section K.5.1.8).

› NSO Territories with Moderate Protection

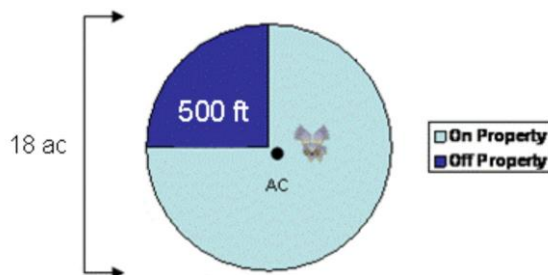
Habitat

- C§10.3.1.3.1-20 Adhere to MRC guidelines for selecting a core area:
- Select nesting/roosting habitat over foraging habitat.
 - Select contiguous habitat over isolated habitat.
 - Select habitat located proximal to the activity center relative to a topographic divide, such as a ridge.
- C§10.3.1.3.1-21 Provide a core area of at least 18 contiguous ac (7 ha) that are *no-harvest* with a minimum distance of 500 ft (152 m) to the initial activity center.
- C§10.3.1.3.1-22 Retain suitable habitat that is within the extended protection area (i.e., 500 ft beyond the periphery of the core area) prior to harvest and ensure that harvested areas maintain or increase pre-harvest mean stand diameter.
- C§10.3.1.3.1-23 Mark and retain all known nest trees of northern spotted owls and protect them with screen trees (see C§10.3.1.3.1-7).

- C§10.3.1.3.1-24 Permit fire control lines for prescribed burning within a core area only with the approval of the wildlife agencies.
- C§10.3.1.3.1-25 Maintain at least 500 ac of suitable habitat within 0.7 miles of the activity center or maintain the existing suitable habitat if, prior to harvest, it is already less than 500 ac.
- C§10.3.1.3.1-26 Protect core areas that are both on and off MRC property in proportion to the amount of acreage that is actually on MRC property.

EXAMPLE

A core area consists of a circle with a 500 ft radius. Within this 18-ac circle, 75% of the land is on covered lands. The rest of the core area is on other property. MRC will protect $0.75 * 18$ or 14 ac.



MRC maintains a minimum of 14 ac (75%) of the core area

Breeding Season

- C§10.3.1.3.1-27 Conduct only the following operations within 1000 ft (305 m) of the current activity center:
- Use of mainline haul roads and maintenance of mainline haul roads as designated in the *HCP/NCCP Atlas* (MAPS 14A-C).
- NOTE**
Maintenance does not include actions that would be considered reconstruction of roads under the California Forest Practice Rules (CDF 2006, 14), such as substantial change in the prism of the road.
- Use of public roads.
 - Use and maintenance of existing MRC roads that (1) are located at least the same distance from the current spotted owl activity center as a public road or mainline haul road; or (2) are existing seasonal roads ≥ 500 ft (152 m) from the current activity center and in use during the time the spotted owl territory has been active.
- NOTE**
Maintenance does not include actions that would be considered reconstruction of roads under the California Forest Practice Rules (CDF 2006, 14), such as substantial change in the prism of the road.
- Use of pickups and ATVs on existing roads.
 - Use of a road if an owl pair is upgraded from limited to moderate protection and has successfully reproduced while the AC was within 500 ft (152 m) of the road.
- NOTE**
The assumption is that the road disturbance has not disrupted the owls since they have already reproduced.
- C§10.3.1.3.1-28 Permit helicopter operations—including service landings—that are at least 2640 ft (805 m) from an activity center, measured and marked according to map distance.

- C§10.3.1.3.1-29 Permit prescribed burning within ¼ mile of an occupied activity center only with the approval of the wildlife agencies.
- C§10.3.1.3.1-30 Allow a logging vehicle to stop only for safety reasons when within 1000 ft (305 m) of a nest site known to be currently active, unless the vehicle is on a mainline road.
- C§10.3.1.3.1-31 Retain any trees, felled for allowable maintenance, in the forest adjacent to roads within the core area.
- C§10.3.1.3.1-32 Survey for spotted owls when operations could result in disturbance or reduction of suitable habitat (see Appendix K, *Northern Spotted Owl Data and Protocol*, section K.5.1.8).

Non-breeding Season

- C§10.3.1.3.1-33 Prohibit harvest or forest management within the core area.
- C§10.3.1.3.1-34 Conduct only the following operations within the core area:
 - Use of cable corridors and tailholds:
 - Fell only trees that may hang up cable lines.
 - Yard logs only outside the core area.
 - Exclude nest or screen trees from felling.
 - Leave all trees felled for the cable corridor on the forest floor for woody debris.
 - Fell trees for cable corridors away from nest or roost trees to limit damage to these trees
 - Use and maintenance of existing roads.
- C§10.3.1.3.1-35 Permit helicopter operations—including service landings—that are at least 1000 ft (305 m) from an activity center.
- C§10.3.1.3.1-36 Survey for spotted owls when operations could result in reduction of suitable habitat (see Appendix K, *Northern Spotted Owl Data and Protocol*, section K.5.1.8).
- C§10.3.1.3.1-37 Permit construction of new roads inside the core area only if MRC maintains habitat thresholds.

› NSO Territories with Limited Protection

Habitat

- C§10.3.1.3.1-38 Mark and retain all known nest trees of northern spotted owls and protect them with screen trees (see C§10.3.1.3.1-7).

Breeding Season

- C§10.3.1.3.1-39 Protect a 500-ft (152-m) no-harvest buffer during the breeding season.
- C§10.3.1.3.1-40 Permit helicopter operations—including service landings—that are at least 1320 ft (402 m) from an activity center.
- C§10.3.1.3.1-41 Survey for spotted owls when operations could result in disturbance (see Appendix K, *Northern Spotted Owl Data and Protocol*, sections K.5.1.3 and K.5.1.9.2).

› NSO Territories Off Property

Non-breeding Season

- C§10.3.1.3.1-42 Mark and retain all known nest trees of northern spotted owls and protect them with screen trees.

Habitat	
C§10.3.1.3.1-43	Level 4A Apply C§10.3.1.3.1-20 through C§10.3.1.3.1-37.
C§10.3.1.3.1-44	Level 4B Apply C§10.3.1.3.1-38 through C§10.3.1.3.1-41
Breeding and Non-breeding Seasons	
C§10.3.1.3.1-45	Level 4A Apply C§10.3.1.3.1-20 through C§10.3.1.3.1-37.
C§10.3.1.3.1-46	Level 4 B Apply C§10.3.1.3.1-38 through C§10.3.1.3.1-41
➤ NSO Territories On/Off Property	
Habitat	
C§10.3.1.3.1-47	Apply C§10.3.1.3.1-20 through C§10.3.1.3.1-37.
Breeding Season	
C§10.3.1.3.1-48	Apply C§10.3.1.3.1-20 through C§10.3.1.3.1-37.
Non-breeding Season	
C§10.3.1.3.1-49	Apply C§10.3.1.3.1-20 through C§10.3.1.3.1-37.
➤ Mobile Activity Centers	
Territories with High or Moderate Protection	
C§10.3.1.3.2-1	Ensure that breeding season protections are always given to the most current activity center.
C§10.3.1.3.2-2	Maintain a nest-site core area through at least 3 breeding seasons (Figure 10-7). EXAMPLE Year 0: Spotted owl is in nest, and initial activity center and core area is established. Year 1: Spotted owl is not in the core area, but the core area remains. Year 2: Spotted owl is not in the core area, but the core area remains. Year 3: Spotted owl is not in the core area, so core area is abandoned.
C§10.3.1.3.2-3	Maintain a roost-site core area through at least 2 breeding seasons unless in Year 0 a spotted owl is detected 1 time only in the roost site. EXAMPLE Year 0: Spotted owl is in roost site; initial activity center and core area is established. Year 1: Spotted owl is not in the core area, but the core area remains. Year 2: Spotted owl is not in core area, so core area is abandoned.
Territories with Limited Protection	
C§10.3.1.3.2-4	Surround a spotted owl's most recent activity center with a 500 ft buffer during the breeding season.
➤ Lower Alder Creek Core Area (LACCA)	
General	
C§10.3.2.3.1-1	Prohibit forest management operations, including timber harvest and road-building.
C§10.3.2.3.1-2	Prohibit public entry into a core area, e.g., for firewood cutting or recreation.
➤ Lower Alder Creek Habitat Area (LACHA)	

