MENDOCINO • HUMBOLDT
Redwood Companies

MANAGEMENT PLAN

October 2, 2023

This plan, additional information about Mendocino and Humboldt Redwood Companies, and contact information can be found at:

www.hrcllc.com or www.mrc.com

CONTENTS

1 OUR VISION

Mendocino and Humboldt Redwood Companies were formed with the idea that it is possible to manage a large block of productive forestland using high standards of environmental stewardship and operate as a successful business.

Managing forestland with a high degree of environmental stewardship means that with each decade of management:

- Our management practices will maintain and improve stand conditions for conifer growth and yield, and carbon sequestration.
- The inventory of redwood, Douglas-fir, and other native conifer trees will increase.
- Wildlife and fisheries habitat will be maintained and improved.
- Soil resources and water quality will benefit from silviculture and harvest practices.

Operating as a successful business means:

- The business offers desirable employment opportunities.
- The community is proud of the business.
- The business is known for integrity and producing quality products.
- The business earns a return, over time, on capital invested in the business.

Actions to achieve our vision include:

- Protect sensitive forest resources during operations and implement restoration if needed.
- Promote a diverse forest ecosystem that includes a range of seral stages, forest openings, grasslands, and oak woodland.
- Promote closed-canopy forest connectivity.
- Utilize uneven-aged stand management.
- Protect old growth trees and stands from timber harvest or management activities.
- Provide watercourse protection zones, habitat restoration, and reduction of sediment input through road maintenance and improvement.
- Harvest less timber than we grow until our timber inventory reaches a target that allows long-term sustained yields.
- Evaluate management practices for opportunities for improvement.
- Be an active participant in our local communities through community giving programs, local purchasing, and by providing good working conditions and fair wages.
- Maintain our commitment to the Principles and Criteria of the Forest Stewardship Council® (FSC®-C031337).

2 DOCUMENT OVERVIEW

This Management Plan describes how we will accomplish our vision. In this plan and associated documents, we state our objectives and operational policies to provide stakeholders with an understanding of our direction and how we will monitor our progress. This is a living document, revised in response to new information, unexpected circumstances, monitoring results, and adaptive management. Additional information, including maps, reports and company contact information can be obtained from our website.

The environmental setting of the properties, including their histories and present conditions are described Section 3, “About Mendocino and Humboldt Redwood Companies” and Section 4, “Forest Resource Inventory and Planning,” which provide an overview of the timber resources on the properties and methods used to maintain data describing those resources.

Our approach to timber harvest is described in Section 5, “Silviculture, Regeneration, and Fire Protection,” which covers policies and procedures pertaining to stand treatments and how they are designed to maintain, enhance, and/or restore forest resources while taking into consideration the long-term economic and ecological values of the forest.

Our timberlands’ role in supporting biodiversity is addressed in Section 6, “Forest Conservation.” Here, we describe our policies for protecting and restoring unique, sensitive, and critical habitat elements including old growth and riparian zones, High Conservation Value Forests, and Representative Sample Areas.

Section 7, “Economic and Social Impacts” covers topics relating to our role in local communities, including a description of our workforce, community input process, community giving, and the cultural sites.

While monitoring methods are discussed throughout the document, Section 8, “Monitoring and Adaptive Management,” provides an overview of the adaptive management process and how we use monitoring to inform policies and practices when new information is available or when circumstances change.

Throughout this document, other policy and implementation documents that guide on-the-ground forestry operations are referenced. Those documents are referred to by name and can be accessed on the MRC-HRC website (www.mrc.com or www.hrcllc.com) or by request, as indicated in this document.

3 ABOUT MENDOCINO AND HUMBOLDT REDWOOD COMPANIES

Mendocino and Humboldt Redwood Companies are sister companies belonging to the larger Mendocino family of companies. Other companies within the family are Mendocino Forest Products, Humboldt Sawmill Company, and Allweather Wood. Mendocino Redwood Company, LLC (MRC) began operations on June 30, 1998, with the purchase of 232,000 acres of timberland from Louisiana-Pacific Corporation. [1] MRC currently owns 232,231 acres [2] of land in California: 223,358 in Mendocino County and 8,874 acres in Sonoma County. Humboldt Redwood Company, LLC (HRC) acquired its property on July 31, 2008, as a result of financial restructuring of The Pacific Lumber Company. HRC owns 211,206 acres in Humboldt County, California (see maps in Appendix).

3.1 HISTORY

Prior to the 1850's, MRC and HRC lands – largely late successional redwood and Douglas-fir mixed forest – were occupied and managed by communities of Native Americans: Pomo, Yuki, Cahto, Wilaki and Sinkyone peoples in Mendocino and Sonoma; and Wiyot, Sinkyone, Whilkut, and the southern Athabascans, which include the Mattole and Nongatle, in Humboldt. These peoples used fire for clearing and thinning to improve hunting and foraging, especially along the borders of the redwood forest where woodlands and prairies existed.

Non-Native American settlement reached California's north coast in the 1800s. Redwood logging on the Mendocino Coast began after the 1850 grounding of the trading ship *Frolic* led to the discovery of the forests by settlers from San Francisco and the subsequent construction of a sawmill at Big River. The settlement of Humboldt Bay followed its re-discovery by the part of Dr. Josiah Gregg, who traveled west on foot from the Trinity Gold Fields in 1849. The first sawmill on Humboldt Bay was established in 1850, marking the beginning of the lumber industry on what is now known as the Redwood Coast of California.

Early redwood harvesting started at the mouths of rivers and creeks and progressed up-stream and up-slope to the ridgelines. These initial logging activities generally consisted of a regimen of burning and clearcutting, with logs being dragged downhill by oxen, using stream beds as transportation corridors. Once landed in the larger river valleys, logs were floated to mills. Later entries into these forests, and first entries into forests located farther inland, were accomplished with steam donkeys (portable steam-powered engines) and railroads. The end of World War II brought an entirely new logging system based on crawler tractors and trucks. This transition stimulated construction of a gravel and dirt road network, much of which is still used.

Companies such as Union Lumber, Albion Lumber, Mendocino Lumber, Rockport Redwood, Cottaneva Lumber, L. E. White, and Southern Pacific Land were some of the early owners of what now comprise MRC forestlands. By 1986, these lands had been consolidated by large landowners: Georgia-Pacific (1968-1999) and Louisiana-Pacific (1973-1998). Both continued their acquisition of small private tracts of harvested lands. It was during this era that almost all the remaining old growth was logged, and second growth logging was beginning. Tanoak became a larger component of the forest as it had little value and

[1] Since 1998, approximately 3,000 acres were sold in conservation purchases, and small acquisitions and boundary line adjustments have occurred as well.

[2] Note, all acreages in this document are calculated from datasets in our Geographic Information System. Areas of landscape features are approximate, and acreages may vary due to different data sources and rounding error.

can re-sprout if damaged during the removal of conifers. Georgia-Pacific was ultimately succeeded by Lyme Redwood Forest Company (2015) and Louisiana-Pacific by MRC (1998).

Some of the early owners of what now comprise HRC forestlands were the Holmes-Eureka Lumber Co., Hammond Lumber Co., Dolbeer & Carson Lumber Co., Arcata Redwood Co., Freshwater Lumber Co., The Pacific Lumber Co., Hicks Vaughan Redwood Co., and Van Duzen River Redwood Company. Over the years, the most productive timberlands owned by many of the original logging businesses were acquired and consolidated by The Pacific Lumber Company (PALCO). These purchases included large tracts of old growth forests that had never been logged. PALCO harvested relatively conservatively in these old growth forests during the first eight decades of the 20th century. Pacific Lumber primarily used partial harvest or thinning techniques and retained old growth trees in mixed-aged and old-growth stands on the ownership. In the mid-1980's under new ownership, a transition to clearcutting even-age silviculture produced a well-stocked but much younger forested landscape across much of the ownership. Several significant remaining stands of old growth were established as conservation areas or transferred to public ownership as a result of the 1999 PALCO (now HRC) Habitat Conservation Plan (HCP).

3.2 OUR LANDS TODAY

Forest management today represents an ongoing effort to balance the economic and ecological values of the forests' resources. These resources and the limitations around which they are managed are summarized here and explored in more detail in subsequent sections of this plan.

3.2.1 Forest Resources

Both properties are located in the outer Northern Coast Ranges, which are characterized by expansive, productive forests. The landscape is a series of ridges formed by the collision of the oceanic plates with the North American continent. The elevation in this mountainous terrain ranges from 40 to 3,600 feet above sea level. Coastal fog and mild winters allow the forests of the region to achieve high volumes of standing biomass.

The geology underlying the ownerships is primarily composed of sedimentary rocks. The bedrock is generally a highly deformed, folded, and fractured sandstone, shale, and weaker argillite. Some areas contain small amounts of igneous and metamorphic rocks which have been accreted with the sedimentary rocks. The more faulted areas have formed a structurally weak mélange consisting of a tectonically sheared argillite. Other portions of the properties contain poorly consolidated, fine-grained silts, clays and sands that are younger and originate from fluvial and shallow marine environments.

The soils vary on the landscape as a function of the underlying geology and slope conditions. Some areas can drain more rapidly due to shallower soils on steeper slopes or where more bedrock is exposed. The soils are generally described as well-drained and moderately deep to deep. In general, the soils on HRC and MRC properties are suitable for the sustainable growth of conifer and hardwood trees.

The most prevalent forest type on the timberlands is redwood forest (48% of total acreage), followed by Douglas-fir – tanoak forest (27%), tanoak forest (13%), and Douglas-fir forest (8%). Non-forested areas make up 3% of the landscape. Other vegetation types (1% or less each) include grasslands, shrublands, bishop pine forest, and oak woodlands.

The condition of stands on MRC and HRC properties is varied and reflects their history of evolving forest management practices, as well as environmental factors such as site class and local climate. Most of the acreage on each property is second- or third-growth forest. Never-harvested stands are present on both properties, though to a greater extent on HRC.

HRC's stands are closer, overall, to desired uneven-aged conditions that allow for selection silviculture; however, on thousands of acres of past clear-cuts a legacy of overly dense young stands remain, which require other treatments before reaching desired conditions. On MRC property, past logging practices have resulted in widespread proliferation of tanoak and other hardwoods to densities that exceed historical values.

3.2.2 Environmental Limitations

Robust regulations are in place in California to protect timber production, soil conservation and water quality, wildlife and fisheries, and other forest values and benefits. The California Forest Practice Rules, state and national Endangered Species Acts, California Environmental Quality Act, and the Porter-Cologne Water Quality Control Act, among others, provide layers of regulation that apply to timber harvest and other activities on these lands, and together provide a framework for protecting the long-term viability of the timber industry while protecting other resources. A full list of applicable regulations and treaties is available upon request.

These regulations are implemented through the Timber Harvesting Plan (THP) process, administered by the state of California, during which potential cumulative effects and sensitive resources requiring special protections or impact mitigations are identified. These sensitive resources include, but are not limited to, threatened and endangered species and their habitat; watercourse zones; and culturally significant sites.

