

THE
CONSERVATION FUND

**North Coast Forest Conservation Program Policy Digest
Original version August 2010; this version September 2018**

TABLE OF CONTENTS

North Coast Forest Conservation Program Policy Digest Overview.....	1
Forest Management Policies.....	4
HCVF RSA Program Memo.....	27
Herbicide Application and Hardwood Management Policy.....	43
Road Management Policies.....	48
Certified Product Chain-of-Custody Program.....	52
Commitment to Safety and Health.....	55
Social Benefit/Impact Assessment Memo.....	64

North Coast Forest Conservation Program Policy Digest Overview
The Conservation Fund's North Coast Forest Conservation Program
Primary authors: Jenny Griffin, Evan Smith
August 2010, updated September 2012, 2014, 2017

Introduction

The following summary of The Conservation Fund's North Coast California forest management policies was prepared to facilitate review and provide links for more information in a single source document.

Program Background

The Conservation Fund's California forest properties were acquired as part of the Fund's North Coast Forest Conservation Initiative, which is dedicated to the permanent protection and restoration of coastal forests in the Redwood Region of northern California. The strategic foundation for the Initiative is described in "Conservation Prospects for the North Coast"¹ prepared in 2005 by The Conservation Fund for the California Coastal Conservancy. This study noted the extraordinary biological diversity and economic productivity of the coastal forests of the Redwood Region and recommended that conservationists "move quickly to establish 'working landscape' conservation management on large, strategically located forest properties in Humboldt, Mendocino and Del Norte counties."

The Conservation Fund acquired the 23,785-acre Garcia River Forest in February, 2004. In October 2006, The Conservation Fund acquired an additional 16,100 acres in two tracts – the 11,707-acre Big River Forest and the 4,204-acre Salmon Creek Forest. In December 2011, The Fund acquired the 13,537 acre Gualala River Forest. The Fund acquired the 177 acre Hardell property, adjacent to Salmon Creek, in September of 2012. The Hardell property will be managed as part of the Salmon Creek tract. In 2013, the Fund acquired the 18,120 acre Buckeye Forest in Sonoma County. The Conservation Fund and its partners developed an Integrated Resource Management Plan (IRMP) for each acquisition² to guide the management and restoration plan for these properties. Partners include the State Coastal Conservancy, Wildlife Conservation Board, State Water Board, North Coast Regional Water Quality Control Board, David and Lucile Packard Foundation, Nature Conservancy, and National Fish and Wildlife Foundation and Sonoma County Agricultural Preservation and Open Space District. These properties represent a collective capital investment of approximately \$120 million.

By acquiring these properties, the Fund and its partners hope to demonstrate that these large tracts of intensively managed coastal forest can gradually be returned to sustainable timber production and ecological vitality through the use of innovative financing and patient management by a nonprofit organization in partnership with private and public agencies and community stakeholders.

Property-specific Background

The Conservation Fund owns five forests in California as part of its North Coast Forest Conservation Program: Salmon Creek, Big River, Garcia River Gualala River and Buckeye Forest. While there is one overall program, each property has some unique management requirements that are outlined in each individual IRMP. All reference documents are available at <http://www.conservationfund.org/our-conservation-strategy/focus-areas/forestry/north->

¹ Available at: http://www.conservationfund.org/north_coast_forests

² *ibid*

coast-conservation-initiative/north-coast-forest-reference-documents/ and at the Fund's North Coast Office.

There are a number of planning differences between the various forests (these are described in more detail in the Forest Management Policies):

1. Because of the different funding sources and loan agreements, each program has its own accounting records and revenue-sharing requirements. Some expenses such as staff time are shared between the accounts but are tracked and reported separately.
2. The Garcia River Watershed has an approved Total Maximum Daily Load (TMDL) Action Plan developed by the EPA and adopted by the North Coast Regional Water Quality Control Board. In compliance with the action plan TCF has developed an ownership-wide program to meet the TMDL requirements through implementation of an approved Site-Specific Management Plan and Erosion Control Plan. Water quality protection is an objective across all of the properties, but because of the TMDL status, the reporting, monitoring and specific policies for the Garcia River Forest are slightly different. [A very small portion of the Gualala Forest is also within the Garcia watershed and subject to the TMDL requirements—these will be addressed in site-specific project prescriptions.]
3. While a key objective on all properties is to increase the volume and quality of the timber inventory, the Annual Allowable Cut levels are different between the forests, primarily because of the different initial inventory conditions and partially because of the loan repayment obligations for BR/SC.
4. The Nature Conservancy holds perpetual conservation easements on the Garcia River and Gualala River Forests which, among other things, protects the land from future development. There is an established Ecological Reserve Network that comprises 35% of the Garcia River Forest where management is limited to techniques that advance the desired ecological goals, namely late-seral forest development and protection.
5. BR/SC also have permanent conservation restrictions, but in a slightly different form. Use of the BR/SC property is limited to conservation purposes (including forest management) and the State Coastal Conservancy and the Wildlife Conservation Board are responsible for ensuring the conservation objectives are met.
6. Sonoma County Agricultural Preservation and Open Space District holds a conservation easement on the Buckeye Forest. The Buckeye has a unique profit-sharing agreement with the State Coastal Conservancy.

Program Goals

The North Coast Forest Conservation Program shall be guided by the following objectives:

- Acquire forestland with high conservation values that is under threat of loss or degradation because of human development and protect those properties for continued forest management and restoration.
- Manage the forests sustainably [and profitably], increasing the economic productivity and ecological health, while providing meaningful local employment and recreation opportunities.
- Respect the local community by operating honestly, transparently and efficiently; soliciting and responding to feedback; hiring local services and purchasing local goods; and holding ourselves to the highest standards for professional, safe and courteous conduct.

- Work collaboratively with local businesses, civic institutions, and other organizations and landowners to increase the understanding, appreciation, and value of the region's forest systems.

Unified Management

All properties that are acquired as part of the North Coast Forest Conservation Program are to be managed consistent with the TCF Forest Management Policies, the property-specific management plan, and the North Coast Forest Conservation Program Goals. In addition, TCF is committed to the Principles and Criteria of the Forest Stewardship Council® (FSC®-C001535) and Sustainable Forestry Initiative® (SFI®) and to maintaining our annual independent certification under those systems. The Management Policies and Program Goals and their implementation will be reviewed every year as part of the Annual Program Review and updated as necessary; the management plans will be reviewed and updated on a ten-year cycle. This document and all management plans and policies are intended to be publicly available.

Policies

Existing stand alone policy documents (attached):

TCF Forest Management Policies
 Road Management Policies
 Commitment to Safety and Health
 HCVF RSA Program Memo
 Social Benefit/Impact Assessment
 Certified Product Chain-of-Custody Program
 Herbicide Application and Hardwood Management Policy

Policies on the following topics are detailed within the respective IRMPs:

Ecological Reserve Network (GRF IRMP, pgs. 17, 25-27)
 Aquatic habitat restoration (GRF pgs. 44; BR/SC pgs. 63-64, 108-192; GuRF pgs. 61-63; BF pgs. 71-74)
 Invasive species management (GRF pgs. 64; BR/SC pg. 67; GuRF pgs. 64; BF pgs 75-76.; see also July 15, 2010 Draft "Invasive Plant Management Plan for the Salmon Creek Forest")
 Water Quality (GRF pgs. 16-21; 254-257; 259-274; BR/SC pgs. 29-37; 58-64; 108-192; GuRF pgs. 26-41; BF pgs. 26-51)
 Community Use and Involvement (GRF pgs. 67-68; BR/SC pgs. 80-84; GuRF pgs. 3,67-68; BF pgs.78-79)
 Monitoring (GRF pgs. 50, 55, 61, 64, 68; BR/SC pgs. 77-79; 258-265, 274; GuRF pgs. 50, 55, 61, 64, 68; BF pgs. 60, 65, 71, 76, 79)

FSC/SFI Standards:

TCF is committed to forest management certification under Forest Stewardship Council (FSC-US Forest Management Standard version 1.0) and Sustainable Forestry Initiative (2015-2019 Standard). Available at <https://ic.fsc.org/united-states.298.htm> and <http://www.sfiprogram.org/sfi-standard/forest-management-standard/>

FOREST MANAGEMENT POLICIES
For The Conservation Fund’s North Coast Forest Conservation Program
Principal authors: Evan Smith, Scott Kelly, Jenny Griffin
August 2010; expanded annually

Contents

I. Program Overview	XI. Retention General Guidelines
II. Policy Introduction	XI.I Habitat Retention
III. Forest Management General Strategy	XII. Hardwoods
IV. Critical Landscape Features	XIII. Pre Commercial Thinning
V. Harvest Levels	XIV. Timber Marking Guidelines
VI. Silvicultural Objectives	XV. WLPZ Protection Measures
VII. Silvicultural Decisions	XVI. Harvesting Operations
VIII. THP Operational Realities	XVII. Contractor Selection
IX. THP Development & Review Process	XVIII. Staff Training
X. Retention Requirements	XVV. Forest Certification
	XVIV. Community Engagement

I. Program Overview

These forest management policies have been developed to guide management of The Conservation Fund’s California forest properties. These properties were acquired as part of the Fund’s North Coast Forest Conservation Initiative, which is dedicated to the permanent protection and restoration of coastal forests in the Redwood Region.

The strategic foundation for the Initiative is described in “Conservation Prospects for the North Coast” prepared in 2005 by The Conservation Fund for the California Coastal Conservancy. This study noted the extraordinary biological diversity and economic productivity of the coastal forests of the Redwood Region and recommended that conservationists “move quickly to establish ‘working landscape’ conservation management on large, strategically located forest...properties in Humboldt, Mendocino and Del Norte counties.”¹

This recommendation is based on two key findings:

1. Population growth, increasing land values, depletion of timber inventories and global competition in the commodities markets are putting increasing pressure on traditional resource-based land uses, making land use conversion increasingly likely as landowners look for more profitable uses of their land.²
2. The traditional approach of public acquisition and preservation of forest and range lands is not sufficient to meet this challenge: there is not nearly enough public money to purchase or manage such large properties and local communities are concerned about the fiscal and economic impacts of taking working lands out of production.

¹ The Conservation Fund, 2005, *Conservation Prospects for the North Coast, A Review and Analysis of Existing Conservation Plans, Land Use Trends and Strategies for Conservation on the North Coast of California* at page 134.

² Id. at page 131.

In furtherance of this strategy, The Conservation Fund acquired the 24,000-acre Garcia River Forest in February, 2004, thereby establishing the first non-profit owned “working forest” in California. An Integrated Resource Management Plan (IRMP) for the property was collaboratively developed over a two-year planning period to meet the following general objectives:

- Restore and protect a productive and relatively natural coastal California forest ecosystem.
- Protect fish and wildlife habitat associated with this ecosystem, in particular the oak woodlands, serpentine grasslands, redwood/-Douglas-fir forests, and spawning habitat for coho salmon and steelhead trout.
- Protect significant water resources, springs and the water quality thereof.
- Maintain the capacity of the Property for productive forest management, including the long-term sustainable harvest of high quality forest products, contributing to the economic vitality of the state and region.
- Provide outdoor recreational opportunities, as appropriate.

In October 2006, The Conservation Fund acquired an additional 16,100 acres in two tracts – the 11,700-acre Big River Forest and the 4,400-acre Salmon Creek Forest. A similar management and restoration plan for these new properties was completed in August 2009 (Big River and Salmon Creek Integrated Resource Management Plan). This plan identifies and describes in detail the following specific management goals:

- Improve ecological conditions by protecting and enhancing water quality.
- Improve ecological conditions by protecting and enhancing terrestrial and aquatic habitat on the Forests.
- Generate sufficient revenue to cover SRF loan and the Packard loan payments (the latter from non-timber revenue, such as the sale of carbon offsets, and only after the accrued SRF obligations are fulfilled), property taxes, on-site maintenance, management, and restoration projects.
- Develop and implement conservation-based forest management greenhouse gas reduction projects under the California Climate Action Registry’s Forest Project Protocol version 2.1.
- Practice continual improvement through adaptive management based on monitoring of water quality and forest health against specific objectives described in the Plan.
- Support the local business community by utilizing local contractors and suppliers.
- Involve the local community by seeking input on management of the Forests, including review of this Plan and timber harvest plans implemented under the Plan, and providing compatible public access, educational, and recreational opportunities.

In 2011, The Conservation Fund acquired the 13,900 acre Gualala River Forest and in 2013 the Fund acquired the 18,120 acre Buckeye Forest in Sonoma County. Integrated Resource Management Plans have been completed for these properties. All activities on the property shall be in conformance with these Forest Management Policies and all other organizational policies and commitments.

These combined acquisitions (74,000 acres) represent a collective capital investment of approximately \$120 million. By acquiring them, the Fund and its partners hope to demonstrate that these large tracts of intensively managed coastal forest can gradually be returned to sustainable timber production and ecological vitality through the use of innovative financing and patient management by a nonprofit organization in partnership with private and public agencies and community stakeholders.

Guiding these properties from their current forest conditions (which reflect a legacy of clear cutting or excessive harvesting resulting in young and in some cases understocked timber stands) to the desired future condition of economic stability and ecological integrity will take decades. Along the way we will need to overcome many challenges, including relatively low current timber volumes, the unnatural predominance of hardwoods in places, the burden of maintaining and improving extensive road systems, and the uncertain economic, regulatory and political environment affecting the timber economy as a whole.

At the same time, there is broad awareness that North Coast forests are at an historic crossroad, with one road leading to fragmentation and loss of forest productivity and ecological integrity, the other leading to intact watersheds, recovering fish and wildlife, and a sustainable timber economy for the region. With the cooperation and goodwill of the community and public and private stakeholders, we are optimistic that we are setting off down the latter, more hopeful road.

II. Policy Introduction

These guidelines and policies apply to management and operations on the Garcia River, Gualala River, Buckeye, Big River, and Salmon Creek properties. This document is a “work-in-progress” and will be revised and refined based on the experience and perspective of our project foresters, program partners, and agency staff as we all develop increasing familiarity with the properties and the forests’ response to the silvicultural and other management measures described here, and in the IRMPs for each Forest (all plans are available at <http://www.conservationfund.org/our-conservation-strategy/focus-areas/forestry/north-coast-conservation-initiative/north-coast-forest-reference-documents/>).

III. Forest Management General Strategy

[Taken, without editing, from the Garcia River Forest IRMP and also detailed in each additional IRMP]

- Our silviculture will be primarily uneven-aged, to develop and maintain a range of tree sizes and ages within a stand, with the goal of producing valuable sawtimber and utilizing natural regeneration.
- We have a responsibility to manage the properties to generate reasonable revenue for loan payments, re-investment in the property (e.g. restoration projects, road upgrades) and, potentially, for conservation projects elsewhere in the region.
- Our harvest levels will be significantly less than growth rates over the next few decades so as to increase the timber inventory.
- We are providing for increased riparian buffers on our Class I streams so as to improve riparian habitat conditions and provide late-seral connectivity across the landscape.
- Special attention will be given to critical wildlife habitat features, such as snags, down wood, and trees of significant size.
- We recognize that because of past practices the forest contains smaller trees and more hardwoods than would have occurred naturally and we will work to more closely approximate natural conditions.
- There are no old growth stands on the properties; there are individual trees that may be residual old growth—these and other very large trees and true oaks will be maintained.
- We anticipate no need to clearcut; we may use even-aged variable retention harvests (that retain large trees and habitat features) to rehabilitate conifer sites now dominated by hardwood or in future salvage situations; group selection will likely be used on Douglas-fir sites; and all regeneration harvests will encourage natural regeneration.

- We have committed to certification of our forest management under the Forest Stewardship Council and Sustainable Forestry Initiative standards and to reporting our carbon sequestration through the California Climate Action Registry.

IV. Critical Landscape Features

Most of these policies are intended to guide the management of those areas of the property which will support commercial timber harvesting operations. However, one of the most important steps in determining how to manage a forest is recognizing which areas have unique ecological values that outweigh their potential contribution from a commercial harvest perspective. For example, oak woodlands are fairly geographically limited and support a very different set of birds and small mammals than dense coniferous forest. Likewise, springs, seeps, and small wetlands occupy only a very small portion of the property but probably support more amphibians than the rest of the forest. The protection of these features is critical to achieving the program objectives of restoring habitat for species of concern and increasing the ecological health of these forests. Specific policies to address these areas include the following:

- All pygmy forest and true oak (*Quercus* spp.) woodlands and native grasslands are to be preserved.
- Springs, seeps, and small wetlands shall receive protection measures at least equivalent to Class 3 WLPZ. [There are no large wetlands on the properties.]
- Riparian forests, particularly along Class 1 streams, will be managed to provide for closed canopy mature forest with a high component of down logs and other late-seral features. [Some removal of timber can be consistent with this objective - see WLPZ Protection Measures for more detail in Section XIV, below.]
- Other features that are fairly rare on the landscape and may have unique habitat value include cliff faces, alder thickets, and recently-burned areas. These will be mapped and receive site-specific protection measures when they are within or adjoining a potential timber harvest area.

V. Harvest Levels

Careful determination of appropriate harvest levels is critical to ensuring sustainability and achieving the conservation and economic objectives for the properties we manage. As described below, each project has slightly different harvest levels because of the differing starting inventories and financial responsibilities.

In the **GRF** IRMP, we committed to harvesting not more than 35% of growth on the working forest (non-reserve) portion of the Garcia River Forest (GRF) for each of the first two decades (measured on a rolling ten-year basis). The net harvest levels shown here are based on the forest growth and yield stream developed in 2013 for TCF's Long Term Sustained Yield Plan as required by the California Forest Practice Rules. The Conservation Fund used the FORSEE growth and yield model to simulate harvests. The model was programmed to incorporate the various management constraints of the forest. The model shows an annual allowable harvest of 2.26 mmbf (million board feet) for the first 5 year planning period (2014-2018). Over the next decade this should result in an increase in standing timber volume on the non-reserve portion of the property from 11.4 mbf (thousand board feet) per acre to 15.0 mbf per acre (reaching 20 mbf per acre around 2038).

In the **BR/SC** IRMP we committed to an annual net harvest level for each of the first two decades of 4.65 million board feet (the MOU restriction is for not greater than 5.1 million board feet and the appraisal estimated that the FPR would allow harvest of 8.5 million board feet). The allowable harvest levels shown here are based on the forest growth and yield stream developed in 2013 for

TCF's Long Term Sustained Yield Plan as required by the California Forest Practice Rules. The Conservation Fund used the FORSEE growth and yield model to simulate harvests. The model was programmed to incorporate the various management constraints of the forest. The model shows an annual allowable harvest of 7.3 and 7.7 mmbf for BR and SC respectively for the first 5 year planning period (2014-2018). Where the growth and yield model exceeds the restrictions of the MOU the MOU will be adhered to. Over the next decade this should result in an increase in standing timber volume on the non-reserve portion of the property from 22.8 mbf (thousand board feet) per acre to 28.9 mbf per acre for Big River and should result in an increase in standing timber volume on the non-reserve portion of the property from 26.4 mbf (thousand board feet) per acre to 31.5 mbf per acre for Salmon Creek.

For the Gualala Forest The Conservation Fund used the FORSEE growth and yield model to simulate growth and harvest, the model was programmed to incorporate the various management constraints of the forest. The harvest levels shown here are based on the forest growth and yield stream developed in 2013 for TCF's Long Term Sustained Yield Plan as required by the California Forest Practice Rules. The model shows an annual allowable harvest of 1.7 mmbf (million board feet) for the first 5 year planning period (2014-2018). Over the next decade this should result in an increase in standing timber volume on the non-reserve portion of the property from 9.4 mbf (thousand board feet) per acre to 11.6 mbf per acre (reaching 20 mbf per acre around 2039).

For the Buckeye Forest, growth forecasting and harvest scheduling is underway as part of our overall management of the property. In the interim, annual harvest is not to exceed 1.5mmbf for the first 5 year planning period, which is based on being comparable in size and composition to the Garcia River Forest (non-reserve). This should be no more than 35% of expected growth and allow the forest to significantly increase in stocking.

VI. Silvicultural Objectives

Our goal is to grow large high-quality trees and be able to perpetuate that through selective harvests. We want to maximize value growth and develop and maintain important late-seral habitat characteristics for wildlife and non-timber forest vegetation. Our "crop tree" target diameters are 30-36" for redwood and 26-28" for Douglas-fir (most high-quality trees below this diameter range will be retained while most non-wildlife trees above this diameter range will be removed). Generally, we are not trying to mimic old-growth or late-seral stand conditions, we are trying to ensure that late-seral ecological functions and processes are present within a managed forest. For example we will be seeking to develop stands that have high canopy closure, some large mature trees, and a high degree of structural diversity. In time we may elect to allow certain stands to return to old growth, once they are on an appropriate trajectory.

