

## Appendix Z

# Coho Recovery Strategies





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## Z. COHO RECOVERY STRATEGIES

### Z.1 Selecting Coho Core Watersheds for Road Restoration

According to estimates, only 1% of wild populations of native coho salmon remain in California streams. In February 2004, the California Fish and Game Commission voted to encompass coho salmon populations north of San Francisco under CESA. Coho populations south of San Francisco were listed under CESA in the mid 1990s. The federal ESA had listed all coho populations in California since the mid 1990s as well.

Accompanying the State listing was a coho recovery strategy. Informing the strategy were discussions of local landowners, tribes, fishing interests, environmental groups, and agency staff. Some of the plan recommendations directly address the adverse impacts on coho from logging practices. In 2002, NMFS began recovery planning for the coho ESUs of Southern Oregon, Northern California Coast, and Oregon Coast (SONCC). The NMFS plan is still in draft status.

In determining the pace and location for our road restoration and LWD placement, MRC used 3 sources:

1. CDFG Recovery Strategy for Coho Salmon in California (2004).<sup>1</sup>
2. Map of core areas from a draft of the NMFS Coho Salmon Recovery Plan.
3. MRC data on coho presence in the plan area.

The CDFG plan, while broad in scope, is not specific at the planning watershed level. Recovery units generally correspond to CALWATER 2.2a hydrologic units. These are 2 hierarchical levels above planning watersheds. Within their plan, CDFG ranks entire basins for recovery efforts. Most of the MRC plan area has a ranking of 5, meaning the land has a high potential for restoration and management. The NMFS recovery plan is more specific to planning watersheds.

Table Z-1 shows the planning watersheds in which MRC will accelerate road restoration and LWD placement to recover coho core areas. An asterisk (\*) indicates the sub-watersheds. Table Z-2 is a list of planning watersheds in which MRC will treat road restoration on a routine schedule since CDFG, NOAA, and MRC did not collectively select these as coho areas for the HCP/NCCP. Both lists indicate the evaluation of CDFG, NMFS, and MRC on current coho presence and potential recovery. Tables Z-3 thru Z-8 show CDFG recommendations for South Fork Eel River and Mendocino Coast broken down by Hydrologic Unit (HU) and Hydrologic Sub Area (HSA), as well as the MRC anticipated actions to comply with the recommendations.

#### Z.1.1 Locations selected as coho core areas

Table Z-1 MRC Coho Core Areas

| MRC Coho Core Areas |   |           |  |
|---------------------|---|-----------|--|
| River               | Planning Watershed or Sub-watershed (*)   | Evaluator | Recommendations and Comments   |
| 1. Big River        | a. East Branch<br>North Fork<br>Big River | NMFS      | This watershed has a consistent, moderate coho presence. According to the MRC harvest schedule, it will not have PTHP road work before 2020. Therefore, this watershed should be a |

<sup>1</sup> Refer to [http://www.dfg.ca.gov/fish/REsources/Coho/SAL\\_CohoRecoveryRpt.asp](http://www.dfg.ca.gov/fish/REsources/Coho/SAL_CohoRecoveryRpt.asp) (accessed 08/14/2009)

| MRC Coho Core Areas |   |              |  |
|---------------------|---|--------------|--|
| River               | Planning Watershed or Sub-watershed (*) | Evaluator    | Recommendations and Comments   |
|                     |   |              | priority for repair.   |
|                     | b. *Ramone Creek <sup>2</sup>           | MRC          | Ramone Creek is not a planning watershed. While most of the South Fork Big River has a low potential for coho presence, Ramone Creek seems to be a localized “hot spot” for coho presence on a consistent basis.   |
|                     | c. *Russell Brook <sup>3</sup>          | NMFS<br>MRC  | Although coho is not as consistently present in the Russell Brook sub-watershed as in the Ramone Creek sub-watershed, the MRC Aquatic Biology Group decided that even this moderate presence is reason to include Russell Brook as a coho core area.   |
|                     | d. *South Daugherty Creek               | NMFS         | Although South Daugherty Creek is a planning watershed, MRC has designated it only for LWD placement in a very specific channel location. MRC will accelerate LWD placement from Gates Creek confluence of Daugherty Creek down to the property line, which is ¼ mile from the confluence with South Fork Big River. |
| 2. Albion River     | a. Middle Albion                        | CDFG<br>NMFS | Coho are consistently present here.  |
|                     | b. South Fork Albion                    | CDFG<br>NMFS | Coho are consistently present here.  |
| 3. Navarro River    | a. John Smith Creek                     | CDFG<br>NMFS | This is the best coho stream on the Navarro. The area has poor road systems in need of repair.   |
|                     | b. Little North Fork Navarro River      | CDFG         | This is a very good coho stream. There are numerous miles of roads near the stream which need decommissioning or repair.   |
|                     | c. Lower South Branch Navarro River     | NMFS         | This drains into the North Fork (called the South Branch of the North Fork). The upper and middle planning watersheds have most of the road work completed. As of 2011, the lower watershed has had the least work done, so it is a good candidate for restoration work.   |
|                     | d. *Lower Navarro                       | MRC          | This is not a planning watershed, but includes the actual drainage areas of the Marsh, Flume, and  |