MRC and HRC approach protections for these resources in a way that often exceeds what is required under existing regulations, via internal operational policies as well as formal site-specific agreements with federal and state agencies (i.e., HRC's Habitat Conservation Plan).

4 FOREST RESOURCE INVENTORY AND PLANNING

To monitor our progress toward achieving our forest management objectives, we strive to produce and maintain accurate estimates of inventory and growth: both property-wide estimates as well as estimates broken down spatially, by species, size, and density.

This section describes our forest resource inventory program including the methods by which the current inventory was developed and is maintained, and the landscape planning process whereby forest inventory data is used as an input to the modeling of future growth, harvest levels, and inventories.

4.1 FOREST RESOURCE INVENTORY

We maintain an inventory of forest resources in a central set of databases. This inventory is intended for multiple purposes, including:

- Providing the best available data on growth, yield, stocking, and regeneration
- Identifying non-forest resources requiring or deserving protection
- Landscape planning, i.e., long-term harvest scheduling across the property
- Harvest plan and silvicultural activity layout
- Characterizing and managing wildlife habitat types, representative sample areas and high conservation value forests
- Monitoring our progress toward restoring species composition and build-up of conifer stocking
- Tracking of inventory and growth of carbon stocks
- Business asset management

The forest inventory is recorded in stand-based GIS datasets. Stands are vegetation/forest type polygons that have been classified by overstory tree species, size, and canopy density using aerial photographs, digital orthophotography, LiDAR derived canopy height models, harvest history, and field review.

Total annual estimated inventories for each ownership are reported alongside harvest levels on our website at https://www.hrcllc.com/forest-inventory.

4.2 DEMONSTRATION OF MAXIMUM SUSTAINED PRODUCTION

We periodically engage in long-term growth and yield modeling to inform maximum annual harvest levels and support each company's demonstration of maximum sustained production under the California Forest Practice Rules. Each model is constructed for a 100-year planning horizon using the best available inventory data and most appropriate suite of silvicultural methods for that property at that time. These models are not constructed with the intent of being used as enforceable operational plans for each harvest unit, but as guidelines for each property. Silvicultural prescriptions are ultimately the discretion of Registered Professional Foresters (RPFs), based on their assessment of on-the-ground conditions.

The documents describing the methodology and results for each model are available on our website at https://www.hrcllc.com/option-a.

5 SILVICULTURE, REGENERATION AND FIRE PROTECTION

Silviculture – the practice of managing forest composition and growth – involves a variety of treatments including harvesting, planting, thinning, and brush management. How these treatments are applied determines the stocking and growth of a forest stand as well as the quality of the wildlife habitat it provides.

The objective of any silvicultural treatment applied on the properties is to develop or maintain the desired stand condition, which is made up of the following attributes:

- Conifer dominated forest comprised of the most ecologically appropriate species for the site, with uneven-aged structure in redwood and mixed-conifer stands.
- Contains forest structural elements such as old growth trees, snags, large woody debris, legacy hardwood trees and wildlife trees.
- Protects the beneficial uses of water and promotes vitality of soils.
- Committed to the maximum sustained production of high-quality forest products where growth rates are predictable and regular (outside of special protection zones)
- Understory vegetation does not inhibit growth and development of conifer trees.

Our overall harvest policy is summarized as follows:

- Utilize selection harvest techniques unless doing so results in undesirable stand conditions.
- Harvest less conifer than we grow on our forestlands.
- Employ the most suitable management techniques to achieve or maintain the desired stand condition stated above.
- Retain elements of the stand such as snags, green trees, down logs, and other features important for a variety of functions for biotic organisms.
- Disperse harvest activity over the landscape to prevent concentrating impacts.
- Retain and recruit the older stand component in the forest with more advanced structure.

5.1 SILVICULTURAL PRESCRIPTIONS

Silvicultural prescriptions, as defined by the California Forest Practice Rules (CFPRs), are enforceable components of all THPs filed with and approved by the California Department of Forestry and Fire Protection (CAL FIRE). THPs are prepared by Registered Professional Foresters[3] (RPFs) licensed by the State of California's Board of Forestry. We have prohibited the use of the traditional clear-cut silviculture. Silvicultural prescriptions used on the properties are described briefly here.

5.1.1 Selection Silviculture

After retaining all trees for wildlife resources, trees are removed individually or as small groups (<2.5 acres). Trees are harvested from all size classes first removing dead, diseased, or malformed trees

[3] Information on professional forester registration can be found at the Board of Forestry and Fire Protection Website (https://bof.fire.ca.gov/projects-and-programs/professional-foresters-registration/).

followed by a marking priority designed to achieve the desired post-harvest stand structure. Generally speaking, this post-harvest stand structure will result in 25% of the growing space being occupied by trees 60 years old or greater, 50% being occupied by trees 40 years old or greater and 75% being occupied by trees 20 years old and greater. 25% of the growing space will be available for the development of new trees.

5.1.2 Special Prescriptions

Special prescriptions such as variable retention and rehabilitation of understocked areas, all defined by the CFPRs, are used to restore a timber stand's species composition to that of the desired stand condition. The use of these silvicultural methods is limited to poorly stocked or tanoak-dominated stands on sites that have historically supported or can support a greater volume of desirable commercial species.

Variable retention harvesting typically retains 10% to 40% of the original stand in both aggregate and dispersed retention. This retention of hardwood as well as conifer within the harvest area provides post-harvest ecological structure while the areas harvested provide opportunity to plant and naturally regenerate redwood and Douglas-fir at spacing suitable for future selective harvest.

Rehabilitation is used to improve the productivity of stands that are capable of supporting conifers but that are understocked with conifer and overstocked with hardwoods.

5.1.3 Commercial Thinning

Commercial thinning is utilized to reduce stand density and improve forest growth. Trees are removed from all size classes; however, the post-harvest forest will have a larger average diameter than the pre-harvest forest (i.e., more smaller trees are cut than large). The primary purpose of this harvest is to improve growth rather than produce forest products.

5.1.4 Shelterwood or Seed Tree

Shelterwood and seed tree silviculture are very similar and are used on our non-redwood sites where Douglas-fir is the most ecologically appropriate species. The harvest usually occurs in two (sometimes three) stages. The first harvest retains enough mature trees to provide seed and/or shelter to the newly established trees in the post-harvest stand. The second harvest will remove the mature trees at a future point (10-15 years) when the new trees are well established. In some cases, these steps may be preceded by an entry which removes 10-15% of the mature trees to reduce wind damage during the main harvest operation.

5.2 FOREST MANAGEMENT TO REDUCE HERBICIDE USE AND IMPROVE GROWTH

Our management strategy utilizes un-even age management techniques designed to move our forest toward a future stand condition representative of the natural mix of conifers historically found across our ownership while also providing for a sustainable harvest of forest products. Uneven-age management involves selective harvesting at intervals such that a forest of multi-aged trees results. This allows us to avoid the use of planted trees and herbicides to control competing vegetation. To date, we have achieved varying degrees of success in this effort and have developed specific strategies to improve our performance.

Douglas-fir and redwood require differing conditions for successful re-establishment of young trees. Redwood reproduces almost exclusively from stump sprouts. Using existing root systems, these sprouted trees are easily re-established and able to outcompete other vegetation. We have found that well stocked redwood-dominated stands are well suited for our preferred uneven-aged management strategy. However, if the stand prior to harvest does not contain adequate numbers of mature trees or the stand is very young and dense, traditional un-even age management techniques result in reduced growth and stagnated forest development.

Douglas-fir reproduces from seed and is most successful when growing in open sunlight. Results of traditional selection harvest in Douglas fir dominated forests have been poor. This is primarily a function of the Douglas-fir's requirement for ample sunlight. If too many trees remain after harvest, the shade from the remaining trees prevents the development of young trees. If the harvest does result in ample sunlight for young trees, competition from brush and grass is too great for young trees to overcome. When this occurs, herbicides must be used to control competing vegetation at each harvest interval. This has the unintended result of increasing herbicide use.

We have determined that a well-developed, mature redwood-dominated forest is the key to successful un-even age management. To that end, where appropriate, all management activities should be directed toward reaching that stage of development prior to initiating un-even age management techniques. In those areas where a redwood-dominated forest is unfeasible, as is the case with our Douglas-fir forests, management techniques designed to reduce overall herbicide usage by lengthening the time between harvests will be utilized.

To this end, we have developed several strategies to improve forest growth and reduce herbicide use. These strategies differentiate areas suitable for the development of a mature redwood forest (where we can apply our highly successful un-even management techniques) from other areas, such as our Douglas-fir forests (where uneven-age management results in increased herbicide usage over time). We will continue to monitor the outcome of our management practices to ensure we are having the desired impact in alignment with our forest management objectives.

5.2.1 Redwood Forests

In areas where a well-developed, mature redwood forest is possible, but does not currently exist, management techniques will be based on current forest conditions, and designed to achieve a well-developed, mature forest.

Where a well-stocked *young* redwood forest currently exists, our strategy of initiating uneven-age management through selective harvest (wherein trees of all sizes are harvested including some of the largest trees in the stand, with the intention of establishing new young trees) has resulted in reduced growth and in some cases the need for herbicide treatments to control competing vegetation to establish young trees. Going forward, these stands will be left to grow or if overly dense, management activities will be applied that grow the forest to maturity prior to initiating un-even age management techniques. Thinning (an even-age management technique wherein the largest and healthiest trees are retained with no intent to establish new young trees) will be used to focus forest growth into the best available trees. This will result in a short-term reduction in harvest volume from these areas as well as increased harvest cost associated with the removal of smaller trees.

In the absence of well-stocked redwood, uneven-age selection harvesting results in the need for herbicide use as discussed above as well as planting of young redwood to achieve a mature, well-stocked forest. This planting and herbicide would be necessary at each harvest entry until a mature redwood forest is established. This may require two to three harvest entries (40-60 years) and associated herbicide use and planting. These areas will be harvested in a single event and planted to redwood thereby creating a well-stocked young redwood stand and managed as stated above. This will increase harvest volume and reduce logging costs for these areas, offsetting the effects of management changes cited above. Herbicide usage will be reduced by 50-75% in these areas.

5.2.2 Douglas fir Forests

As stated earlier, management of Douglas fir forests using un-even age management results in excessive reliance on planted trees and herbicide use at each harvest interval. Management in these areas will use silvicultural techniques such as variable retention, seed tree, or shelterwood. These techniques harvest most of the trees in one entry, retaining trees necessary as a seed source. Once established, these areas are not harvested again, aside from thinning, until the forest has reached maturity. By reducing the need to establish new trees to a single event, we are ensuring adequate sunlight for new young trees as well as reducing the need to frequently control competing vegetation. This will increase harvest volume and reduce logging costs in these areas. This will also reduce herbicide usage by 50-75%.