General

- C§10.3.2.3.1-3 Conduct timber management only to create and enhance habitat for marbled murrelets.
- C§10.3.2.3.1-4 Obtain approval of the wildlife agencies before submitting a PTHP for any proposed forest management in LACMA.
- C§10.3.2.3.1-5 Obtain approval of the wildlife agencies before altering vegetation or maintaining roads.
- C§10.3.2.3.1-6 Provide the wildlife agencies with a map of the entire project area before initiating any activity.
- C§10.3.2.3.1-7 Permit fire control lines for prescribed burning within LACHA only with approval of the wildlife agencies.
- C§10.3.2.3.1-8 Treat logging debris—between September 15th and March 24th in the 1st year following any harvest conducted in LACHA—with means approved by the wildlife agencies, such as:
- Lopping slash so that a minimal amount remains as ladder fuels.
 - Removing felled trees < 24 in. dbh to a landing.
 - Cutting the top 50 ft off any felled tree > 24 in. dbh and removing this 50-ft segment to a landing.
 - Bucking and limbing, in the forest, any segments of tree stems remaining on the ground.
 - Lopping any residual slash, after the above operations have been completed, that is more than 30 in. high.

Breeding Season

- C§10.3.2.3.1-9 Conduct timber operations only if (a) an MRC survey shows that murrelets are not occupying any area within a ¼ mile of a proposed project; (b) the operations are at least a ¼ mile beyond a core area periphery; (c) the operations are at least 100 ft (23 m) away from potential habitat trees; and (d) the operations occur within the time period of 2 hours after sunrise to 2 hours before sunset.
- C§10.3.2.3.1-10 Permit vehicular traffic within ¼ mile of a core area periphery or within 100 ft of potential murrelet habitat trees for (a) maintenance and hauling on mainline routes; (b) vehicles on existing seasonal or permanent roads which are 1 ton or less; or (c) all terrain vehicles (ATVs) on existing roads.
- C§10.3.2.3.1-11 Permit prescribed burning within ¼ mile of LACHA only with approval of the wildlife agencies.
- C§10.3.2.3.1-12 Permit helicopter operations if they are at least ½ mile from a core area periphery and an MRC survey shows that murrelets are not occupying any area within a ½ mile of the helicopter operations.
- C§10.3.2.3.1-13 Conduct blasting only if (a) it is at least 1 mi (1.6 km) from a core area periphery; (b) it is within the time period of 2 hours after sunrise to 2 hours before sunset; and (c) an MRC survey shows that murrelets are not occupying any area within 1 mile of the blasting.
- C§10.3.2.3.1-14 Conduct all road maintenance as well as rock and log hauling from 2 hours after sunrise to 2 hours before sunset.

- C§10.3.2.3.1-15 Prohibit public entry, e.g., for firewood cutting or recreation.
- Non-Breeding Season**
- C§10.3.2.3.1-16 Permit vehicular traffic within 300 ft (91 m) of a core area periphery or within 100 ft (23 m) of potential murrelet habitat trees for (a) maintenance and hauling on mainline routes; (b) vehicles on existing seasonal or permanent roads which are 1 ton or less; or (c) all terrain vehicles (ATVs) on existing roads.
- C§10.3.2.3.1-17 Conduct timber operations only if (a) an MRC survey shows that murrelets are not occupying any area within 300 ft (91 m) of a proposed project; (b) the project is at least 300 ft beyond a core area periphery; (c) the operations are 100 ft (23 m) away from potential habitat trees; and (d) the operations are within the time period of 2 hours after sunrise to 2 hours before sunset.
- C§10.3.2.3.1-18 Create a required cable corridor only if (a) an MRC survey shows that murrelets are not occupying any area within 300 ft (91 m) of the cable corridor; (b) trees are felled away from potential habitat; and (c) operations are within the time period of 2 hours after sunrise to 2 hours before sunset.
- C§10.3.2.3.1-19 Permit helicopter operations if they are at least 500 ft from a core area periphery and an MRC survey shows that murrelets are not occupying any area within 500 ft of the operations.
- C§10.3.2.3.1-20 Conduct all maintenance and hauling (a) at least 300 ft (92 m) from a core area periphery and (b) within the time period of 2 hours after sunrise to 2 hours before sunset.
- C§10.3.2.3.1-21 Maintain a consistent “viewshed” for radar monitoring sites.

➤ **Lower Alder Creek Buffer Area (LACBA)**

General

- C§10.3.2.3.1-22 Conduct timber management only to provide buffering and protection for LACCA and LACHA.
- C§10.3.2.3.1-23 Obtain approval of the wildlife agencies before submitting a PTHP for any proposed forest management in LACMA.
- C§10.3.2.3.1-24 Permit fire control lines for prescribed burning within LACBA only with approval of the wildlife agencies.
- C§10.3.2.3.1-25 Obtain approval of the wildlife agencies before altering vegetation or maintaining, constructing, or reconstructing roads.
- C§10.3.2.3.1-26 Provide the wildlife agencies with a map of the entire project area before initiating any activity.

- C§10.3.2.3.1-27 Treat logging debris—between September 15th and March 24th in the 1st year following any harvest conducted in LACHA—with means approved by the wildlife agencies, such as:
- Removing felled trees < 24 in. dbh to a landing.
 - Cutting the top 50 ft off any felled tree > 24 in. dbh and removing this 50-ft segment to a landing.
 - Bucking and limbing, in the forest, any segments of tree stems remaining on the ground.
 - Lopping any residual slash, after the above operations have been completed, that is more than 30 in. high.

- C§10.3.2.3.1-28 Prohibit public entry, e.g., for firewood or recreation.

Breeding Season

- C§10.3.2.3.1-29 Conduct timber operations only if an MRC survey shows that murrelets are not occupying any area within a ¼ mile of a proposed project and the operations are (a) at least a ¼ mile beyond a core area periphery; (b) at least 100 ft (23 m) away from potential habitat trees; and (c) within the time period of 2 hours after sunrise to 2 hours before sunset.
- C§10.3.2.3.1-30 Permit vehicular traffic within ¼ mile of a core area periphery or within 100 ft of potential murrelet habitat trees for (a) maintenance and hauling on mainline routes; (b) vehicles on existing seasonal or permanent roads which are 1 ton or less; or (c) all terrain vehicles (ATVs) on existing roads.
- C§10.3.2.3.1-31 Permit helicopter operations if they are at least ½ mile from a core area periphery and an MRC survey shows that murrelets are not occupying any area within a ½ mile of the helicopter operations.
- C§10.3.2.3.1-32 Conduct blasting only if (a) it is at least 1 mi (1.6 km) from a core area periphery; (b) it is within the time period of 2 hours after sunrise to 2 hours before sunset; and (c) an MRC survey shows that murrelets are not occupying any area within 1 mile of the blasting.
- C§10.3.2.3.1-33 Permit prescribed burning within ¼ mile of LACBA only with approval of the wildlife agencies.
- C§10.3.2.3.1-34 Conduct all maintenance and hauling from 2 hours after sunrise to 2 hours before sunset.