<sup>2</sup> This refers to the actual drainage area of Ramone Creek.

<sup>3</sup> This refers to the actual drainage area of Russell Brook.

| MRC Coho Core Areas |   |              |   |
|---------------------|---|--------------|---|
| River               | Planning Watershed or Sub-watershed (*) | Evaluator    | Recommendations and Comments  |
|                     | Drainages                               |              | Murray Gulch streams. All three of these sub-watersheds have coho presence annually.  |
|                     | e. *North Fork Navarro River            | NMFS         | <p>This core area is only designated for road repair in one location within the planning watershed. As of 2011, more than 60% of the roads in the North Fork Navarro watershed meet HCP/NCCP standards. MRC will repair specific road segments within this watershed during the first 20 years of HCP/NCCP implementation.</p> <p>MRC will address all road segments from the south side of the North Fork Navarro Planning Watershed, starting from the Scale Ramp bridge crossing, proceeding west to Dimmick Camp Ground, and then up to the divide between the main Navarro and the North Fork Navarro. The roads in this geographic location have had sporadic work since 1998; many road segments are in need of repair.</p> <p>There are restrictions on LWD placement in the Navarro River because, at that location, a state park is on one side of Highway 128 and a Save the Redwoods Conservation Easement on the other side.</p> |
|                     | f. *Cook Creek                          | NMFS         | As a sub-watershed of the Dutch Henry Creek Planning Watershed, this is a core watershed only designated for LWD placement. All road work is nearly completed. MRC decommissioned the main road alongside Cook Creek, along with many spur roads near streams, in THPs 1-01-354 and 1-01-355. NMFS reviewed THP 1-01-354 during the PHI and provided recommendations.   |
| 4. Cottaneva Creek  | Cottaneva Creek                         | NMFS         | Although MRC has completed a substantial amount of road work in this planning watershed since 1998, there are many miles of roads near streams which need upgrading to the standards in Appendix E. Since coho are consistently present in its streams, this planning watershed is a good candidate for restoration.  |
| 5. Garcia River     | South Fork Garcia                       | CDFG<br>NMFS | Coho are consistently present in the Garcia River. MRC has restored many roads in this planning watershed to the standards in Appendix E. However, some of its roads still need upgrading.  |

| MRC Coho Core Areas |   |           |   |
|---------------------|---|-----------|---|
| River               | Planning Watershed or Sub-watershed (*) | Evaluator | Recommendations and Comments  |
| 6. Noyo River       | Hayworth                                | NMFS      | MRC biologists have observed coho presence within the streams of this watershed almost every year. While road work on the western portion of the planning watershed is nearly complete, MRC has not recently assessed the roads in the remaining two-thirds of the watershed for sediment control. The California Conservation Corps (CCC) has placed LWD in approximately 2500 ft of Hayworth Creek; they will continue LWD placement in 2011. |