5.3 TIMBER HARVESTING OPERATIONS

Timber harvesting is generally conducted by Licensed Timber Operators (LTOs) who are contractors working for MRC or HRC. They comply with the harvest prescriptions in the THP. LTOs must meet education and training requirements to maintain their license.

5.3.1 Timber Harvesting Plans

The THP is the environmental review document submitted by landowners to CAL FIRE outlining what timber is to be harvested, how it will be harvested, and the steps that will be taken to prevent damage to the environment and avoid cumulative impacts. It is by legal standards the functional equivalent of an Environmental Impact Report. THPs are prepared by RPFs, who are licensed to prepare these comprehensive, detailed plans.

Forest managers and their staff are responsible for oversight of harvesting operations conducted by the LTOs, and for monitoring the contractor's implementation of the requirements of the THP and company policies and procedures. Managers or their staff meet with contractors prior to beginning operations to review the THP and operational restrictions to ensure that the LTO clearly understands company operating guidelines such as chain of custody (trip ticket and source codes), fire plan, and hazardous Spill Cleanup Procedures, operational restrictions, and best management practices. Active operations are monitored by forestry staff weekly, or as needed.

5.3.2 Logging Methods

It is our goal to use the most environmentally appropriate and economically feasible method to bring logs out of the forest. Three types of yarding methods are used to bring logs from the forest to a landing where they are loaded onto log trucks. The two primary methods are cable and tractor yarding, while the third less common type is helicopter yarding.

Cable yarding is used on steeper slopes to minimize soil disturbance and erosion concerns. It is typically accomplished using cable yarders capable of reaching distances greater than 2500' with a lift capacity of 8,000 to 10,000 pounds.

Tractor yarding is used for logging on more gentle slopes when erosion is less of a concern. Rubber-tired skidders, tracked skidders, and winch tractors with the capability to skid logs of 15,000 pounds or less are used. Feller bunchers may be used to assist in timber falling associated with tractor operations. Helicopter yarding is used where a harvested area is too far from a landing or road to be cable or tractor yarded.

Helicopters capable of lifting 25,000 pounds are utilized for helicopter logging. Helicopter yarding is generally avoided due to the high costs involved.

5.3.3 Environmental Considerations

Special measures are put in place during harvest operations to prevent sedimentation of watercourses and other negative impacts to aquatic habitat resulting from harvest operations. These include restrictions on harvest and road construction on unstable areas, erosion control where exposed soil occurs in riparian zones, and restrictions on non-winterized roads when the road substrate is saturated, and water drafting guidelines. These activities are regulated under the CFPRs.

5.4 REGENERATION AND VEGETATION MANAGEMENT

Comprehensive coverage of MRC and HRC vegetation management practices is provided in the *HRC-MRC Vegetation Management Policy, Policy Implementation Plan and Effectiveness Monitoring Plan*. Key points are summarized here, and the document is available upon request.

Natural regeneration from redwood stump sprouts and Douglas-fir seedlings are the desired method of forest regrowth, but in many cases additional management is undertaken to improve conditions for the growth of new trees following harvest. Regeneration can include site preparation, tree planting, pre-commercial thinning, and brush control.

5.4.1 Site Preparation

Site preparation includes removal of a portion of the post-harvest slash (limbs and tops of harvested trees), and competing vegetation, by means of chemical, mechanical, manual treatment, or burning.

5.4.2 Tree Planting

Tree planting is aimed at regenerating harvested stands with desirable conifer species. Planting is not conducted with the intention of converting non-forested areas (such as prairies or meadows) to forest. We plant site-appropriate trees where harvest activities have left openings; the tree species selected for planting will be evaluated for their ecological suitability for the site (see the Ecological Risk Assessment Checklist below). Planted redwood trees will be either cultivars or seedlings and planted Douglas-fir will be grown from seed.

Redwood Ecological Risk Assessment Checklist

Reforestation Foresters evaluate the ecological conditions on a unit for each of the six conditions listed below. If three or more of the conditions are met, then the ecological appropriateness is considered 'Good', and redwoods can be planted on the site. If two or fewer conditions are met then the

Reforestation Forester shall either plant the site using only Douglas-fir or prepare a justification for planting redwood, which must be approved by the Silviculture Manager before proceeding.

- Historical Occurrence: Evidence of historical occurrence of redwood on the site. Evidence may include redwood stumps, naturally occurring redwood trees in adjacent stands, historical records, or other suitable indications that redwood trees have naturally grown at this site.
- Coastal fog: Summer coastal fog occurs periodically at the site.
- Aspect: The site is on north, east, or northwest facing slopes.
- Slope Position: The site is on the middle slope, lower slope, or the flat of the local 'slope position'.
- General Soil Composition: The soil does not have greater than 70% coarse fragments, or bedrock within two feet of the surface.
- Soil Series: Review of the 'Soil Series' at the site suggests that redwood is a typical tree species on that soil type. Reference the publications *Soils of Western Humboldt County, McLaughlin, and Harradine* (November 1965) or *Natural Resources Conservation Service Soil Survey of Mendocino County, California, Western Part* (2006).

5.4.3 Pre-commercial Thinning

Pre-commercial thinning (PCT) is applied to stands of young trees up to 30 feet in height to reduce tree density, improving the diameter growth of the remaining trees by reducing inter-tree competition. PCT would be used to grow larger diameter trees at an earlier age, favor species composition to redwood, and promote late seral habitat characteristics at an earlier age. It could also be used to maintain true oak woodlands and coastal prairie by removing encroaching Douglas-fir.

5.4.4 Vegetation Control

Vegetation control includes the use of mechanical, manual, and chemical means to control the growth of competing woody plant species, and herbaceous species such as grasses and weeds.

Burning is generally spot or "slash pile" burning rather than broadcast burning. Ignition is limited to appropriate weather and fuel moisture conditions to minimize loss of the humus layer, while achieving the objectives of increasing growing space, improving access for planters, and creating landscape fuel breaks.

5.5 HERBICIDE USE

Herbicides can be a valuable tool in forest restoration to establish the desired conifer stocking level, protect young trees from competition, or control invasive exotic plants. Our long-term objective, however, is a reduction in herbicide use. We are committed to phasing out the use of chemical herbicides as a routine management tool in keeping with Forest Stewardship Council (FSC) principles as we transition towards uneven-aged silvicultural regimes.

Herbicides are applied manually by ground-based crews. We do not apply herbicides aerially. Manual applications include both "foliar" and "frill" treatments. In a foliar application, either before or after harvesting occurs, herbicide is applied to the foliage of competing vegetation or exotic plants. A frill treatment entails cutting through the bark of a hardwood tree or tall brush species such as blueblossom (*Ceanothus thyrsiflorus*) and applying herbicide into its cambium.

Annual herbicide use will vary, depending on the level of harvest and which forest stands are chosen for restoration. These figures are posted annually on our website.

Our herbicide policies, and strategies for reduction of herbicide use in the long term are provided in the *HRC-MRC Vegetation Management Policy, Policy Implementation Plan and Effectiveness Monitoring Plan.*

5.6 FIRE PROTECTION AND PREVENTION

Non-prescriptive forest fires pose a threat to safety, property, and forest health. Fire protection and prevention is a high priority for the company, requiring advanced planning and diligence by all field employees and logging contractors.

5.6.1 Annual Fire Plan

Each company prepares an annual Fire Plan which is submitted to CAL FIRE. Each Fire Plan, which is considered part of the management plan, describes procedures and responsibilities in the event of a fire, and includes a call down list of critical employees and their emergency phone numbers as well as an emergency helicopter evacuation plan with coordinates of landing sites. As part of this planning process, we meet with local CAL FIRE Battalion Chiefs and engineers to familiarize CAL FIRE personnel with all primary road access to the properties.

5.6.2 Fire Protection and Prevention Measures

- Annual Fire Plan addressing fire precautions on all operations for the season
- Annual meeting with local firefighting agencies to review fire plan.
- Cooperative air patrol for operations in Mendocino and Sonoma Counties.
- Pre-operational fire inspections for all contract activities.
- Require fire trailers at all active landings.
- Remote weather stations and fire weather monitoring.
- Discretionary operating restrictions based on Forest Manager judgement.
- Property wide analysis of relative fire risk identifying highest fire risk areas.
- Conduct fuels reduction activities in strategic locations.
- Require contractor to maintain fire tool as required by FPR and PRC.
- Monitor lightning activity and conduct on the ground inspections of all ground strikes on or near company property.

5.6.3 Fire Risk Analysis

In 2019, MRC and HRC began developing a fire risk analysis to better understand the risk of ignition and rate of spread on the companies' timberlands. We assessed topography, fuels, weather conditions, public roads, and transmission lines, as well as adjacent neighbors, to better understand these risks. This resulted in a modelled value that facilitated mapping areas of higher risk of accelerated rate of spread and ignition sources for potential fires. We utilize this mapping effort today to identify potential sites for shaded fuel breaks and other fuel reduction projects.

5.6.4 Tanoak Treatment and Fire Danger

Where hardwoods have been treated with herbicides to restore conifer dominance, fire hazard is increased temporarily. This transitional state of increased fire danger is mitigated by the limited extent

of treatment areas within manageable harvest units and across the landscape, and by proximity to road networks and other management activity, which facilitates rapid response.

Field research has been conducted to help understand the relationship between tanoak mortality and fire in Douglas-fire-tanoak forests. A study investigating fuel loading related to sudden oak death mortality sampled herbicide-treated sites in addition to diseased sites. Surface fuel accumulation observations were used in models that predicted flame lengths and fire line intensities could increase significantly and challenge effective response during the early-to-mid-phase (2-8 years) after treatment. The researchers note that in treated stands, compared to diseased stands, decomposition reduces the "single-pulse-driven" fuels over time, in contrast to diseased stands which contribute fuels over broader temporal and spatial scales. [4] Another study investigated fuel loading and fuel depth in herbicide-treated stands over time by sampling areas treated one, five, 11 and 16 years prior to the study. Tanoak foliage remained for at least a year. After five years, many treated trees had fallen and become fine and course woody debris. After 11 years, most down wood was rotten, and after 16 years fuel loading was approximately at pre-treatment levels. [5]

[4] Krieger, Raven & Wall, Brian & Kidd, Cody & Berrill, John-Pascal. 2020. Chronosequence of Fuel Loading and Fuel Depth Following Forest Rehabilitation Frill Treatment of Tanoak to Release Douglas-fir: a Case Study from Northern California. Forests. 11. 691.

[5] Valachovic, Yana & Lee, Christopher & Scanlon, Hugh & Varner, J. & Glebocki, Radoslaw & Graham, Brad & Rizzo, David. 2011. Sudden oak death-caused changes to surface fuel loading and potential fire behavior in Douglas-fir-tanoak forests. Forest Ecology and Management. 261. 1973-1986.

6 FOREST CONSERVATION

Our silvicultural practices promote habitat and forest complexity, adding to the ecological values of the landscape and ultimately enhancing biodiversity. Additionally, we have identified key features and areas on the property for protection or special management to further ensure maintenance and enhancement of wildlife and fisheries habitat quality. These include old growth trees and stands, representative areas of regional vegetation, high-conservation value forests, and sensitive species habitat.