The success of our initiative and these acquisitions depends on our ability to generate revenue to support ongoing management and restoration projects and repay loans for the acquisition of the properties in a manner that over time achieves our stated silvicultural and ecological objectives. In consultation with project foresters and biologists, we will continually strive to balance our harvest levels and methods to carefully meet our financial and management obligations while improving ecological health and vitality. We will not fixate on the silvicultural semantics of "uneven-aged," "all-aged" or "multi-aged" or the coefficient of the "reverse J-shaped curve," but on the question of whether we are growing high-quality trees and maintaining desired habitat conditions. In

addition we have the broader objectives of engaging the local community and businesses in what we do, which relates back to how we conduct harvesting operations.

This silvicultural strategy is also aligned with what we understand about historical disturbance patterns and evolutionary forces in the redwood region. To generalize from many years of complementary academic research, including the Proceedings from the past two Redwood Forest Science Symposiums, it is safe to say the pre-European settlement conditions were very different than the processes of today. Most forests were quite old, in the 500-2000 years in the canopy, with a modest amount of tanoak (10-15% of basal area), with occasional small (under 1000 acre) patches of younger and brushier forest, and relatively limited bareground or early seral stage conditions (caused by flooding, landslides or extreme fires). Fires were frequent (10-20 year recurrence) and low intensity, likely driven by Native American burning as much as lightning strikes. Individual tree mortality was limited, mostly due to self-thinning (competition-induced) and occasional windstorm damage. In general, the redwood forest was fairly stable at large temporal and spatial scales. Our silvicultural practices follow these patterns, emphasizing low-intensity but extensive single-tree selection harvests, similar to what would occur under self-thinning stages of stand development. Our group selection harvests are probably similar in size (1-2 acres) to openings created by landslides, flood scouring or higher intensity fires. Variable retention harvests, especially because we utilize this approach on dryer sites, are probably similar to conditions after a more intense fire. In short, our silviculture should restore and maintain more natural forest conditions and simulate natural disturbance patterns, with the exception that development of true late seral stage characteristics will only occur in the Ecological Reserve, riparian buffers and NSO habitat core areas-- and not across the managed forest.

VII. Silvicultural Decisions

To the extent that it is possible to generalize types of stands and approaches, we have attempted to describe likely decision pathways below. Forests are highly variable so it is impossible and unwise to prescribe “one-size fits all.” Further, each of the forests reflects a management legacy that limits our silvicultural options. For example, prior management of the Garcia River Forest, Gualala Forest and Buckeye Forest has left very young stands with limited commercial volumes. For the most part, these stands are growing well—they just have limited silvicultural options in the short-term. On Big River and Salmon Creek, a history of clear-cuts forces difficult choices between the remaining well-stocked stands and stand classes that are several years away from supporting our preferred silvicultural methods. Additionally many of the partial harvests of the past did not always leave the high-quality trees we desire. Finally, we are learning more every day about how to manage forests for both economic and environmental objectives and our approaches will change with future scientific research and operational realizations.

Our preferred silviculture is high retention (150 sf/acre basal area) single tree selection with re-entries every 10-20 years to remove most trees that exceed the target crop-tree size and thin the smaller size classes. Stands that have reached this condition (referred to as stand condition A) will be maintained indefinitely through thinning, individual tree selection, and small group selection harvests. Most stands are not anywhere near the desired stand condition A. Some stands may consist of smaller diameter classes or be less dense but generally have good form and growth (referred to as stand condition B). These stands might be dense even-aged stands of 40-60 years or they may be more open stands of indeterminate age that have had past selection harvests; regardless, the key silvicultural criteria is that they have good material to work with. (The Garcia LNF THP, the BR Riverbends THP, and the selection units of LSC THP are good examples of B conditions.) B stands are in an excellent position because they can support commercially-viable selection harvests and with

a few decades of growth and just one or two intermediate harvests that maintain high-quality trees and increasing stocking, they will reach A condition. The silviculture to go from B to A is similar to the selection silviculture to maintain A (although in B we are not particularly concerned with creating a new age class). These are “easy” decisions, because the stands have good stocking and growth and the pathway to the desired conditions is evident and readily achievable.

However because of past harvesting practices, very few stands are currently in A or B condition (because of lower stocking, smaller diameters and/or poorer-quality trees). Most stands will take several decades to reach this steady-state condition with multiple intermediate harvest entries to guide this development. Until we reach the ideal steady-state condition, the silviculture focus will be on creating and/or building stands of higher quality and better growth potential. Many stands (especially on Big River) are young and even-aged, from clearcuts or aggressive selection harvests in the last thirty years (referred to as stand condition C). C stands are, for the most part, growing quickly and with good-quality stems—but they are small in diameter (average 12” or less) and lack structure from a habitat perspective. C stands will receive thinnings to accelerate stand development and concentrate growth on high-quality stems. These selective harvests will occur every 10-20 years with the long-term objective of moving the C stands into B and then A condition. These thinnings will yield low harvest volumes and small average piece sizes so they will need to be carefully-designed to be economically-viable. These low-value harvests will be a good source of employment in the local community and will also allow us to shape the stand at an early age to better achieve our long-term growth and habitat objectives. (The better-stocked parts of the Jack’s Opening THP fit this generalization.) In some cases pre-commercial thinning will be considered.

A different category of stands (condition D) has resulted from the merchantable trees having been excessively “picked over;” most of the dominant trees were removed leaving uneven regeneration, a low-quality overstory and often a high degree of tanoak competition. The overstory may be of average to large diameter but the entire stand is usually less than 100 square feet of basal area per acre and not comprised of the high-quality stems we desire (and therefore not growing in value). In most of these cases the younger “regeneration” age classes exhibit good growth, height, form and stocking. Harvests in D stands need to balance the removal of the poor-quality overstory (to accelerate the development of the higher-quality regeneration and pole-sized trees) with the need to maintain habitat structure and late-seral elements. (The “seed tree removal” units in the LSC THP and the variable retention units in the Jarvis Camp THP fall into this category.) This is not “easy” silviculture as it will feel like an aggressive harvest. The residual stand will be open-looking and often we will need to reduce hardwood competition and/or plant additional conifers. A good indication for this type of harvest is that given twenty years without harvest the stand would not be appreciably improved (hence the need for an intervention). In the short-term it is easy to think, “maybe it would be better to not harvest here,” but it should be obvious that in the long-term the stand and the program will benefit from this harvest. These D harvests result in a good-quality young stand that is growing well and has some late-seral elements. Given two to three decades to develop without commercial harvest they will become C and B stands.

Of course not all stands fit these generalizations. In some stands, especially on the east side of the Garcia, it is more appropriate to manage primarily for Douglas-fir than redwood and since Douglas-fir lacks redwood’s remarkable abilities to release and sprout, these will likely have long-term management through group selection, although the first couple of entries will look more like B thinnings. And some stands, again on the east side of Garcia, are completely dominated by tanoak. While it might be better ecologically and financially to be growing more conifers on these sites the short-term cost of such a rehabilitation will likely preclude much action.

VIII. THP Operational Realities

The complexity of forest regulations and the high cost of harvesting operations impose additional constraints on our operations, beyond simply what silviculture we want to apply. For example, almost all of our harvests are some type of thinning (a selective harvest not designed to introduce another age class) but under the Forest Practice Rules (FPR) they may need to be called Selection, Group Selection, Commercial Thinning, Transition, Variable Retention, Rehabilitation, or Alternative Prescription because of the differing requirements for initial and post-harvest stocking and tree diameter requirements defined in the FPR for each specific silvicultural treatment listed above. And in the Timber Harvest Plan (THP) document we will commit to meeting only the FPR stocking requirements (rather than a voluntary higher standard) to avoid risk of violation in areas where initial stocking is low prior to harvest. Regardless of what the prescription is called, we will only implement the silviculture that enables us to meet our long-term project goals and follows the retention requirements and tree marking guidelines below.

Another operational reality relates to the distribution of THPs across the landscape. Our THPs will need to be fairly large (200-500 acres) and geographically-concentrated because of the high costs of THP development and maintenance. The goal is to increase operational efficiency by concentrating planning and road costs. We will try to treat all the eligible stands within a selected area (rather than cherry-picking across the property). Thus THPs will often include several types of FPR silviculture but almost all of them will meet stocking requirements immediately following the harvest. In the future we will not use amendments to increase THP area (unless there is a significant market or regulatory shift) but in 2007 as part of adapting the approved LSC THP to our preferred approach we used an amendment as an expedient means. Another important economic constraint is that currently we have limited ability to cable-thin young Douglas-fir stands because of high logging costs and low Douglas-fir prices.

IX. THP Development and Review Process

Our goal is to develop clear and consistent THPs that incorporate the concerns of the public and conservation partners before they are submitted to the state agencies. THPs are, by requirement, cumbersome documents and long-term legal obligations; we do not expect to revolutionize THP writing. We have adopted the following procedures for the development and review of THPs:

1. General harvest locations will be informed by harvest scheduling plans and reviewed by Scott Kelly (TCF's Forest Manager).
 2. Field foresters will review past materials and field conditions, decide on likely unit layout, silvicultural prescriptions, access needs, road improvements, etc., and consult with project consultants and partners on habitat and restoration implications and opportunities.
 3. Evan and Scott will field review harvest unit selections and general operation strategies.
 4. Field foresters will coordinate necessary surveys and access (geologist, botanist, NSO).
 5. Field foresters will begin unit layout and stand marking.
 6. "Field Consultation"-- staff, contract foresters and advisors will discuss, in the field, the proposed operation.
 7. Garcia only—notice to TNC will be provided and field review scheduled if desired.
 8. Stakeholder tour. Tours will be offered just prior to CAL FIRE submittal (when all the potential THP issues are well-identified and resolved). Holly Newberger, Program Coordinator, will coordinate.
 9. Field foresters will complete drafting of the THP.
 10. THPs will be submitted to Scott for review.
 11. Field foresters will prepare final version and submit to CAL FIRE, with copy for TCF office.
- Field Consultations are a very important step in our review process because they leverages the combined experience of our foresters and biologists to ensure that only sound and well-planned

THPs that reflect TCF goals and objectives go forward and because it offers an opportunity for everyone to learn from each other, thus helping our program grow efficiently.

X. Retention Requirements

[Quoted from the Big River and Salmon Creek IRMP - with edits italicized and in brackets - and equally applicable to all properties]

Within a harvest area, the Fund will permanently retain or recruit downed wood, snags, and trees with high wildlife value given their recognized ecological role and ability to enrich the surrounding stand. The following policies for downed wood, snags, and wildlife trees are meant to implement this strategy by providing clear rules and numerical targets for certain types of features. [The FPR do not categorically address general wildlife habitat retention trees (although there are some requirements for protection of active raptor nests), but additional guidance is available from DFG.] Retention trees will be painted (“W”) or tagged by the field foresters as they are marking the timber harvest to communicate the value of these features not just to the loggers but also the public and future foresters. Because a harvest can include over a thousand retention trees, they are not mapped or recorded unless they are suspected NSO nest trees. And while maintaining trees with high wildlife value is important, it is also critical to recognize the wildlife value of the surrounding stand and the conserved landscape, and not expect the harvest stand to mimic or contain all features which may be better represented in other areas of the property.

Downed Wood

Target: two pieces per acre (at least one conifer, 18 inch minimum diameter and ten feet minimum length).

Actions:

- Retain existing downed wood except in situations of recent windfall or fire outside of WLPZ. (In most stands this should be sufficient to meet the target.)
- Retain snags and mark trees for recruitment snags to eventually become downed wood.
- Redistribute cull logs from the landing (unless used for firewood or instream restoration).

Snags and Wildlife Trees

Target: four per acre on average across stand. [*While every effort shall be made by the Licensed Timber Operator (LTO) to retain all snags, it is understood that some snags may be cut for safety considerations by the LTO with the project foresters approval (e.g. snags near active landings which may fall into the landing if bumped by logging equipment or snags used to anchor yarder guy lines or tail holds).*]

Criteria for mandatory retention:

- Snags (all should be retained but only those greater than 18-inch DBH and 20 foot height shall count towards the retention targets);
- Conifers greater than 48-inch DBH;
- Old-growth trees (use MRC definition if in question – see Appendix K [*of Big River/Salmon Creek IRMP*]);
- Raptor nest trees (active or likely to be re-used);
- Any hardwood [*tanoak, true oak, madrone, chinquapin, and alder*] over 20 inches;
- Murrelet habitat trees (use MRC definition if in question – see Appendix K [*of Big River/Salmon Creek IRMP*]);
- Den trees (cavity greater than three inch diameter and greater than ten feet above ground);

- Trees with basal hollows or other significant features (cavities, acorn granaries, significant burn scars, significant or unusual lichen accumulation, signs of deformity, decadence, unusual bark patterns, or other unique structure or features).

Actions:

- Retain all mandatory [*retention*] trees and snags except where necessary to fall for operator safety, and protect with screen trees if appropriate.
- If below the target number, mark and retain additional recruitment trees. [*Additional wildlife trees will likely be marked in the future from the surrounding stand as it develops.*]
- [*At the discretion of the project forester live trees may be designated for girdling to accelerate snag recruitment within a THP area.*]

XI. Retention General Guidelines

- Marked wildlife trees...are not intended for future harvest and are allowed to grow beyond the crop tree target size.
- In the absence of mandatory retention trees, on average at least one conifer per acre should be retained from the largest ten percent of the diameter distribution of the stand.
- Marking of the wildlife trees (with paint or tags) is intended to communicate the recognition of the importance of that stem to future foresters, agency reviewers, and the public.
- For the next 20 years some preference for snag and downed log creation and wildlife tree recruitment will be given to cull trees and whitewoods (because of their low financial value) even though they may have a shorter lifespan.
- All retention is subject to operational considerations; the felling of any tree is permitted when necessary for operator safety, road right of way, or yarding corridors. Field foresters will attempt to avoid locating yarder corridors where they would conflict with mandatory retention wildlife trees.
- Targets shall be assessed across the entire harvest stand, not on an individual acre basis.
- Preference is for spatial grouping (clumps of downed wood, snags, and/or wildlife trees).
- The above criteria shall apply to selection harvests. When marking variable retention harvests extra screen trees may be appropriate.

All of the foregoing requirements and guidelines are subject to further review and amendment as the science and practice of forest management evolves and new research is developed and applied. Because of past practices, some portions of the Forests do not have sufficient wildlife features and the initial targets set forth above are intended to guide the long-term retention and recruitment of these features.

Two or three of anything per acre is an admittedly arbitrary number chosen to put our forestlands on the right trajectory for the development and maintenance of late-seral habitat characteristics within a managed forest; achieving some of these targets will likely take more than one entry. These distribution and size targets are not expected to be the ultimate value but merely what is appropriate to select and recruit in the next twenty years; the development of late-seral habitat elements is a long-term process and will be shaped over several harvest entries. In addition, it is unclear how the establishment of Sudden Oak Death (documented on GRF) will affect the Forests.

XI.I. Habitat Retention

When encountered, rare plants, animals and their associated habitat will be protected per the guidelines established by CalFire, USFWS or CDF&G. Established general habitat retention guidelines for the Northern Spotted Owl, Marbled Murrelet and California Red Legged Frog are followed. In the absence of pre-established guidelines, protection measures developed in

consultation with CalFire, CDF&G and/or USFWS will be implemented. Habitat protection measures for coho salmon and steelhead trout are embedded in the forest practice rules and included in the “Specific Watercourse and Lake Protection Zones (WLPZ)” described below. Other rare species are generally protected on a case by case basis during the timber harvest planning and review process.

XII. Hardwoods

Hardwood species, including tanoak, true oaks, madrone, chinquapin, and alder, are an important ecological component of North Coast forests. Past management practices have resulted in an unnaturally high abundance of tanoak in many areas that historically were dominated by conifers. Mixed hardwoods account for 13.8 percent of the basal area on the Salmon Creek Forest, 16.8 percent on the Big River Forest, 34.1 percent on the Garcia River Forest, 39.6 percent on the Gualala River Forest and 34.7 percent on the Buckeye Forest; in some stand types in Salmon Creek and Big River it is as high as 46 percent, and on the Garcia up to 83 percent. For comparison, old growth conifer stands in the area often have ten percent or less of the basal area in hardwood species. On Salmon Creek and Big River, stands with greater than 25 percent of the basal area in hardwood species account for 23 percent of the forested acres. On the Garcia, stands with greater than 25 percent of the basal area in hardwood species account for 91 percent of the forested acres, and stand with greater than 50 percent of the basal area in hardwood species account for 45 percent of the forested acres.

In addition to the ecological imbalance, the high concentration of tanoak significantly reduces conifer growth and stocking and therefore the future financial value of the properties, since tanoaks have effectively no commercial value (it costs more to log and deliver than they are worth as firewood). The long-term goal is to maintain an appropriate level of tanoak and other hardwoods (probably around ten percent on average). It is important to not try to eliminate tanoak—merely to increase conifer site occupancy over time. To achieve these objectives, the following management measures will be implemented:

- All true oak (*Quercus* spp.) woodlands are to be preserved [*these occur primarily on GRF and Gualala*].
- All hardwood wildlife trees are to be retained (which includes all hardwoods 20 inches or greater), except where removal is required for safety concerns or necessary for yarding or road corridors.
- Where the post-harvest hardwood basal area would exceed 30 square feet of basal area per acre (averaged across the stand), tanoak shall be controlled through manual falling or girdling or herbicide treatment through direct basal injection (“hack-and-squirt”) or stump treatment to provide a post-harvest hardwood basal area of 15 to 30 square feet per acre. This may take more than one entry to achieve.
- Most tanoak reduction will be achieved within a selection or thinning harvest by selective falling (of tanoaks) to release existing conifers. While the tanoak stumps will likely re-sprout, the conifers should have established dominance and will eventually shade-out most of the sprouts. In this type of incremental treatment (selective falling), clumps of hardwoods and individual hardwoods which do not compete with desirable conifers will be left alone. [*This treatment occurred to varying degrees in almost all of THPs prepared to date, the best example of which might be the Jack’s Opening THP on GRF.*]
- There are many stands where selective tanoak felling would not be sufficient to meet the desired level of conifer site occupancy. In these situations, a more aggressive treatment will be utilized through an herbicide treatment that kills a majority of the tanoak to release either

existing conifers or seedlings planted shortly before or after the tanoak treatment. Even within these prescriptions, smaller areas of intact hardwoods would be intentionally retained (for biodiversity reasons). Preference for hardwood retention will be given to large trees (greater than 20 inches), true oaks, chinquapins and madrones, and groups of hardwoods. Rehabilitation treatments (including the use of herbicides) are intended to be one-time interventions and should not need to be repeated because of the decreased openings and ground disturbance associated with subsequent harvests. *[An example of this treatment occurred within the Variable Retention units of the Jarvis Camp THP on Big River.]*

- The only herbicide to be used in tanoak control treatments currently is imazapyr (tradename Arsenal). Only licensed and insured contractors with a good track record for safety and compliance may apply herbicides. All herbicide application must be in conformance with label guidelines and applicable laws. Additional herbicides may be considered in the future as they are developed and tested and reviewed with respect to Forest Stewardship Council and Sustainable Forestry Initiative standards.
- Any planned use of herbicide will be clearly identified in the THP and THP summary.
- Reduction in the use of herbicides is an important objective; alternatives to herbicide treatment have been and will continue to be evaluated on a periodic basis. A comparison of herbicide treatment and logging of tanoaks for commercial firewood was evaluated as part of the Jarvis Camp THP. Monumented plots will allow for long-term evaluation of effectiveness but the initial impressions are that the logging method resulted in increased cost and site disturbance (exposed soil and damage to the residual stand). That said, a commercial market for tanoak would be pursued if it develops. Areas with well-established and good quality hardwoods will likely be managed for mature hardwoods instead of attempting to re-establish conifer.
- There will be no tanoak control with herbicides in WLPZs; manual falling or girdling of small tanoak may be used, but only as part of a riparian shade enhancement project (likely with conifer underplanting).
- Priority for rehabilitation treatments will be given to high site, tractor-operable ground, with existing desirable redwood growing stock. Herbicide treatments will be less than 100 acres annually (on a rolling average basis) on Big River. No acreage limitations for herbicide have been adopted for Garcia, Gualala and Buckeye.
- Tanoak control measures will be reviewed periodically and revised as appropriate based on knowledge and experience gained in the field over the next several years. Herbicides will likely also be used to control certain exotic invasive plants, primarily jubata grass and broom. No other uses of herbicides or pesticides are anticipated.
- See also in this Policy Digest “HERBICIDE APPLICATION AND HARDWOOD MANAGEMENT POLICY”

XIII. Pre Commercial Thinning

Pre commercial thinning involves the selective cutting of small trees and brush that are not subsequently processed into forest products. PCT is generally done in stands of young, 10-15 year old plantations with the purpose of accelerating stand development and promoting conifer dominance. Vigorous growth of small trees and brush in the early stages of stand development following clear cutting often leads to intense competition for a site’s resources including water, soil nutrients and sunlight. By selectively cutting brush and small trees we can focus more of a site’s

resources on fewer tree stems. This increases individual tree growth and promotes sustained vigorous growth across the stand and into the future. Trees selected for retention are generally in the upper 25% of stem diameters within the stand and have full crowns and straight stems without crooks, forks, dead, or broken tops. The ideal spacing between conifer stems is generally 15 feet, though additional trees may be left around the edges of small openings as they are encountered. When thinning redwood stump sprouts, 2-3 sprouts are left around each stump, trees sprouting from the root collar are favored over trees sprouting from the top of the stump. Tanoak and other miscellaneous brush species are cut wherever they are competing with conifer regeneration. Thinning is also used for “species control” in which desirable commercial species are favored to remain on site. Wherever possible redwood is favored as a leave tree, Douglas-fir and Grand-fir are retained where no redwood trees exists or where hotter, dryer site conditions dictate that Douglas-fir be left in favor of redwood. To retain structural and compositional diversity, clumps of brush and hardwood species that are not competing with conifers are left uncut.