**Z.1.2 Locations excluded as coho core areas**

**Table Z-2 Excluded as Coho Core Areas**

| Excluded as Coho Core Areas |                          |           |   |
|-----------------------------|--------------------------|-----------|---|
| River                       | Planning Watershed       | Evaluator | Recommendations and Comments  |
| 1. Big River                | a. Dark Gulch            | NMFS      | MRC does not influence much of this planning watershed since it owns 533 of the 7151 ac or 7% of the watershed.   |
|                             | b. Two Log Creek         | NMFS      | MRC does not influence much of this planning watershed since it owns 624 of the 11424 ac or 5% of the watershed.  |
|                             | c. South Daugherty Creek | NMFS      | Portions of this planning watershed, not yet treated, have been designated for road repair. Coho presence is very low and sporadic within this watershed. MRC last found coho here in 2002. LP detected coho in 1996. Between 1997 and 2001, there were no observations of coho salmon in this planning watershed. Since 1998, MRC decommissioned approximately 4.75 miles of roads and landings near streams. As of 2011, another 2 miles of road are scheduled for decommissioning within an approved THP. For another 1.9 miles of road near streams, we excavated eroded crossings and properly drained the road from surface water. MRC conducted these operations after the Horse Fire, which was a part of the 2008 Mendocino Lightning Complex. We effectively abandoned these roads and will decommission 4 remaining miles of roads near streams. The 8.65 miles of road already abandoned or approved for abandonment represent 55% of all the roads near streams within |

| Excluded as Coho Core Areas |                       |           |  |
|-----------------------------|-----------------------|-----------|--|
| River                       | Planning Watershed    | Evaluator | Recommendations and Comments   |
|                             |                       |           | the Daugherty Creek watershed.   |
| 2. Navarro River            | a. Mill Creek         | NMFS      | MRC does not influence much of this watershed since it owns approximately 600 of the 7731 ac or 8% of the watershed. MRC brought approximately 95% of the roads up to HCP/NCCP standards in 2008, leaving less than .35 miles of road to repair.   |
|                             | b. Dutch Henry Creek  | CDFG      | Within this planning watershed, MRC has brought most of the Cook Creek and Deer Creek sub-watersheds up to HCP/NCCP standards. MRC has abandoned all of the roads near streams in these 2 sub-watersheds (4.9 miles within Cook Creek and 1.9 miles in Deer Creek). The remaining MRC roads near streams in the Dutch Henry Creek watershed are within an approved THP in Little Jack Creek or an approved CDFG grant. MRC decommissioned the 1 mile long Little Jack Creek road in 2011. Although MRC owns the 2.6 mile long Dutch Henry Creek Road, we do not own the lands surrounding it. This road is an old railroad grade that Masonite Corporation purchased and used to haul logs.  |
|                             | c. Flynn Creek        | CDFG      | This watershed had very few roads near streams. The Tank 4 Gulch Road is presently up to HCP/NCCP standards. There are 2.5 miles of railroad grade, near a stream, which was never converted for log truck hauling. Although there are some sediment problems along this railroad grade, MRC would have difficulty getting equipment into the site; this would require a substantial amount of excavation and placement of crossings. In 2004, MRC staff walked the railroad grade to locate the sediment problems. They noted only 1 site, of 40-100 yds <sup>3</sup> , for high priority treatment. The site was at the terminus of the railroad grade. Due to the condition of the historic railroad grade, there was virtually no way to get equipment into the area without destroying it and converting the grade to a road. The remaining roads within this watershed are small spur segments off of ridge roads. Any unknown, isolated road problems on these ridge roads would be minor and located well upslope. |
|                             | d. North Fork Navarro | NMFS      | See Table Z-1, #3e for an exception to the selection process for coho core areas; this specific area is designated for road repair. For the remaining areas in this watershed, MRC has decommissioned most of the roads near streams   |