6.1 OLD GROWTH

We protect all trees meeting our old growth definition, either as individual trees or as stands of trees. We have developed guidelines for our staff to better manage old growth in our forestlands. We welcome stakeholder input in assessing and identifying old growth across the property. The process we use to identify and protect these stands is described here.

6.1.1 Old Growth Tree Policy

Our lands contain numerous individual residual old growth trees (fewer residual old growth trees are known to occur on MRC property). Foresters ensure retention of any residual old growth trees found during timber harvesting plan field work. These trees are identified based on the policy below that recognizes their age, size, function, and characteristics specific to the species.

We will preserve individual old growth trees, both conifers and hardwoods, which have significant habitat values and provide unique biological function within the forest. These old growth trees are remnant trees from the primary forest, established prior to the year 1800 which will be difficult, if not impossible to replace.

Old Growth definition:

- Any redwood tree, 48” DBH and larger, established prior to the year 1800.
- Any Douglas-fir tree, 36” DBH and larger, established prior to the year 1800.
- Any tree established prior to the year 1800 (conifer or hardwood), regardless of diameter, with a preponderance of species-specific old growth characteristics (see below).
- Any tree (conifer or hardwood) established prior to the year 1800 which cannot be replaced in size and function within 80-130 years, regardless of diameter or presence of old growth characteristics (see below).

We will retain those trees surrounding old growth trees that have intermingling limbs as screen trees.

We anticipate rare instances where the cutting of an old growth tree may be required for road construction, skyline corridors, or workplace safety. Prior to this occurring, all other feasible alternatives will be considered. Trees cut under these circumstances will be left in the forest to provide large wood to the forest floor as important habitat and soil replenishment. If old growth trees are mistakenly cut due to misjudgment of age they will also be left in the woods. To date, we have not encountered any old growth trees requiring removal.

Species-specific Old Growth Tree Characteristics

Redwood Old Growth Characteristics

- Deeply fissured bark, fire resistant
- Flattened or irregular crowns, highly complex structure (multiple sprouting, replicated growth patterns, dead tops)
- Highly reiterated crowns (multiple sprouting, replicated growth patterns)
- Large limbs, more than 6 inches in diameter
- Crown debris accumulation
- Platforms
- Cavities, partial snag formation
- High presence of complex lichens and moss
- Basal burn cavities

Douglas-fir Old Growth Characteristics

- Bark deeply fissured, thick and fire resistant
- High presence of lichens and moss, where crown soils present, ferns
- Large lateral limbs more than 8-10 inches in diameter
- Flattened, irregular crowns with lower limbs with signs of decay and crown thinning
- Conks
- Partial sagging in tops
- Broken out tops
- Crown debris accumulation

Hardwood Old Growth Characteristics
(Tanoak, Live Oak, Oregon White Oak, Madrone, Laurel, Chinquapin, etc.)

- Flattened or irregular crowns, highly complex structure
- Multiple branching crowns with few large well-developed main limbs
- Large limbs, more than 4-12 inches in diameter
- Crown debris accumulation
- Platforms
- Cavities, partial snag formation
- Crown die-back
- Basal burn cavities

6.1.2 Old Growth Forest Stand Policy

In addition to individual old growth trees, old growth forest stands are protected by our company policies. The Forest Stewardship Council defines (FSC-US Forest Management Standard v 1.0, 2010) old growth as:

> *(1) the oldest seral stage in which a plant community is capable of existing on a site, given the frequency of natural disturbance events, or (2) a very old example of a stand dominated by long-lived early- or mid-seral species. The onset of old growth varies by forest community and region. Depending on the frequency and intensity of disturbances, and site conditions, old growth forest will have different structures, species compositions, and age distributions, and functional capacities than younger forests.*

There are two types of old growth forest in the FSC standard:

> ***Type 1 Old growth:*** *Three acres or more that have never been logged and that display old-growth characteristics.*
>
> ***Type 2 Old growth:*** *Twenty acres or more that have been logged, but which retain significant old growth structure and functions.*

Type 1 stands are permanently protected from road construction and timber harvest operations. Management activity within Type 1 stands may be considered if it excludes timber harvest or road construction and maintains or enhances the ecological values of the stand (removing exotic species, controlled burning, etc.).

Type 2 stands allow harvest operations that enhance old growth characteristics and retain existing old growth trees. Harvest practices that reduce fuel loads are tools that can enhance old growth characteristics and at the same time lower the threat from destructive wildfire.

Old Growth Forest Stand Indicators[6,7]

- Contains trees meeting old growth tree requirements or otherwise exhibits old growth characteristics
- Multi-layered, multi-species canopy
- Multiple age cohorts
- Exhibits signs of decadence/final forest succession stage (broken tops, disease, conk)
- Stand contains wide range of tree sizes and spacing
- Moderate to high total canopy closure (except in true oak woodlands) provided by large overstory trees
- Presence of large snags (>30" DBH and > 20' in height)
- Downed wood including from old growth tree size classes in various decay stages

Old Growth Stands on the Properties

We have completed assessments of un-harvested (FSC Type I) and previously harvested old growth (FSC Type II) forest stands across the property utilizing stand inventory, aerial photography, and LiDAR. This categorization informs the forestry staff which areas are candidates for field investigation.

All known old growth stands are categorized as or contained within High Conservation Value Forests. Old growth stand acreages are as follows:

	MRC	**HRC**	**Total**
Type I Old Growth HCVF	86 acres	1,618 acres	1,704 acres
Type II Old Growth HCVF	366 acres	1,724 acres	2,117 acres

[6]Russell and Michels. 2010. Stand Development on a 127-yr Chronosequence of Naturally Regenerating *Sequoia sempervirens* (Taxodiaceae) Forests. Madroño 57(4):229-241. AND USFS Region 6 Interim Old Growth Definition. June 1993.124 pp. Located at: http://www.blm.gov/or/plans/surveyandmanage/files/16- region6_old_growth_def.pdf

[7] Old-Growth Definition Task Group. 1986. Interim Definitions for Old-Growth Douglas-Fir and Mixed-Conifer Forests in the Pacific Northwest and California. USDA Forest Service Res. Note PNW-447.

6.2 TERRESTRIAL HABITAT AND WILDLIFE

The approach to protecting wildlife species on our forestlands is multi-tiered. Species-specific protections are provided for threatened, endangered, and sensitive species populations (e.g., breeding season protection buffers for Northern Spotted Owls). Key habitat elements (e.g., snags and old growth) are retained and recruited. Finally, the diverse natural communities that occur on the landscape are maintained (oak woodlands, redwood forest, etc.) and special management prescriptions are in place for protecting sensitive natural communities (via the High Conservation Value and Representative Sample Area designations).

6.2.1 Threatened, Endangered and Sensitive Species

Our forestlands are home to diverse species of terrestrial wildlife, including threatened, endangered, and sensitive species. We maintain a list of threatened, endangered, and sensitive species known to occur on our forestlands (available upon request).

We focus our most intensive conservation efforts on those threatened, endangered, or sensitive species with the greatest sensitivity to our operations. For instance, most of our wildlife survey work is focused on locating and determining nesting status of NSO on the forestlands. This provides us with a year-to-year barometer of owl populations and allows us to tailor protection for each individual NSO territory.

6.2.2 Forest Structure

Ecological functioning in our forests is promoted through uneven-aged management and through retention of structural elements important to forest biota. These elements include snags, live trees with complex structures, large woody debris (LWD) on the forest floor, and hardwood species at densities appropriate to the site. We provide these habitat elements by implementing CFPR requirements; HRC additionally follows HCP 6.11 (includes High Value Wildlife Trees).

The following practices are used to retain and recruit elements that promote ecologically important forest structure:

- Snags are retained according to the retention guidelines in the CFPRs, and the HRC HCP. Snags provide habitat for various wildlife species. For example, woodpeckers feed on insect larvae that feed on the decaying wood and small owls nest in cavities excavated by woodpeckers.
- Trees with a preponderance of structure for wildlife, including broken tops, platforms, basal cavities, and other deformities may provide nesting and sheltering structure for wildlife and are retained following retention guidelines in the CFPRs and the HRC HCP.
- LWD (downed logs or fallen trees greater than 16 inches in diameter at the large end and longer than 10 feet) are recruited and retained on the forest floor where possible. These downed logs provide a moist microclimate and shelter for invertebrates, amphibians and other organisms and contribute nutrients to the forest floor which in turn support organisms at subsequent trophic levels.
- Hardwood trees are managed in a manner that recognizes the ecological role of hardwood species in a properly functioning conifer forest:
    - Natural hardwood-dominated stands are not a target for conifer management.
    - All true oaks (*Quercus* spp.) greater than 18 inches DBH will be retained (except for incidental removal for safety, road right-of-way or yarding corridors.

- Hardwood retention will be 10% of the total post-harvest basal area, provided hardwood comprised at least 10% prior to harvest.
- Hardwood trees that enhance wildlife habitat will be retained according to the retention standards in the HRC HCP and our *Vegetation Management Policy*.

6.2.3 Connectivity

Connectivity between habitat areas (sometimes referred to as "wildlife corridors") is provided across the landscape through uneven-aged management, the implementation of CFPRs, species protection measures, and other site-specific resource protection. For example, the Marbled Murrelet Conservation Areas (MMCAs), Northern Spotted Owl Habitat Retention Areas (HRAs)/core areas, Riparian Management Zones (RMZs)/Watercourse and Lake Protection Zones (WLPZ), and protected unstable hillslopes provide extensive connectivity on our forest lands. Our policy of no traditional clearcutting and using selection as the preferred silviculture also will provide connectivity by providing continuous canopy across the landscape. Additionally, large timberland ownerships connect other forests, including privately managed forestlands, and public lands such as state and national parks and forests.

6.3 AQUATIC HABITAT AND WILDLIFE

Our forest lands support sensitive species of anadromous fish, including Chinook salmon (*Oncorhynchus tshawytscha)*, coho salmon (*Oncorhynchus kisutch*), steelhead trout (*Oncorhynchus mykiss irideus*) and coastal cutthroat trout (*Oncorhynchus clarkii clarkii*), which rely on coastal watersheds for spawning and rearing habitat. These species have been the focus of survey and conservation efforts throughout several watersheds on the properties. Survey efforts assessed baseline population and distribution data using sampling techniques including electrofishing and snorkeling, outmigrant trapping, and winter carcass (escapement) surveys. Surveys also assessed the habitat elements that have beneficial impacts to these and other aquatic species, including stream temperatures, suspended sediment, large woody debris structures, and barriers to migration.