Pre commercial thinning is implemented in young stands with chainsaws and no heavy equipment is used therefore, impacts to non timber resources including wildlife habitat, rare plants and water quality are assumed to be negligible. Conifer and Hardwood trees identified for retention with an orange stripe by the previous owner(s) are retained for wildlife habitat. TCF does not remove or burn slash generated from PCT, slash is lopped such that it is contact with the ground to promote decomposition and return nutrients to the soil. Habitat values for some species of birds and rodents can be improved by the slash accumulation associated with PCT which provides ground cover necessary for those species. It is felt that forage values for deer and bear are generally unaffected by thinning slash accumulations.

If PCT is to be implemented between February 1st and July 10th of any year the most recent NSO call records are reviewed to ensure that our operations are more than ¼ mile from an active NSO nest. One quarter mile is the recommended distance to avoid auditory harassment of NSO during the breeding season. The stands targeted for PCT are too young (to small) to be considered nesting habitat for NSO or other raptors. It has been shown that NSO do forage in clear cuts for wood rats which prefer heavy slash accumulations for nesting. It is assumed that PCT does not negatively impact forage for NSO and it may improve wood rat habitat by replenishing the available downed material.

XIV. Timber Marking Guidelines

Timber marking (designating individual trees for harvest) is the art of shaping future forest stand conditions by extracting merchantable forest volume while protecting and enhancing wildlife habitat such that the end result is a well-stocked, rapidly-growing, and healthy forest with abundant and diverse wildlife habitat features. Approaches to timber marking vary by stand condition and silvicultural objective and it is difficult to identify a universal prescription.

Because of the thousands of individual judgment calls that are made while marking a stand, even individual foresters with the same objective would inevitably make slightly different decisions. The general goal of timber marking by the Fund is relatively simple: current (pre-harvest) conditions should be improved by the time of re-entry (typically ten to twenty years) while also increasing net growth. “Improved” is a subjective term but for our purposes it means increased values for conifer basal area, merchantable volume, snags and downed logs per acre. These are also some of the values that will be used to monitor forest trends across the properties.

Below is a summary of The Fund’s timber marking criteria incorporating recommendations from two experienced local foresters (Jim Able and Craig Blencowe). These guidelines strive to capture some

of the art of achieving the desired balance between habitat recruitment and retention while removing sufficient conifer volume to satisfy the economic needs of the project. Timber marking will be conducted with these criteria in mind. One of the purposes of the Field Consultations (both pre- and post-harvest) is for the forestry team to discuss the timber marking, particularly in riparian stands, understocked areas, and near NSO activity centers.

Timber marking criteria

Marking can vary according to two criteria: the type of stand and the management objectives. These two factors permit flexibility to the extent that the marking adheres to the overall management goal of maintaining a productive sustainable forest.

To this end, what we leave is more important than what we cut. Following a harvest, a stand should have a higher proportion of high-quality trees with well-developed crowns (high potential for increased growth). The key question we must answer before marking a tree is, “What is the potential for the tree to grow in the future?” Trees with little or no potential to grow (i.e. put on recoverable volume) should be removed [unless they are retained for wildlife trees]. The difficult questions arise when a tree’s potential is not readily apparent (often in the case of co-dominants). For this reason, beginning timber markers (and even experienced ones) benefit from boring trees and comparing recent growth with crown size, color, and form.

There are factors other than maximum growth which determine which trees we mark. We place as much emphasis upon high quality and high future value as we do upon maximizing growth rate. For that reason, trade-offs exist and while our stands may be maximizing annual value growth, they may not necessarily be growing at the maximum rate.

In addition to the wildlife tree retention requirements, our “normal” marking scheme for selection harvests involves the following:

- Retained trees should be thrifty and of good quality (e.g. minimum 30% crown ratio). Leave best formed trees regardless of diameter and spacing.
- Focus on attaining “target sizes” of 30-36” in redwood and 26-28” in Douglas-fir. This means that you must be very cautious about marking in the 24-28” dbh classes (redwood) and the 22-24” dbh classes (fir), since these will be your “crop trees” at the next entry.
- Assume that 20% of the trees are doing 80% of the growing so it’s not which trees to cut, it’s which trees should be left to grow. Figure out which of the trees are in this 20% grower category, and leave them. (Percentages will vary from stand to stand.)
- Green culls, conk-infected fir, and large rough wolf trees are usually retained for wildlife.
- Trees that have reached ‘crop tree’ size should be harvested, along with other suppressed and intermediate trees to capture mortality and improve the growth of the residual stand. Perpetuate the development of a new age class or the growth of existing advance regeneration at each entry by introducing sunlight to the forest floor. Without the new age classes sustainable selection silviculture will not work!
- You can always opt to allow trees to grow larger than crop size; however, when leaving trees 40” dbh +, you must carefully weigh your decision. Are they to be a legacy tree? Remember trees greater than 48” are to be permanently retained and many large trees with large crowns may reduce the growth of seedlings and future crop trees. Suggest no more than 4 large legacy trees per acre in addition to other trees retained for wildlife and snag recruitment.

- Removal of suppressed and intermediate trees with little or no growth potential. Severely suppressed trees (even redwood) do not release significantly (volume wise) or at least should not be counted on to add significant growth. Cutting suppressed trees does not generally benefit growth and timber recovery, but it will significantly increase logging costs. Cut a few with each entry.
- Removal of grand-fir overstory trees to specifically release viable redwood and Douglas-fir understory is appropriate. We will be managing for mixed-species stands but we do need to guard against encouraging grand-fir in the understory - it is shade tolerant and can dominate a redwood forest in the absence of periodic wildfires. Alternatively, grand-fir can be designated for girdling for accelerated snag recruitment (especially in poor market conditions). These treatments are designed to mimic the high natural mortality rate of grand-fir in an unmanaged forest.
- Removal of 25-35% of the stand volume with a re-entry of 10-15 years. In the field, this usually works out to marking perhaps 30-50% of the volume in a redwood clump, and leaving the well-formed trees growing in the open..
- In windy areas, we try to remove less volume and leave some kind of a wind buffer on the windward side of the stand (usually these trees are wind-beat anyway).
- Where only one large tree (e.g. 26" dbh+) occurs in a clump of smaller (12-14" trees), we mark it, especially if it is on the south side of the clump. Cutting one large high-quality tree is preferable to generating the same value by cutting three or four small high-quality trees.
- Spacing improvement becomes more important when we are returning for the 2nd or 3rd time to a stand because the trees are larger and the crowns need room to expand to maintain high growth rates.
- Do not "give up" WLPZ areas and mark them to the extent it is appropriate and consistent with WLPZ Measures in Section XIV, below.
- Mark hardwoods for removal where small redwood or Douglass- fir trees or a sprouting redwood stump will receive more light.
- It is sometimes necessary to have logistics trump silviculture (e.g. we may have to mark the tree that can be physically felled or yarded, even though it may not be the one we really want to cut). This is especially true in WLPZs
- Group selections work in places where there are few if any good trees to leave or where you need to cut volume across a low-to-medium volume stand. Better to lose the growth on 2.5 acres than to over cut 50 acres.
- Likewise, aesthetics may also trump silviculture in given locations (e.g. along county roads).
- Do not become "hung up" on whether you are doing "all age" or "even age" management. If you are truly selecting the best trees to retain for the future and perpetuating the development of the next age class you are probably doing both.

XV. Watercourse and Lake Protection Zone (WLPZ) Measures

TCF places a very high priority on protecting and improving water quality and aquatic and riparian habitat. On the Garcia River Forest, a detailed Site Specific Management Plan (SSMP) required under TMDL regulations was submitted to and approved by the North Coast Regional Water Quality Control Board (NCRWQCB). The GRF SSMP is available from TCF or RWQCB staff; all of the

harvesting and road maintenance operations on the Garcia River Forest must be in compliance with the SSMP. For Big River and Salmon Creek, we were required to develop a Water Quality Management and Restoration Plan, which was incorporated into the management plan for BR/SC and included in its entirety as an appendix. WLPZ Protection Measures are based primarily on the framework established in the Forest Practice Rules (FPR). We have chosen to supplement the FPR requirements for our policies in Gualala, Big River and Salmon Creek rather than creating entirely new requirements (e.g. the GRF SSMP) so as to provide for greater consistency and clarity with existing expectations and professional practices. In all of our operations we and our contractors will comply with all applicable regulations and TCF-imposed obligations.

BR/SC and Gualala WLPZ Protection Measures

[Taken, without editing, from the Big River and Salmon Creek IRMP]

The California Forest Practice Rules and other requirements of the NCRWQCB and DFG provide extensive and complex protections for watercourses. By most estimations, combined they are the world's most comprehensive and restrictive regulations governing forestry operations near watercourses. These rules are designed to protect against changes in sediment delivery, shade, large wood recruitment, late seral wildlife habitat, bank stability, and many other issues. The rules were developed in response to major declines in salmonid habitat conditions over the last three decades.

In general, aquatic conditions seem to be slowly recovering from the past practices and current regulatory protective measures should prevent further degradation. But it is unclear whether aquatic conditions are recovering quickly enough to recover and sustain salmonids, particularly in light of human impacts on other life stages. The acceleration of both aquatic and terrestrial restoration measures proposed in this Plan is intended to improve the prospects for the recovery and maintenance of salmonids in the Big River and Salmon Creek Forests.

As stated above, improvement of spawning and migration habitat for salmonid species is a key management goal for the Fund and one of the principal motivations for the acquisition of the Forests. Prohibiting development and agricultural uses on the properties will preclude the largest possible impacts on water quality, followed by comprehensive property-wide road assessments to identify and prioritize sites with sediment delivery potential (the treatment of which will occur over the next ten to fifteen years at an estimated expense of over \$5 million). In addition, the following silvicultural practices ...also will be implemented to improve water quality:

1. Upslope silviculture. Practicing principally uneven-age single-tree selection silviculture to maintain a mature forest across the Forests with minimal openings will reduce the potential hydrologic impacts of even-aged management, which studies at Caspar Creek (<http://www.fs.fed.us/psw/topics/water/caspar/>) have linked to temporary increases in peak flows, sediment yields, and ambient temperature. Uneven-aged management does, however, require more frequent entries and increased road infrastructure, which is why the next strategy is so important.
2. Increased riparian protection. In addition to standard Watercourse and Lake Protection Zone measures, forest management will include increased canopy retention across all classes of streams.

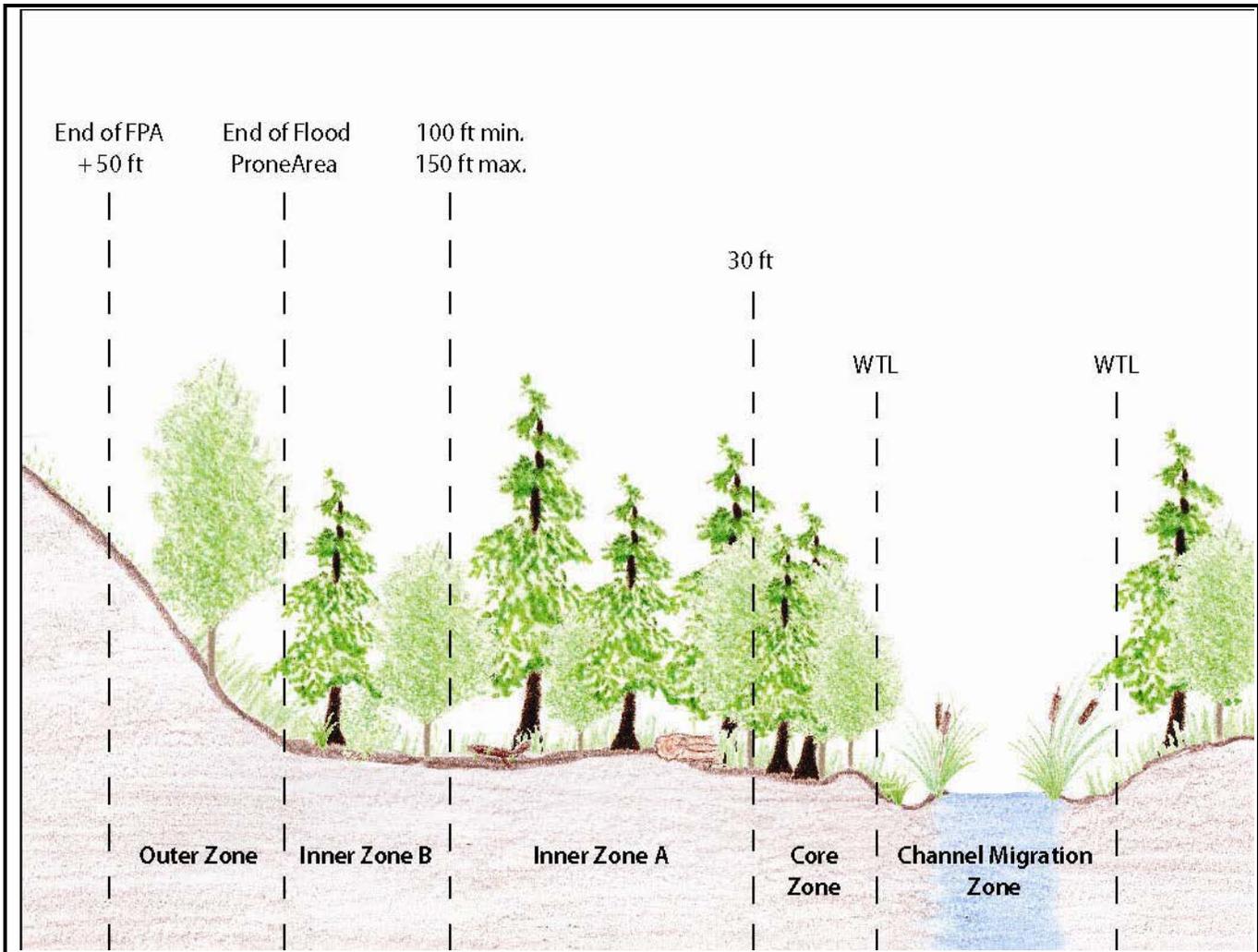
Specific Gualala and Big River/Salmon Creek WLPZ Protection Measures

Class 1 Watercourses:

Timber operations within the Class I WLPZ have been designed and will be conducted to protect, maintain, and contribute to restoration of properly functioning salmonid habitat and listed salmonid species. To achieve this goal, timber operations will:

- Prevent significant sediment load increase to a watercourse system or lake
- Prevent significant instability of a watercourse channel or of a watercourse or lake bank.
- Prevent significant blockage of any aquatic migratory routes for any life stage of anadromous salmonids or listed species.
- Prevent significant adverse effects to stream flow.
- Protect, maintain, and restore trees (especially conifers), snags, or downed large woody debris that currently, or may in the foreseeable future, provide large woody debris recruitment needed for instream habitat structure and fluvial geomorphic functions.
- Protect, maintain, and restore the quality and quantity of vegetative canopy needed to provide shade to the watercourse or lake to maintain daily and seasonal water temperatures within the preferred range for anadromous salmonids or listed species where they are present or could be restored; and provide a deciduous vegetation component to the riparian zone for aquatic nutrient inputs.
- Prevent significant increases in peak flows or large flood frequency.

Profile View of Class I WLPZ in flood prone areas and channel migration zones (not to scale)



Channel Migration Zone: When a CMZ is present upslope of the WTL it is incorporated into the Core Zone. No timber harvesting is proposed in this zone.

Core Zone: The primary objective for this zone is streamside bank protection to promote bank stability, wood recruitment by bank erosion, and canopy retention. Timber operations are generally excluded from this zone and limited to actions which meet the objectives stated above or improve salmonid habitat consistent with 14 CCR 916.9 subsections (a) and (c). The width of the Core Zone is 30 feet measured from the watercourse transition line or lake transition line. No timber harvesting is proposed within the 30 foot wide core zone. **TCF has elected to increase the required core zone from 30 feet to 50 feet.**

Inner Zone A: The primary objective for this zone is to develop a large number of trees for large wood recruitment, to provide additional shading, to develop vertical structural diversity, and to provide a variety of species (including hardwoods) for nutrient input. This is accomplished through the establishment of high basal area and canopy retention by retaining or more rapidly growing a sufficient number of large trees. Additional specific objectives include locating large trees retained for wood recruitment nearer to the Core Zone and maintaining or improving salmonid habitat on flood prone areas and CMZs when present. Timber operations within WLPZs are limited to those

actions which meet the objectives stated above or to improve salmonid habitat consistent with 14 CCR 916.9 subsection (a) and (c).

The Inner Zone A generally encompasses the portion of the flood prone area from 30 feet beyond the WTL (Core Zone perimeter) up to 150 feet from the WTL. The minimum width of the Inner Zone A shall be the greater of the area from the landward edge of Core Zone to the landward edge of the Inner Zone B or 70 feet. The maximum width is 120 feet. **Within Inner Zone A harvesting is subject to the following additional restrictions:**

- The silvicultural method in this area is single tree selection.
- The post harvest stand shall have a minimum 80% overstory canopy cover.
- The post harvest canopy may be composed of both conifers and hardwood species and shall have at least 25% overstory conifer canopy.
- The post harvest stand shall retain the 13 largest conifer trees (live or dead) on each acre of the area that encompasses the Core and Inner Zones.
- Large trees retained shall be the most conducive to recruitment to provide for the beneficial functions of riparian zones (e.g. trees that lean towards the channel, have an unimpeded fall path toward the watercourse, are in an advanced state of decay, are located on unstable areas or downslope of such an unstable areas, or have undermined roots) are to be given priority to be retained as future recruitment trees.
- Harvesting is planned so that the QMD of the flood prone area timber stand will increase.

When no floodplain or Channel Migration Zone is present the maximum width of the WLPZ is 100 feet, the harvest restrictions in the core zone and inner zone A apply.

Inner Zone B: The Inner Zone B is applicable when there are very wide flood prone areas. The Inner Zone B encompasses the portion of the flood prone area from the landward edge of the Inner Zone A (i.e. 150 feet from the WTL) to the landward edge of the flood prone area. The landward edge of the Inner Zone B (i.e. the landward perimeter of the flood prone area) shall be established in accordance with flood prone area. Timber operations are permitted in this zone when conducted to meet the goals of this section, including those for the Inner Zone as follows: The primary objective for this zone is to develop a large number of trees for large wood recruitment, to provide additional shading, to develop vertical structural diversity, and to provide a variety of species (including hardwoods) for nutrient input. This is accomplished through the establishment of high basal area and canopy retention by retaining or more rapidly growing a sufficient number of large trees. Additional specific objectives include locating large trees retained for wood recruitment nearer to the Core Zone and maintaining or improving salmonid habitat on flood prone areas and CMZs when present. Timber operations within WLPZs are limited to those actions which meet the objectives stated above.

Within Inner Zone B harvesting is subject to the following additional restrictions:

- The silvicultural method in this area is single tree selection.
- The post harvest stand will retain the 13 largest conifer trees (live or dead) on each acre of the Core and Inner Zones.
- Postharvest stand shall have a minimum 50% overstory canopy cover.
- The post harvest canopy may be composed of both conifers and hardwood species and will have at least 25% overstory conifer canopy.
- Harvesting is planned so that the QMD of the flood prone area timber stand will increase.

Outer Zone: There is no outer zone due to application of uneven aged silvicultural practices. If, in the future, we institute even-age harvest methods an Outer Zone will be implemented pursuant to the current WLPZ rules.

Slope Class	Class II-S WLPZ Zone Width (feet) Core/Inner Zones	Class III ELZ Width (feet)	Wet Area ELZ Width (feet)
<10%	0 / 50	30	30
10 - 30%	15 / 35	30	30
30 - 50%	15 / 60	50	50
>50%	15 / 85	50	50

Class II Watercourses:

All Class II WLPZs shall be composed of two zones regardless of the watercourse type: a Core Zone and an Inner Zone. The Core Zone is nearest to the water; the Inner Zone is contiguous to the Core Zone and is furthest from the water. The width of the Core and Inner Zones vary depending on the following three factors: (i) side slope steepness in the WLPZ, (ii) whether the watercourse is a Class II-S or Class II-L watercourse type, and (iii) whether the watercourse is within a watershed in the coastal anadromy zone or outside the coastal anadromy zone (*all watercourses within TCF ownership are within the coastal anadromy zone*).