| Excluded as Coho Core Areas |                              |              |  |
|-----------------------------|------------------------------|--------------|--|
| River                       | Planning Watershed           | Evaluator    | Recommendations and Comments   |
|                             |                              |              | and along tributary streams, such as those within Coon Creek and Deadhorse Creek. In 2007, MRC decommissioned 2 miles of road along Deadhorse Creek. In 2008, we decommissioned 1/3 of a mile of road in Coon Creek, and made major repairs to the crossings along Coon Creek. LP abandoned 1 mile of the road along Coon Creek in the 1990s. Under MRC harvest schedules, more than 80% of the roads in this planning watershed will be up to HCP/NCCP standards by Year 10 of HCP/NCCP implementation. Currently, 50% of the roads are up to standard. Small tributaries within this watershed that feed into the mainstem of the North Fork Navarro have only minimal areas, near the flood plain, with fish-passable streams.  |
|                             | e. Ray Gulch                 | NMFS         | <ul style="list-style-type: none"> <li>• Mustard Gulch sub-watershed is a Class I watercourse for only ¼ mile. MRC has completed sediment control work on all roads that drain here.</li> <li>• Barton Gulch sub-watershed shows no presence of coho. MRC has completed sediment control work on 90% of our roads in this sub-watershed.</li> <li>• Ray Gulch sub-watershed shows no presence of coho above the 20-acre pond that is close to its mouth. MRC still has roads to repair in this sub-drainage. Although there are roads near streams, our surveys indicate very few sediment sites and those that exist are minor. MRC repaired the one main road that crossed many headwater streams within the 1-02-058 THP. Although we will continue to address roads near streams, this sub-watershed does not fit into the coho recovery plans because of the lack of coho.</li> </ul> |
| 3. Elk Creek                | a. Lower and Upper Elk Creek | CDFG         | Overall, there is very little coho presence in this watershed, with only sporadic observations from 1996. Due to the MRC efforts in fire suppression during the 2008 Mendocino Lightning Complex and to our past THP work, more than 70% of the roads are currently at HCP/NCCP standards.   |
| 4. Albion River             | a. Lower Albion River        | CDFG<br>NMFS | MRC has brought more than 75% of the roads in this planning watershed up to HCP/NCCP standards. Most of this watershed drains into estuarine habitat in the lower portions of the Albion.  |
|                             | b. Upper Albion              | CDFG         | MRC does not influence much of this watershed  |

| Excluded as Coho Core Areas |                           |           |  |
|-----------------------------|---------------------------|-----------|--|
| River                       | Planning Watershed        | Evaluator | Recommendations and Comments   |
|                             | River                     |           | since it owns approximately 1420 of the 8733 ac or 16% of the watershed.   |
| 5. Garcia River             | a. Rolling Brook          | CDFG      | There is no coho presence in this watershed. CDFG lists this watershed only for cold water refugia to the Garcia. Road repair does not have as much of an influence on water temperatures as streamside shade and LWD.   |
|                             | b. Inman Creek            | NMFS      | MRC does not influence much of this watershed since it owns approximately 110 of the 5481 ac or 2% of the watershed.   |
| 6. Noyo River               | a. Redwood Creek          | NMFS      | Redwood Creek watershed shows, on an annual basis, the best coho presence within the Noyo River. MRC does not influence much of this watershed since it owns approximately 1100 of the 3361 ac or 33% of the watershed. Our acreage is at the lower end of Redwood Creek. Up-stream sources create most of the influence within this planning watershed. |
|                             | b. *Marble Gulch          | NMFS      | Marble Gulch sub-watershed shows coho presence that is both limited and sporadic. MRC owns most of the sub-watershed.  |
|                             | c. McMullen Creek         | NMFS      | McMullen Creek watershed has only shown coho presence once since 1994. Roads which MRC owns roads high in the watershed could affect coho downstream in the Noyo River. However, MRC has repaired half of our roads in this watershed for sediment control. Our road surveys only show low and moderate sediment sites in the remaining roads.           |
|                             | d. Middle Fork Noyo River | NMFS      | Middle Fork watershed has had reported sightings of coho presence a number of times since 1994. MRC has recently repaired most of the sediment sites related to our roads through both grants and THPs. The CCC has been placing LWD in the Middle Fork Noyo River and will continue to do so.   |

**Z.2 Watershed Recommendations for South Fork Eel River**

The South Fork Eel HU is part of the SONCC ESU. Within the South Fork Eel HU, there is only 1 HSA in the MRC plan area—the Laytonville HSA. The highlighted text in Table Z-3 is verbatim from the CDFG *Recovery Strategy for California Coho Salmon*. Each excerpt is succeeded by the anticipated MRC action to comply with the CDFG recommendations.

**Table Z-3 Laytonville HSA**

|                   |   |
|-------------------|---|
| ER-LA-03          | Encourage the county to coordinate with landowners on the removal of barriers on private property.  |
| <b>MRC Action</b> | MRC will share data with both the county and private landowners to identify barriers outside of the MRC plan area.  |
| ER-LA-04          | Support efforts by the county sheriff to enforce laws against dumping and the Department of Health to clean up dumped materials.  |
| <b>MRC Action</b> | MRC security officers will patrol our property and assist in removing trash.  |
| ER-LA-07          | To minimize and reduce the effects of water diversions, take actions to improve SWRCB coordination with other agencies to address season of diversion, off-stream reservoirs, bypass flows protective of coho salmon and other anadromous salmonids and natural hydrograph, and avoidance of adverse impacts caused by water diversion. |
| <b>MRC Action</b> | MRC will reduce and minimize the impacts of water drafting by adhering to the standards in section E.7 as well as through conservation measures designed to reduce and minimize hydrologic change (section 8.4).  |

