

U.S. FOREST OFFSET PROJECT DATA REPORT INITIAL REPORTING PERIOD - IMPROVED FOREST MANAGEMENT				
OPR Staff Use Only	Date Report Received:	OPR Tracking Number:	Date Report Reviewed:	OPR Staff Use Only
<i>Entities submitting the project's first Offset Project Data Report must submit the information requested in both Initial Reporting Period and the Annual Reporting forms to the appropriate Offset Project Registry. For every reporting year thereafter, submit only the information requested in the Annual Reporting form.</i>				
PART I. ENTITY SUBMITTING REPORT				
Is this form being submitted by the Offset Project Operator (OPO) or by the Authorized Project Designee (APD)? <i>Note: The person completing this form should be an OPO/APD employee.</i>				☒ OPO ☐ APD
Name of Person Completing Form: Lauren Fety		Organization, if applicable: The Conservation Fund		
Date Form Completed: 3/24/2017; 3/15/2017; 3/14/2017; 3/13/2017; 2/15/2017; 1/27/2017; 10/17/2016; 3/20/2016	Phone Number: 541-727-2094	Email Address: lfety@conservationfund.org		
PART II. OFFSET PROJECT INFORMATION				
Offset Project Name: Big River / Salmon Creek Forests - ARB		OPR Project ID #: CAR 1100	ARB Project ID # (if known): CAFR 5106	
Offset Project Commencement Date: 1/1/2007	First Reporting Period Start Date: 1/1/2015		First Reporting Period End Date: 4/15/2016	
Provide an explanation and justification for the commencement date. Specify the action(s) that identify the offset project commencement date. The Big River/Salmon Creek Forests project has been registered through CAR as a Conservation Based Forestry Project, protocol version 2.1 from 1/1/2007 through 12/31/2014. The 1/1/2007 commencement date was selected during the early action project development. The Conservation Fund acquired the tracts in late 2006; the first of the calendar year was selected to represent the the project commencement date and facilitate modeling and reporting. This OPDR is intended to transition the project to an ARB Improved Forest Management Project beginning 1/1/2015.				
Optional: Provide the nearest town/city to the Project Area: Mendocino, CA.				
PART III. OPO / APD INFORMATION				
A. OPO				
OPO Name: The Conservation Fund			OPO's CITSS ID #: CA <u>1</u> <u>5</u> <u>9</u> <u>7</u>	
Mailing Address: 1655 N. Fort Meyer Drive, Suite 1300		City: Arlington	State: VA	Zip: 22209
Contact Person: Lauren Fety	Phone Number: 541-727-2094	Email Address: lfety@conservationfund.org		
B. APD (if applicable)				☒ No APD / Not Applicable
APD Name: NA			APD's CITSS ID #: CA _ _ _ _	

Mailing Address:		City:	State:	Zip:
Contact Person:		Phone Number:	Email Address:	