Class II Large:

Core Zone: 30 feet in which no harvest may occur.

Inner Zone: The widths of the Inner Zone is 70 feet and adjacent to the core zone forming a total zone of 100 feet for all class II L streams. Harvesting within the inner zone is allowed providing the 13 largest trees per acre are retained and at least 80% canopy is retained. Silvicultural systems for harvesting are limited to the use of commercial thinning or single tree selection.

Class II Standard:

Core Zone: Variable zone (0-15 feet) based on slope in which no harvesting can occur.

Inner Zone: Variable zone (35-85 feet) based on slope at least 50% of the total canopy covering the ground shall be left in a well distributed multi-storied stand configuration composed of a diversity of species similar to that found before the start of operations. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers.

Class III streams: Using the variable width Equipment Limitation Zone (ELZ) defined by the FPR, where there are no overstory retention requirements under the FPR, the Fund will retain at least 50 percent canopy, and a minimum of 25 percent overstory conifer.

[Note: conformance with all canopy requirements will be measured as an average across not less than a 200-foot lineal WLPZ segment—the same as the FPR.]

The Fund believes these three simple measures of increased retention (one per stream class) a) complement the project goals and the process and review requirements of the existing regulations; b) are efficient for foresters to implement in the field; and c) offer higher confidence that aquatic habitat conditions will improve.

In acquisition funding agreements for Big River and Salmon Creek, the Fund committed to management practices that, among other things, “establish riparian buffers that are wider than required under the Forest Practice Rules.” The Fund’s forest management policies meet that requirement by providing greater canopy retention within the WLPZ and increased basal area and canopy retention upslope from the WLPZs. A specific example of the wider buffer is the no-cut buffer along Class I streams which has been expanded from 30 feet to 50 feet from the stream—a significant expansion. Additionally, the predominant silviculture beyond the formal WLPZ buffers will be single-tree selection which substantially extends the effective riparian buffer width.

XVI. Harvesting Operations

One of the key planning aspects for timber harvest operations is choice of yarding method—ground or tractor-based and cable or skyline systems. The yarding method choice for a specific harvest unit should be based on the silvicultural system, and the site-specific topography and access. The two primary yarding methods most commonly employed are tractor yarding and cable skyline yarding. Tractor yarding includes tractors with winches and chokers, tractors equipped with grapples or rubber tired skidders with grapples or winches. Tractor yarding is generally used on gentle terrain up to 55% slope. Tractors may be used on steeper slopes where cable yarding is infeasible due to access problems or on long corners where deflection for skyline logging is inadequate. Cable skyline yarding consists of a running skyline or preferably a standing skyline with a carriage, either system should be capable of elevating the logs above the existing tree canopy. Cable logging is used on steep slopes, generally over 50%, where slopes are long and planer or concave. Cable yarding on convex slopes can result in a ground lead situation which can cause unnecessary damage to residual timber or the logging equipment. The key to successful cable yarding is to ensure that there is adequate deflection in the logging unit to suspend the logs above the ground and tree canopy.

The decision to use cable or tractor logging systems is generally an easy one to make. The coast range is very steep and highly dissected with many drainages which make for easy cable logging settings and the ridge tops are reserved for tractor logging. There is a range of slopes between 50-65% where either method may be judged to be adequate in the eyes of the forester laying out the timber harvest unit. Cable logging may be used on shallow slopes where the logs would otherwise be adverse skidded to a landing above the harvest area and conversely tractors may be employed where there are adequate roads and landings downhill of the harvest area. The decision to use one method over the other in this “gray” area is generally made by using the equipment that is required on the rest of the job for example a shallow slope may be cable logged if the rest of the job is predominately cable logging. Or tractors may be used on steeper slopes if there is so little steep ground that bringing in a cable yarding machine for a few acres is deemed infeasible or uneconomical. Tractor long lining is a common practice where winch lines are pulled down hill and the logs are winched up to the tractor sitting in a stationary position. This technique is generally used when the slopes are very short and do not justify the expense of a cable machine and the tractor itself does not operate on the steep slope. Other methods which are suitable for unevenage management techniques are helicopter or balloon yarding which are used when access is limited or there is no access because of excessive road construction or stream crossings requirements to get road access to a harvest unit.

Yarding method decisions are reviewed by the Senior Forester and are discussed in the field consultations. Yarding method and any unusual access situations are described in THPs and are also included in our more readily-available THP summaries.

XVII. Contractor Selection

TCF will utilize contractors in several roles in the management of these properties—from forestry and wildlife surveys to logging and road maintenance. There are several reasons for this—as a relatively new enterprise TCF is not in a position to take on significant staff obligations and many of the most experienced professionals already have contract businesses set up. Additionally we can not guarantee year-round work in some areas. We will strive to use the highest quality professionals available—from owl calling to bridge repair. At least initially we will put most logging jobs out to bid, although we will select the firm that offers the best combination of price, performance, and experience. Other contracts, such as for road maintenance and security, will likely be negotiated directly with the professionals who have the most experience in the area and want the work. Especially for logging, road, and security contracts, ensuring safe working conditions and selecting contractors with good safety records will be an important concern. Additional forestry project work (e.g. owl surveys, preparing and supervising a THP) will be drawn from the area’s experienced consulting biologists and foresters. In those situations we will seek to utilize the consultant as a full team member to solicit their ideas on how to meet our objectives. In all roles we have a strong preference for local expertise because it helps support local communities and the timber-based economy. We are concerned about the relative lack of young professionals in the field and will seek to create opportunities that encourage viable business opportunities for young loggers and technicians. In all our efforts we will strive to pay a good and fair wage, to reward performance, and to encourage professional development.

XVIII Staff Training

The Conservation Fund has taken advantage of the high quality of local contractors and chosen to keep our staff relatively small. TCF recognizes that staff will need training in specific areas, appropriate to their positions. Training will be provided as deemed necessary by a supervisor as the staff person’s responsibilities grow, or as requested by the staff person. TCF will train staff to encourage individual strengths. TCF recognizes that the SFI 2010-2014 Standard, Objective 16 and FSC US Forest Management Standard, C4.1b encourages employees to improve their skills in sustainable forestry practices through appropriate training and education sufficient to their roles and responsibilities. Each employee has an annually updated job description outlining individual responsibilities and participates in an annual performance review.

Staff Training Expectations

	Timberlands Manager	Registered Professional Forester	Forestry Technician	Office Manager	Forest Carbon Analyst
Participate in SFI Implementation Committee and other forestry associations	x				
Sustainable forestry principles and SFI & FSC standards	x	x	x	x	x
Best management practices: specific to streamside and road management	x	x	x		
Principles related to	x	x	x		

reforestation, invasive plants and animals, forest resource conservation and aesthetics					
Responsibilities under the US Endangered Species Act, Salmonid Protocol, NSO Protocol and Red Legged Frog Protocol	x	x	x		
Safety precautions	x	x	x	x	x
OSHA regulations	x				
Business Management	x				
Public Outreach	x			x	
Emerging Technologies	x	x	x	x	x
Forest carbon quantification and verification					x
Road engineering	x	x			

XVIV. Forest Certification

The Conservation Fund has committed to seeking dual certification under the Forest Stewardship Council and Sustainable Forestry Initiative programs (FSC-US Forest Management Standard version 1.0) and Sustainable Forestry Initiative (2015-2019 Standard), available at <https://ic.fsc.org/united-states.298.htm> and <http://www.sfiprogram.org/sfi-standard/forest-management-standard/>. The Conservation Fund supports the efforts of the SFI Implementation Committee (SIC) by actively participating in the California SIC meetings and programs and retains records of the SICs submittal of annual data to SFI, Inc. regarding inconsistent practices. An initial scoping audit was completed on the Garcia River Forest in May 2006. A full audit and annual surveillance audits were successfully completed on in all subsequent years, with a full recertification audit to take place every five years.

XVV. Community Engagement

TCF seeks involvement from the local community at several stages of its activities. A public meeting was held to review the management plan for BR/SC, much like a meeting was held in Point Arena to review the GRF IRMP prior to adoption. Interested parties are invited to participate in a tour of each THP either before or shortly after submission, and again following completion of the operation. In addition, TCF staff is available to respond to questions or concerns raised by the local community. TCF prepares and broadly disseminates an Annual Report that describes major activities on the properties, changes to policies, and monitoring results. Should a dispute arise between TCF and a local citizen, neighbor, partner organization, current or potential contractor, or other interested entity, TCF will first seek to resolve the dispute through open communication, prior to more formal dispute resolution through mediation or litigation. Records of disputes will be made available to the lead certification auditor. In all situations, TCF strives to be a good neighbor and fair employer, and will hold itself to high professional standards in its dealings with the local community, contractors, Native American tribes, public agencies, and all other interested parties.

**PROGRAM ON HIGH CONSERVATION VALUE FORESTS, IMPERILED SPECIES,
AND REPRESENTATIVE SAMPLE AREAS**

The Conservation Fund's North Coast Forest Conservation Program

Primary author: Evan Smith

Original version December 2008; updated 2018

Document background

This program description was prepared to assist the audit team in evaluating compliance with the requirements of the SFI & FSC forest certification systems and to guide the forest planning and monitoring conducted by The Conservation Fund (TCF). This document references and expands upon the Integrated Resource Management Plans for each TCF North Coast Forest and “*Conservation Prospects: A review and analysis of existing conservation plans, land use trends and strategies for conservation on the north coast of California.*” All plans are available in the reference documents section of the North Coast Program website-- <https://www.conservationfund.org/projects/north-coast-forest-conservation-initiative/north-coast-reference-documents>. While some of the material in this summary is duplicative of the management plans it provides additional detail that is of specific interest to FSC/SFI auditors; this is intended to be a stand-alone policy applicable across all properties (and any additional acquisitions in California).

Introduction

The Conservation Fund (TCF) is required to identify areas that because of significant conservation values should have special management practices. This requirement is imposed by TCF's internal forest management planning approach (see Forest Management Policies section IV, Critical Landscape Features) and by the requirements for sustainable forest management certification. For consistency purposes this document will primarily reference language from the Forest Stewardship Council (FSC) US Forest Management Standard, especially Principle 9; we prefer the term “features” over “forest” because many of the highest priority conservation elements are the non-forested features within a forested landscape. This discussion is also linked to Sustainable Forestry Initiative Standard, Section 2, Indicator 4.1.3. The basis for most of this program comes from two important conservation planning exercises, “*Conservation Prospects for the North Coast*” and the Conservation Action Planning assessment in the “*2006 Garcia River Forest Integrated Resource Management Plan,*” described in more detail below.

Conservation Prospects

In August 2005, after two years of research and review, TCF completed “*Conservation Prospects for the North Coast: a review and analysis of existing conservation plans, land use trends, and strategies for conservation on the North Coast of California.*” This plan was prepared under a contract for the California State Coastal Conservancy. “*Conservation Prospects*” systematically identifies the highest conservation values for the region based on a broad set of past conservation plans and develops recommendations for future conservation efforts. The two principal recommendations are to:

- Move quickly to establish “working landscape” conservation management on large, strategically located forest and agricultural properties in resource-rich watersheds in Humboldt, Mendocino and Del Norte counties.
- Focus other fee or easement acquisitions on unique resources that are essential to conserving high-priority coastal resources, such as coastal estuaries, old-growth redwood forest stands, coho salmon refugia, floodplains, and California Coastal Trail segments.

In addition to these general recommendations, the report reviews and catalogs 154 individual conservation plans for the region and provides a detailed spatial synthesis assessment of the seven plans

deemed to be the most broadly relevant and instructive. The seven plans were chosen on the basis of data quality, scientific principles, format, and mandate and consist of:

1. *California North Coast Ecoregion Aquatic Conservation Strategy Recommendations*, The Nature Conservancy of California, Fall 2003;
2. *California North Coast Ecoregional Plan*, The Nature Conservancy of California, June 2001;
3. *Completing the California Coastal Trail*, California State Coastal Conservancy, January 2003;
4. *Mendocino County Coastal Conservation Plan*, Mendocino Land Trust, April 2003;
5. *A GIS-Based Model for Assessing Conservation Focal Areas for the Redwood Ecoregion*, Conservation Biology Institute and Save-the-Redwoods League, 1999;
6. *Recovery Strategy for California Coho Salmon*, California Department of Fish and Wildlife, 2004; and
7. *Strategic Plan Update*, Pacific Coast Joint Venture, 2004.

The 13-page chapter of “*Conservation Prospects*” on the Mendocino Coast Hydrologic Unit (which contains all of the Mendocino County TCF properties) draws from 15 local plans in addition to the seven core regional plans. In general, “the Mendocino Coast HU is consistently one of the most highly valued regions of the North Coast” by the conservation plans synthesized. Specific features that are recognized as of high conservation value include pygmy forest, coastal dunes, coastal estuarine wetlands, seabird rookeries, spawning areas for anadromous fish, and old growth forests (note that redwood-Douglas fir and tanoak forests were not identified as high conservation value).

The report was developed over a 24 month period in collaboration with state agencies and conservation groups; 41 organizations or individuals provided technical review for the assessment. The report is frequently cited by conservation plans and initiatives on the North Coast.

Garcia River Forest Conservation Action Planning

Occurring nearly simultaneous with the development of “*Conservation Prospects*” was a much more targeted exercise in conservation planning for the Garcia River Forest (GRF) led by The Nature Conservancy and utilizing their “Conservation Action Planning” process (also known as “5-S”). As described in the 2006 GRF Integrated Resource Management Plan (Section II, Identification of Conservation Targets and Associated Indicators) this was “designed to help identify conservation targets, develop strategies to protect those targets, take action, measure success, and adapt.” Among the numerous features evaluated, five were identified as Conservation Targets: anadromous fish bearing stream, redwood/Douglas-fir forest, oak woodland/grassland, non-riverine wetlands, and Northern spotted owl.

Each conservation target has identified indicators with quantitative monitoring metrics relating to distribution, viability, and quality. For example, the selected indicators for anadromous fish bearing streams include percent fines less than .85mm (spawning sites); percent fines less than 6.5mm (spawning sites); mean weekly average water temperature (Class I streams); mean pool shelter rating (Class I streams); primary pool frequency (Class I streams); riparian canopy cover (Class I streams). Nine additional indicators were identified for further evaluation.

The primary references used in the Conservation Action Planning process were:

- Low, Greg. 2003. *Developing Strategies, Taking Action & Measuring Success. Landscape – Scale Conservation: A Practitioner’s Guide*. The Nature Conservancy, Arlington, Virginia.
- The Nature Conservancy. 2005. *Conservation Action Planning Workbook, Version 4b*. The Nature Conservancy, Arlington, Virginia.

The Conservation Action Planning process is the premier tool for conservation and restoration planning within a conservation biology framework. It has been used at thousands of sites across the world.

As part of the 2006 GRF Integrated Resource Management Plan (IRMP), the Conservation Action Planning process was led by Mark Reynolds and Jen Carah, ecologists with The Nature Conservancy. The GRF planning team included an additional twelve experts from the fields of forest management, land conservation, and watershed restoration. A well-attended public meeting to solicit comment on the draft plan was held in nearby Point Arena, CA, and numerous additional consultations were provided by recognized experts and the local community. The plan was approved by the State Coastal Conservancy, the California Department of Fish and Wildlife, and The Nature Conservancy.

The 2006 GRF Integrated Resource Management Plan was updated in 2018. The 2018 GRF Integrated Resource Management Plan maintains the conservation targets identified in the Conservation Action Planning process and has been reviewed by The Nature Conservancy and the State Coastal Conservancy for consistency with our conservation easement.

North Coast Forests Conservation Values

In order to document the conservation values of a prospective property, TCF prepares a Land Acquisition Evaluation and/or a conservation easement baseline report prior to commitment of acquisition funding from the state agencies and easement holders. Following acquisition, TCF prepares an Integrated Resource Management Plan for each forest. These documents include detailed descriptions of vegetation types and species occurrences, as well as more general information about physiographic features and local ecology. These documents prepared for each California North Coast forest have formed the basis of ongoing management activities, ecological monitoring and planning. Relevant information from these documents is excerpted below in the sections on specific conservation features.

HCVF definition from the FSC-US Forest Management Standard (v1.0)

FSC defines High Conservation Value Forests are 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).

[note: this definition was updated by FSC in 2010, the change in the FSC HCVF definition does not result in changes to the TCF HCVF definition.]

TCF Definition of HCVF

The North Coast forests were acquired by TCF expressly because of their conservation value. The properties possess significant conservation values, including habitat for numerous endangered species. It could be argued that all of the North Coast should be considered High Conservation Value Forests, but more realistically only the most exceptional and sensitive areas of the landscape should be classified as HCVF. The TCF team identified those elements that deserve more than just recognition and protection as part of a conserved working forest but are truly critical conservation values at a significant regional level. Based on the analysis done as part of *Conservation Prospects* and the IRMPs, TCF has identified the following areas as High Conservation Value Forest features:

- a) Oak woodlands and grasslands: regionally unique due to the low frequency of occurrence in the coastal forests but becoming more common as one moves east from the coast.
- b) Pygmy cypress forest: regionally unique and occur only on podzolized (nutrient poor) soils found in the coastal marine terraces of Mendocino County.
- c) Old growth coniferous forest: regionally unique and absent on TCF lands except for scattered individual old growth trees.
- d) Salmonid spawning streams: regionally unique as Coho are on the decline in the Central California Coast Evolutionary Significant Unit, thus all anadromous streams are protected by regulation. In some instances, TCF has increased protection measures beyond the regulatory standard.

Grasslands and salmonid spawning streams are obviously not “forest,” but occur within or on the edge of forests and are recognized as HCVF features because of their critical importance and sensitivity to management practices.

In addition to this list, many additional areas and elements were considered. All portions of the properties have some degree of ecological value—whether it is habitat for the Northern spotted owl or ability to support carbon storage. And some of the forests are used for recreation, public education, and to a limited extent, foraging. And there are many fine-scale elements that have significant conservation value—migratory birds, historic sites, etc. The above definition is designed to recognize those elements that are regionally-significant and deserve special management attention. The HCVF also considers the degree of threat—many of the above-listed elements are still vulnerable under current laws and regulations.

TCF Inventory of HCVF

Oak woodlands and grasslands. Oak woodlands and grasslands have been mapped by TCF via digitalization of 2012 aerial photographs, then confirmed by on the ground staff expertise.

Oak Woodland Acres

Big River Forest: 0
 Salmon Creek Forest: 0
 Garcia River Forest: 613
 Gualala River Forest: 91
 Buckeye Creek Forest: 268

Grassland Acres

Big River Forest: 0
 Salmon Creek Forest: 0
 Garcia River Forest: 369
 Gualala River Forest: 115
 Buckeye Creek Forest: 812

Currently we track 972 acres of oak woodlands and 1, 296 acres of grassland.

Pygmy cypress forest. Salmon Creek Forest contains the only known occurrence (on TCF properties) of this rare natural community type, which are limited to former marine terraces with thin, nutrient-poor, acidic soils underlain by a hardpan. TCF has mapped and ground-truthed during the Lower Salmon Creek THP that only 4 acres were identified as having pygmy cypress forest characteristics. This community type does not usually grade into commercial forest types; typically there is a fairly sharp demarcation, but field staff are knowledgeable of the characteristics of pygmy forest and will readily observe any additional stands if they are present. If field surveys reveal additional pygmy forest areas, they will be added to this inventory. Currently we track 4 acres of pygmy cypress forest.

Old growth coniferous forest. Unfortunately, due to the extensive logging of coastal Mendocino County, there are no old growth stands on TCF forests. Old growth stands are defined as having the majority of the canopy in trees established prior to 1800—even if harvest or other disturbance has occurred within the stand. Individual old growth trees do occur on these properties—although to a very limited extent. They usually result from the release in the early to mid-1900s of suppressed trees when the old growth overstory was removed. They are not mapped but are fully protected under the wildlife tree retention requirements (see TCF Forest Management Policies). Currently we track 0 acres of Old Growth.

Salmonid spawning streams. While there is excellent mapping of fish-bearing streams (Class 1 watercourses) and there is decent understanding of salmonid distribution within these watersheds, there has not been a detailed assessment of individual spawning areas. Precise location of spawning areas is not critical to the HCVF policies but will likely be the subject of future monitoring. Surveys by Department of Fish & Wildlife, The Nature Conservancy, and North Coast Regional Water Quality Control Board have indicated coho presence in North Fork, Signal, Blue Waterhole, and Inman creeks on the Garcia River Forest (as well as the mainstem), whereas steelhead are widely documented (assume they are using just about every Class 1 stream on our properties). On Big River, coho are documented in the mainstem, Two Log Creek, Laguna Creek, North Fork and the East Branch North Fork. Coho are documented along most of the length of Salmon Creek and Hazel Creek. On the Gualala River, coho are documented on the North Fork Gualala River and Dry Creek. The Buckeye Forest Baseline Report states that coho salmon have been identified on the forest but does not name specific streams. Accounts of Coho in the Gualala Basin are likely anecdotal. Presence/absence surveys in the Gualala Basin have not detected coho salmon since 2001, although they were historically present. Currently track 122 total miles of Class I streams.