### Z.3 Watershed Recommendations for the Mendocino Coast

The Mendocino Coast HU is part of the CCC ESU. Within the Mendocino Coast HU, there are 5 HSAs in the plan area; however, MRC is only addressing Albion River, Big River, Garcia River, and Navarro River in our HCP/NCCP. The 4 recommendations for the Noyo HSA are for projects that do not require MRC direct action; for example, CDFG recommends investigating the role of Pudding Creek Dam in coho migration and the barriers to coho passage on the right-of-way of the California Western Railroad. The highlighted text in Tables Z-4 through Z-8 is verbatim from the CDFG *Recovery Strategy for California Coho Salmon*. Each excerpt is succeeded by the anticipated MRC action to comply with the CDFG recommendations.

**Table Z-4 Mendocino Coast HU**

|                   |   |
|-------------------|---|
| MC-HU-06          | Increase stream complexity by actions to: <ul style="list-style-type: none"> <li>a. Retain current limited supply of LWD, boulders, and other structure-providing features;</li> <li>b. Install new LWD, boulders, and other features immediately; and</li> <li>c. Restore riparian vegetation to provide for future recruitment of LWD.</li> </ul> |
| <b>MRC Action</b> | MRC will retain all in-stream LWD, boulders, and other features that provide structure. Following the conservation measures presented in section 8.2.3.6, we will meet or exceed objectives set for LWD. Our conservation measures for largest tree retention (section 8.2.3.6) will also promote recruitment of LWD to the stream channel.         |
| MC-HU-07          | Support the assessment, prioritization, and treatment of sediment sources at an HSA level.  |
| <b>MRC Action</b> | MRC has assessed and prioritized the sediment sources. We will treat controllable erosion per the prescriptions in 8.3.3.2.1.   |
| MC-HU-08          | Determine site-specific recommendations, including incentives, to remedy high temperatures. Depending on the terrain and aspect, examples could include riparian planting to increase shade to reduce high ambient temperature and raise humidity along streams.  |
| <b>MRC Action</b> | MRC will create a 10-ft no harvest zone along with AMZ buffers of various widths to provide shade to watercourses (section 8.2.3).  |

|                   |  |
|-------------------|--|
| MC-HU-09          | Map unstable soils and use that information to guide land-use decisions, road design, PTHPs, and other activities that can promote erosion.  |
| <b>MRC Action</b> | MRC has identified and mapped potentially unstable areas—Terrain Stability Units (TSUs)—and proposed conservation measures for each unit (section 8.3.2).  |
| MC-HU-11          | <p>Improve pool frequency and depth by actions to:</p> <ol style="list-style-type: none"> <li>a. Continue to treat existing upslope sediment sources; and</li> <li>b. Avoid or minimize land ownership fragmentation/conversion to more intensive uses.</li> </ol>   |
| <b>MRC Action</b> | MRC will address upslope sediment sources through TSUs (section 8.3.3). In addition, we will reduce sediment by upgrading all roads and skid trails to the standards presented in Appendix E. Through the 80-year commitment of this HCP/NCC, MRC will avoid fragmentation of our landscape.   |
| MC-HU-12          | <p>Discourage poaching of coho salmon by measures to:</p> <ol style="list-style-type: none"> <li>a. Cooperate with and provide incentives to landowners to maintain road and trail closures to be effective against trespass;</li> <li>b. Encourage monitoring of road closures and timely repair of defective or damaged road closure systems;</li> <li>c. Promote CalTIP, especially how it might apply to spawning coho salmon;</li> <li>d. Report un-permitted road use to local, State, and Federal enforcement personnel during periods when coho salmon are running.</li> </ol> |
| <b>MRC Action</b> | The MRC road system is closed to the public; gates restrict vehicle access to our property. Security officers are on duty, patrolling the property for trespassers.  |
| MC-HU-14          | <p>Supplement ongoing efforts to provide short-term and long-term benefits to coho salmon by restoring LWD and shade through:</p> <ol style="list-style-type: none"> <li>a. Management to promote conifer recruitment; and</li> <li>b. Incentives to landowners, such as technical support.</li> </ol>   |
| <b>MRC Action</b> | MRC will improve LWD and shade throughout the plan area by adhering to the conservation measures for LWD placement (section 8.2.3.6) as well as the conservation measures for AMZs (section 8.2.3). By streamlining the permit process, the wildlife agencies can assist us in our restoration activities.   |
| MC-HU-15          | <p>Maintain or improve instream flows by actions to:</p> <ol style="list-style-type: none"> <li>a. Avoid or minimize increases in water use; and</li> <li>b. Provide incentives to remove or convert direct diversions to off-stream storage and restrict the season of diversion to December through March.</li> </ol>  |
| <b>MRC Action</b> | MRC will address instream flows through the water drafting plan (section E.7) and through conservation measures designed to reduce and minimize hydrologic change (section 8.4).   |
| MC-HU-16          | The Department, the SWRCB, the RWQCB, the CDF, Caltrans, and counties, in cooperation with NOAA Fisheries, should evaluate the rate and volume of water drafting for dust control in streams or tributaries and where appropriate, minimize water withdrawals that could impact coho salmon. These agencies should consider existing regulations or other mechanisms when evaluating alternatives to water as a dust palliative (including EPA-certified compounds) that are consistent with maintaining or improving water quality.   |