Non-breeding Season

- C§10.3.2.3.1-35 Harvest to create a required cable corridor only if (a) an MRC survey shows that murrelets are not occupying any area within 300 ft of the cable corridor; (b) trees are felled away from potential habitat; and (c) operations are within the time period of 2 hours after sunrise to 2 hours before sunset.
- C§10.3.2.3.1-36 Conduct timber operations only if (a) an MRC survey shows that murrelets are not occupying any area within 300 ft of a proposed project; (b) the project operations are at least 300 ft beyond a core area periphery; (c) the operations are at least 100 ft (23 m) away from potential habitat trees; and (d) the operations are within the time period of 2 hours after sunrise to 2 hours before sunset, unless harvest is required for a cable corridor and (i) trees are felled away from potential habitat, and (ii) operations are within the time period of 2 hours after sunrise to 2 hours before sunset.

- C§10.3.2.3.1-37 Permit vehicular traffic within 300 ft (91 m) of a core area periphery or within 100 ft (23 m) of potential murrelet habitat trees for (a) maintenance and hauling on mainline routes; (b) vehicles on existing seasonal or permanent roads which are 1 ton or less; or (c) all terrain vehicles (ATVs) on existing roads.
- C§10.3.2.3.1-38 Permit helicopter operations if they are at least 500 ft from a core area periphery and an MRC survey shows that murrelets are not occupying any area within 500 ft of the helicopter operations.
- C§10.3.2.5.1-39 Conduct all maintenance and hauling only within the period from 2 hours after sunrise to 2 hours before sunset.

➤ Murrelet Habitat Recruitment Stands (MHRS)

- C§10.3.2.3.2-1 Identify and prioritize MHRS with the wildlife agencies within 2 years of HCP/NCCP approval.
- C§10.3.2.3.2-2 Provide at least 2-years notice to the wildlife agencies prior to submitting a PTHP containing or adjacent to an MHRS in order to allow the wildlife agencies to analyze the MHRS and possibly purchase it at a mutually agreed upon price prior to approval of the PTHP.
- NOTE**
MRC may at any time identify potential murrelet habitat as a conservation easement and provide the wildlife agencies the opportunity to purchase it. If the wildlife agencies decide to purchase any potential or designated habitat, they may apply silviculture based on stand conditions and on habitat enhancement for murrelets.
- C§10.3.2.3.2-3 Prohibit harvest in MHRS during the first 20 years of HCP/NCCP implementation.

➤ Occupied Murrelet Habitat in the Murrelet Habitat Zones (MHZ)

Breeding Season

- C§10.3.2.3.10-1 Limit approaches to at least a distance of 0.25 mi (0.4 km) from identified habitat tree(s) unless it involves (a) maintenance or hauling on mainline haul routes, (b) the use of non-mainline roads if they are farther away from an identified habitat tree than the mainline road, (c) use of a vehicle \leq 1 ton on existing seasonal or permanent roads; or (d) all terrain vehicles (ATVs) on existing trails.
- C§10.3.2.3.10-2 Permit prescribed burning within ¼ mile of occupied murrelet stands only with approval of the wildlife agencies.
- C§10.3.2.3.10-3 Permit fire control lines for prescribed burning within occupied murrelet stands only with approval of the wildlife agencies.
- C§10.3.2.3.10-4 Permit helicopters at least 0.50 mile (0.8 km) from identified habitat trees.
- C§10.3.2.3.10-5 Conduct blasting at least 1 mile (1.6 km) from identified habitat trees.
- C§10.3.2.3.10-6 Conduct all maintenance and hauling within 0.25 miles of identified habitat trees only from 2 hours after sunrise to 2 hours before sunset.

Non-breeding Season

C§10.3.2.3.10-7 Conduct harvest operations and construction of new roads at least 300 ft (92 m) away from identified habitat trees.

C§10.3.2.3.10-8 Permit helicopters at least 500 ft (152 m) away from identified habitat trees.

C§10.3.2.5.10-9 Conduct all maintenance and hauling within 300 ft (92 m) of identified habitat trees only from 2 hours after sunrise to 2 hours before sunset.

➤ Murrelet Habitat in the Murrelet Habitat Zones (MHZ) - High Protection Areas

Breeding Season

C§10.3.2.3.11-1 Conduct operations defined in Table 10-18 at their prescribed distance from habitat trees.

NOTE

This constraint does not apply to (a) use or maintenance of mainline roads for log hauling or (b) use of non-mainline roads that are farther from the potential habitat trees than a mainline or public road.

C§10.3.2.3.11-2 Conduct operations not defined in Table 10-18 at least 800 ft (244 m) from habitat trees

NOTE

This constraint does not apply to (a) use or maintenance of mainline roads for log hauling or (b) use of non-mainline roads that are farther from the potential habitat trees than a mainline or public road.

C§10.3.2.3.11-3 Permit helicopters at least 0.25 mile (0.40 km) away from potential habitat trees.

C§10.3.2.3.11-4 Conduct blasting at least 1 mile (1.6 km) away from potential habitat trees.

Non-breeding Season

C§10.3.2.3.11-5 Conduct harvests at least 100 ft (30 m) away from potential habitat trees.

NOTE

This constraint does not apply to operations where tree felling is necessary for a cable corridor.

C§10.3.2.3.11-6 Conduct harvests between 100-200 ft (61 m) from habitat trees in accordance with the following silvicultural prescriptions or obtain approval of the wildlife agencies for alternative prescriptions more suitable for a specific stand.

Buffer	Buffer Silvicultural Prescription
100-200 ft (30-60 m)	<ul style="list-style-type: none"> • ≥ 175 ft² post-management • 70% post-management canopy closure • No harvesting of existing old-growth or potential murrelet trees

C§10.3.2.3.11-7 Permit helicopters that are at least 300 ft (92 m) away from habitat trees or known Type I or Type II old-growth stands unless they have been surveyed according to currently accepted protocols without murrelet detections.

C§10.3.2.3.11-8 Retain all primary murrelet trees and screen trees.

C§10.3.2.3.11-9 Permit harvest of secondary murrelet trees if a ground survey determines that it is unlikely murrelets are occupying the surrounding area.

NOTE

MRC will not harvest old-growth trees under this provision.

➤ Murrelet Habitat in the Murrelet Habitat Zones (MHZ) - Moderate Protection Areas

Breeding Season

C§10.3.2.3.12-1 Conduct operations defined in Table 10-18 at their prescribed distance from habitat trees.

NOTE

This constraint does not apply to (a) use or maintenance of mainline roads for log hauling or (b) use of non-mainline roads that are farther from the potential habitat trees than a mainline or public road.

C§10.3.2.3.12-2 Conduct operations not defined in Table 10-18 at least 400 ft (153 m) from habitat trees.

NOTE

This constraint does not apply to (a) use or maintenance of mainline roads for log hauling or (b) use of non-mainline roads that are farther from the potential habitat trees than a mainline or public road.