Class I Stream Miles

Big River Forest: 26

Salmon Creek Forest: 11

Garcia River Forest: 39

Gualala River Forest: 17

Buckeye Creek Forest: 29

TCF Protection Measures for HCVF

General measures. The most significant threats to any HCVF element would be residential development, forest fragmentation, vineyard conversion or grazing—all have been mitigated by TCF's acquisition and the permanent conservation restrictions on the forests. This limits the number of potential threats to the much smaller subset of forest management, road building and/or maintenance, recreation, trespass and neglect. Appropriate protection measures for HCVF are incorporated in the TCF Forest Management Policies, as described below. New road building projects carefully reviewed by TCF staff (both because of its expense as well as the potential environmental impact) and are included in proposed THP's or Department of Fish and Wildlife projects such as Fisheries Restoration Grant Projects. Guidelines for road construction and maintenance are described in the TCF Road Management Plan. Recreation policies have been developed for these properties, to date we have a pedestrian and equestrian access permit system for Big River and Salmon Creek. Garcia is favored for hunting and a small number of permits to hunt are issued each year, primarily to neighbors. Trespass is a major concern on TCF forests, particularly as it relates to illegal marijuana cultivation. All the properties are actively patrolled by TCF staff and contractors and thoroughly gated to discourage trespass. Fortunately, marijuana cultivation is not common in pygmy cypress or oak woodlands and grasslands.

Sudden Oak Death (SOD) does occur on TCF forests and may pose a threat to HCVF oak woodlands. Tanoak infected with SOD is visible on all TCF ownership except Salmon Creek and ocular forest

monitoring indicates that SOD is increasing in frequency. However recent observations of the oak woodlands did not reveal SOD in the true oaks. There is no effective and affordable treatment or vaccination against SOD in a forested setting, so treatment will consist of maintaining an ecologically balanced and healthy forest. For all these reasons, protection of the HCVF is well-integrated with the design and implementation of the projects. Additional specific references are provided below.

Oak woodlands and grasslands. TCF Forest Management Policies (Section IV) states, “All true oak (*Quercus* spp.) woodlands and native grasslands are to be preserved.” In addition, the vast majority of the oak woodlands and grasslands on TCF forests are included within the Ecological Reserve Network (ERN) on the Garcia River Forest. Management of the ERN is described in the GRF IRMP but all management activities must be designed and implemented to further the ecological goals. In the case of oak woodland and grassland this means that prescribed fire or selective harvest to address conifer encroachment or to control the spread of Sudden Oak Death would be permitted.

Pygmy cypress forest. TCF Forest Management Policies (Section IV) states, “All pygmy forest is to be preserved.” Salmon Creek contains the only known occurrence of this rare natural community type on TCF properties. The area northwest of the Lower Salmon Creek THP Unit A are to be protected from future harvest and monitored for potential impacts. Pygmy forest occurs along a gradient, according to soil and hydrological variations, and there may be pygmy characteristics within the adjoining managed forest. Unique pygmy features that are encountered within a harvest area would be retained under Forest Management Policies Section X, Retention Requirements.

Old growth coniferous forest. Unfortunately, this does not exist within the TCF ownership. Should any new stands be identified, or new forest be acquired, all old growth coniferous forest would be preserved. Individual old growth trees are preserved on TCF forests whenever they are encountered.

Salmonid spawning streams. Protection for salmonid spawning streams is provided for by the Forest Management Policies Section XIV, WLPZ Protection Measures, and includes measures related to upslope silviculture, road improvements, and increased riparian buffer protection. Additional details are available within the IRMPS, the Forest Management Policies and the GRF Site-Specific Management Plan approved by the North Coast Regional Water Quality Control Board.

TCF Monitoring of HCVF

Periodic monitoring of HCVF will be integrated into ongoing monitoring activities on the properties and will occur at different scales and timeframes as necessary. Two categories of monitoring will occur: 1) biophysical—related to the distribution and condition of the HCVF features, and 2) programmatic—related to the effectiveness of the protection measures.

Biophysical monitoring will consist of:

- Ongoing vegetation mapping as part of forest inventory updates and Timber Harvest Plan preparation, with updated forest stratification approximately every ten years.
- Ongoing rare plant surveys in the areas within and adjoining planned Timber Harvest Plans and Road Improvement or Decommissioning Projects.
- Occasional evaluations of Sudden Oak Death distribution and mortality.
- Aquatic habitat typing by The California Department of Fish and Wildlife have been completed on TCF forests, and are tentatively scheduled to be re-assessed approximately every ten years.
- EMAP aquatic monitoring on Garcia River Forest by The Nature Conservancy and the North Coast Regional Water Quality Control Board—initial assessments completed, re-assessments in approximately ten years.

- Annual summer season stream temperature monitoring at multiple sites on all properties (multiple partners).

Programmatic monitoring will consist of:

- 1) an annual evaluation of whether the HC VF features are being sufficiently protected and if there are any new threats to consider.
- 2) A long-term evaluation of the water quality and stream habitat condition response to TCF forest management and watershed restoration practices. This will be developed over the next decade based on observations in the habitat assessment and EMAP measurements (see the Garcia River Monitoring Program, Monitoring the Status and Trends of a Watershed Recovery Effort included in the 2018 GRF IRMP).

Representative Sample Areas. Ecosystem type definition

Identification and protection of Representative Sample Areas (RSA) are explicitly required as part of the FSC-US Forest Management Standard (C6.4) in order to ensure the conservation of ecosystem types that are not protected through HC VF or other requirements. [Definition from FSC Standard: **Representative Sample Areas (RSAs)** 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)]. In the context of the North Coast there are many ecosystem types and conditions present, from ocean shore to old growth forest. The TCF forests all occur within the Northern California Coastal Forest Ecoregion (NA0519), as defined by Ricketts et al, “*Terrestrial Ecoregions of North America: a conservation assessment*” (Island Press 1999). More traditional forest classification systems show similar categorization, e.g. Northern California Coast Section (263A) in “*Description of the ecoregions of the United States*” (Bailey, R.G., US Forest Service, 1995).

Northern California Coastal Forest Ecoregion conservation status

Ricketts et al describe the Northern California Coastal Forest Ecoregion as a Class 1 ecoregion, or “Globally outstanding ecoregion requiring immediate protection of remaining habitat and extensive restoration.” Urgent action priorities developed by the WWF include greatly increasing “...the number of certified forests where timber is being harvested sustainably,” which is “...essential for maintaining the integrity of ecosystems outside protected areas.” At 18.7% protected, the Northern California Coastal Forest Ecoregion is one of the most protected forest types in the world (Schmitt, C.B., et al. “*Global analysis of the protection status of the world’s forest*,” Biological Conservation, 2009). The Convention on Biological Diversity targets 10% protection of each ecoregion as necessary to maintain biological diversity, thus the Ecoregion can be considered well-protected.

The vast majority of the Northern California Coastal Forest Ecoregion is analyzed as part of “*Conservation Prospects*,” which recognized two principal recommendations as conservation priorities

- Move quickly to establish “working landscape” conservation management on large, strategically located forest and agricultural properties in resource-rich watersheds in Humboldt, Mendocino and Del Norte counties.
- Focus other fee or easement acquisitions on unique resources that are essential to conserving high-priority coastal resources, such as coastal estuaries, old-growth redwood forest stands, coho salmon refugia, floodplains, and California Coastal Trail segments.

It does not recommend the additional preservation of redwood forest unless it contains some of the high value features (where they occur, those same features are protected within the TCF forests through the HCVF program).

Identification of Representative Sample Areas

For the purpose of this program we classify the following as Representative Sample Areas—Big River unit of the Mendocino Headlands State Park, Jackson State Demonstration Forest, Maillard State Reserve, and the Ecological Reserve Network of the Garcia River Forest. These are large-scale formally-protected landbases containing a diversity of representative natural habitat conditions.

There are countless habitat conditions and successional stages that could be considered for the purpose of defining Representative Sample Areas. The most significant of these, such as oak woodlands, are protected through the HCVF program described above. Less significant examples could include riparian alder stands and natural, early successional stands. Within the portion of the Northern California Coastal Forest Ecoregion that is vegetated with conifer forest there is relatively little spatially-explicit variation—almost everything is dominated by redwood, Douglas fir, Grand fir, hemlock and tanoak and is less than 100 years old. There are minor variations depending on the proximity to the coast. There is a naturally occurring belt of sugar pine (*Pinus lambertiana*) which extends from Mountain View Road southward into northern Sonoma County. This is unique to the north coast and our ownership. The sugar pine is managed concurrently with the other major forest types and sold commercially when market conditions are favorable. Other tree species do occur but are almost never a large component of a stand. Certain ecological processes create significant features to consider, for example forest fires and landslides can and do create successional pathways with some different characteristics.

The process of identifying RSAs within this somewhat indistinctive landscape becomes somewhat irrelevant when looking at the conservation status and management of surrounding lands. In addition to all TCF forests being permanently conserved, there are a number of other large landholdings with similar features which are also permanently conserved. For example, adjoining the Big River Forest is the Big River unit (7,334 acres) of the Mendocino Headlands State Park and the Jackson Demonstration State Forest (48,652 acres). Due to the shared management history, the State Park is almost identical in conditions to TCF's Big River tract, and is permanently protected with little to no harvesting or road building expected. Comparatively, the State Forest is thirty to fifty years more developed, with significantly older and denser forest conditions prevalent, and will be managed for both continued late-seral forest development as well as some modest level of harvesting (both even-aged and uneven-aged). The Garcia River Forest adjoins an old growth reserve and contains a 8,264 acre Ecological Reserve, which in addition to being permanently protected from development and conversion can also only be managed for late-seral and other desired ecological conditions. TCF's Garcia River Forest, Gualala River Forest and Buckeye Forest create a contiguous 50,000 acres of permanently conserved forestland. Looking beyond the protected lands, due to the significant land use and forestry restrictions imposed on the surrounding landscape a wholesale change in ecological patterns is unlikely.

As it relates to designating RSAs, it is possible that some existing but niche habitat type is unlikely to persist on the landscape. For example red alder stands less than 30 years old are very uncommon because red alder stands are almost exclusively located in riparian zones and due to the Forest Practice Rules (dating to the 1970s); new clearings in riparian zones are relatively rare (only triggered by flood scouring). They provide a unique and valuable wildlife habitat and enrich stream nutrient conditions, however it would likely be illegal to try to encourage the development of new alder stands and it would certainly be impractical to try to freeze in time the existing stands. The habitat types that are most likely to decrease in abundance are early successional stands, due to the decrease in even-aged management practices. However early successional stand conditions are still being perpetuated to some extent on private lands and were likely an almost non-existent component of the pre-European landscape. The

ecological process least represented is probably fire, due to 50+ years of aggressive fire suppression. Reintroducing low-intensity ground fires is a long-term objective for TCF but will require a significant shift in forest structure and community acceptance. And despite the suppression efforts, fires still occur, as shown by recent fires in Mendocino County—so recently burned areas are not lacking and will continue to persist on the landscape. The more pervasive threat to habitat conditions and distribution will likely be climate change, which cannot be prevented through the designation of RSAs, and the extensive network of protected lands already provides the best hope for adaptation and species persistence.

In summary, numerous forest stand types and processes were considered for RSA designation, and the following summarizes the salient conclusions.

1. Old growth forests and Oak woodlands and native grasslands are important and would receive RSA designation if they were not already recognized and protected through the more-stringent HCVF designation.
2. Late-seral conditions are the highest priority feature in the coniferous forest, even when not occupied by Northern spotted owl or marbled murrelet. At the site-scale, protection of existing individual features is recommended by the California Department of Fish and Wildlife and occasionally required during Timber Harvest Plan review, as well as required in TCF's retention policies. At the landscape-scale, over 100,000 acres of similar coniferous forest in Mendocino County is managed for development and retention late-seral habitat conditions, which is in excess of conservation biology guidelines for maintaining biodiversity.
3. Young coniferous forest has not been identified as high wildlife or social importance and will continue to be created on the landscape through ongoing even-aged harvesting activities on private lands; therefore it is unnecessary to include in a RSA.
4. Hardwood riparian stands (of all ages) are gradually being succeeded by coniferous stands. They are a unique and valuable type but impractical to deliberately maintain as a RSA.
5. Fire is the most significant process that is under-represented on the landscape and burned conditions and features are probably under-represented compared to pre-European settlement conditions. TCF is taking steps to be able to re-introduce fire (and by extension, burned conditions) but is decades away from safe implementation.

To summarize, because of the widespread protected nature of the region, the extensive regulatory system restricting land use change and harvest practices, and the existing pattern of habitat conditions and ecological processes present on the landscape, our conclusion is that the designation of additional Representative Sample Areas is not necessary and would not be ecologically beneficial. This conclusion will be re-evaluated at least every ten years, with stakeholder input, as part of a planned update to TCF's Management Policies.

2018 Re-evaluation of Representative Sample Area Program

The following regional conservation plans were reviewed as part of the ten year re-evaluation of TCF's RSA program:

1. *California's Forests and Rangelands 2010 Assessment*, California Department of Forestry and Fire Protection, June 2010;
2. *Centennial Vision for Redwoods Conservation*, Save the Redwoods League, 2018;
3. *Conserving California's Coastal Habitats: A Legacy and a Future with Sea Level Rise*, The Nature Conservancy and State Coastal Conservancy, 2018;
4. *Conserving Landscapes, Protecting the Climate: The Climate Action through Conservation Program*, The Nature Conservancy and Sonoma County Agricultural Preservation and Open Space District, January 2016;
5. *A Freshwater Conservation Blueprint for California: prioritizing watershed for freshwater biodiversity* Jeanette K. Howard, et al., April 2018;
6. *Recommendations for the 2018 Farm Bill*, Forests in the Farm Bill Coalition, July 2017;

7. *SalmonScope: Priorities for Conserving California's Salmon and Steelhead Diversity*, The Nature Conservancy, August 2011.

The common six high priority issues identified in these regional conservation plans include:

- Water Quality and Quantity
- Forest Health/Invasive Species
- Forest Fragmentation/Parcelization/ Changing Ownerships
- Increase and Enhance the Benefits of Working Forests
- Climate Change
- Fire Management

Following the review of these plans and re-evaluation of our HCVF and RSA program, TCF maintains our previous outcome (analyzed and stated above) that because of the widespread protected nature of the region, the extensive regulatory system restricting land use change and harvest practices, and the existing pattern of habitat conditions and ecological processes present on the landscape, our conclusion is that the designation of additional Representative Sample Areas is not necessary and would not be ecologically beneficial.

Protection and management of Representative Sample Areas

Ongoing preservation and management of the Representative Sample Areas is the responsibility of the landowner, California State Parks Department, California Department of Forestry and Fire Protection, and The Conservation Fund, respectively. All properties are covered by management plans consistent with the public mission of the organization; in addition management plans and actions are reviewed by outside advisory groups. The adequacy of these protection measures will be re-evaluated at least every ten years, with stakeholder input, as part of a planned update to TCF's Management Policies.

Consultation regarding HCVF and RSAS

The FSC-US Forest Management Standard explicitly expects some level of stakeholder consultation as part of the HCVF and RSA identification and protection process. As described above, the identification of the four HCVF features was based on two well-respected conservation biology planning efforts which were openly developed, are publicly available and have been thoroughly reviewed by natural resource agencies, environmental organizations and the local communities. In addition the HCVF/RSA features descriptions and protection measures have been part of the TCF Policy Digest, which is a publicly available document that has benefited greatly from community and agency review, including by our Advisory Council. The most significant contributors to the policies include: Jen Carah (The Nature Conservancy), Linda Perkins (Sierra Club), and Alan Levine (Coast Action Group). The TCF Forest Management Policies are discussed as part of every THP field review (which includes both an internal staff and an open tour); the public tours draw a broad range of stakeholders, including students, neighbors, and local environmentalists. We have also benefited from the extensive HCVF and RSA consultation and analysis conducted by the Mendocino Redwood Company which manages an adjoining and much larger landbase and came to very similar conclusions regarding high priority features and protection measures.

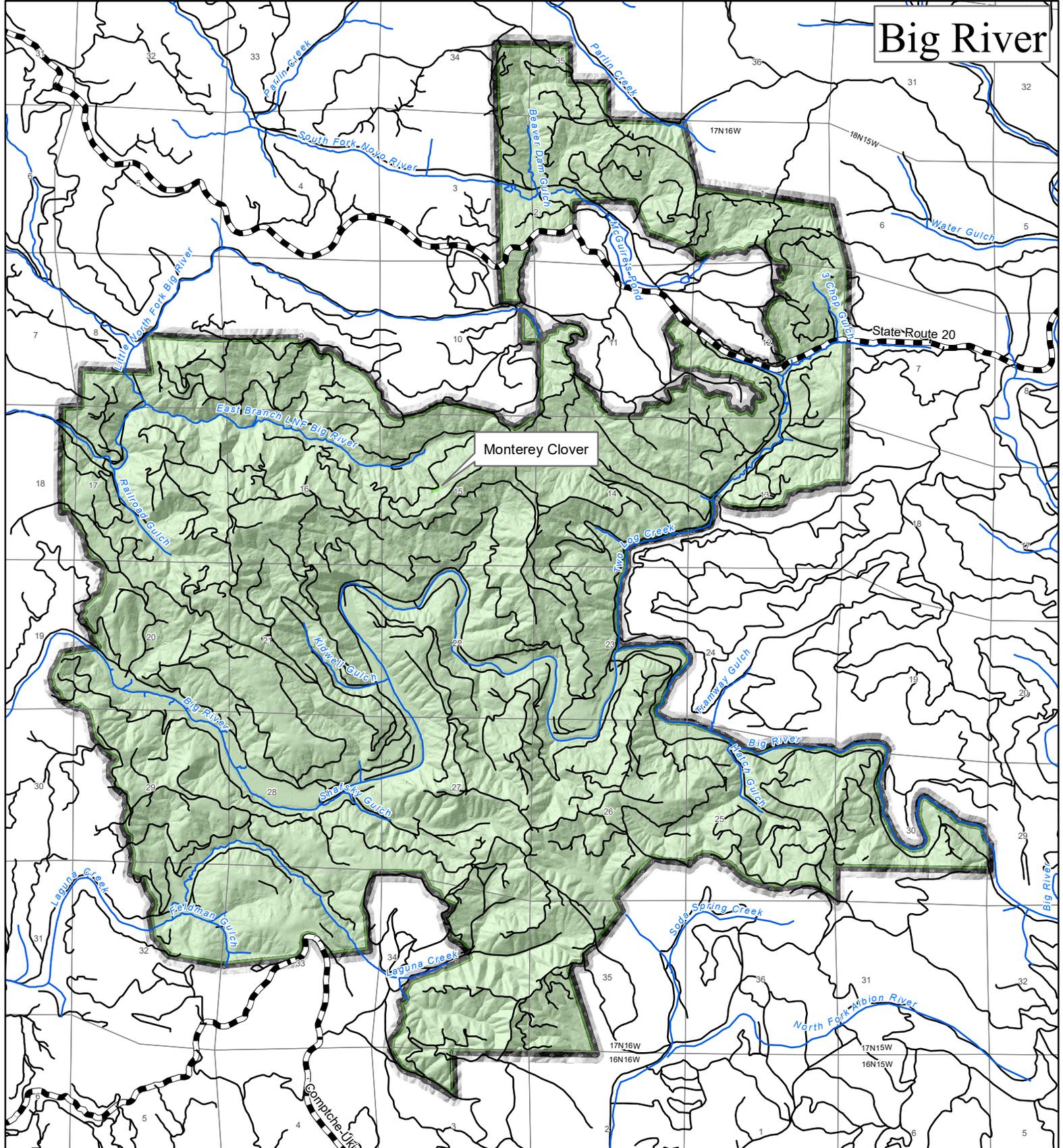
Imperiled Species

The SFI standard specifically requires identifying and protecting species that have been identified as Globally Critically Imperiled and Globally Imperiled (G1 and G2 status, respectively). The California Natural Diversity DataBase (CNDDDB) maintains all recorded sitings of G1/G2 species, as well as other listed species and species of concern. The following G1/G2 species have been identified on TCF properties:

Species name	Common name	Location	Notes and protection measures
Trifolium trichocalyx	Monterey clover	Big River, in a road cut bank near the Elephant Seal and ELF THPs	This G1 and state and federally endangered plant was identified by TCF in 2011 prior to a road upgrade project. Per CDFW permit, the single location was fenced and protected, and will be monitored. It is the only location known outside of a handful of sites in Monterey County.
Agelaius tricolor	Tricolored blackbird	McGuire's Pond, private forest adjoining Big River	The detection of this G2/G3 species is from a single day in 1992 and it has not been observed since. Given their preference for open riparian and field habitats they are unlikely to be found on TCF forest or impacted by TCF management.
Hesperocyparis pygmaea	Pygmy cypress	Salmon Creek, between the Lower Salmon Creek THP and the forest border	This G2 plant species is not state or federally listed. Within TCF ownership, it occurs in one stand, and is protected as part of the pygmy forest HCVA area.
Trifolium buckwestiorum	Santa Cruz clover	Garcia, Salmon Creek and Gualala, along mainline roads	This G1 species was detected by TCF botanists and has been confirmed along multiple sections of road. Per CDFW recommendations, several sites have been fenced for protection and all locations are monitored.
Trifolium Trichocalyx	Monterey Clover	Garcia River Forest	This G1 species was detected by TCF botanists and has been confirmed along multiple sections of road. Per CDFW recommendations, several sites have been fenced for protection and all locations are monitored.