|                   |   |
|-------------------|---|
| <b>MRC Action</b> | MRC will minimize water drafting impacts to all covered species, including coho salmon (section E.7).   |
| MC-HU-17          | Maintain or re-establish geographic distribution of coho salmon by continuing to allocate substantial improvement efforts towards identified biological refugia spawning coho salmon populations, and/or otherwise suitable habitat conditions accessible to coho salmon.   |
| <b>MRC Action</b> | MRC will maintain the geographic distribution of coho salmon in all of the major basins within the plan area as well as their distribution in specific watercourses. We will not on our own accord transport coho salmon among sites but will cooperate with the wildlife agencies if they determine repatriation efforts are necessary. However, since we cannot control conditions in the marine environment, changes there may still result in changes in fish distribution.   |
| MC-HU-18          | Coordinate with the NCRWQCB to implement water quality monitoring and streamline permitting of coho salmon habitat restoration projects (RWQCB 401, USACE 404, NOAA Fisheries, and USFWS permitting).   |
| <b>MRC Action</b> | MRC has coordinated with NCRWQCB to implement water quality monitoring (section 13.4.4).  |
| MC-HU-20          | <p>Decrease coarse sediment delivery by implementing actions to work with:</p> <ol style="list-style-type: none"> <li>a. Landowners, other resource professionals, and agencies to identify areas of increased risk of mass wasting to enable avoidance or mitigation of triggering activities; and</li> <li>b. Transportation system (State, county, and private road and rail) construction and maintenance personnel to identify risks and mitigation measures for mass wasting such as replacing culverts with bridges, minimizing fill volumes on culverts, and constructing critical dips at culverts.</li> </ol>   |
| <b>MRC Action</b> | MRC will address upslope sediment sources through TSUs (section 8.3.2). In addition, we will reduce sediment by upgrading all roads and skid trails to the standards presented in Appendix E.   |
| MC-HU-21          | <p>Decrease fine sediment loads by actions to:</p> <ol style="list-style-type: none"> <li>a. Abandon riparian road systems and/or upgrade roads and skid trails that deliver sediment to adjacent water courses;</li> <li>b. Limit winter use of unsurfaced roads and recreational trails by unauthorized and impacting uses;</li> <li>c. Minimize the density of road and trail crossings of water courses;</li> <li>d. Encourage out-sloping roads with rolling dips as the standard, wherever feasible, for all roads, and especially unsurfaced roads; and</li> <li>e. Work with landowners to identify and modify practices such as road maintenance that generate fine sediment.</li> </ol> |
| <b>MRC Action</b> | MRC standards for roads, landings, and skid trails (Appendix E) address road use, seasonal road use, and limited road access during the wet season.   |
| MC-HU-22          | Develop erosion control projects similar to the North Fork Ten Mile River erosion control plan.   |

**MRC Action** MRC has assessed and prioritized our sediment sources. We will treat controllable erosion per the prescriptions in 8.3.3.2.1.