Aquatic habitat elements are maintained and improved over time through implementation of the CFPRs, including the Anadromous Salmonid Protection (ASP) rules, and site-specific measures required under the HRC HCP. These rules require extensive measures to protect aquatic habitat, primarily through controlling sediment sources and establishing appropriately sized buffer zones around watercourses. Additionally, we have performed watershed analyses throughout the properties to better understand existing conditions and areas requiring improvement. Habitat improvement is accelerated through restoration projects, often in partnership with outside organizations.

6.3.1 Sediment Reduction

As roads are indispensable in facilitating our forest management activities, we direct significant resources towards road improvement each year with the objective of reducing sediment delivery to watercourses.

Sediment reduction is an integral part of the preparation of each THP and is also specifically targeted in restoration projects outside harvest areas (generally cooperative work with conservation organizations and government agencies). We prioritize road projects based on the volume of sediment that can potentially be controlled and the risks of imminent failure to the road or drainage structures.

The Companies own and manage over 4,500 miles of forest roads, which have been inventoried, mapped, and assessed for associated sediment sources. Development, implementation, and monitoring of site-specific road improvement projects involving road stabilization, removal, winterization, and other prescriptions to address sediment sources is ongoing. The following list summarizes measures taken to improve and monitor sediment sources.

- Construction and reconstruction of roads will be based on CFPR and Regional Water Quality Control Board requirements, guidelines in *Handbook for Forest and Ranch Roads* (Weaver, Weppner, and Hagans 2014), and the experience of the RPF.
- Construction and reconstruction will also meet the standards developed in watershed analysis work designed to control sediment delivery, protect stream bank stability, and provide passage for fish in all life stages in Class I streams.
- Rocked fords, vented fords, rolling dips, and out-sloping will be used where possible and watercourse crossings will be sized to pass 100-year flood requirements.
- The condition of culverts, bridges, and other erosion control structures will be monitored (per Erosion Control Plans and HRC's Annual Road Inspection program).
- Use of non-winterized roads is restricted during the rainy season when the road substrate is saturated.
- Bare mineral soil is treated (mulched) when in proximity to a watercourse.
- Roads may be decommissioned when they have a high potential for sediment input.

Sediment savings, or the volume of sediment (in cubic yards) prevented from entering watercourses as a result of road restoration work is estimated and posted yearly on our website.

6.3.2 Watercourse Protection Zones

A key element of protecting aquatic habitat is limiting management activities near watercourses. Anadromous Salmon Protection (ASP) rules are followed for Watercourse and Lake Protection Zones (WLPZ) on non-HCP-covered lands. The HCP, informed by watershed analysis, provides area-specific prescriptions for harvest within areas defined as Riparian Management Zones (RMZ).

These protection zones are established to achieve multiple benefits to aquatic habitats. Retention of canopy provides cover and maintains low water temperatures required for aquatic species. Retention of riparian trees promotes recruitment of LWD, which influences the scour of streambeds, creating pools and gravels favorable for rearing, overwintering, and spawning habitat for salmonids. LWD also acts to store and slowly release stream sediment as it makes its way through the stream network.

Watercourse Classifications

Class I	Fish always or seasonally present	Class I watercourses receive the largest buffer zones and highest canopy retention levels; road construction and access by logging equipment is largely avoided.
Class II	Provide habitat for non-fish aquatic species	Class II Watercourses (divided into Standard and Large Class II and Class II under the ASP rules) receive intermediately sized

		buffer zones and canopy retention levels; road construction and access by logging equipment is largely avoided.
Class III	Seasonal flow, no aquatic species present	Class III watercourses receive canopy retention within a slope-dependent buffer zone; road construction and access by logging equipment is restricted.

6.3.3 Watershed Analysis

Watershed Analysis, which is stipulated by the HRC HCP and was also conducted at MRC, is a management tool that assesses individual watershed analysis units (large-scale stream basins, 10,000 to 50,000 acres in size). The analysis evaluates each watershed's characteristics and identifies the risks to fisheries and wildlife based on these evaluations and results in watershed-specific management prescriptions. While HRCs watershed analyses require 10-year revisits and reviews under the HCP, MRC's watershed analyses were completed in 2012 and are static documents.

Watersheds are fundamental units of ecosystems that can be used to evaluate cumulative impacts on fish and other aquatic resources. The purpose of developing the intensive watershed analysis program is to provide baseline data for monitoring stream conditions. This provides forest science and forestry staff guidance to determine the mitigations needed for any harvest plan and prioritize road repair and stream restorations. By understanding restoration priorities and the locations of high erosion risk roads and stream crossings, foresters can combine the restoration work and harvest work while equipment is present in a watershed area. Watershed analysis also enables us to establish more sophisticated improvement targets and to monitor progress.

Watershed analysis includes assessments of:

- Mass wasting inventory and map units
- Road erosion and erosion risk
- Stream channel condition
- Riparian function and condition
- Fish habitat condition
- Potential salmonid distribution and habitat
- Potential amphibian and reptile distribution and habitat

Watershed Analysis reports are available in the Reports section of our website.

6.3.4 Aquatic Habitat Restoration

Restoration projects on the properties are a mix of company and cooperatively sponsored activities. Local conservation groups and government agencies often assist in funding and implementation of stream restoration work. The focus of these projects has been: removing fish passage barriers (mostly complete), reducing sediment addition to the stream, adding structure to the streams (large woody debris and boulders), improving stream-side vegetation, and the creation of off-channel pool habitats that salmonids use as refugia during large storm events.

6.4 HABITAT CONSERVATION PLAN

Prior to acquisition, HRC lands were covered by a multi-species HCP (March 1, 1999), which is considered part of the Management Plan. The HCP is the cornerstone for HRC's landscape-level considerations and analyses because of the extensive inputs from State and Federal Agencies and public stakeholders and scientists that took place during its development. It forms the basis of our surveys, monitoring, adaptive management, and environmental protections for fish, wildlife, and rare plants. It describes how we identify, inventory, and protect non-economic natural resources, and overlaps to some extent with the resource protections achieved by protecting High Conservation Value Forests, Representative Sample Areas, and Sites of Significance. Most of these special management areas are shown in maps on our website.

HRC is committed to continued implementation of the HCP, and to seek ways to improve it. The HCP has extensive provisions for monitoring forest dynamics, providing environmental safeguards based on assessments and monitoring, and the use of adaptive management to continually improve our practices.

Section 6 of the HCP contains the Operating Conservation Programs for 17 species of fish, amphibians, reptiles, birds, and mammals (the "covered species") and includes conservation measures for sensitive plants. These programs provide for the identification and protection of rare, threatened, and endangered species.

Copies of the HCP are available upon request.

6.5 HIGH CONSERVATION VALUE FORESTS AND REPRESENTATIVE SAMPLE AREAS

High Conservation Value Forests (HCVFs) and Representative Sample Areas (RSAs) are areas designated for protection or special management. The following excerpts from the *FSC-US Forest Management Standard* (July 2010) describe each designation:

HCVF Definition

> *High Conservation Value Forests are managed to protect and maintain their identified high conservation value attributes. In some cases, active management is consistent with these attributes, and in other cases (e.g., most old growth forests), active management is specifically precluded.*
>
> *FSC introduced the concept of High Conservation Value Forests (HCVFs) in 1999 to ensure identification and proper management of forest areas with exceptional conservation value. FSC defines High Conservation Value Forests as those that possess one or more of the following High Conservation Values (HCVs):*
>
> > *1. HCV forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g., endemism, endangered species, refugia), including RTE species and their habitats;*
> >
> > *2. HCV forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;*

3. HCV forest areas that are in or contain rare, threatened or endangered ecosystems;

4. HCV forest areas that provide basic services of nature in critical situations (e.g., watershed protection, erosion control);

5. HCV forest areas fundamental to meeting basic needs of local communities (e.g., subsistence, health); or,

6. HCV forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

RSA Definition

Representative Sample Areas are ecologically viable representative samples designated to serve one or more of three purposes:

1. To establish and/or maintain an ecological reference condition; or

2. To create or maintain an under-represented ecological condition (i.e., includes samples of successional phases, forest types, ecosystems, and/or ecological communities); or

3. To serve as a set of protected areas or refugia for species, communities and community types not captured in other Criteria of this Standard (e.g., to prevent common ecosystems or components from becoming rare).

One of the primary provisions is to ensure that examples of ecosystem types that are not protected elsewhere in this Standard are protected in their natural state within the landscape.

6.5.1 Assessment Process

Designations of HCVFs and RSAs on each ownership resulted from consultations with multiple experts, resources, and stakeholders. HCVF and RSA development follows FSC Criterion 6.4 (Representative Samples) and FSC Principle 9 (High Conservation Value Forests). HCVF assessment uses the *FSC-US HCVF Assessment Framework* (July 2010) available from the FSC-US web site.

Reserve analyses completed early in MRC's tenure contributed to its initial HCVF/RSA assessments, and HRC was guided by consultations related to the development and implementation of its HCP, which required extensive consultation with public trust agencies, scientists, and the public. In 2020, HRC and MRC used the HCVF framework to re-evaluate and assess current and potential HCVF identification on both forestlands in a consistent process for both properties.

We track HCVFs and RSAs in our GIS. All HCVFs and RSAs are delineated as a feature to allow for comparison of future trends, as well as to ensure their protection when forest management projects are proposed.

It is important to note that due to succession or natural disturbance processes, some habitats will trend into different types over the course of our lifetimes; for instance, a small Type 2 old growth stand may

be destroyed by a pest outbreak the result of which may be a regenerating young stand. In this case, staff will decide whether to retain this area as an HCVF or RSA.

The process of HCVF/RSA assessment is ongoing, and we encourage any individual who wishes to contribute to contact us.

6.5.2 High Conservation Value Forests

Our 2020 HCVF assessment designated the following areas as HCVF. Descriptions, acreages, management prescriptions monitoring methods for these HCVFs are published in the document, *High Conservation Value Forest Assessment, Mendocino-Humboldt Redwood Companies* (2020).

HCVF Name
Class 1 and 2 stream zones
Northern spotted owl protected areas
Pygmy forest
Oak woodland
Marbled murrelet habitat
Point Arena mountain beaver habitat
Long Ridge (Douglas-fir forest)
Type 1 and 2 old growth
Saltwater marsh
Community water source

6.5.3 Representative Sample Areas

Representative samples of the following vegetation types and habitats have been identified as RSAs on the timberlands. Descriptions, acreages, and management prescriptions for these areas are published in the document, *RSA Assessment Process and Outcome* (2023).

RSA Type
Bishop pine forest
California black oak forest and woodland
Chaparral
Cliff and outcrop
Coastal scrub
Marsh
Montain riparian
Grassland
Oregon white oak woodland

6.6 UNIQUE ELEMENTS AND SITES OF SIGNIFICANCE

In addition to HCVFs, RSAs and sensitive species habitat, we recognize there are additional sites on the landscape with special attributes that deserve protection. These include but are not limited to Native American archaeological sites, pioneer homestead sites, other historical structures, a land survey initial point, chert sites, fossil beds and raptor nests. These sites are mapped in our GIS, which is available to foresters and managers so they can plan operations with protections and/or appropriate mitigations for these sites.