There are a few other rare plants that may yet be found on the forest but given the extensive surveys by TCF botanists prior to any ground disturbing activity, it seems highly unlikely they will go undetected.

Big River



THE CONSERVATION FUND High Conservation Values

1 inch = 4,400 feet

- Property Boundary
- Conservation Easement
- County or State Road
- Other Roads

CNDDB

Global Rank G1 & G2 Species

- Monterey clover

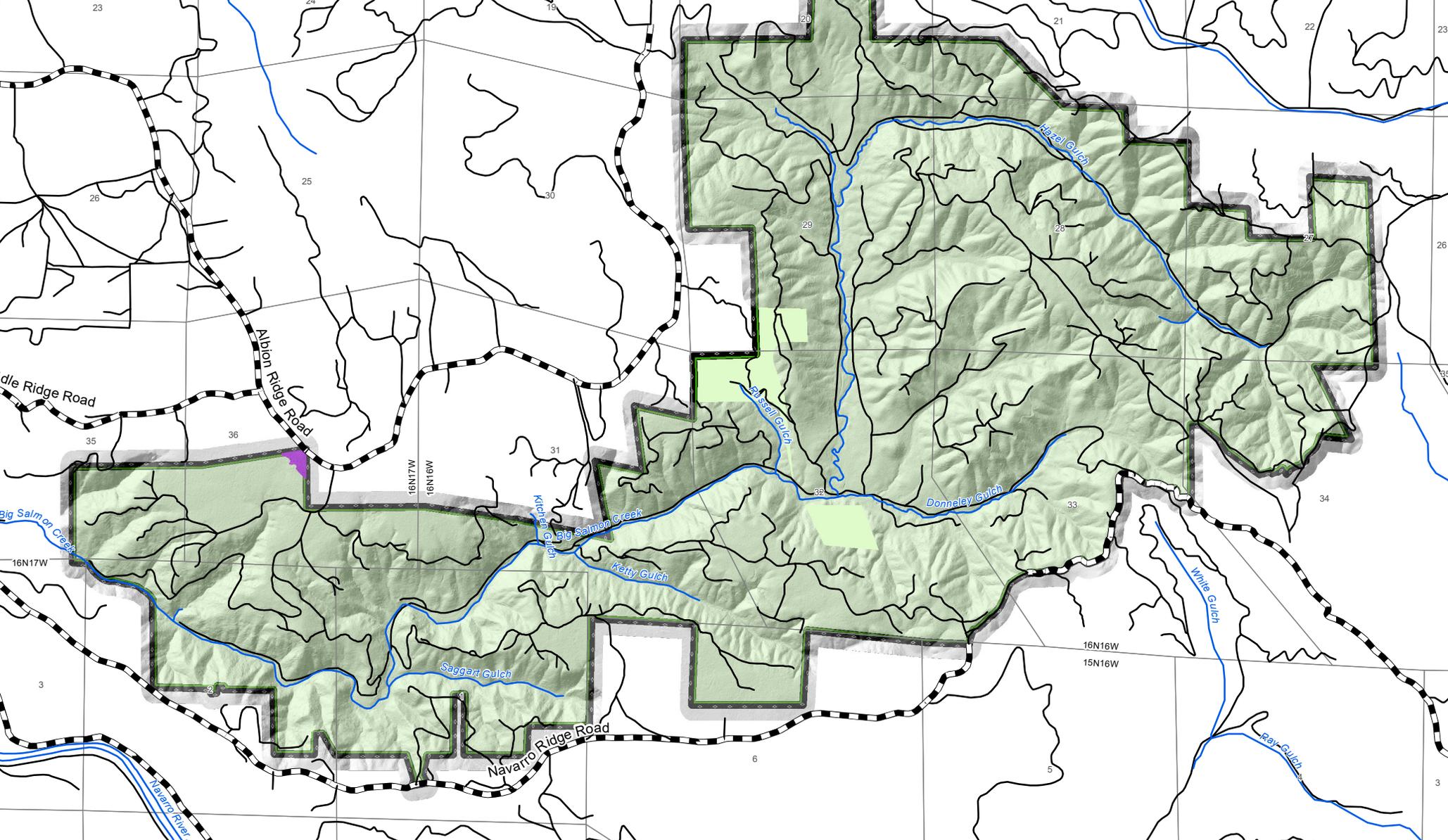


9/20/2018 - LK

HCV Veg Types		Acres
	Oak Woodland	0
	Grassland	0
	Pygmy	0
Miles		
Class I Streams:		26

38

Salmon Creek



THE CONSERVATION FUND
High Conservation Values
1 inch = 2,800 feet

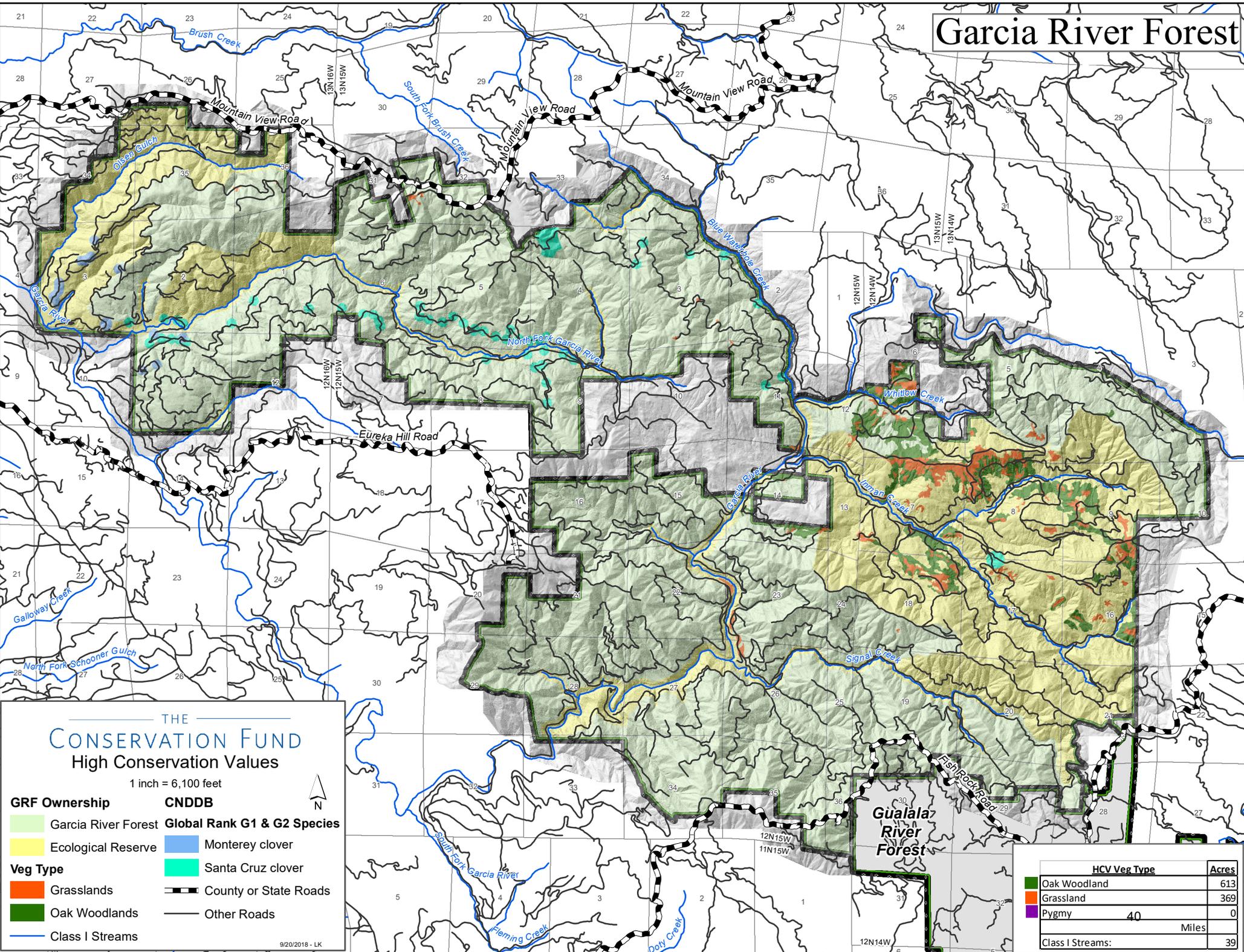
Property Boundary
 County or State Road
 Other Roads
 Class I Streams

CNDDB
Global Rank G1 & G2 Species
 Pygmy Cypress

9/20/2018 - LK

HCV Veg Types		Acres
	Oak Woodland	0
	Grassland	0
	Pygmy	4
39 Miles		
Class I Streams:		11

Garcia River Forest



THE CONSERVATION FUND High Conservation Values

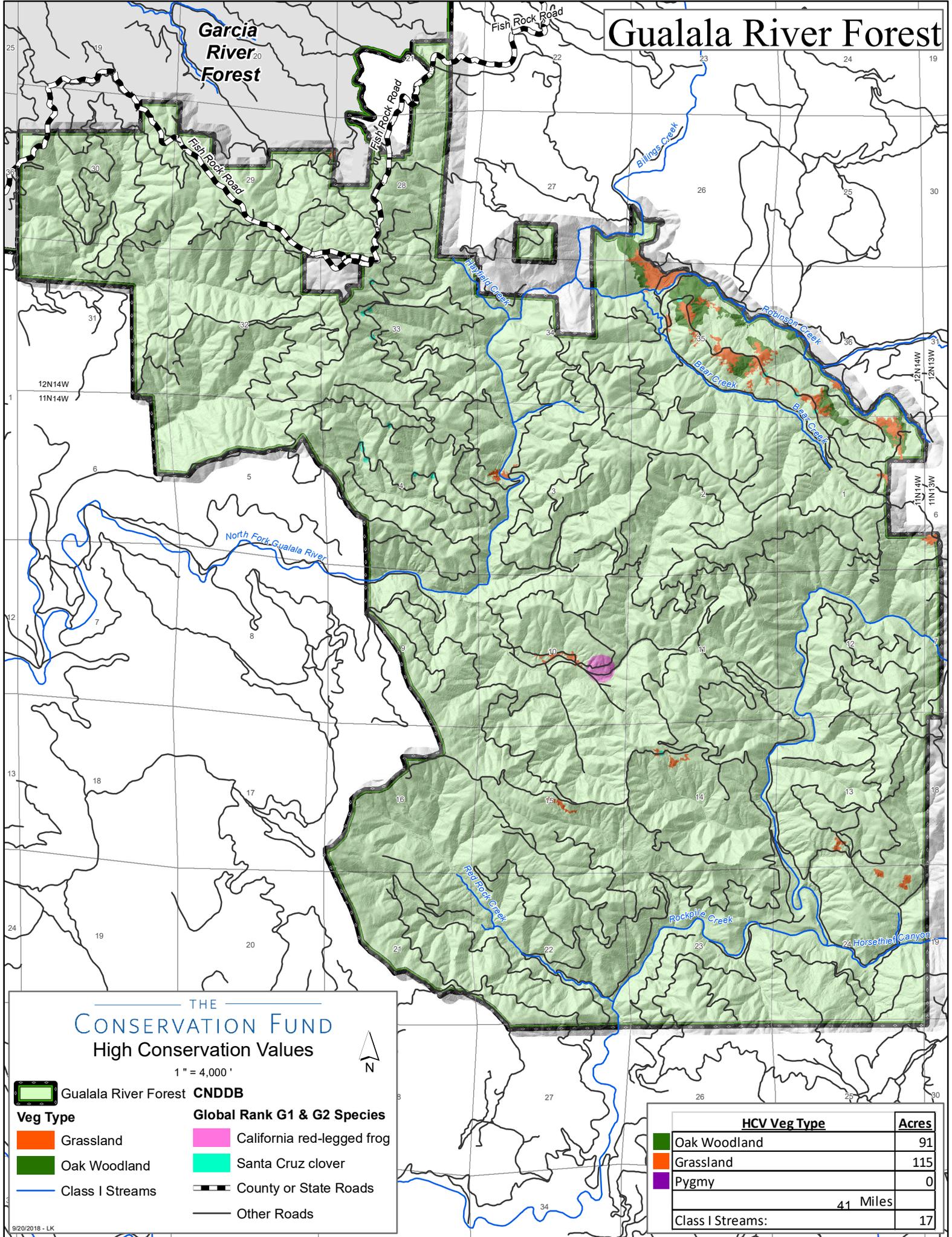
1 inch = 6,100 feet

- | | |
|----------------------|-----------------------------|
| GRF Ownership | CNDDB |
| Garcia River Forest | Global Rank G1 & G2 Species |
| Ecological Reserve | Monterey clover |
| Veg Type | Santa Cruz clover |
| Grasslands | County or State Roads |
| Oak Woodlands | Other Roads |
| Class I Streams | |

9/20/2018 - LK

HCV Veg Type		Acres
Oak Woodland		613
Grassland		369
Pygmy	40	0
Miles		
Class I Streams:		39

Gualala River Forest



THE CONSERVATION FUND High Conservation Values

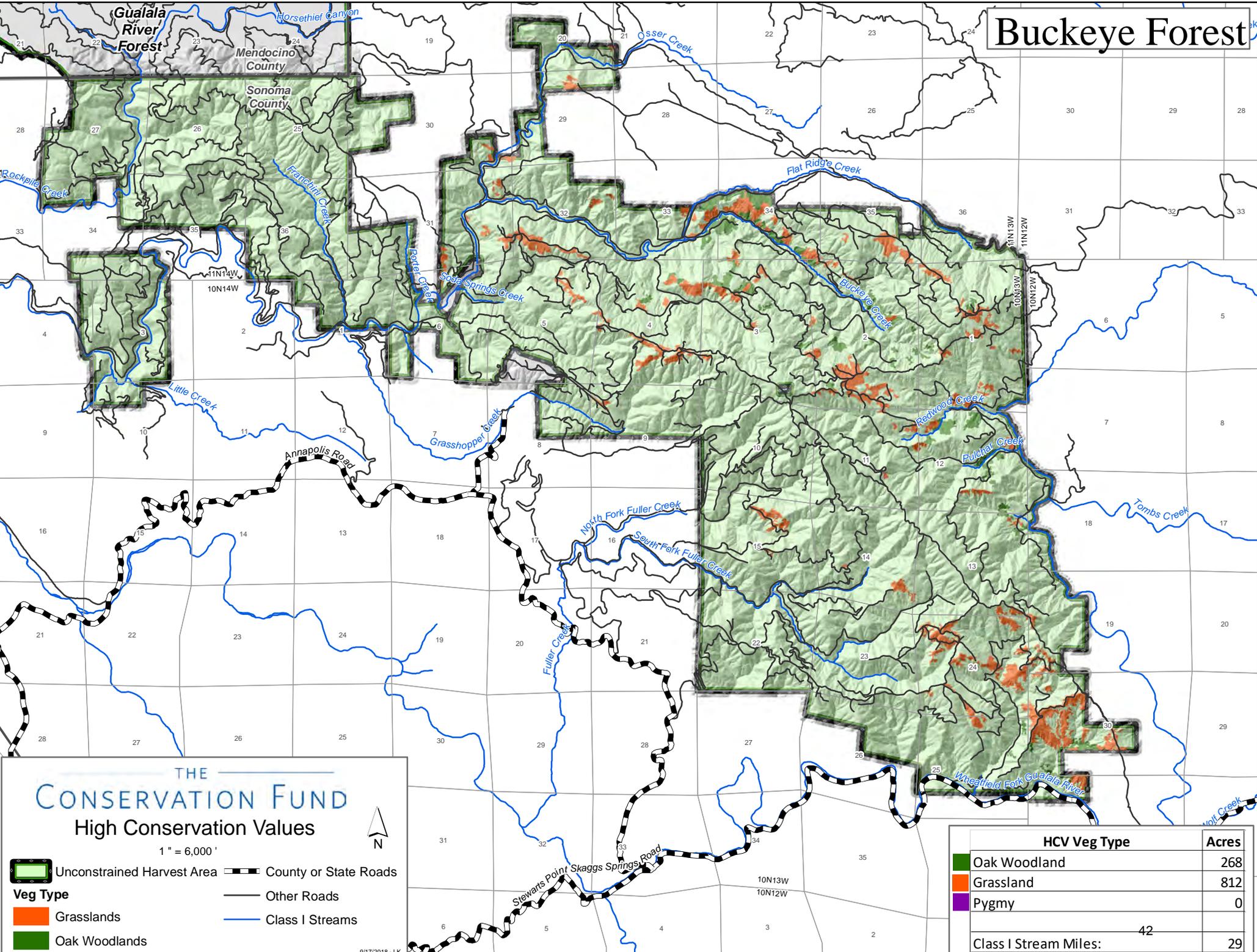
1" = 4,000'



- Gualala River Forest **CNDDB**
- Veg Type**
- Grassland
- Oak Woodland
- Class I Streams
- County or State Roads
- Other Roads
- Global Rank G1 & G2 Species**
- California red-legged frog
- Santa Cruz clover

HCV Veg Type	Acres
Oak Woodland	91
Grassland	115
Pygmy	0
41 Miles	
Class I Streams:	17

Buckeye Forest



THE CONSERVATION FUND High Conservation Values

1" = 6,000'

-  Unconstrained Harvest Area
-  County or State Roads
- Veg Type**
-  Grasslands
-  Oak Woodlands
-  Other Roads
-  Class I Streams



HCV Veg Type		Acres
	Oak Woodland	268
	Grassland	812
	Pygmy	0
Class I Stream Miles:		42
		29

HERBICIDE APPLICATION AND HARDWOOD MANAGEMENT POLICY

The Conservation Fund's North Coast Forest Conservation Program

Principal authors: Madison Thomson and Scott Kelly

October 2012, revised October 2016

Overview

The Conservation Fund acquired the Garcia River Forest in 2004, Big River and Salmon Creek in 2006 and Gualala River Forest in 2011. The Buckeye Forest was acquired by Sustainable Conservation, Inc. in 2014 and is managed by The Conservation Fund. All of the forests have been harvested by previous landowners for forest products and some of the second growth stands have unnaturally high proportion of hardwoods, especially tanoak, as a result of the previous harvests.

Control of the tanoak composition within the forest is a priority for The Conservation Fund. The California Forest Practice Rules (14CCR 912.7(d)) require: "The site occupancy provided by group A species (conifer) shall not be reduced relative to group B species (hardwoods)." In 2016 Measure V was passed by the Mendocino County voters, which reads: "trees taller than five (5) meters, which have been intentionally killed and left standing for longer than ninety (90) days (except those that are left for the benefit of wildlife habitat) be considered a public nuisance. It makes the responsible party liable for any damage if: 1) it is within one-thousand (1,000) meters of a structure, a public or private roadway or fire lane, electrical or telecommunication poles or lines, or water sources such as rivers, creeks, ponds or lakes; or 2) it is within the CAL FIRE State Responsibility Area. Measure V declares that standing dead trees left over 90 days can be declared a public nuisance. Through our Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC) certification, we are obligated to prove compliance with FSC Principle #1 and SFI Principle #7 that state "certified properties must comply with applicable federal, provincial, state, and local forestry and related environmental laws, statutes, and regulations."

Reduction in the use of herbicides over time is an important objective to The Conservation Fund and alternatives to herbicide treatments have been and will continue to be evaluated. In addition, we will strive to stay informed as new research becomes available related to the efficacy and environmental impacts of various herbicides. The following document has been prepared to outline our herbicide application and use policies to control tanoak and exotic invasive species on the north coast forest properties.

Tanoak Management

Hardwood species, including tanoak, pacific madrone, chinquapin, California bay and alder, are an important ecological component of north coast forests. Hardwood mast is an important source of food for a variety of wildlife species and the trees often possess a variety of structural attributes (basal hollows, cavities, large limbs, etc) which are extremely valuable for wildlife habitat. However, past management practices have resulted in an unnaturally high abundance of hardwoods, specifically tanoak in many areas that historically were dominated by conifers. As such, TCF is committed to pursuing management practices that reduce the tanoak component, increase conifer site occupancy, and transition our forests toward a more historically appropriate species

composition while retaining high quality hardwood stands and individual trees for wildlife habitat.