**Table Z-5 Albion River HSA**

|                   |   |
|-------------------|---|
| MC-AR-01          | Place instream structures to improve gravel retention and habitat complexity.   |
| <b>MRC Action</b> | MRC will improve LWD and habitat complexity by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as by cooperating with other interested parties, such as the California Conservation Corp (CCC), with similar restoration objectives.   |
| MC-AR-03          | Conduct collaborative evaluations of priorities for treatment of barriers such as Fish Passage Forum.   |
| <b>MRC Action</b> | MRC has identified and treated the majority of fish barriers within the plan area and will continue to do so throughout the 80-year term of the HCP/NCCP.   |
| MC-AR-04          | Supplement ongoing efforts to provide short-term and long-term benefits to coho salmon by restoring LWD and shade through: <ul style="list-style-type: none"> <li>a. LWD placement;</li> <li>b. Management to promote conifer recruitment;</li> <li>c. Improvement of existing riparian zones through plantings, release of conifers, and control of alders, blackberries, and other competitors; and</li> <li>d. Incentives to landowners, such as technical support.</li> </ul> |
| <b>MRC Action</b> | MRC will improve LWD and shade throughout the plan area by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as the conservation measures for AMZs (section 8.2.3). By streamlining the permit process, the wildlife agencies can assist us in our restoration activities.   |
| MC-AR-10          | Encourage coordination of large wood placement in streams as part of logging operations and road upgrades to maximize size, quality, and efficiency of effort.  |
| <b>MRC Action</b> | MRC will improve LWD and habitat complexity by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as by cooperating with other interested parties, such as the California Conservation Corp (CCC), with similar restoration objectives.   |
| MC-AR-11          | Encourage, when necessary and appropriate, restricted access to unpaved roads in winter to reduce road degradation and sediment release. Where restricted access is not feasible, encourage measures such as rocking to prevent sediment from reaching streams with coho salmon.  |
| <b>MRC Action</b> | MRC standards for roads, landings, and skid trails (Appendix E) address road use, seasonal road use, and limited road access during the wet season.   |
| MC-AR-12          | Conduct comprehensive sub-basin erosion control “storm proofing” combined with installation of LWD into streams.  |
| <b>MRC Action</b> | MRC has assessed and prioritized our sediment sources. We will treat controllable erosion per the prescriptions in 8.3.3.2.1. To improve LWD and habitat complexity, we will adhere to the conservation measures for LWD placement (section 8.2.3.6) and cooperate with other interested parties, such as the California Conservation Corp (CCC), following similar restoration objectives.   |

MC-AR-13 Modify stream barriers to allow coho salmon passage while maintaining LWD.

**MRC Action** MRC will maintain LWD by treating significant stream barriers as encountered.

**Table Z-6 Big River HSA**

MC-BR-01 To minimize and reduce the effects of water diversions, take actions to improve SWRCB coordination with other agencies to address season of diversion, off-stream reservoirs, bypass flows protective of coho salmon and other anadromous salmonids and natural hydrograph, and avoidance of adverse impacts caused by water diversion.

**MRC Action** MRC will reduce and minimize the impacts of water drafting by adhering to the standards in section E.7 as well as through conservation measures designed to reduce and minimize hydrologic change (section 8.4).

MC-BR-02 Target Big River for enhancement of instream habitat by installation of LWD.

**MRC Action** MRC will improve LWD and habitat complexity by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as by cooperating with other interested parties, such as the California Conservation Corp (CCC), with similar restoration objectives.

**Table Z-7 Garcia River HSA**

MC-GA-06 Utilize as a model for erosion reduction and LWD placement the comprehensive approach practiced in the South Fork of the Garcia River.

**MRC Action** The model described above was actually developed and implemented in the plan area at South Fork Garcia.

MC-GA-07 Investigate stream nutrient enrichment and cycling needs for coho salmon.

**MRC Action** MRC will participate in and support any scientific efforts to improve the stream nutrients and cycling needs of coho salmon.

MC-GA-09 Encourage coordination of LWD in streams as part of logging operations and road upgrades to maximize size, quality, and efficiency of effort.

**MRC Action** MRC will improve LWD and habitat complexity by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as by cooperating with other interested parties, such as the California Conservation Corp (CCC), with similar restoration objectives.

MC-GA-11 Maintain the following tributaries to provide coldwater input to the Garcia River mainstem: Hathaway, North Fork, Rolling Brook, Mill Creek (lower Garcia River), South Fork, Signal, Mill Creek (upper Garcia River).