6.7 INVASIVE SPECIES MANAGEMENT AND MONITORING

We prioritize management of invasive species that have the highest potential for significant impacts to sensitive species habitat, HCVFs, and RSAs. The following species or groups of organisms have been identified as the greatest threats to ecosystem function in these areas, and the highest priority for monitoring and potential management actions aimed at reducing growth or spread. Monitoring high priority invasive species is facilitated by recording observations in a GIS dataset.

6.7.1 Invasive Plants and Animals

Plant species identified as the highest priorities for monitoring and potential management are brooms (*Genista monspessulana* and *Cytisus scoparius*), pampas grasses (*Cortaderia jubata* and *C. selloana*) and gorse (*Ulex europaeus*). The primary method of spread for these and other invasive plant species on our lands is through the road networks; thus, a high priority is placed on treating invasive species occurrences on or near roads.

Except for gorse, the abovementioned species are already well-established across the properties, making eradication an impractical goal. Instead, control of localized occurrences will be attempted where their populations impact sensitive species habitat.

Invasive animal species identified as the highest priorities for monitoring and potential management are feral pig (*Sus scrofa*), wild turkey (*Meleagris gallopavo*), bullfrog (*Lithobates catesbeianus*), pike minnow (*Ptychocheilus oregonensis*), and barred owl (*Strix varia*).

Legal feral pig and turkey hunting on the properties provides some measure of control for those species. Bullfrog may be targeted for lethal control where they threaten California and Northern red-legged frog (*Rana draytonii, Rana aurora*). Pike minnow, which is known to occur in some streams on HRC land, is reported to CDFW and NOAA fisheries when it is observed on the property.

Barred owl management is limited to monitoring. Barred owls have been detected on both properties during surveys for NSO, whose populations are negatively affected by the barred owl's range expansion. Surveys for NSO also solicit responses from barred owls and are used to determine if barred owl presence may impact NSO territories in the survey area.

6.7.2 Pathogen and Pest Control

While forest insect pests and diseases are generally uncommon in redwood and Douglas-fir forests, foresters and contractors who conduct field operations are trained in pest and disease recognition and are aware of the need to report any signs of pests or diseases on our forest lands.

Forest pest infestation recognition and reporting

- Forestry personnel are trained in the identification of forest conditions that would indicate a present or potential loss in forest productivity, such as excessive windthrow and dead or dying trees.
- Causes of these conditions could range from animal damage, weather, forest diseases or insect pests.
- If these conditions are observed, a report shall be made to the Forest Manager identifying the location, size of area, and impacts observed.
- The Forest Manager will review for significance and possible follow-up action.

Forest pest control strategies

- Consultation with the University of California Agricultural Extension Forestry Advisor on preferred control strategies for pest infestations discovered on live trees.
- Salvage logging of dead and dying trees.

Sudden Oak Death

Sudden oak death, or SOD, is caused by the pathogen (*Phytophthora ramorum*). Since the mid-1990s, *P. ramorum* has caused substantial mortality in tanoak trees and several true oak tree species (coast live oak, California black oak, Shreve oak, and canyon live oak). It also causes twig and foliar diseases in numerous other plant species, including California bay laurel, Douglas-fir, and coast redwood.

SOD is known to occur on both properties. We are open to partnerships that will facilitate control efforts.

6.8 MANAGING NON-TIMBER OPERATIONS

Environmental impacts related to non-timber operation on the property are mitigated by internal policies and stipulated in leases with third parties where applicable.

Livestock Grazing

HRC has several livestock grazing leases with local ranchers. Livestock grazing has been part of the regional landscape for many years and can be compatible with forest management. For example, grazing provides the benefit of lowering the amount of dry standing grass in the summer, which helps to decrease the fire hazard to surrounding forests and can also keep brush and tree species from invading grasslands.

The purpose of the grazing lease policy is to minimize resource damage. Grazing leases address environmental concerns and stipulate conditions such as:

- The number of animals allowed per acre is determined through a process that identifies the carrying capacity of the area under lease (the process was developed in 2010 in consultation with the U.S. Department of Agriculture, Natural Resource Conservation Service).
- Animals will be rotated to different pastures to prevent overgrazing.
- Animals will be removed during the winter unless the pasture area is cross fenced.
- If supplemental feed is brought in by the lessee, it will be fed in a confined area that can support dense cattle concentrations (e.g., ridges with firm rocky soil).
- If supplemental feed is brought in by the lessee, HRC prefers that it be certified weed- free; if other feeds are used and weeds introduced by the feeds become established, the lessee will provide non-herbicide weed control as needed.
- Fencing and gates will be maintained by the lessee; gates will be installed to HRC specifications.
- Lessee will develop and install water troughs away from creeks and springs.
- Salt licks will be placed away from creeks and springs.
- Creeks and springs will be protected from cattle access by fencing installed by the lessee, as necessary.

In addition, in cooperation with local agencies (e.g., Natural Resource Conservation Service, NCRS) we employ grazing Best Management Practices (BMPs) to ensure that any livestock grazing on our lands is consistent with our management plan.

Communication Sites
Potential impacts from developing communications sites are relative to site development, and road construction and maintenance. Areas cleared and developed for communication sites are often located on ridge-top prairies, and range in size from 0.1 acre to approximately five acres. In total, less than 10 acres have been developed for these sites on HRC property, and less than three acres on MRC property; thus, the impact to loss of forest lands is minimal. The roads that are used to access the communication sites are part of the existing road network and only small spurs leading to the communication sites were added.

Hunting
MRC has leases with hunting clubs on certain areas of the property. Their use of the property for the purposes of hunting is predicated on their commitment to adhering to all applicable hunting laws as well as restrictions on road use during wet weather.

Hunting in unleased areas at both companies is made available as a courtesy to employees and retirees. Hunting is conducted only during the season scheduled by the CDFW, by licensed hunters with written permission to access the property for hunting. Hunting entry permits are scheduled for weekends only, and the number of hunters allowed into each area of the property is limited. These restrictions provide for hunter safety as well as prevent over-hunting in any specific location. Consistency with the Management Plan is ensured by controlling access by hunters to only select areas of the property, requiring compliance with all appropriate laws and regulations, and by ensuring hunters comply with specific requirements such as wet-weather road use restrictions.

In addition to the above hunting use, both MRC and HRC participate in the California Department of Fish and Wildlife (CDFW) Private Lands Wildlife Habitat Enhancement and Management Area (PLM program). MRC manages the approximately 10,381-acre Ackerman-South Daugherty PLM for the improvement of blacktail deer habitat, primarily through restoration and maintenance of hardwood prairie habitat and improvement of water sources. Similarly, HRC manages the approximately 21,300-acre Rainbow Ridge PLM. These are five-year plans approved by the CDFW. In return for the habitat improvement work, MRC and HRC work with the CDFW to establish longer hunting seasons with specific numbers of take allowed.

Carbon Credit Programs
We participate in the California carbon market managed by the California Air Resources Board. Carbon projects generate carbon offsets annually and are verified by a third party and approved by the Air Resources Board as meeting all the requirements of Improved Forest Management offsets. It is our goal to continue to participate in this market and add new projects as appropriate across the landscape.

Rock Excavation
Rock and gravel extraction is conducted mainly for on-property use. Rock is processed on-site and used for road stormproofing and restoration, stream restoration, and other similar projects. Rock obtained from aggregate resource sites is generally developed close to where the resource will be used, which

minimizes the size of individual borrow pits. Rock extraction is carried out in compliance with other pertinent laws and regulations (e.g., Mine Safety Hazard Administration [MSHA], North Coast Unified Air Quality Management District [NCUAQMD], and Surface Mining and Reclamation Act [SMARA]).

In 2018 MRC was approved to extend mining operations for 30 years on its commercial Bald Hills Quarry, located on 39 acres, about 2.5 miles Northeast of Manchester, and 1.5 miles east of Highway 1. The quarry is approved to extract up to 100,000 cubic yards per year but not to exceed 1,500,000 cubic yards over the 30-year period. As part of the permitting process, MRC has a plan to reclaim 12.9 acres at the end of its life cycle.

In some years HRC extracts gravel from bars along the Eel and Van Duzen rivers for which HRC has vested rights. If HRC desires to sell rock from any source, it can only be from sites permitted through SMARA. Our currently permitted commercial sites require ongoing maintenance and reporting to various agencies. The result of these regulatory processes is that any rock extraction is consistent with the Management Plan.

7 ECONOMIC AND SOCIAL IMPACTS

Just as our management practices impact forest resources, our businesses impact the communities in which they operate. As employers and purchasers of local goods and services, we contribute to the local economy. As neighbors, we manage and share common resources, such as road networks, water sources, and sites of cultural importance.

7.1 ECONOMIC IMPACTS

Our local communities rely on their forests and natural landscapes for multiple economic benefits. Forestry, along with agriculture and fishing, represent a relatively high proportion of the workforce in Mendocino and Humboldt counties, compared to other California counties.[8] And the areas' natural beauty and public lands destinations bring tourism, which is another important industry in both areas. Our forest lands, managed sustainably with a long-term vision for business success, will make consistent, significant contributions to these local economies into the future.

7.1.1 Employment and Contracting

We are committed to providing employment, attractive pay and benefits, opportunities for professional development and advancement, and a safe work environment. Our full-time pay, family wage jobs and excellent benefits enhance the social fabric of the rural communities where we operate. Our high-quality medical insurance is important for maintaining robust medical care in very remote areas. Additionally, we help sustain a reliable supply of raw material to our sister company sawmills, which employ approximately 400 people, supporting their families and the local community.

A variety of backgrounds and expertise are represented among our workforce, including forestry, wildlife, botany, fisheries, geology, heavy equipment operation, GIS, and forest biometrics. We anticipate providing stable employment opportunities into the foreseeable future through sustainable harvest from our increasing inventory over time.

In addition to direct employment, we contract with Licensed Timber Operators, RPFs, vegetation management contractors, and other professionals involved in the timber harvesting process.

Employee Safety

Employees receive training necessary to conduct their work safely and efficiently. Staff conducting their duties on the forest lands must follow a daily sign-in/sign-out procedure or other contact system established by their supervisor. Field staff also receive and review the annual fire plan and carry fire tools in their vehicles. Employees who work with heavy equipment are trained in emergency procedures including hazardous spill reporting and cleanup and notification of qualified personnel who perform appropriate removal and remediation.

We have an active safety program with monthly all-hands meetings, "tailgate" safety meetings held weekly or as needed, and a behavior-based safety system featuring hazard/near miss reporting. Our Forest Operations Safety Committee meets every other month to discuss our performance relative to

[8] "Mendocino County, Ca: Data USA." *Data USA*, 2017, https://datausa.io/profile/geo/mendocino-county-ca#economy & "Humboldt County, Ca: Data USA." *Data USA,* 2017, https://datausa.io/profile/geo/humboldt-county-ca#economy

safety metrics including recordable incidents, lost time incidents, and near misses. There is a hazard reporting program that provides supervisors and employees with information to improve our safety awareness and work environment.