Tanoak's unique physiological attributes allow it to be a component of north coast forests at a variety of successional stages. Tanoak is extremely shade tolerant meaning that it can persist and grow at relatively low light levels. Because of this characteristic, tanoak regeneration is often ubiquitous in the understory of stands with moderate to high overstory crown cover. Redwood and Douglas-fir are less shade tolerant than tanoak and regenerate poorly under partial canopy. When overstory trees are removed through timber harvest or natural disturbances, the tanoak in the understory "releases" and grows upward to occupy the vacated growing space. As this occurs, redwood and Douglas-fir regeneration and growth is often hindered. Tanoak also sprouts vigorously when cut or damaged, allowing it to rapidly colonize sites after fire, logging, and other disturbances. Because of tanoak's ability to sprout and grow in shade or low light conditions, many stands across TCF ownership that were once conifer dominated now possess an unnaturally high composition of tanoak due to repeated overstory harvests with no tanoak control treatments.

The common approaches to tanoak control are: direct herbicide treatment of the tree or sprouted stump, manual felling also known as "high stumping" or logging. To date herbicides have been The Fund's primary method of tanoak control but other methods have been tested and used by the Fund and described below.

Hardwood reduction activities (without any commercial timber harvest) may also be pursued in areas outside Timber Harvest Plans where stands are overstocked with hardwoods.

Many tanoak dominated stands on our tracts were treated with Imazapyr or Triclopyr by previous owners. Those treatments were successful in that they reduced hardwoods and allowed for improved conifer growth but were broad in scope killing all hardwood species at the expense of other forest values. The herbicide application policies described below are intended to reduce tanoak while considering other forest values such as wildlife habitat, aesthetics and fire danger and also reducing our reliance on herbicide use for tanoak control in the future. We expect that as the forest matures and the conifer canopy closes that hardwood reduction treatments will no longer be needed, but this is a process that may take multiple entries or 30-40 years.

Depending on the structure and composition of a given stand, there are a variety of approaches that we may take toward tanoak management. The following is a summary of management policies that we use to drive the decision making process on a stand by stand basis. These generalized policies are subject to change as new information becomes available and the results of previous tanoak reduction projects become apparent.

- All true oak (*Quercus* spp.) woodlands and individual trees are to be preserved.
- Where the post-harvest tanoak basal area would exceed 30 square feet of basal area per acre (averaged across the stand), hardwoods shall be controlled through manual falling or

herbicide treatment through direct basal injection (hack-and-squirt) to provide a post-harvest tanoak basal area of 15-30 square feet per acre. (This may take more than one entry to achieve).

- In stands with a moderate tanoak component where conifers are well established in the overstory, selective falling of tanoaks to release existing conifers will be employed. While the tanoak stumps will likely resprout, the conifers should have established dominance and will eventually shade-out most of the sprouts. In this type of incremental treatment (selective falling), clumps of tanoaks and tanoaks, which do not compete with desirable conifers, will be retained.
- In stands with a significant tanoak component which also possess a substantial conifer component in equal and lower crown classes, selective herbicide treatments will be employed. Stands that fall into this category generally have over 75 square feet of tanoak basal area/acre and over 75 square feet of conifer basal area/acre. Tanoak trees that are directly competing with healthy, established conifers will be targeted for treatment. Those tanoaks that are not directly competing with established conifers will be retained. Selective falling of tanoaks can cause excessive damage to residual conifers when numerous hardwood trees are cut. Because of this, herbicide will generally be the primary method of tanoak reduction in stands with both significant tanoak and conifer components.
- In stands with a significant tanoak component and minimal conifer stocking, a more broad scale herbicide treatment coupled with conifer planting will be employed. With this type of treatment, the majority of the tanoak in a given stand will be treated and conifer seedlings will be planted either shortly before or shortly after tanoak treatment.
- Tanoak logging may be pursued as an alternative to herbicide in certain cases if a market for tanoak logs develops and the tanoak can be harvested without damaging the residual conifers. Even where hardwood logging is utilized, there may be a need for post harvest herbicide treatment in order to control tanoak sprouting and prepare the site for conifer regeneration.
- The Big River and Salmon Creek tracts possess a number of young plantations (less than 15 years old) that were established by the previous landowner. In these stands, tanoak reduction will be accomplished in conjunction with pre-commercial thinning using brush or chain saws. In addition to tanoak, other brush species such as Blue Blossom, and small trees are cut in order to create growing space for the healthiest, best formed conifer specimens. Mechanical thinning is generally preferred to herbicide application in these stands due to the greater control of spacing and species composition.

The herbicide primarily recommended for use of tanoak control is imazapyr. The primary application method will be via frilling or “hack and squirt.” Using this method, a series of cuts are made around the stem of the tree and the herbicide is applied directly to the tree’s vascular tissues. This application method greatly reduces the total quantity of herbicide required and minimizes the risk of drift onto non-target species and other resources. Additional herbicides for tanoak control may be considered in the future as they are developed and tested. The following is a list of guidelines that are to be followed with

FRILLING OR HACK AND SQUIRT herbicide applications:

- All applications must be by a licensed pesticide applicator with a good safety track
- record and in compliance with EPA-approved label recommendations.
- Detailed contract specifications shall be provided to minimize risk of over- application or misapplication.
- Frilling or Hack and Squirt shall not occur within 100 feet of any property line herbicides will be applied within 50' of neighborhood property lines.
- Work will be closely supervised by TCF staff or consulting foresters.
- Notification signs will be posted in logical locations at least 30 days prior to applying herbicides.
- Records on all applications will be compiled by TCF staff, submitted to the county and available upon request.
- The effectiveness of treatments will be monitored by TCF staff.
- No hardwood species other than tanoak shall be treated
- Retain all hardwoods (>18" DBH) per acre. Exceptions to the general retentions guidelines may be adopted on a site specific basis if in the opinion of the project forester the general guidelines are not adequate to reduce the hardwood component to a level low enough to allow conifer regeneration and growth.
- There will be no hardwood control with herbicides in Class I, II or IV WLPZs or within 25 feet of a class III watercourse; manual falling or girdling of small hardwoods may be used within these restricted areas as part of a riparian shade enhancement project designed to increase conifer site occupancy and growth.

The results of different tanoak control techniques will be monitored over time and our policies will be revised as new information becomes available. We recognize that because of soils and aspect some sites are naturally dominated by tanoak and we will avoid tanoak reduction activities in these stands. Tanoak reduction projects will be focused on the more productive sites with evidence of past conifer dominance (i.e. stumps, suppressed conifer regeneration).

Invasive Exotic Species

Invasive exotic species such as French Broom, Jubata Grass and various thistles have been introduced onto the properties as a result of past management activities, primarily by contaminated equipment. Controlling the spread of these invasive species is a priority for the Fund. Herbicide are the primary tool used for the control of invasive exotics but other methods such as manual removal are also employed. Specifically on Salmon Creek, French Broom and Jubata Grass are removed annually by hand with the cooperation of the "Salmon Creek Project Team" In areas with extreme infestations of exotics, such as those found on Big River, we believe that herbicide application is the safest and most cost effective alternative for the control of those species.

Various precautions are taken with all herbicide applications to ensure that adverse impacts to the environment and human health are minimized. The following is a list of guidelines that are to be followed with **FOLIAR** herbicide applications:

- All applications must be by a licensed pesticide applicator with a good safety track record and in compliance with EPA-approved label recommendations.
- Detailed contract specifications shall be provided to minimize risk of over- application or misapplication.
- Indicator dye will be used to enable better monitoring, and applications areas will be flagged in advance,
- No foliar herbicides will be applied within 50' of neighborhood property lines.
- Work will be closely supervised by TCF staff or consulting foresters.
- Notification signs will be posted in logical locations at least 30 days prior to applying herbicides.
- Records on all applications will be compiled by TCF staff, submitted to the county and available upon request.
- The effectiveness of treatments will be monitored by TCF staff.

There will be no herbicide application in Class I, II or IV WLPZs or within 25 feet of a class III watercourse.

ROAD MANAGEMENT POLICIES
For The Conservation Fund's North Coast Forest Conservation Program
Primary author: Scott Kelly
May 24, 2007, revised September, 2012, 2014

Introduction

The Conservation Fund owns approximately 73,000 acres in Mendocino and Sonoma County, California. The tracts consist of the 24,000 acre Garcia River Forest, the 12,000 acre Big River Forest the 4,000 acre Salmon Creek Forest, the 13,900 acre Gualala River Forest and the 19,552 acre Buckeye Forest. The Garcia River Forest was acquired by The Conservation Fund in 2004; the previous landowner conducted some minor road maintenance activities and remediation projects however the forest land and roads have been essentially inactive since 1998. The Conservation Fund acquired the Big River and Salmon Creek forests in 2006 from Hawthorne Timber Company in Fort Bragg who were actively managing the forest for timber production. The Conservation Fund acquired the Gualala River Forest in 2011 and the Buckeye Forest in 2013 the previous landowners conducted some minor road maintenance activities and remediation projects however the forest land and roads have been essentially inactive since 1998. A 17 acre vineyard and pond were developed on the Buckeye Forest in the early 2000' however no other management activities have occurred. The Conservation Fund intends to actively manage the timber resources on all five properties to improve stocking and growth across the ownership and to actively manage the road system and riparian conditions to improve watershed health and use by anadromous fish. Therefore, it has become a priority to improve and maintain access to the timberlands from the existing road system.

It has been documented that forest roads can contribute significant sediment to streams. Increased stream sediment can result in cemented gravels reducing salmonids ability to spawn and/or inhibiting salmonid fry emergence. High sediment levels can also cause pool filling and associated reduction in pool habitat. Extreme sediment loads can cause stream temperatures to be elevated due to the reduction in stream depth. Near stream roads can also reduce stream shading where the road is very wide or very close to the stream. Reduced stream shading has been linked to increased water temperature which stresses juvenile salmonids.

The Garcia River, Gualala River and Big River have been identified by the EPA and are on the 303(d) list of impaired waterbodies. The listed stressors include sediment and temperature. The Gualala is also listed for Aluminum on the mainstem downstream of The Fund's property. Placement of a waterbody on the 303(d) list acts as the trigger for developing a sediment control plan, called a TMDL, for each water body and associated pollutant/stressor on the list. At this time the Garcia River is the only river that has an action plan for the TMDL and many of the sediment reduction activities in this document have been adopted to conform to the Garcia TMDL and are implemented throughout the ownership.

Recent management practices by TCF and previous landowners have reduced road related stream sedimentation and improved long-term road stability. Specifically many bridges and multi-plate culverts have been installed to replace standard culverts on class I streams. Class II watercourse crossings have been rock armored and new culverts buried to grade. Watercourse and Lake Protection Zone (WLPZ) roads have been rocked or otherwise improved to reduce stream sedimentation caused by near stream roads. Many other forest roads have been rocked and drained by outsloping or use of rolling dips. The use of ditch relieve culverts is being minimized to reduce the potential for culvert failure and road maintenance costs.

Objectives

The Conservation Fund is committed to continue this trend of road improvement over time and has developed and will continue to refine this Road Maintenance and Improvement Plan to:

- 1) Reduce sediment inputs resulting from the existing road network as well as reduce inputs from new roads.
- 2) Develop proactive measures to help reduce stream sedimentation as a result of road runoff and cooperate with regulatory agencies involved with timber harvest planning.
- 3) Develop a timeline for road maintenance activities.
- 4) Act as a guide to foresters who are actively developing timber harvest plans or other projects on the properties.

Planned road maintenance will be in conformance with The Conservation Funds overall forest management goals. The Conservation Funds immediate goal for new properties is to maintain access through grading and maintaining existing mainline roads. These roads form the core of the road system and provide access for fire suppression, log hauling, wildlife surveys, future road improvement and abandonment projects and other management activities. It is expected that maintenance and improvements of secondary roads will be carried out in conjunction with Timber Harvest Plans or as part of larger Watershed Improvement projects.

Timeline

It is The Conservation Fund's goal is to develop a road system which provides access to the property for timber harvest, fire protection and wildlife resource monitoring while reducing annual maintenance activities and expense and potential watershed impacts. It is expected that the property will generally be managed with unevenage silvicultural systems and a 10-20 year re-entry period. Most road improvement projects will generally be done in conjunction with THP's and therefore the timeline to rotate through the property with road upgrades will be similar as the overall harvest schedule (within the first 20 years). Projects which require a 1603 stream alteration permit and do not otherwise qualify as an emergency repair will necessarily be conducted in conjunction with timber harvests or another CEQA project.

The Conservation Fund will conduct property wide assessments of all the roads on each tract using the road inventory and assessment system developed by Pacific Watershed Associates and others. The assessments will be used as a planning tool to prioritize sites for repair and to assist in the evaluation procedure for road decommissioning.

Road Maintenance and Improvement Guidelines

The purpose of this section is to aid resource professionals to identify forest road attributes that will assist in determining whether a road should be maintained in its current configuration, reconfigured with upgraded drainage structures or decommissioned. Some of the primary objectives and constraints identified during land management planning were: 1) Improve fisheries and wildlife habitat. 2) Maintain or improve the current level of access. 3) The landowner is willing to bear higher management costs in the future that arise from reconfiguring the roads if it results in other operational and environmental benefits.

To reduce sediment delivery from the road surfaces emphasis will be placed on increasing the number of drainage points along roads and reducing the potential for diversion at culverted watercourse crossings. On low gradient roads (0-4% grade) roads will be primarily drained by outsloping with occasional dips or ditch relief as necessary. On higher gradient roads (5-10+% grade) roads will be drained primarily with rolling dips in combination with outsloping and inboard ditch relief culverts as necessary. It is expected that most roads will be improved so as

to be drained by a combination of out sloping with rolling dips. However ditch relief culverts cannot be completely abandoned and will be used where necessary. To reduce sediment from watercourse crossings up to 3 criteria will be met: 1) New culverts and culverts proposed for replacement will be sized to meet the 100 year storm event. 2) New or replaced culverts will be installed such that the culvert is at stream grade and deep enough that a critical dip can be constructed to provide protection against stream diversions. 3) A trash rack or stake shall be installed upstream of the culvert to catch or turn debris prior to reaching (and blocking) the pipe.

New roads will be designed with gentle grades wherever possible and long rolling dips will be constructed into the road or the road shall be outsloped to relieve surface runoff. Where possible watercourse crossings will be designed such that road grades dip into the crossing and then climb out of the crossing, eliminating the need for abrupt critical dips. Crossings will be rock fords or temporary crossings on secondary roads which see only periodic activity to reduce maintenance requirements. Minor crossings on permanent roads can be converted to rock fords over time.

The Handbook of Forest and Ranch Roads prepared by Weaver and Hagans 1994 will be used as a guideline for all proposed road construction and improvement projects. Specific projects and locations will be mapped and site specific prescriptions for each project will be included in the appropriate THP, TMDL, SSMP or other guiding document.

Road Abandonment Plan

There are three criteria to consider in determining which roads can be abandoned. The first is focused on environmental considerations. Roads located near (within the WLPZ) of a class I or class II stream or constructed on unstable slopes such as active landslides or headwall swales are likely candidates for abandonment due to their potential contribution to in-stream sediment. Road construction across headwall swales and unstable slopes can result in mass wasting events, delivering large amounts of sediment to the watershed. They pose an ongoing maintenance problem caused by constant bank sloughing which block roads and plug ditches and culverts.

The second criterion is that roads to be abandoned must not cut off or substantially reduce access to areas where future management is anticipated. In the case where a road has been determined to be undesirable due to its location but access is still required the landowner is obliged to maintain the existing road or find another route. Reconfiguring the road network is a difficult, time consuming and costly task and will have long term effects on management activities. The likely result is that any new road system will be designed for yarder logging and to minimize the total road mileage.

The third criteria is that road abandonment does not result in the construction of a replacement road that is environmentally unsound. Removing a road from a stream zone with the intent of moving upslope can require that the landowner make a value judgment between, for example, a near stream road and a road constructed on steep slopes with multiple watercourse crossings. Improving existing roads with rock surfacing, rolling dips and oversized culverts or bridge installation is generally the least costly alternative compared to relocating a road system and should be considered when no clear beneficial alternative is available.

In areas with excess roads it may be desirable to abandon or decommission roads or reduce their status to "temporary" to reduce potential sediment delivery. Temporary roads and decommissioned roads are similar in that permanent and temporary watercourse crossings are removed for an indefinite period of time. Road decommissioning differs from abandonment in that a decommissioned road may be rebuilt at a later date if in the opinion of the land owner it is the least damaging alternative.

The economics of road abandonment also contributes to the decision making process. Unfortunately it is not practical to use a “one size fits all” prescription for road abandonment. Some roads, which appear to be poorly located, may have to remain in place because they service a larger area with good arterial roads. While it may be physically possible to relocate a road it may not be in the best interests of the landowner to do so due to the excessive cost involved . The types of roads which will be a priority to evaluate as potential candidates for abandonment are listed below.

1. Roads that parallel watercourses and dead end in landings are good candidates for abandonment or repair because of their proximity to streams and their lack of arterial roads. These are the highest priority because they can be abandoned or decommissioned without impact to future management.
2. Roads that cross unstable areas or headwall swales can be abandoned if alternate routes exist to both ends of the subject road. Roads crossing unstable areas are deemed to be the second priority for abandonment because there are fewer roads on unstable slopes than WLPZ roads and the management implications and fieldwork necessary to make an informed decision will delay the decision making process.
3. Long term plans should include abandonment and replacing or upgrading roads that are poorly located but are necessary in the short term for forest management.

It is felt that proper implementation of this plan will reduce the potential for excess runoff and diversions common to forest roads. Over the long term the reduction in stream sedimentation will improve salmonid habitat conditions and reduce yearly maintenance costs.

CERTIFIED PRODUCT CHAIN-OF-CUSTODY PROGRAM
For The Conservation Fund's North Coast Forest Conservation Program
March 1, 2010, revised September 2012

Note to Licensed Timber Operators, Log Haulers, and Log Buyers

This document is being provided to you because it is required by The Conservation Fund's certification under the Forest Stewardship Council standard for forest management and chain-of-custody for logs. The purpose of this policy is to ensure that wood products which originate on our properties are appropriately accounted for and do not become inappropriately labeled. All logs generated on our Mendocino properties are certified under the Forest Stewardship Council US Forest Management Standard (v.1.0) and Sustainable Forestry Initiative Standard (section 2). Use of the Forest Stewardship Council logo or other origin claims is restricted to those facilities that have undergone an independent certification of their compliance with the Forest Stewardship Council Chain-of-Custody standard. The Conservation Fund's participation in this program should not impose any additional burdens on our contractors and customers other than standard log security and accounting. If you have any questions about this policy, please contact Scott Kelly at (707) 272-4497.

Forest Certification Status

The Conservation Fund's North Coast timberland (Garcia River, Big River, and Salmon Creek, Mendocino County, California) were certified as sustainably managed by the Forest Stewardship Council and the Sustainable Forestry Initiative on October 12, 2007. The Gualala River Forest was certified in 2012. Buckeye Forest, Sonoma County, California will be certified in 2014. Audits are conducted annually to ensure continued eligibility and are available at <http://www.conservationfund.org/our-conservation-strategy/focus-areas/forestry/north-coast-conservation-initiative/north-coast-forest-reference-documents/>

Section 1, Control System Documentation

1.1 The Conservation Fund has implemented a documented control system in order to responsibly track log sales under Generally Accepted Accounting Principles (GAAP) and to address the Principles of Chain-of-Custody control as set forth by the FSC.

1.2 The Conservation Fund's designated Chain of Custody Control Administrator is Scott Kelly, the senior forester responsible for, among other things, log sales and harvest administration. Scott Kelly is responsible for education of employees and contractors, as well as for implementation of the documented control system for Chain of Custody of FSC-certified wood products sold by The Conservation Fund from its properties in Mendocino County, California.

1.3 Scott Kelly is assisted in this documentation by Margery Hoppner, staff accountant, who manages the log sale accounting process and reconciles trip tickets, scale records, mill receipts, and contractor payments.

1.4 A sample Trip Ticket and Log Sales Record are attached at the end of this document. Instructions for the trip ticket are provided to the log hauler. Instructions for the Log Sales records are contained in The Conservation Fund's accounting procedures manual.

Section 2, Confirmation of Inputs

2.1 The Conservation Fund is engaged in the business of selling logs and does not purchase logs or any other FSC-certified wood products. Therefore, confirmation of inputs is not applicable, except that The Conservation Fund will be responsible for ensuring that log decks in the forest contain only logs originating on that property and that log trucks exiting the property only contain logs that originated on the property.

2.2 It may be required for The Conservation Fund or its partners to purchase small quantities of conifer logs for installation in streams as restoration projects. Those logs are intended for permanent installation and will not be considered an input for the purpose of Chain of Custody accounting.

Section 3, Separation/Demarcation of Inputs

3.1 The Conservation Fund has a system for ensuring that FSC-certified products are clearly identified. The Conservation Fund timber harvest and log sale activity is only conducted for The Conservation Fund's properties, all of which are certified. Thus, there are no non-FSC products involved.

3.2 Physical separation/segregation of certified and non-certified products is achieved by not involving any non-certified logs in The Conservation Fund's activities. There are no inputs (either certified or not), thus no non-certified logs will ever be brought on the property and mixed with certified logs.