C§10.3.2.3.12-3 Permit helicopters at least 0.25 mile (0.40 km) away from potential habitat trees.

C§10.3.2.3.12-4 Conduct blasting at least 1 mile (1.6 km) away from habitat trees by line of sight and at least 0.5 miles (0.80 km) away by map distance.

Non-breeding Season

C§10.3.2.3.12-5 Conduct harvests at least 75 ft (23 m) away from habitat trees unless tree felling is necessary for a cable corridor

NOTE

This constraint does not apply to operations where tree felling is necessary for a cable corridor. In these cases, MRC will leave all felled trees on the ground and will fell trees away from potential habitat trees. Additionally, MRC will make every reasonable effort to avoid felling trees within 50 ft (15 m) of potential habitat trees.

C§10.3.2.3.12-6 Conduct harvests between 75-200 ft (22-60 m) from habitat trees in accordance with the following silvicultural prescriptions or obtain approval of the wildlife agencies for alternative prescriptions more suitable for a specific stand.

Buffer	Buffer Silvicultural Prescriptions
200 ft (61 m)	<ul style="list-style-type: none"> • $\geq 175 \text{ ft}^2$ post-management basal area • 60% post-management canopy closure • No harvesting of existing old growth or potential murrelet trees

C§10.3.2.3.12-7 Permit helicopters at least 200 ft (61 m) away from habitat trees or known Type I or Type II old growth stands unless they have been surveyed according to currently accepted protocols without murrelet detections.

- C§10.3.2.3.12-8 Retain all potential murrelet trees and screen trees.
- C§10.3.2.3.12-9 Permit harvest of secondary murrelet trees if a ground survey determines that it is unlikely murrelets are occupying the surrounding area.
- NOTE**
MRC will not harvest old growth trees under this provision.

➤ **Murrelet Habitat in Murrelet Habitat Zones (MHZ) - Limited Protection Areas**

Breeding and Non-breeding Seasons

- C§10.3.2.3.13-1 Retain all primary murrelet habitat trees.
- C§10.3.2.3.13-2 Permit harvest of secondary murrelet trees if a ground survey determines that it is unlikely murrelets are occupying the surrounding area.

➤ **Point Arena Mountain Beavers**

General

- C§10.3.3.3-1 Prohibit timber operations (including felling, yarding, and construction of firelines) in any contiguous habitat area that is within 200 ft of active PAMB burrows or un-surveyed suitable PAMB habitat.
- NOTE**
Patches of habitat are contiguous only if they are less than 50 ft apart.
- C§10.3.3.3-2 Prohibit road construction in any contiguous habitat area that is within 400 ft of active PAMB burrows or un-surveyed suitable PAMB habitat.
- C§10.3.3.3-3 Prohibit salvage operations within 100 ft of known existing PAMB burrow systems.
- C§10.3.3.3-4 Prohibit foot traffic that might cause burrow collapse within 25 ft of active PAMB burrow systems or un-surveyed potential PAMB habitat.
- ALLOWABLE USE**
MRC staff may enter the bounds of an active burrow system or un-surveyed potential habitat when surveying for burrows or conducting HCP/NCCP monitoring.
- C§10.3.3.3-5 Fell trees away from un-surveyed potential PAMB habitat or active PAMB burrow systems, unless the wildlife agencies approve an alternative treatment within adaptive management.
- C§10.3.3.3-6 Construct or reconstruct roads to maintain or enhance hydrologic conditions in the vicinity of PAMB burrow systems.
- NOTE**
MRC will only modify local hydrology with the approval of the wildlife agencies.
- C§10.3.3.3-7 Prohibit construction of permanent barriers, including fences and permanent openings greater than 50 ft (15 m), which might disrupt dispersal or movement between occupied PAMB colonies.
- C§10.3.3.3-8 Conduct rodent control, including trapping, at least 500 ft (152.5 m) away from active PAMB burrows or un-surveyed potential PAMB habitat.
- C§10.3.3.3-9 Conduct outdoor rodent control within PAMB assessment areas only with individuals approved as PAMB surveyors.
- C§10.3.3.3-10 Restrain domestic dogs on a 6-ft leash in areas containing PAMB burrow systems or un-surveyed potential PAMB habitat.

C§10.3.3.3-11 Conduct blasting at least 500 ft (152.5 m) away from an active PAMB burrow or un-surveyed potential PAMB habitat.

C§10.3.3.3-12 Conduct prescribed burning at least 100 ft away from an active PAMB burrow or un-surveyed potential PAMB habitat.

Breeding Season

C§10.3.3.3-13 Conduct the following operations (resulting in severe ground disturbance) at least 500 ft (152.5 m) away from an active PAMB burrow or un-surveyed potential PAMB habitat:

- Use of heavy equipment off roads.
- Tractor yarding.
- Operation of log landings.
- Loading log trucks.
- Use of rock pits.

C§10.3.3.3-14 Conduct the following operations (resulting in above-ground noise and ground vibration) at least 100 ft (30.5 m) from an active PAMB burrow system or un-surveyed potential PAMB habitat:

- Use and maintenance of existing roads for log hauling.
- Chainsaw brushing or thinning of non-commercial trees.
- Felling commercial trees.
- Cable yarding.
- Helicopter yarding.
- Use of motorized vehicles.
- Limbing and bucking.
- Maintenance and re-fueling of heavy equipment.
- Construction or re-construction of roads.

ALLOWABLE USE

MRC may yard logs in un-surveyed potential PAMB habitat and occupied PAMB habitat as long as the logs are fully suspended above the habitat. Yarding must occur between 1 hour after sunrise and 1 hour prior to sunset.

C§10.3.3.3-15 Permit the following operations at all times no matter what the distance from active PAMB burrow systems or un-surveyed potential PAMB habitat:

- Use of mainline roads for log hauling and maintenance of mainline roads as designated by various maps in the HCP/NCCP Atlas.

NOTE

Maintenance includes actions necessary to use the roads, e.g., knocking down waterbars, grading, and watering. Maintenance does not include actions considered reconstruction of roads under the California Forest Practice Rules (CDF 2006, 14), such as changing the prism of the road. MRC must retain any trees felled for maintenance in forest adjacent to burrow systems or un-surveyed potential habitat.

- Use of public roads.
- Use and maintenance of MRC roads which are at least the same distance from a current active PAMB burrow as a public road or mainline haul road.
- Use of pickups and ATVs on roads.