Contractor Training Policy
To ensure that company policies and forest stewardship objectives are carried out in all aspects of operations, we work closely with contractors at all stages. All logging and road construction contractors receive training on company policies relevant to their activities. Depending on their specific contract, training can include: chain of custody process, hazardous spill containment and cleanup procedures, fire response, safety and first aid, log quality, FSC Principles, THP implementation, or the HRC HCP. Information is clearly communicated to logging contractors, including abbreviated THP and color-coded maps when necessary.

7.1.2 Local Economic Contributions
We contribute to the local economy by purchasing products and services, with a total value averaging $26.9 million annually (over a 10-year period from 2010 to 2022). Total annual values of goods and services purchased are posted in the Facts and Figures section of our website.

7.1.3 Quality Timber Products
Reliable delivery of high-quality logs to our facilities is an important component of our long-term viability. Through quality control we maximize the delivery of logs that meet customer specifications. Reduction of damage to logs in the woods prevents loss in product recovery and years of valuable fiber growth. We provide feedback to logging contractors immediately about quality targets and the need for improvement. We have a log-length bucking program to facilitate removal of preferred log sizes from the woods. Felling contractors are provided with Log Specification tables which give specific log diameters and lengths for preferred species and sizes for delivery to the mills, and instructions on handling defects.

Our quality timber products attain added value through FSC® certification of our sustainable forest management practices.

7.1.4 Non-timber Forest Products and Income Sources
Non-timber forest products diversify land use benefits, contributing to the long-term viability of the businesses. See section 6.8 for more information.

7.2 SOCIAL IMPACTS

7.2.1 Community Input
We welcome community input to assist in monitoring our community impacts and identifying and solving problems. Maintaining and improving community relationships has been an important goal since each company's inception. To that end we are committed to responding to community concerns in a timely and thoughtful manner. We aim to address concerns to the greatest extent possible while meeting our stewardship and business objectives.

Our website is a valuable communication tool. We cover our forest practices and plans in depth on our website – we believe this is the best way to begin learning about our company and what we do. Our

website also provides our phone number, an e-mail contact form, and a physical address enabling visitors to provide feedback and ask questions regarding the information provided.

We believe that the best way to reach common ground on complex or controversial issues is to observe them in the forest first-hand. Our goal, and our policy, is to take interested parties to the forest to review any areas of concern and discuss plans for managing those areas.

Important Community Issues
Based on communications with community members, we have compiled the following list of issues of concern for our neighbors and other stakeholders:

• Cumulative impacts/forest ecosystem health	Herbicide use, clean water sources, wildlife and fisheries habitat, sediment in streams, climate change, grazing leases, old growth/late seral forest, over-harvesting, illegal dumping, and cannabis cultivation
• Community/economy	Employment, neighbor notification, public access, transparency/public input, non-profit donations, shared road use, emergency evacuation routes, fire hazard/protection, yield taxes, business viability
• Cultural values	Archeological, historical, and other unique sites; traditional and customary rights of use; view sheds

7.2.2 Community Contributions

The Companies, in association with Mendocino Forest Products created a community giving program to support local non-profit funding requests. Our Community Action Team (CAT) responds to requests for local community organization donations and sponsorships. These teams are made up of a representative committee of local employees that meet periodically to review local solicitations.

Total annual donations are reported in the facts and figures section of our website.

7.2.3 Adjacent Landowners

The most prevalent adjacent land use is timber production, which ranges from approximately 50% to 65% of the property boundary (lowest in Sonoma County). The remaining parcel types vary widely. Public land/open space (including regional, State and county land; State and Federal parks and reserves; Bureau of Land Management) are adjacent to the properties in all counties but are most prevalent in Humboldt County (12% of boundary). Range land, agriculture and residential land combined represent from 6% (in Mendocino County) to over 40% (in Sonoma County) of the property boundary. Other neighboring parcel uses include industrial, and miscellaneous private and public facilities.

We follow appropriate channels with regards to access through neighboring lands. The Companies hold deeded rights-of-way with neighbors in many areas where regular access is needed to conduct forest operations. Some neighbors have deeded rights-of-way across our land; some of these deeded rights-of-way are reciprocal and some are stand-alone. There are some publicly used roads for which neighbors have prescriptive rights-of-way across our land. In cases where we do not have deeded access, we notify the landowner and request permission.

We have a process to address significant disputes regarding third-party tenure and use. Should these occur, they are brought to the attention of the Forest Manager who will bring the issue to the attention of the Director, Forest Operations if agreement cannot be reached. The natures of these disputes are expected to be predominately disputed road use, unpermitted water use, and disputed property line.

7.2.4 Public Access

Entry permits or lease agreements are required to access the property to prevent road damage, protect watercourses and wildlife, and protect the company from liability. Interested parties will find contact information on our website. We participate in cooperative education and research on the ownerships, and are open to other activities, with written permission.

To control the occurrence of non-permitted access onto the forest lands, for public and employee safety and environmental protection, the following gate policy is implemented:

- When entering the property through a locked gate, employee/permittee must lock the gate behind them.
- Employees may leave the gate open *only* during periods of log hauling or rock hauling or other situations where there is consistent traffic entering or and exiting the property. In the case that the gate is left open, the lock shall be secured to the chain, gate, or gate post. At the end of the workday all gates shall be locked.
- Damaged, broken, or malfunctioning gates, locks, and chains shall be reported to the Forest Manager.

MRC provides two areas for public recreation: Rockport picnic grove (adjacent to Highway 1, approximately 27 miles north of Fort Bragg) and Navarro picnic grove (corner of Highway 128 and Masonite Road). When management occurs in these areas, they will be closed until the area is deemed safe for use again.

HRC has a fisheries exhibit in the town of Scotia. The exhibit displays fish species found in our waterways, including Chinook salmon and steelhead trout, in large tanks that mimic a natural forest stream with a total volume of roughly 30,000 gallons of water that is recycled through a chilled, closed system. The exhibit is typically open daily.

7.2.5 Domestic Water Sources

Permitted domestic water sources are often located on our land where it interfaces with residential areas. These water sources are addressed in THPs and protected with a protective buffer.

7.2.6 Cultural Resources

Native American Cultural Sites

To ensure cultural sites are protected during management operations, the CFPRs require that all THPs be surveyed by an individual trained in archaeological survey and reporting methods. CFPRs also require notification of local tribes prior to the submittal of THPs and when new or existing sites are located within the plan area. Site-specific protections for newly discovered and known sites are included in the THPs. For ground-disturbing projects not included in THPs or grant projects, forest managers determine if known sites exist around the project area and if additional surveys should be conducted.

The locations of archaeological sites are kept confidential.

As local Native American tribes are key members of the community with deep ties to the land, forest managers and their designees work with tribal Timber Harvest Plan Officials (THPOs) and tribal members to address their concerns. This may include attending tribal meetings, if requested.

Historical Sites
Historical sites also have intrinsic value, due to their irreplaceable nature. Our lands contain historic structures such as railroad trestles, shake making cabins, ranch houses, and mill sites. We protect these sites from degradation or destruction as part of our forest management. As required by the California Forest Practice Rules, archaeological surveys also include surveys for historical sites.

Aesthetic Values
We make management provisions for aesthetic values where appropriate. For example, special consideration is given to harvesting planned within 200 feet of any State, County, Federal, Regional, Municipal park, or State or Nationally designated Wild & Scenic River or Scenic Highway.

8 MONITORING AND ADAPTIVE MANAGEMENT

Monitoring and adaptive management are integral to sustainable forest management. Monitoring programs ensure our objectives are met and policies are followed, and through adaptive management, monitoring results are incorporated into policy and management decisions.

8.1.1 Implementation Monitoring

Implementation of the policies and objectives of our management plan is monitored through the timber harvest planning process, employee and contractor training, managerial oversight, and inventory analysis. For example, a key management objective for our forest lands – increasing conifer inventory through stand improvement – involves management processes that are monitored at every step. Application of appropriate silvicultural prescriptions and vegetation management practices is overseen by experienced forestry professionals acting in accordance with forest practice rules and our management objectives. The THP planning process is standardized using checklists that ensure sensitive resources are protected and company policies are followed. Finally, the forest inventory is reviewed annually to assess trajectory of timberlands growth and yield and how it relates to projections.

8.1.2 Environmental Impact Monitoring

Environmental impact monitoring addresses a key management objective – to maintain and restore wildlife and fisheries habitat. HCVFs are monitored periodically to ascertain if environmental changes have occurred since they were established. Threatened and endangered species' populations, habitat, and protection measures are monitored as well. Aquatic habitat conditions are monitored by tracking the estimated amount of sediment prevented from entering waterways through road improvements (which are also monitored using established protocols). Both companies have completed watershed analyses to establish baseline conditions in their watersheds. Monitoring of sensitive environmental resources is facilitated through the maintenance of extensive GIS datasets.

8.1.3 Social Impacts Monitoring

Social impacts are monitored by keeping records of community input and interactions. We track annual community giving, value of local goods and services purchased, total number of individuals employed, and employee safety statistics.