PART IV. LAND OWNERSHIP

A. Is the Offset Project Operator (OPO) the owner in fee for the Project Area? <i>Further documentation is required for all projects. Submit as attachment labeled "Attachment A." See Part X of this OPDR document for more information.</i> If "no," explain how the entity identified as the OPO has the right to undertake and list the project.	☒ Yes ☐ No
B. Optional: List all Forest Owners. This includes owners in fee as well as third parties with existing property interests within the Project Area that affect the trees and standing timber located in the Project Area (e.g. mineral rights, timber rights, easements, rights of way, leases, etc.).	
C. Does the offset project occur on public or private lands? <i>If the project occurs on public lands, proceed to questions C1 and C2. Otherwise, skip to question D.</i> <i>Further documentation is required if project occurs on public lands. Submit copies of documentation demonstrating explicit approval of the project's management activities and baseline, as well as the public vetting process used; attachment should be labeled "Attachment B." See Part X of this document for more information.</i>	☒ Private ☐ Public
1. Describe the public process that was used to evaluate the forest management activities and policy decisions concerning the offset project.	
2. Describe the explicit approval process used by the public entity to initiate and maintain this offset project, including the offset project's management activities and baseline.	
D. Does the project employ a Qualified Conservation Easement (QCE)? <i>If employing a QCE, proceed to questions D1, D2, and D3. Otherwise, skip to question E.</i> <i>Supporting documentation for a QCE is required. Submit as attachment labeled "Attachment C."</i> <i>See Part X of this document for more information.</i>	☐ QCE ☐ Public Ownership
1. Date that the QCE was recorded. N/A	
2. Optional: Is the project located in a state that requires third-party beneficiaries to sign the easement (i.e., to "accept and record that acceptance"), such as Arizona, Pennsylvania, or West Virginia?	☐ Yes ☐ No
3. Provide the terms within the easement that affect forest management. Project is covered by easements, which are not qualified, see Report section IV.D.3	
E. Does the offset project occur on any of the following categories of land? (check all that apply) ☐ Land that is owned by, or subject to, an ownership of possessory interest of a Tribe ☐ Land that is "Indian lands" of a Tribe as defined by 25 U.S.C. §81(a)(1) ☐ Land that is owned by any person, entity, or Tribe, within the external borders of such Indian lands ☒ None of the above <i>If "none of the above," skip to Part V. Otherwise, proceed to Optional questions E1 and E2.</i> <i>Further documentation is required for projects occurring on land listed in the first three categories. Submit supporting documents as attachments labeled "Attachment D." See Part X of this document for more information.</i>	
1. Optional: Does a limited waiver of sovereign immunity between ARB and the governing body of the Tribe exist?	☐ Yes ☒ No
2. Optional: Provide a description of land ownership within the Project Area.	

PART V. OFFSET PROJECT AREA

Maps depicting specific elements of the Project Area are required for all projects. <i>Submit supporting documentation as attachments labeled "Attachment E." See Part X of this document for more information.</i>		
Latitude of Offset Project Location: 39.32296; 39.20796	Longitude of Offset Project Location: -123.63387; -123.67131	Project Area Total Acreage: 15,911
A. Identify the assessment area (or assessment areas, if project crosses more than one) that contain Project Area lands and list the acreage of project lands within each assessment area.		

Coast Redwood/Douglas-fir Mixed Conifer & Northern California Mixed Oak Woodland	
B. Identify and describe the governing jurisdiction(s) applicable to the Project Area. The Project is located in Mendocino County, California.	
C. Describe how the Project Area was determined. The project area is the full extent of the property purchased by The Conservation Fund; the acreage is based on the GIS shapefile in Attachment E.	
D. Describe the existing land cover, and land use of the Project Area. The BRSC is predominantly timberland with small areas of brush, grass and rock out croppings. The property is zoned for timber production.	
E. Describe the forest vegetation types within the Project Area boundary. The BRSC is made up of mostly Redwood / Douglas-fir / Tanoak trees. There are also small areas of mixed oak woodlands and grasslands within the project area boundary.	
F. Describe the site classes within the Project Area boundary. The property is primarily Dunning's Site Index II-III; the FIA productivity classification used for this project is a "high site".	
G. Describe the land pressures and climate zone /classification applicable to the Project Area. The primary land pressures within the project vicinity are vineyard development and subdivision for second home development and hobby ranches. The BRSC project is part of forested watersheds influenced by the proximity to the coast. Located within the Oregonian Biotic Province, BRSC has a Mediterranean climate, characterized by a pattern of low-intensity rainfall in the winter and cool, dry summers with coastal fog. Mean annual precipitation is 30 inches at the coast and up to 100 inches per year on the inland peaks. 90% of this precipitation generally falls as rain between October and April with the highest average precipitation in January.	
H. Describe the historical land uses, current zoning, and projected land use within the Project Area and surrounding areas. The property has a history of forest management that has resulted in the current forest conditions, which can be characterized as a young redwood Douglas-fir forest with a high component of tanoak. Compared to pre-settlement conditions, the forest is relatively young, structurally simplified, and contains a relatively high density of hardwoods. Almost all of the old growth was logged in the 1960's, with ground-based harvesting practices that were damaging to streams. Subsequent harvests removed all the residual old growth and most of the large second-growth. The project is currently zoned as a Timber Production Zone (TPZ). Future land use in this area will continue to be forest management but may also include increased subdivision into single family ranches and vineyard development.	
I. Describe the forest conditions within the Project Area, including species composition, age class distribution, and management history. The BRSC is richly productive and supports significant wildlife, including many imperiled species such as coho salmon, steelhead trout, and northern spotted owls. The majority of the BRSC has been harvested at least twice since the arrival of European settlers around the turn of the 20 th century. Some of the forest stands are 80 years old, but most are much younger - the results of significant harvesting in the 1950s through the project commencement. The timber inventory on BRSC is significantly depleted compared to historic levels.	
PART VI. OFFSET PROJECT ELIGIBILITY	
A. Does the Project Area have a canopy cover that is greater than 10 percent? <i>Supporting documentation is required. Submit as attachment labeled "Attachment F." See Part X of this document for more information.</i>	☒ Yes ☐ No
B. Optional: Are the associated project lands currently in compliance with all local, state, and federal regulatory requirements?	☒ Yes ☐ No
Optional: If no, provide an explanation of the non-compliance.	