Non-breeding Season

- C§10.3.3.3-16 Conduct the following operations (resulting in severe ground disturbance) at least 100 ft (30.5 m) away from an active PAMB burrow or un-surveyed potential PAMB habitat:
- Use of heavy equipment off roads.
 - Tractor yarding.
 - Operation of log landings.
 - Loading log trucks.
 - Use of rock pits.
- ALLOWABLE USE**
MRC may schedule these operations within 100 ft (30.5 m) of a known burrow system with prior approval of the wildlife agencies (M§13.9.3.2-2).
- C§10.3.3.3-17 Conduct the following operations (resulting in above-ground noise and ground vibration) at least 50 ft from an active PAMB burrow system or un-surveyed potential PAMB habitat:
- Chainsaw brushing or thinning of non-commercial trees.
 - Felling commercial trees.
 - Cable yarding.
 - Helicopter yarding.
 - Use of motorized vehicles.
 - Limbing and bucking.
 - Maintenance and re-fueling of heavy equipment.
 - Construction or re-construction of roads.
- ALLOWABLE USE**
MRC may yard logs in un-surveyed potential PAMB habitat and occupied PAMB habitat as long as the logs are fully suspended above the habitat. Yarding must occur between 1 hour after sunrise and 1 hour prior to sunset.
- C§10.3.3.3-18 Permit the following operations at all times no matter what the distance from active PAMB burrow systems or un-surveyed potential PAMB habitat:
- Use of mainline roads for log hauling and maintenance of mainline roads as designated by various maps in the HCP/NCCP Atlas.
- NOTE**
Maintenance includes actions necessary to use the roads, e.g., knocking down waterbars, grading, and watering. Maintenance does not include actions considered reconstruction of roads under the California Forest Practice Rules (CDF 2006, 14), such as changing the prism of the road. MRC must retain any trees felled for maintenance in forest adjacent to burrow systems or un-surveyed potential habitat.
- Use of public roads.
 - Use and maintenance of MRC roads which are at least the same distance from a current active PAMB burrow as a public road or mainline haul road.
 - Use of pickups and ATVs on roads.

W.4 Summary of Conservation Measures for Rare Plants

Covered Rare Plants	
<p>➤ Management Category 1</p>	
<p>Communications</p>	
C§11.7.1-1	Instruct all field personnel working in the vicinity of covered species occurrences, particularly operators of heavy equipment and those who apply pesticides, to comply with conservation measures, especially in locations with activity restrictions for core occurrence areas and buffers.
<p>Core Occurrence Area</p>	
C§11.7.1-2	Install a marking system that will persist throughout the term of the HCP/NCCP to designate environmentally sensitive areas along roads, such as core occurrences areas.
C§11.7.1-3	Mark the boundaries of a core occurrence area at regular intervals with painted t-posts, with stakes and colored flags, with clearly visible marks on retained trees, or with other means, so that the occurrence boundary maintains its integrity and is easily identifiable during activity and monitoring periods.
C§11.7.1-4	Mark the outer limits of the core occurrence area at least 5 ft beyond any visible parts (e.g., branches, surface roots) of a covered rare plant; use GPS data, as required, to define the core occurrence and ensure relocation if markers are damaged or removed.
C§11.7.1-5	Mark groups of plants within a core occurrence area, using methods described above, to facilitate avoidance and monitoring.
C§11.7.1-6	Restrict operations to use of existing truck roads, landings, and rock pits, as well as any activities intended to conserve rare plants, such as weed control.
C§11.7.1-7	Avoid all activities, including those outside the core occurrence and buffer areas, which result in significant alterations in surface water hydrologic conditions within the core occurrence area and adversely affect covered rare plants.
C§11.7.1-8	Fell trees, only for safety purposes, into a core occurrence area but do not harvest them.
	<p>NOTE If this need arises, MRC will notify the wildlife agencies before felling occurs. The wildlife agencies have 15 working days to respond before MRC can proceed with the planned felling operations.</p>
C§11.7.1-9	Avoid using site preparation within designated core areas unless the wildlife agencies concur.
C§11.7.1-10	Avoid piling slash within designated core areas.
<p>Buffer Width</p>	
C§11.7.1-11	Ensure that the buffer width is 150 ft for forested sites (subject to timber harvest and other covered activities) and 50 ft for all other sites.
	<p>NOTE MRC can reduce the buffer width—while still providing adequate protection—because of factors such as topographic characteristics (e.g., north slope situation); silvicultural practices (e.g., single tree selection); or adjacent stand conditions (e.g., uneven-aged management). Such reduction requires MRC to obtain the approval of the wildlife agencies.</p>

C§11.7.1-12 Mark the outer edge of the buffer area with colored flagging or its equivalent, before covered activities begin; flagging must be clearly visible throughout the period when covered activities are taking place.

Buffer Management during Timber Operations

C§11.7.1-13 Use only non-ground-disturbing types of site preparation (e.g., chainsaw brush cutting).

C§11.7.1-14 Use silviculture that results in cover approximately equivalent to that found in the core occurrence area with the harvest at least meeting the basal area and canopy requirements (derived from Class I and Large Class II AMZ, inner and middle bands).

NOTE

MRC will obtain the approval of the wildlife agencies on exceptions for early successional species and others that prefer open conditions.

C§11.7.1-15 Retain the approximate spatial and species mix and size distribution of tree species (conifers and hardwoods) found in the local area.

C§11.7.1-16 Fell trees away from a core occurrence area, whenever possible.

C§11.7.1-17 Treat the buffer area as an ELZ, allowing for use of existing roads, landings, and rock pits.

C§11.7.1-18 Avoid significantly altering surface water hydrologic conditions in ways that could adversely affect covered rare plants.

Invasive Pest Plant Management

C§11.7.1-19 Control invasive pest plants within 50 ft of all covered rare plant individuals, using methods that are feasible and effective, and that minimize impacts to non-target species, during both the 1st and 2nd years following covered activities.

Take Provisions

C§11.7.1-20 Avoid or minimize take to the maximum degree feasible.

C§11.7.1-21 Permit take only if required for normal operations.

C§11.7.1-22 Permit take only for occurrences > 250 individuals, except for roads, landings, and rock pits (see below).

C§11.7.1-23 Describe in project documents (e.g., PTHPs) the amount of take anticipated from covered activities.

C§11.7.1-24 Restrict activities causing take to the period between seed set and the breaking of dormancy, if feasible.

C§11.7.1-25 Consult with the wildlife agencies, if normal operations require higher take limits than those specified in C§11.7.1-26 and C§11.7.1-29.

Take for Roads, Landings, and Rock Pits

C§11.7.1-26	<p>Permit take of covered rare plant individuals growing in previously established roads, landings, and rock pits, if avoidance is infeasible, and adhere to the following limits:</p> <ul style="list-style-type: none"> ▪ For occurrences < 250 individuals, take of up to 2% of the individuals within a single occurrence, per each single- or multiple-year project. ▪ For occurrences of 251-500 individuals, take of up to 5% of the individuals within a single occurrence, per each single- or multiple-year project. ▪ For occurrences > 500 individuals, take of up to 10% of the individuals within a single occurrence, per each single- or multiple-year project. <p>NOTE Feasible minimization includes: (1) minimizing grading of roadbed and roadsides; (2) running logging trucks and other equipment in tire tracks only; (3) enforcing seasonal restrictions; and (4) applying other restrictions.</p>
C§11.7.1-27	<p>Spread soil from road berms (which need to be removed for proper road drainage and on which rare plants are growing) in roadside areas that MRC will manage as EEZs for a minimum of 2 years.</p> <p>NOTE If these sites are not colonized by rare plants within 2 years, MRC will remove EEZ restrictions. If these sites are colonized by rare plants within 2 years, MRC will continue to manage them as EEZs as long as the rare plants persist in those locations.</p>
C§11.7.1-28	<p>Donate, for scientific purposes and whenever possible, any rare plant that is incidentally taken and not used in translocation; this includes collecting and preserving voucher specimens, as well as salvaging live plants and seeds for researchers, seed banks, or botanic gardens.</p> <p>NOTE If MRC gets no willing takers for a specific species, we will advise the wildlife agencies and no longer make donations of that species unless the wildlife agencies identify a recipient.</p>
Take for All Other Covered Activities	
C§11.7.1-29	<p>Permit take, in the case of occurrences > 250 individuals, as follows:</p> <ul style="list-style-type: none"> ▪ Take of up to 2% of the individuals within a single occurrence, per stand entry, for PTHPs. ▪ Take of up to 2% of the individuals within a single occurrence, per year, for other activities, without approval of the wildlife agencies.
Variances	
C§11.7.1-30	<p>Seek approval in writing from the wildlife agencies if requesting changes to core area management, buffer management, or buffer width; include the variances in a PTHP subject to public comment.</p>
C§11.7.1-31	<p>Ensure that requested variances are consistent with the objectives of the conservation strategy.</p>
Translocation	
Non-compensatory	
C§11.7.1-32	<p>Notify the wildlife agencies when MRC will perform a non-compensatory translocation.</p>
C§11.7.1-33	<p>Mark and map the location of the translocation in the field.</p>
C§11.7.1-34	<p>Describe in writing the result of the translocation for the wildlife agencies.</p>

Covered Rare Plants

Compensatory translocation

- C§11.7.1-35 Obtain approval from the wildlife agencies before implementing.
- C§11.7.1-36 Mark and map the location of the translocation in the field.
- C§11.7.1-37 Provide thorough written documentation of methods, results, and conclusions for the wildlife agencies.