**MRC Action** MRC will improve shade throughout the plan area by adhering to the conservation measures for AMZs (section 8.2.3). Our monitoring data on stream temperatures in the South Fork and Rolling Brook tributaries confirms that these watercourses currently provide cold water inputs and should continue to do so.

MC-GA-13 Encourage, when necessary and appropriate, restricted access to unpaved roads in winter to reduce road degradation and sediment release. Where restricted access is not feasible, encourage measures such as rocking to prevent sediment from reaching streams with coho salmon.

**MRC Action** MRC standards for roads, landings, and skid trails (Appendix E) address road use, seasonal road use, and limited road access during the wet season. All our road networks

are behind locked gates and road use is restricted during the wet season to administrative requirements. To ensure that trespassers do not degrade these road networks, our security officers patrol MRC roads on a regular basis.

MC-GA-18

Consider projects to open logjam migration barriers while maintaining LWD in the North Fork, South Fork, and Fleming Creek.

**MRC Action**

MRC will identify and address migration barriers, where present in the plan area.

MC-GA-19

Complete the remaining 25% of erosion control sites, identified in the South Fork Garcia River by the Trout Unlimited North Coast Coho Project.

**MRC Action**

In conjunction with Trout Unlimited and Pacific Watershed Associates, MRC has identified and treated 100% of the erosion control sites in the South Fork Garcia (Pacific Watershed Associates 2010).

MC-GA-21

Place large woody debris in Inman Creek, South Fork Garcia River, Signal Creek, and North Fork Garcia River, where necessary and with willing landowners

**MRC Action**

MRC will improve LWD and habitat complexity by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as by cooperating with other interested parties, such as the California Conservation Corp (CCC), with similar restoration objectives.

**Table Z-8 Navarro River HSA**

MC-NA-03

Investigate stream nutrient enrichment and cycling needs for coho salmon.

**MRC Action**

MRC will participate in and support any scientific efforts to improve the stream nutrients and cycling needs of coho salmon.

MC-NA-04

Supplement ongoing efforts to provide short-term and long-term benefits to coho salmon by restoring LWD and shade through:

- a. LWD placement;
- b. Management to promote conifer recruitment;
- c. Improvement of existing riparian zones through plantings, release of conifers, and control of alders, blackberries, and other competitors; and
- d. Incentives to landowners, such as technical support.

**MRC Action**

MRC will improve LWD and shade throughout the plan area by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as the conservation measures for AMZs (section 8.2.3). By streamlining the permit process, the wildlife agencies can assist us in our restoration activities.

MC-NA-07

Comprehensive, sub-basin wide, erosion control and LWD installation is being implemented by Mendocino Redwood Company in partnership with the Department through the North Coast Coho Project in the Little North Fork. This approach of “storm proofing” key subbasins needs to be fully implemented in the key sub-basins of Flynn, Dutch Henry, John Smith, Minnie, Horse Camp and German creeks. These tributaries have been identified as high priority in the Navarro River Restoration Plan.

**MRC Action**

MRC standards for roads, skid trails, and landings (Appendix E) dictate road upgrades, as necessary. Our conservation measures for LWD placement (8.2.3.6) will add LWD in these sub-basins. We will treat controllable erosion per the prescriptions in 8.3.3.2.1. In the sub-basins listed in MC-NA-07, we plan to implement erosion control and LWD

placement.

MC-NA-09

Encourage coordination of large wood placement in streams as part of logging operations and road upgrades to maximize size, quality, and efficiency of effort.

**MRC Action**

MRC will improve LWD and habitat complexity by adhering to the conservation measures for LWD placement (section 8.2.3.6), as well as by cooperating with other interested parties, such as the California Conservation Corp (CCC), with similar restoration objectives.

MC-NA-11

Encourage, when necessary and appropriate, restricted access to unpaved roads in winter to reduce road degradation and sediment release. Where restricted access is not feasible, encourage measures such as rocking to prevent sediment from reaching streams with coho salmon.

**MRC Action**

MRC standards for roads, landings, and skid trails (Appendix E) address road use, seasonal road use, and limited road access during the wet season. All our road networks are behind locked gates and road use is restricted during the wet season to administrative requirements. To ensure that trespassers do not degrade these road networks, our security officers patrol MRC roads on a regular basis.