C. Does the entity submitting this report declare that the offset project <u>has not</u> and <u>does not</u> employ broadcast fertilization?		☒ Yes ☐ No
D. Indicate how the offset project meets the definition of Natural Forest Management per Table 3.2 in the U.S. Forest protocol:		
1. Native species: a) Does the project consist of at least 95 % native species based on the estimated sum of carbon in the standing live carbon pool? Improved Forest Management Projects are assessed using estimates of basal area per acre. <i>If "no," proceed to question 1b. Otherwise, skip to question D2.</i>		☒ Yes ☐ No
b) Describe how the project will meet this requirement. See report section VI.D1		
2. Composition of native species: a) Does the Project Area naturally consist of a mixed species distribution where no single species' prevalence, measured as the percent of basal area of all live trees in the Project Area, exceeds the percentage value of standing live carbon shown under the heading 'Species Diversity Index' in the Assessment Area Data File? <i>If "no," proceed to questions 2b and 2c. Otherwise skip to question D3.</i>		☒ Yes ☐ No
b) Explain how the project will demonstrate a trend toward achieving the Species Diversity Index of native species and meet this requirement within 25 years.		
c) If the Project Area does not naturally consist of a mixed species distribution: Will or have you provided a written statement from the government agency in charge of forestry regulation in the state where the project is located stipulating that the Project site is not capable of meeting the requirement of mixed species distribution?		☐ Yes ☐ No
3. Distribution of age classes/sustainable management: a) Indicate how the project will meet the requirement for sustainable management if regeneration or commercial harvesting is either planned or initiated within the Project Area demonstrating sustainable long-term harvesting practices. This applies to all forest landholdings of the Forest Owner(s) (check one of the boxes). ☐ Not applicable; no commercial harvesting is occurring within the Project Area. ☐ Third party certification under the Forest Stewardship Council, Sustainable Forestry Initiative, or Tree Farm System, whose certification standards require adherence to and verification of harvest levels which can be permanently sustained over time. ☐ Adherence to a renewable long-term management plan that demonstrates harvest levels which can be permanently sustained over time and that is sanctioned and monitored by a state or federal agency. ☒ Employ uneven-aged silvicultural practices and maintain canopy retention averaging at least 40 % across the forest, as measured on any 20 acres within the entire forestland owned by the Forest Owner, including land within and outside of the Project Area (areas impacted by Significant Disturbance may be excluded from this test).		
b) On a watershed scale up to 10,000 acres (or the Project Area, whichever is smaller), projects must maintain, or make progress toward maintaining, a maximum of 40 % of the project's forest lands in ages that are less than 20 years old. (Areas impacted by Significant Disturbance are exempt from this test until 20 years after reforestation of such areas.) Does the acreage within this project meet this requirement? <i>If "no," proceed to question 3c. Otherwise, skip to question D4.</i>		☒ Yes ☐ No
c) If the project does not meet the age class requirement at this time, explain how the project intends to demonstrate progress to meet this requirement over time; such that forest lands in ages less than 20 years old are reduced and make up no more than 40 % of the Project Area.		
4. Structural elements (standing and lying dead wood): How does the project ensure that structural elements are retained in sufficient quantities throughout the project life? Structural elements will be retained and recruited as would naturally occur in any forest. When timber harvesting occurs on this property, the harvesting will retain standing dead wood in the form of snags for wildlife trees. Tops will be left in woods during harvesting to increase down wood recruitment and no standing or lying dead wood will be removed from the forest.		
E. Describe the management activities that will result in increased carbon stocks in the Project Area, compared to the baseline. See report section VI.E		