► Management Category 2

Communications

- C§11.7.2-1 Instruct all field personnel working in the vicinity of covered species occurrences, particularly operators of heavy equipment and those who apply pesticides, about complying with conservation measures, especially in locations with activity restrictions for core occurrence areas and buffers.

Core Occurrence Area

- C§11.7.2-2 Install a marking system along roads to designate environmentally sensitive areas, such as core occurrence areas; ensure the system persists throughout the period when the HCP/NCCP is in effect.
- C§11.7.2-3 Mark the boundaries of a core occurrence area at regular intervals with painted t-posts, with stakes and colored flags, with clearly visible marks on retained trees, or with other means, so that the occurrence boundary maintains its integrity and is easily identifiable during activity and monitoring periods.
- C§11.7.2-4 Mark the outer limits of the core occurrence area at least 5 ft beyond any visible parts (e.g., branches, surface roots) of a covered rare plant; use GPS data, as required, to define the core occurrence and ensure relocation if markers are damaged or removed.
- C§11.7.2-5 Mark groups of plants within a core occurrence area, using methods described in C§11.7.2-4, to facilitate avoidance and monitoring.
- C§11.7.2-6 Avoid using site preparation within designated core areas unless the wildlife agencies concur.
- C§11.7.2-7 Avoid piling slash within designated core areas.

Buffer Width

- C§11.7.2-8 Ensure that the buffer width is 50 ft.

NOTE

MRC can reduce the buffer width—if still providing adequate protection—because of factors such as topographic characteristics (e.g., north slope situation); silvicultural practices (e.g., single tree selection); or adjacent stand conditions (e.g., uneven-aged management). Such reduction requires approval of the wildlife agencies.

- C§11.7.2-9 Mark the outer edge of the buffer area with colored flagging or its equivalent before covered activities begin; flagging must be clearly visible throughout the period when covered activities are taking place.

Core Area Management during Timber Operations

- C§11.7.2-10 Ensure that post-harvest stands meet the basal area and canopy requirements of the inner and middle bands of Class I and Large Class II AMZs.

NOTE

MRC will obtain approval of the wildlife agencies on early successional species and others that prefer open conditions.

- C§11.7.2-11 Retain the approximate distribution of conifers and hardwoods found in the core occurrence area.
- C§11.7.2-12 Fell trees away from the core occurrence area, whenever possible.
- C§11.7.2-13 Treat a core occurrence area as an ELZ, allowing for use of existing roads, landings, and rock pits.
- C§11.7.2-14 Avoid significantly altering surface water hydrologic conditions in ways that could adversely affect covered rare plants.

Buffer Management during Timber Operations

- C§11.7.2-15 Ensure that post-harvest stands meet the basal area and canopy requirements of the inner and middle bands of Class I and Large Class II AMZs.

NOTE

MRC will obtain approval of the wildlife agencies on early successional species and others that prefer open conditions.

- C§11.7.2-16 Retain the approximate distribution of trees (conifers and hardwoods) found in the local area.
- C§11.7.2-17 Fell trees away from a core occurrence area, whenever possible.
- C§11.7.2-18 Treat the buffer area as an ELZ, allowing for use of existing roads, landings, and rock pits.
- C§11.7.2-19 Avoid significantly altering surface water hydrologic conditions in ways that could adversely affect covered rare plants.
- C§11.7.2-20 Prepare sites without creating ground disturbances.

Invasive Pest Plant Management

- C§11.7.2-21 Control invasive pest plants within 50 ft of all covered rare plant individuals, using methods that are feasible and effective, and that minimize impacts to non-target species, during both the 1st and 2nd years following covered activities.

Take Provisions

- C§11.7.2-23 Permit take only if required for normal operations.
- C§11.7.2-24 Permit take only for occurrences > 250 individuals,¹⁴ except for roads, landings, and rock pits (see C§11.7.2-28).
- C§11.7.2-25 Describe in project documents (e.g., PTHPs) the amount of take anticipated from covered activities.
- C§11.7.2-26 Restrict activities causing take to the period between seed set and the breaking of dormancy, if feasible.
- C§11.7.2-27 Consult with the wildlife agencies, if normal operations require higher take limits than those specified in C§11.7.2-28 and C§11.7.2-31.

Take for Roads, Landings, and Rock Pits

C§11.7.2-28	<p>Permit take of covered rare plant individuals growing in previously established roads, landings, and rock pits, if avoidance is infeasible, and adhere to the following limits:</p> <ul style="list-style-type: none"> ▪ For occurrences < 250 individuals, take of up to 5% of the individuals within a single occurrence, per each single- or multiple-year project. ▪ For occurrences > 250 individuals, take of up to 10% of the individuals within a single occurrence, per each single- or multiple-year project. <p>NOTE Feasible minimization includes: (1) minimizing grading of roadbed and roadsides; (2) running logging trucks and other equipment in tire tracks only; (3) enforcing seasonal restrictions; and (4) applying other restrictions</p>
C§11.7.2-29	<p>Spread soil from road berms (which need to be removed for proper road drainage and on which rare plants are growing) in roadside areas that MRC will manage as EEZs for a minimum of 2 years.</p> <p>NOTE If these sites are not colonized by rare plants within 2 years, MRC will remove EEZ restrictions. If these sites are colonized by rare plants within 2 years, MRC will continue to manage them as EEZs as long as the rare plants persist in those locations</p>
C§11.7.2-30	<p>Donate, for scientific purposes and whenever possible, any rare plant that is incidentally taken and not used in translocation; this includes collecting and preserving voucher specimens, and salvaging live plants and seeds for researchers, seed banks, or botanic gardens.</p> <p>NOTE If MRC gets no willing takers for a specific species, we will advise the wildlife agencies and no longer make donations of that species unless the wildlife agencies identify a recipient.</p>
Take for All Other Activities	
C§11.7.2-31	<p>Permit take, in the case of occurrences > 250 individuals, as follows:</p> <ul style="list-style-type: none"> ▪ Take of up to 5% of the individuals within a single occurrence, per stand entry, for PTHPs. ▪ Take of up to 5% of the individuals within a single occurrence, per year, for other activities, without approval of the wildlife agencies.
Variances	
C§11.7.2-32	<p>Seek approval in writing from the wildlife agencies if requesting changes to core area management, buffer management, or buffer width; include the variances in a PTHP subject to public comment.</p>
C§11.7.2-33	<p>Ensure that requested variances are consistent with the objectives of the conservation strategy.</p>
Translocation	
Non-compensatory	
C§11.7.2-34	<p>Notify the wildlife agencies when MRC will perform a non-compensatory translocation.</p>
C§11.7.2-35	<p>Mark and map the location of the translocation in the field.</p>
C§11.7.2-36	<p>Describe in writing the result of the translocation for the wildlife agencies.</p>
Compensatory translocation	
C§11.7.2-37	<p>Obtain approval from the wildlife agencies before implementing.</p>

- C§11.7.2-38 Mark and map the location of the translocation in the field.
- C§11.7.2-39 Provide thorough written documentation of methods, results, and conclusions for the wildlife agencies.