8.1.4 Tracking Certified Products

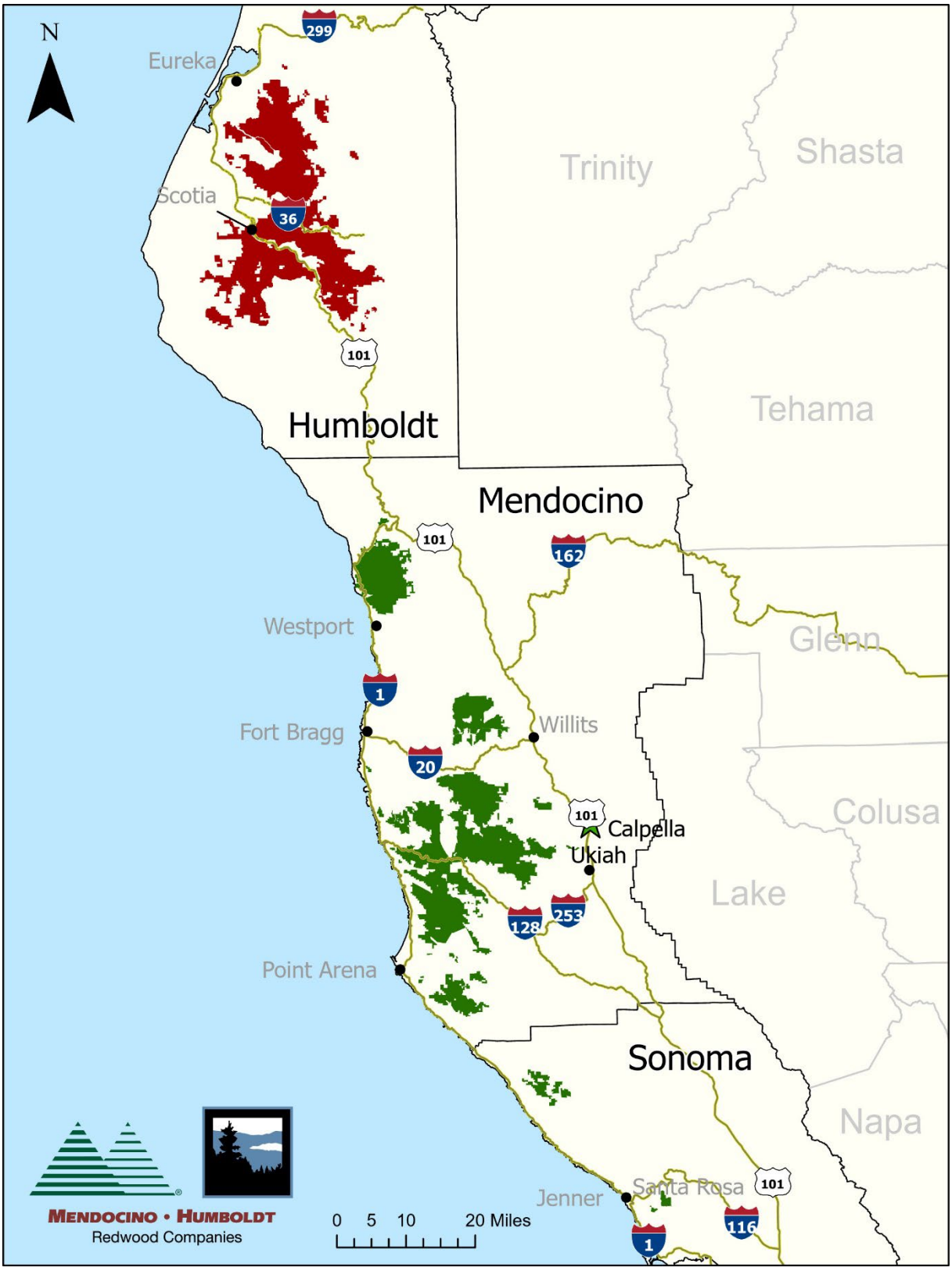
We have a strict policy to ensure the Chain of Custody for FSC® certified forest products remains intact from the forest to the mill gate, which applies to foresters, harvest contractors, and administrative staff. Each harvest plan has source codes assigned, which are applied to each log load leaving the harvest area, received at the mill gate, scaled, and received into mill inventory. Administrative staff use collected information that is tied to each trip ticket to determine how much log volume was delivered from each source code on the timberlands and provides reports as needed on volume harvest under FSC® standards.

8.1.5 Adaptive Management

We recognize that even with our best planning, the environment, and our understanding of it will change over time. Through adaptive management, we continually improve company practices and policies through informed decision-making which makes use of monitoring data and other new

information. Policies, procedures, and objectives are subject to change through adaptive management. Some management practices involve reassessment on predictable cycles. For example, this management plan will be fully re-evaluated every ten years. In the intervals between revisions, we ensure that we respond appropriately to unexpected events with strong internal communication. This internal communication provides notification to the appropriate parties of any new circumstances (including environmental and safety hazards) and enables us to document and learn from these changed circumstances.

APPENDIX: OVERVIEW MAPS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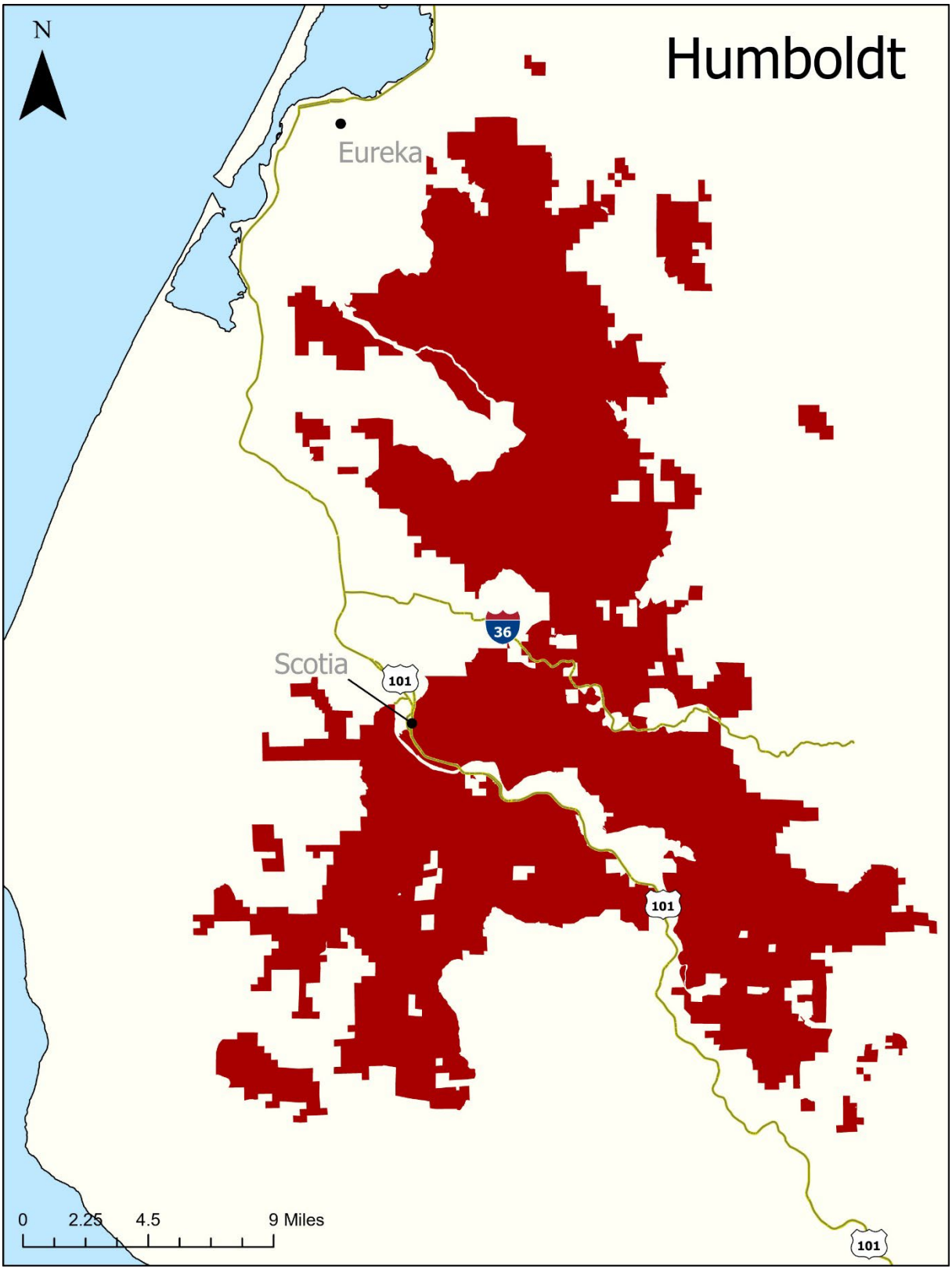
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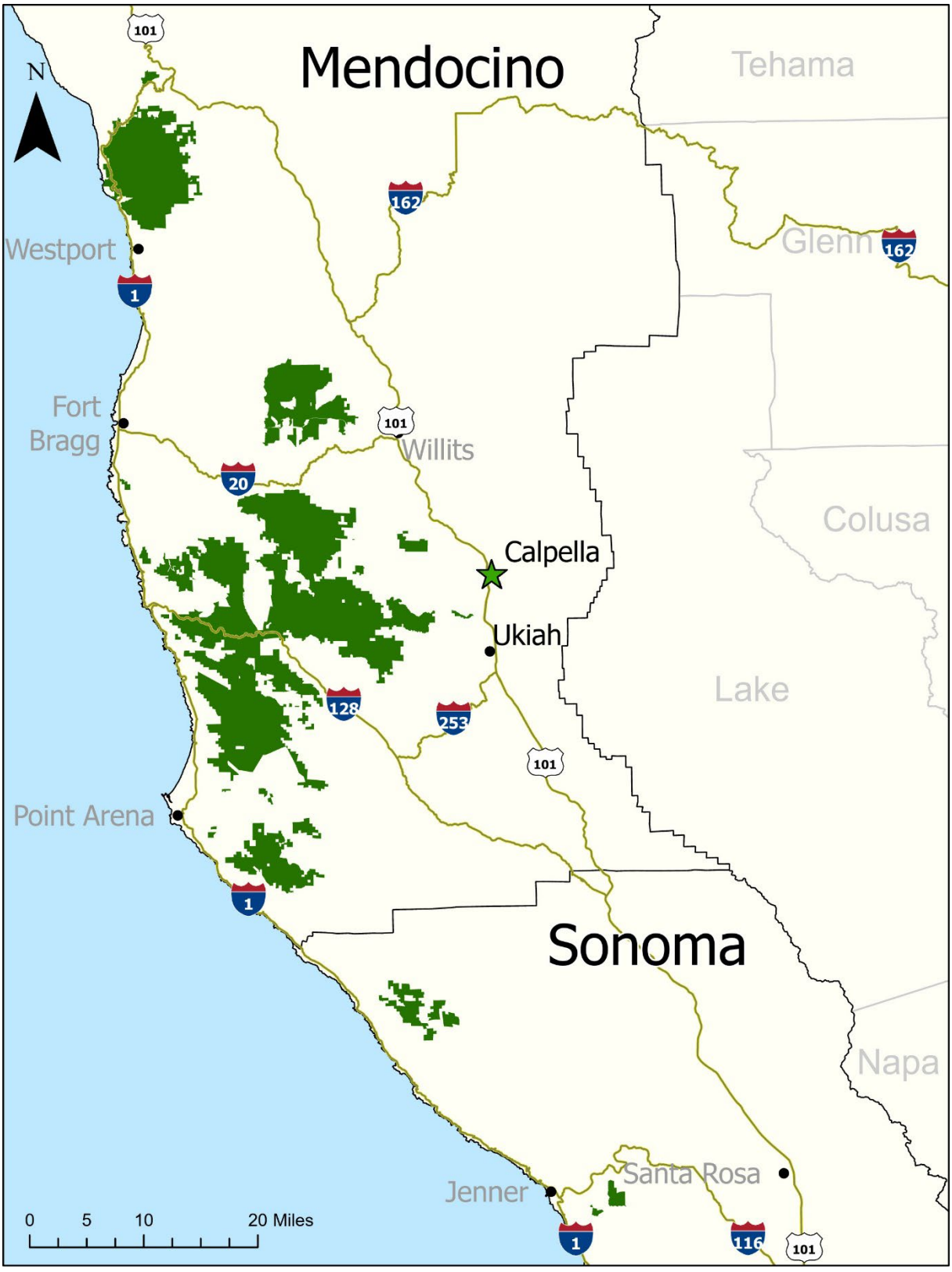
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