3.3 Logs are identified as certified through paperwork supplied by The Conservation Fund to the purchasing mill.

Section 4, Secure Product Labeling

The Conservation Fund does not use on-product labels during the sale of logs. The Conservation Fund accepts the responsibility to ensure that the FSC Logo Pack and labels are not used by unauthorized users or for any unauthorized use.

Section 5, Identification of Certified Outputs

Certified products are identifiable by field marking and trip ticket paperwork that clearly identifies the purchaser and seller of the logs. The certified status of the logs is communicated in writing (through the log sales agreement and by sharing this document) by The Conservation Fund to the purchaser.

The Conservation Fund operates an accounting system that records log species, volume, and grade information for all log deliveries. This includes reconciliation between the trip tickets provided by the LTO and log hauler, scale records provided by the scaling bureau, and payment receipts provided by the purchasing mill.

Payment is issued by the purchasing mill upon receipt (and scaling) according to the terms of the log sales agreement. Because no invoices are issued it is incumbent on The Conservation Fund to communicate the certified status of the logs to the purchaser (which is done through this document and the log sales agreement). A copy of The Conservation Fund's Chain of Custody certificate will be provided to the purchasers upon request.

Section 6, Record Keeping

6.1 The Conservation Fund maintains appropriate records of all log sales (which is the same as outputs of certified products) in accordance with Generally Accepted Accounting Practices (GAAP).

6.2 The Conservation Fund's records are sufficient to satisfy a financial auditor or an independent assessor seeking to trace back any given certified product output pool or load back to the specific certified forest of origin.

6.3 The Conservation Fund's records are sufficient to allow an independent assessor to determine the rate of production of certified logs from the certified forest, as well as to determine the certified product delivered to each manufacturing facility.

6.4 All records related to certified products sold by The Conservation Fund will be kept for a minimum of five years.

Section 7, Training

7.1 The Conservation Fund will supply this procedure to all contractors and explain the COC procedures.

7.2 The Conservation Fund will include this COC procedure as an exhibit in all timber sale contracts, and train all contractors, buyers and loggers on the procedure.

7.3 The Conservation Fund will maintain a database of all personnel who have received the COC procedure and related training.

7.4 Distribution of the procedure and related training will take place with all new contractors and loggers at the beginning of a new contract or sale. Personnel who are already familiar with the procedure will receive it in each additional contract.

THE CONSERVATION FUND
TEMPLATE -- TRIP TICKET:

<u>THE CONSERVATION FUND</u>		TRIP TICKET
<i>America's Partner in Conservation</i>		150
14951 "A" Caspar Road, Box 50, Caspar, CA 95420 (707) 962-0712		
DATE ____/____/____	TRUCK NO./ DRIVER _____	
TRACT NAME _____	THP NAME _____	FSC/SCC COC-00102N
LOGGER _____	SOURCE CODE _____	FSC 100%
BUYER _____	DESTINATION _____	
# OF LOGS RW___ DF___ WF___ ww___ HW___ OTHER_____		
RECEIVED BY _____		DECK NO. _____
White - Logger	Canary - Trucker	Pink - Mill
		Goldenrod - Owner

**COMMITMENT TO SAFETY AND HEALTH OPERATING POLICY,
The Conservation Fund's North Coast Forest Conservation Program
Primary authors: Evan Smith and Scott Kelly.
November 28, 2011, revised September, 2012**

Commitment to Safety and Health

A. Safety and Health Policy

The Conservation Fund (TCF) is firmly committed to maintaining a safe and healthful working environment across all its offices and programs. This document guides TCF activities on its California timberlands to ensure safe operations. To achieve this goal TCF has implemented a comprehensive Injury and Illness Prevention Program. This program is designed to prevent work place incidents. The designated Safety Coordinator is responsible for monitoring the performance of each team member to ensure compliance in conducting an effective Injury and Illness Prevention Program.

Special statement on forestry-related risk--The field of forest management inevitably involves travel, heavy equipment, challenging terrain, and variable weather conditions—all serious contributors to risk. All employees and contractors should be cognizant of those risks and develop the judgment to evaluate conditions and act in a safe manner. Driving to and from the forest is probably the most dangerous activity we engage in—it is very important that we slow down and pay attention. The most important piece of safety equipment is what sits under the hardhat, behind the safety glasses, and between the ear plugs—use your brain! Every team member is responsible for thinking about the safety of themselves and everyone else present. TCF's North Coast program is a loosely-organized team of employees, contractors, consultants, partners, and volunteers—we rely on these individuals to exercise good safety skills. It is critical that we be cognizant of the conditions around us and the safety preparedness of those around us and those that might visit the site later. We owe it to ourselves and the families of those we work with to conduct all our activities safely.

Each individual is responsible for their own safety at the work place. The safety coordinator can assure that programs and policies are in place to provide for a safe working environment however it is the responsibility of the individual to implement the safety policies and make their own working environment as safe as possible.

Specific policies—

- 1. No alcohol or drug use on the property.*
- 2. Maintain a daily log of where people are working and an emergency contact system in the event of an emergency or someone not returning in a timely fashion. Each employee has been issued a SPOT GPS device, which tracks an employee's location and allows an emergency signal to be sent. This device has essentially replaced the daily log.*
- 3. Remind visitors and tour participants of potential risks and necessary precautions.*

4. *Annual safety training will be developed for everyone that works in the woods if it is not already part of their professional licensing requirements (eg Licensed Timber Operator).*
5. *First Aid Kits are available in the TCF office and vehicles.*
6. *Indications of illegal marijuana cultivation will not be investigated by field staff but reported to the property's security patrol who will report it to law enforcement personnel.*

B. Vehicle Operation

Driving to and from the forest is probably the most dangerous activity we engage in it is very important that we slow down and pay attention while operating company vehicles on the street or on company lands. Driving in the forest exposes the driver to narrow winding gravel roads which can be very slick when wet and require extra caution when operating a motorized vehicle.

- All persons operating a vehicle on company property are required to possess a valid driver's license.
- All persons operating an ATV or other off road vehicle shall have received proper training from a certified ASI Rider Course Instructor or equivalent. To enroll in an ATV [Rider Course](#), call the national, toll-free enrollment number, 1-800-887-2887.
- Use common sense, do not drive in dangerous conditions or terrain beyond your ability to safely operate the vehicle, when in doubt, slow down or walk.

C. Chainsaw Operation

Staff is required to read the owner's manual carefully before operating a chain saw. Wearing proper safety equipment and protective clothing is required. When using a chainsaw be sure to keep the cutting area clear of spectators, note any overhead hazards, including hanging tree limbs and utility lines, keep the chain clean, sharp and lubricated, keep both hands on the saw handles, and let the saw come to a complete stop before reaching for the chain or blade. For further safety regulations regarding chainsaw usage please consult http://www.osha.gov/OshDoc/data_Hurricane_Facts/chainsaws.pdf

D. Herbicide Application

Only Certified Pesticide Applicators may apply herbicides. Staff will read and follow all chemical label directions. Apply herbicides at minimal levels in accordance with the label and targeted to specific weed problems. Wearing proper safety equipment and protective clothing is required. A notice of intent must be submitted to Mendocino County 24 hours prior to application; a pesticide use report must be filed by the 10th of the month; herbicides should be contained and not be allowed to drift unto a neighboring property; and immediately notify Mendocino County Agriculture Commissioner of any changes to our permit. To promote transparency and communication, TCF will post signs in the forest at the locations where herbicides are proposed for use 30 days prior to their

application. For more information please consult <http://www.epa.gov/oppfead1/safety/resource.htm>

E. Personnel Safety

Many minor injuries such as cuts, scratches, bee stings, and ankle sprains can be prevented by wearing proper safety equipment or protective clothing. When working in the woods around heavy equipment all personnel shall wear hardhats and boots. Long pants are also required while working in the forest. Other recommended personal safety items include:

- Eye Goggles
- Ear Plugs
- Long sleeve shirt
- Gloves
- Tecnu or other poison oak prevention treatments.

F. Contractor Safety & Training Policy

The Conservation Fund shall only employ contractors that have good safety records and up-to-date training. Specifically, only Licensed Timber Operators in good standing may conduct timber harvesting operations and only Certified Pesticide Applicators may apply herbicides. Prior to the start of each work project (e.g. logging job, road opening, weed control treatment, etc) the Safety Officer will conduct a discussion of the safety concerns and ensure contractors are aware of TCF's safety expectations. For professions that do not have formal licensing requirements that address safety, such as consulting biologists and botanists, The Conservation Fund will emphasize the importance of accident avoidance and communication and seek to resolve any safety concerns they may have.

G. Company Housekeeping Policy

Good housekeeping is a critical part of the safety program. Keeping work areas neat and clean reduces the risk of on the job injuries. Well organized work areas increase the ability of employees to perform their jobs efficiently and safely. In addition a clean workplace is a source of good morale, improved quality and partner satisfaction. Each employee is responsible for keeping his or her work area neat and orderly. Housekeeping inspections may be conducted as part of regularly scheduled or impromptu safety inspections.

II. PERSON(S) WITH AUTHORITY AND RESPONSIBILITY FOR IMPLEMENTING THE PROVISIONS OF THIS INJURY AND ILLNESS PREVENTION PROGRAM (IIPP)

The North Coast Timberlands Manager shall serve as the Safety Coordinator, with authority and responsibility for implementing the provisions of this program.

Responsibilities assigned to the Safety Coordinator, Site Supervisors, and Employees are described in general on the following pages.

All employees and contractors of TCF are responsible for working safely and maintaining a safe and healthful work environment. It is a condition of employment.

The North Coast Timberlands Manager will assume the overall responsibility for this program as the Safety Coordinator. These duties include:

- Ensuring that adequate financial, personnel and material resources are available, including identifying safety leaders for projects and training needs.
- Ensuring employees receive specific training for each task they are expected to perform, and whenever new processes or chemicals are introduced into the workplace.
- Leading by example.
- Recognizing safe work practices as part of performance reviews.
- Encouraging employee involvement.
- Investigating and correcting any unsafe action or condition reported to them.
- Holding employees accountable for poor safety performance by utilizing re-training and company disciplinary procedures.

All TEAM MEMBERS (employees, contractors and lead partners) will be responsible for the implementation of this program at his/her work area. These duties include:

- **TAKING PERSONAL RESPONSIBILITY FOR THEIR OWN SAFETY AND THE SAFETY OF OTHERS.**
- Understanding that working safely is a condition of employment.
- Participating in developing safety rules, procedures, and improvements.
- Obeying safety rules, procedures and work practices.
- Wearing all required Personal Protective Equipment (PPE).
- Reporting all injuries, no matter how minor, to their supervisor immediately.
- Reporting all “near-misses” and hazardous conditions to their supervisors.

- Participating in the safety effort by demonstrating an understating of training received and the ability to perform tasks safely.
- Participating in tailgate and general safety meeting.
- Learning to manage “self-safety” by developing proactive (prevention) skills in decision-making.
- Communicating safety suggestions to supervisors or contract representatives.

III. SYSTEM FOR ENSURING THAT ALL WORKERS COMPLY WITH SAFE AND HEALTHY WORK PRACTICES:

- A. Informing employees of the provisions of our Injury and Illness Prevention Program (IIPP):
- B. Recognizing employees who perform safe and healthful work practices.
- C. Training employees whose safety performance is deficient; and
- D. Disciplining employees for failure to comply with safe and healthful work practices.

IV. SYSTEM FOR COMMUNICATING WITH EMPLOYEES:

A. Safety Meetings

TCF requires frequent tailgate meetings with individual work-groups to discuss safety issues and resolve problems. At a minimum, employees will be exposed to ½ hour per month of safety training/discussion. Also, tailgating will be held whenever work conditions change – e.g. foresters moving from burning to marking trees, contractors working at a mill site in an area which affects employees, special construction or maintenance projects are taking place, etc. to alert and/or remind employees to potential hazards.

B. Training

All employees will receive an overview of the IIPP during their initial orientation and can review a copy provided by their supervisor. Additional training, such as First Aid and Interagency Wildland Fire Certification, will be made available on an as needed basis. Employees and contractors that desire additional training should notify their supervisor or the Safety Officer.

C. Written Communications

TCF produces informational memos and handouts covering various safety topics. These sources of communication are posted for review by all employees. They include safety inspection reports and safety committee meeting minutes.

TCF's written IIPP is also assessable to all employees.

D. Anonymous Notification Procedures

TCF has a system of anonymous notifications whereby an employee who wishes to inform TCF of work place hazards may do so anonymously by notifying Safety Coordinator in writing or over the phone. The Safety Coordinator shall investigate, or cause to be investigated, all such reports in a timely manner.

V. HAZARD IDENTIFICATION

TCF will identify and evaluate work place hazards when the program is first established; whenever new substances, processes, procedures, or equipment are introduced to the work place that represents a new occupational safety and health hazard and whenever TCF is made aware of a new or previously unrecognized hazard.

A. General Elements To Identify and Evaluate Work Place Hazards

1. Review of applicable General Industry Safety Orders and other safety orders that apply to the operation.
2. Review of industry and general information (including Material Safety Data Sheets for chemicals used) about potential occupational safety and health hazards.
3. Investigation of all incidents and unusual events that have occurred at these facilities.
4. Periodic and/or scheduled inspections of general work areas and specific work stations.
5. Evaluation of information provided by employees.

B. New Safety and Health Concerns

It is a requirement of all employees and contractors to notify the Safety Coordinator and provide appropriate documentation (location, MSDS, potential hazards, etc.) regarding any new substance, process, or equipment prior to its introduction to the workplace.

C. Employee Reporting of Hazards

Employees are required to immediately report any unsafe condition, unsafe action or other hazard that they discover in the work place to their supervisor or any safety committee member. No employee will be disciplined or discharged for reporting potential work place hazards or unsafe conditions.

Employees who wish to remain anonymous may report unsafe conditions as described above.

VI. PROCEDURE TO INVESTIGATE OCCUPATIONAL INJURY OR ILLNESS

A. Employee Responsibility

Employees shall immediately report all injuries occurring at work, no matter how slight, to their supervisor.

B. Supervisor's Responsibility

It is the Supervisor's responsibility to complete an Incident Investigation Report and, IF THE INJURED NEEDS TO GO TO A MEDICAL PROVIDER OFF-SITE, TO ACCOMPANY THE INJURED. The Supervisor will immediately alert the Safety Officer of any injuries requiring treatment other than first aid.

C. Incident Investigation Procedure

Incident where a hazard or condition persists after the occurrence of an incident, incidents where there is a potential for recurrence, and incidents where the Safety Officer judges that procedural or training deficiencies may have contributed to the incident will be investigated.

They may be investigated by the supervisor and employee only, an appointed investigator, or an incident review team depending on the nature and/or severity of the incident.

Employees have the right to an independent investigation by someone other than their supervisor if they feel additional investigation is necessary. All incidents will be investigated at the time of occurrence, or as soon thereafter as possible, but in no case later than twenty-four hours.

When appropriate, these investigations may include complete statements from the employee(s) involved, any witnesses to the injury and the injured employee's supervisor. A copy of all Incident Investigation Reports will be forwarded to the Safety Officer for review. Employees who do not cooperate with incident investigations will be subject to TCF's disciplinary policy.

VII. PROCEDURE TO CORRECT UNSAFE OR UNHEALTHY CONDITIONS, WORK PRACTICES, AND WORK PROCEDURES IN A TIMELY MANNER BASED ON THE SEVERITY OF THE HAZARD.

A. Workplace Hazards

The causes of all incidents will be documented and reviewed immediately. Corrective actions including condition repair/modifications, retraining or disciplining for unsafe actions will be initiated immediately. Safety procedures will be reviewed, if necessary, by the combined efforts of the affected employees, supervisors and safety manager and or safety committee. Training programs and safe job operating procedures will also be modified, if appropriate, to prevent reoccurrence.

B. Imminent Hazards

When an imminent hazard exists which cannot be immediately abated without endangering employees and or property, all exposed employees will be removed from the area except those necessary to correct the existing condition. Employees needed to correct the hazardous condition shall be provided with the necessary training and Personal Protective Equipment. All such actions taken and dates they are completed shall be documented.

VIII. PROVISIONS FOR TRAINING AND INSTRUCTION

A. Policy

Awareness of potential health and safety hazards as well as knowledge of how to control such hazards is critical to maintaining a safe and healthful work environment. TCF is committed to instructing all employees in safe and healthful work practices. To achieve this goal, TCF shall provide training to each employee with regard to general safety and emergency procedures. Training shall also be provided by the effected employees' supervisor for any hazard or safety procedure specific to the employees work assignments as mandated by regulations or company safety programs. Records of all training shall be maintained in employee files.

B. When Training Will Occur.

1. When the program is first established.
2. To all new employees.
3. To all employees given a new job assignment for which training has not previously been received.
4. Whenever new substances, processes, procedures or equipment which represent a new hazard are introduced into the workplace.
5. Whenever TCF is made aware of a new or previously unrecognized hazard.
6. Whenever an employee, through observation or investigation is found deficient, they will be retained.

Supervisors must familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed. Supervisors

shall be responsible to provide their employees with safety training to minimize or eliminate such exposure.

C. Areas of Training

All areas or items identified in the IIPP.

All areas or items identified as specific to the performance of any task.

IX. RECORDS OF THE STEPS TAKEN TO IMPLEMENT AND MAINTAIN THE PROGRAM

Records of scheduled and periodic inspections to identify unsafe conditions and work practices, including person(s) conducting the inspection, the unsafe conditions and practices that have been identified and the action taken to correct the identified unsafe conditions and work practice. These records shall be maintained for at least one year. Documentation of safety and health training for each employee, including employee name or other identifier, training dates, types of training, and training providers. This documentation shall be maintained at least one year.

Social Benefit/Impact Assessment Memo
The Conservation Fund's North Coast Forest Conservation Program
Primary authors: Jenny Griffin and Evan Smith
Original: August 25, 2008; Updated September 2012

social: L socialis, fr. socius companion, ally, associate; akin to L sequi to follow. Of or relating to human society, the interaction of the individual and the group, or the welfare of human beings as members of society (Websters Seventh New Collegiate Dictionary, 1972).

The Conservation Fund's North Coast Forest Conservation Program endeavors to have a very positive impact in our local community. This is due in part to our charitable mission as a non-profit organization, which is broader than just environmental protection, and references economic development and education. It is also explicitly addressed as part of the Garcia River Forest Integrated Resource Management Plan:

"The Plan identifies and describes in detail the following general management goals:

- Improve ecological conditions by increasing the viability of selected "conservation targets" identified during the planning process.*
- Generate sufficient revenue to cover the costs of property taxes, on-site maintenance, management and restoration projects and, potentially, generate net revenues for other conservation initiatives.*
- Practice continual improvement through adaptive management based on monitoring of ecological, financial and social values.*
- Support the local business community by utilizing local contractors and suppliers.*
- Engage the local community by providing compatible public access, educational and recreational opportunities."*

We pride ourselves on being very cognizant of and sensitive to the potential social impacts (positive and negative) of our forest management activities and the role we play in the community.

We have identified five primary social elements as integral to our program and organize our evaluation of potential social impacts/benefits around these elements. We have not had a formal prioritization of these elements—all are important for our evaluation and monitoring. The five elements, and examples of how they are addressed, are:

- Creative arts (eg. College of the Redwoods and Mendocino Art Center photography and painting workshops, elementary school writing and art projects, etc.)
- Economic/financial (e.g. employment, log sales, carbon sales, etc.)
- Recreational (e.g. interpretive walks, passive recreational access, Boy Scouts and Sierra Club hikes, Audubon trips, etc.)
- Science/education (e.g. EMAP project, UC Davis research, Humboldt State and other surveys, SONAR projects, PWA workshops, stakeholder tours, etc.)
- Spiritual (e.g. open space values, Children and Nature programs, Leopold and Thoreau philosophy-based programs, and access/utilization by Native tribes)

We consider social benefits as an integral part of our management planning. The social elements are assessed and described in various sections of our forest management plans, which include policies on such issues as recreational access, scientific monitoring priorities, and preference for local goods and services. In addition to management planning, our operational decision-making also includes evaluation of potential social impacts—ranging from maintaining a viable logging industry to resolving the concerns of a neighbor. Our forest management policies have very clear requirements for community engagement and local procurement—we require that every timber harvest plan and major watershed restoration project have publicly available summaries and provide opportunities for field tours before and after operation. We continually ask for feedback from the local community through tours and informal meetings and routinely adjust programs or projects to address concerns. As described above, having a positive impact in the community is a program objective; we evaluate our success at meeting this objective as part of our annual operations review. The discussion and results of the annual operations review then inform the next year’s workplan and as appropriate will be included in updates to the management plans.

As part of our annual monitoring, we publicly report (via the Annual Review) our data on key activity metrics. Most relevant to this topic is reporting on local economic contribution, participants in our public access program, and number of public tours we host. In addition to these three metrics that seem to best track the community interest, we usually also include short features on specific harvests, restoration projects, or safety issues. We also keep a log of any criticisms the program receives and how those are resolved. These metrics and concerns are also reviewed annually by the local Advisory Council.