► Management Category 3

Communications

- C§11.7.3-1 Instruct all field personnel working in the vicinity of covered species occurrences, particularly operators of heavy equipment and those who apply pesticides, about complying with conservation measures, especially in locations with activity restrictions for core occurrence areas and buffers.

Core Occurrence Area

- C§11.7.3-2 Mark the boundaries of a core occurrence area at regular intervals with painted t-posts, with stakes and colored flags, with clearly visible marks on retained trees, or with other means, so that the occurrence boundary maintains its integrity and is easily identifiable during activity and monitoring periods.
- C§11.7.3-3 Mark the outer limits of the core occurrence area at least 5 ft beyond any visible parts (e.g., branches, surface roots) of a covered rare plant; use GPS data, as required, to define the core occurrence and ensure relocation if markers are damaged or removed.
- C§11.7.3-4 Limit losses of individual covered rare plants as feasible.
- C§11.7.3-5 Treat a core occurrence area as an ELZ, allowing for use of existing roads, landings, and rock pits.
- C§11.7.3-6 Minimize significant alterations to surface water hydrologic conditions that could adversely affect covered rare plants.
- C§11.7.3-7 Minimize disturbance from site preparation and slash piles.

Buffer Width

- C§11.7.3-8 Ensure that the buffer width is 50 ft.
- NOTE**
MRC can reduce the buffer width—if still providing adequate protection—because of factors such as topographic characteristics (e.g., north slope situation); silvicultural practices (e.g., single tree selection); or adjacent stand conditions (e.g., uneven-aged management). Such reduction requires approval of the wildlife agencies.
- C§11.7.3-9 Mark the outer edge of the buffer area with colored flagging or its equivalent, before covered activities begin; flagging must be clearly visible throughout the period when covered activities are taking place.

Core Management during Timber Operations

- C§11.7.3-10 Fell trees away from the core occurrence area, whenever possible.
- C§11.7.3-11 Minimize direct impacts, where feasible, by felling trees away from plants and by not skidding on plants.

Buffer Management during Timber Operations

- C§11.7.3-12 Fell trees away from a core occurrence area.
- C§11.7.3-13 Treat the buffer area as an ELZ.
- C§11.7.3-14 Minimize significant alterations to surface water hydrologic conditions that could adversely affect covered rare plants.

Invasive Pest Plant Management

- C§11.7.3-15 Control invasive pest plants within 25 ft of all covered rare plant individuals, using methods that are feasible and effective and that minimize impacts to non-target species, during the first year following covered activities.

Take Provisions

C§11.7.3-16	Avoid or minimize take to the maximum degree feasible.
C§11.7.3-17	Permit take only if required for normal operations.
C§11.7.3-18	Permit take only for occurrences > 250 individuals, except for roads, landings, and rock pits (see C§11.7.3-22).
C§11.7.3-19	Describe in project documents (e.g., PTHPs) the amount of take anticipated from covered activities.
C§11.7.3-20	Restrict activities causing take to the period between seed set and the breaking of dormancy, if feasible.
C§11.7.3-21	Consult with the wildlife agencies, if normal operations require higher take limits than those specified in C§11.7.3-25.

Take for Roads, Landings, and Rock Pits

C§11.7.3-22	Permit take of covered rare plant individuals growing in previously established roads, landings, and rock pits, if avoidance is infeasible. NOTE Feasible avoidance includes: (1) minimizing grading of roadbed and roadsides; (2) running logging trucks and other equipment in tire tracks only; and (3) other feasible restrictions.
C§11.7.3-23	Spread soil from road berms (which need to be removed for proper road drainage and on which rare plants are growing) in roadside areas that MRC will manage as EEZs for a minimum of 2 years. NOTE If these sites are not colonized by rare plants within 2 years, MRC will remove EEZ restrictions. If these sites are colonized by rare plants within 2 years, MRC will continue to manage them as EEZs as long as the rare plants persist in those locations.
C§11.7.3-24	Donate, for scientific purposes and whenever possible, any rare plant that is incidentally taken and not used in translocation; this includes collecting and preserving voucher specimens, and salvaging live plants and seeds for researchers, seed banks, or botanic gardens. NOTE If MRC gets no willing takers for a specific species, we will advise the wildlife agencies and no longer make donations of that species unless the wildlife agencies identify a recipient.

Take for All Other Covered Activities

C§11.7.3-25	Permit take, in the case of occurrences > 250 individuals, as follows: <ul style="list-style-type: none"> ▪ Take of up to 10% of the individuals within a single occurrence, per stand entry, for PTHPs. ▪ Take of up to 10% of the individuals within a single occurrence, per year, for other activities, without approval of the wildlife agencies.
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Variances

C§11.7.3-26	Seek approval in writing from the wildlife agencies if requesting changes to core area management, buffer management, or buffer width; include the variances in a PTHP subject to public comment.
C§11.7.3-27	Ensure that requested variances are consistent with the objectives of the conservation strategy.

Translocation

Non-compensatory

- C§11.7.3-28 Notify the wildlife agencies when MRC will perform a non-compensatory translocation.
- C§11.7.3-29 Mark and map the location of the translocation in the field.
- C§11.7.3-30 Describe in writing the result of the translocation for the wildlife agencies.

Compensatory translocation

- C§11.7.3-31 Obtain approval from the wildlife agencies before implementing.
- C§11.7.3-32 Mark and map the location of the translocation in the field.
- C§11.7.3-33 Provide thorough written documentation of methods, results, and conclusions for the wildlife agencies.

► Standard Conservation Measures for Management Category 4

Communications

- C§11.7.4-1 Instruct all field personnel working in the vicinity of covered species occurrences, particularly operators of heavy equipment and those who apply pesticides, to comply with conservation measures.

Core Occurrence Area

- C§11.7.4-2 Mark the boundaries of a core occurrence area at regular intervals with painted t-posts, with stakes and colored flags, with clearly visible marks on retained trees, or with other means, so that the occurrence boundary maintains its integrity and is easily identifiable during activity and monitoring periods.
- C§11.7.4-3 Mark the outer limits of the core occurrence area at least 5 ft beyond any visible parts (e.g., branches, surface roots) of a covered rare plant; use GPS data, as required, to define the core occurrence and ensure relocation if markers are damaged or removed.
- C§11.7.4-4 Avoid impacts to individual covered rare plants to the degree necessary to meet conservation objectives.

Limits of Take

- C§11.7.4-5 Ensure that the number of individuals lost through incidental take is low enough so that a covered rare plant species qualifies for its current S rank or a higher S rank.

► Longbeard Lichen

- C§11.8.1-1 Train foresters and rare plant surveyors in the field to recognize pendant lichens that may be long-beard lichen.
- C§11.8.1-2 Search for, identify, and document long-beard lichen source and sink trees during rare plant surveys in PTHP areas.
- C§11.8.1-3 Protect up to 10 source trees in any PTHP area.
- EXAMPLES**
- If the PTHP area has 7 source trees, MRC will protect all 7.
 - If the PTHP area has 25 source trees, MRC will protect 10 of the 25.
- C§11.8.1-4 Prevent the cutting or trimming of protected source trees, except to ensure the safety of workers.
- C§11.8.1-5 Maintain screen trees in the vicinity of source trees to buffer them from wind-throw and other threats and to provide an opportunity for the dispersal of long-beard lichen.

NOTE

If feasible, MRC will select screen trees that are within the dispersal range for long-beard lichen, i.e., < 16 ft (5 m) from a source tree, and whose retention will not cause source trees to be heavily shaded.

- C§11.8.1-6 Protect old-growth trees and snags and limit harvest in AMZs to provide potential habitat for new occurrences of long-beard lichen.
- C§11.8.1-7 Test lichen samples, whenever possible, to determine their identity, using tests recommended by lichenologists.
- C§11.8.1-8 Monitor for the presence or absence of long-beard lichen throughout the term of the HCP/NCCP during preparatory fieldwork for PTHP submissions.

➤ **Humboldt Milk-vetch**

Communications

- C§11.8.2-1 Instruct all field personnel working in the vicinity of covered species occurrences, particularly operators of heavy equipment and those who apply pesticides, about complying with conservation measures, especially in locations with activity restrictions for core occurrence areas and buffers.

Core Occurrence Area

- C§11.8.2-2 Mark the boundaries of a core occurrence area at regular intervals with painted t-posts, with stakes and colored flags, with clearly visible marks on retained trees, or with other means, so that the occurrence boundary maintains its integrity and is easily identifiable during activity and monitoring periods.
- C§11.8.2-3 Mark the outer limits of the core occurrence area at least 5 ft beyond any visible parts (e.g., branches, surface roots) of a covered rare plant; use GPS data, as required, to define the core occurrence and ensure relocation if markers are damaged or removed.
- C§11.8.2-4 Mark groups of plants within a core occurrence area, using methods described above, to facilitate avoidance and monitoring.
- C§11.8.2-5 Avoid using site preparation within designated core areas unless the wildlife agencies concur.
- C§11.8.2-6 Avoid piling slash within designated core areas.

Core Management during Timber Operations

- C§11.8.2-7 Fell trees away from core occurrence areas, whenever possible, in order to create the least direct disturbance to individual plants.
- C§11.8.2-8 Establish an ELZ within a 25 ft radius of a core occurrence area's periphery.
- C§11.8.2-9 Allow the use of existing roads, skid trails, landings, and rock pits within the ELZ surrounding the core occurrence area.
- C§11.8.2-10 Limit road maintenance within the ELZ to grading of running surfaces and creation of drainage structures as specified in Chapter 8, Appendix E, or the Forest Practice Rules.
- C§11.8.2-11 Transport spoils from the ELZ no farther than 100 ft from the plant population unless safety or operational needs require otherwise.
- C§11.8.2-12 Deposit spoils from the ELZ preferably on the outside edge of the road where impacts from traffic and grading are limited or, if necessary, across the road surface or on a turnout or landing.
- C§11.8.2-13 Permit roadside brushing and road day-lighting within the ELZ.
- C§11.8.2-14 Conduct road maintenance and other covered activities, if feasible, between seed-set in the fall and breaking of dormancy in the spring.
- C§11.8.2-15 Do not allow direct ignition or pile burning within the ELZ unless the wildlife agencies concur.
- C§11.8.2-16 Do not plant trees within a designated core area.

C§11.8.2-17	Avoid significantly altering surface water hydrologic conditions in ways that could adversely affect covered rare plants.
Invasive Pest Plant Management	
C§11.8.2-18	Control invasive pest plants within 100 ft of a designated core area, using methods that are feasible and effective and that minimize impacts to non-target species, during both the 1 st and 2 nd years following covered activities.
Take Provisions	
C§11.8.2-19	Avoid or minimize take to the maximum degree feasible.
C§11.8.2-20	Permit take only if required for normal operations.
C§11.8.2-21	Describe in project documents (e.g., PTHPs) the amount of take anticipated from covered activities.
C§11.8.2-22	Restrict activities causing take to the period between seed set and the breaking of dormancy, if feasible.
C§11.8.2-23	Consult with the wildlife agencies, if normal operations require higher take limits than those specified in C§11.8.2-24 and C§11.8.2-28.
Take for Roads, Landings, and Rock Pits	
C§11.8.2-24	<p>Permit take of Humboldt milk-vetch individuals growing in previously established roads, landings, and rock pits, if avoidance is infeasible, and adhere to the following limits:</p> <ul style="list-style-type: none"> ▪ For occurrences > 100 reproductive individuals, take of up to 15% of the individuals within a single occurrence, per each single- or multiple-year project. ▪ For occurrences < 100 reproductive individuals, take of up to 10% of the individuals within a single occurrence, per each single- or multiple-year project. <p>NOTE Feasible avoidance includes: (1) minimizing grading of roadbed and roadsides; (2) running logging trucks and other equipment in tire tracks only; and (3) other feasible restrictions.</p>
C§11.8.2-25	Seek approval of the wildlife agencies prior to commencement of operations if anticipated take exceeds permitted levels.
C§11.8.2-26	<p>Spread soil from road berms (which need to be removed for proper road drainage and on which rare plants are growing) in roadside areas that MRC will manage as EEZs for a minimum of 2 years.</p> <p>NOTE If these sites are not colonized by rare plants within 2 years, MRC will remove EEZ restrictions. If these sites are colonized by rare plants within 2 years, MRC will continue to manage them as EEZs as long as the rare plants persist in those locations.</p>
C§11.8.2-27	<p>Donate, for scientific purposes and whenever possible, a sampling of Humboldt milk-vetch that is incidentally taken and not used in translocation; this includes collecting and preserving voucher specimens, and salvaging live plants and seeds for researchers, seed banks, or botanic gardens.</p> <p>NOTE If MRC gets no willing takers for a specific species, we will advise the wildlife agencies and no longer make donations of that species unless the wildlife agencies identify a recipient.</p>
Take for All Other Covered Activities	

- C§11.8.2-28 Permit take, in the case of occurrences > 100 reproductive individuals, as follows:
- Take of up to 5% of the individuals within a single occurrence, per stand entry, for PTHPs.
 - Take of up to 5% of the individuals within a single occurrence, per year, for other activities, without approval of the wildlife agencies.

Variations

- C§11.8.2-29 Seek approval in writing from the wildlife agencies if requesting changes to core area management, buffer management, or buffer width; include the variations in a PTHP subject to public comment.
- C§11.8.2-30 Ensure that requested variations are consistent with the objectives of the conservation strategy.

Translocation

Non-compensatory

- C§11.8.2-31 Notify the wildlife agencies when MRC will perform a non-compensatory translocation.
- C§11.8.2-32 Mark and map the location of the translocation in the field.
- C§11.8.2-33 Describe in writing the result of the translocation for the wildlife agencies.

Compensatory translocation

- C§11.8.2-34 Obtain approval from the wildlife agencies before implementing.
- C§11.8.2-35 Mark and map the location of the translocation in the field.
- C§11.8.2-36 Provide thorough written documentation of methods, results, and conclusions for the wildlife agencies.