F. Is this project being implemented and conducted as the result of any law, statute, regulation, court order, or other legally binding mandate? If "yes," explain:	☐ Yes ☒ No
G. Does the offset project take place on land that was part of a previously listed and registered Forest Offset Project? <i>This question is applicable to both voluntary and compliance markets. If "yes" proceed to questions G1 and G2. Otherwise, skip to Part VII.</i>	☒ Yes ☐ No
1. Optional: Was the previous Forest Offset Project terminated due to an Unintentional Reversal?	☐ Yes ☒ No
2. Optional: Has this project transitioned to the Compliance Offset Protocol U.S. Forest Projects after previously being listed as an early action offset project?	☒ Yes ☐ No

PART VII. CARBON STOCK INVENTORY

A. Provide a description of the inventory methodology used to quantify carbon stocks for each required carbon pool in the forest project's offset boundary. The inventory methodology must describe the information required in Appendix A.3 of either the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 or the Compliance Offset Protocol U.S. Forest Projects, November 14, 2014. IFM-1 Standing Live: See report section VIIA IFM-3 Standing Dead: See report section VIIA IFM-6 Soil (if applicable): NA IFM-7 Carbon in in-use forest products: See report section VIIA IFM-8 Forest product carbon in landfills (if applicable): See report section VIIA IFM- 9 Biological emissions from site preparation: NA IFM-14 Biological emissions/removals from change in harvesting on forestland outside project area: See report section VIIA IFM-17 Biological emissions from decomposition of forest products: See report section VIIA.
B. Describe the calculation methodologies used to determine metric tons per acre for each of the carbon pools included in the Offset Project Data Report. IFM-1 Standing Live: See report section VIIB IFM-3 Standing Dead: See report section VIIB IFM-6 Soil (if applicable): NA IFM-7 Carbon in in-use forest products: See report section VIIB IFM-8 Forest product carbon in landfills (if applicable): See report section VIIB IFM- 9 Biological emissions from site preparation: NA IFM-14 Biological emissions/removals from change in harvesting on forestland outside project area: See report section VIIB IFM-17 Biological emissions from decomposition of forest products: See report section VIIB
C. Provide a summary of the inventory of carbon stocks for each carbon pool (or approach used, if inventory is not applicable). IFM-1 Standing Live: 3,571,731 MtCO₂e IFM-3 Standing Dead: 32,942 MtCO₂e

IFM-6 Soil (if applicable):

NA

IFM-7 Carbon in in-use forest products:

2,603 MtCO₂e

IFM-8 Forest product carbon in landfills (if applicable):

1,682 MtCO₂e

IFM- 9 Biological emissions from site preparation:

NA

IFM-14 Biological emissions/removals from change in harvesting on forestland outside project area:

-11,578 MtCO₂e

IFM-17 Biological emissions from decomposition of forest products:

Calculated as part of IFM-7 & IFM-8

D. Provide a summary of inventory confidence statistics.

The inventory has a sampling error of 5.23% as the 90% confidence interval; a confidence deduction of 0.2% was required. See modeling plan for calculations and report section VIID for values

E. Provide the calculation of the offset project's reversal risk rating and contribution to the Forest Buffer Account.

The Project's reversal risk rating is 19.236%; 17,546 credits will be contributed to the Buffer Account for RP1. See report section VIIE for calculations

PART VIII. OFFSET PROJECT BASELINE

A. Required for ALL Improved Forest Management Projects

1. Describe the project's modeling plan, following the requirements and methods in Appendix B, Section B.3 of the U.S. Forest protocol.

See report section VIIB & additional information in the modeling plan, Appendix B

2. Describe and estimate the project's baseline onsite carbon stocks. Explain any annual changes in baseline carbon stocks over time.

A graph of the baseline onsite carbon stocks, labeled "Attachment G," must be portrayed depicting time on the x-axis and metric tons CO₂-e on the y-axis. Include a written characterization describing any annual change in baseline carbon stocks over time. See Part X of this document for more information. A diagram of the baseline incorporating all required carbon stocks, labeled "Attachment H," is also required.

See report section VIIIA2; Attachment H & Attachment G

3. Optional: Identify the approved growth model that will be used for the project.

FORSEE

4. Harvest Planning

a. Is harvesting planned in the Project Area?

If "yes," proceed to question 4b. Otherwise, skip to question A5.

☒ Yes
☐ No

b. Optional: Does the project use a harvest schedule model?

If "yes," proceed to question 4c. Otherwise, skip to question A5.

☐ Yes
☒ No

c. Optional: Explain how you are addressing age class and stratification as part of your harvest scheduling?

5. Provide an estimate of carbon that will be stored long-term in harvested wood products in the baseline.

15,339 MtCO₂e/year

6. Provide a projection of baseline and actual harvesting volumes from the Project Area over 100 years.

A projection may be provided in an attachment, labeled "Attachment I". Include a narrative with a clear explanation of how the OPO/APD arrived at the baseline and actual harvest volumes is determined

B. Required for Improved Forest Management Projects on Private Lands ONLY

1. Provide the initial above ground standing live carbon stock (per acre) for the project.

147.86 MtCO₂e/acre

2. Provide the Common Practice statistic (per acre) associated with the Project Area.

180.79 MtCO₂e/acre

3. Summarize how the Project's initial above-ground standing live carbon stock compares to Common Practice.

The initial live stocks are below common practice

Are the initial above-ground standing live carbon stocks above or below Common Practice?

Below common practice

If below Common Practice, what is the High Stocking Reference for the Project Area? Describe the

☐ Above
☒ Below

Project Area's live tree carbon stocks over the previous 10 years. <i>Further documentation is required if project is below Common Practice. Submit supporting documents as attachments labeled "Attachment J." See Part X of this document for more information. An affidavit must be submitted testifying that the inventory depicted over the past 10 years is reasonably accurate.</i> See report, Attachment J			
4. Optional: Does the Forest Owner(s) and its affiliate(s) own land in fee or hold timber rights on land outside the Project Area? <i>If "no," skip to question B.5.</i>		☒ Yes ☐ No	
Optional: If "yes" does the Protocol require the use of a weighted average carbon stock on lands in the same Logical Management Unit (LMU, as defined in Section 6.2.1.1)? <i>If "no," skip to question B.5.</i>		☐ Yes ☒ No	
Optional: If "yes," is inventory data available for the LMU or will the OPO use a stratified vegetation analysis? <i>If "no," skip to question B.5.</i>		☐ Data available for LMU ☐ Stratified Vegetation Analysis	
Optional: Identify the Minimum Baseline Level for above-ground standing live carbon stocks for the Project Area: 147.86 MtCO₂e/acre			
5. Provide a description of any and all legal constraints affecting forest management activities in the Project Area. Include documentation of legal constraints and a description of each constraint (referring to Section 6.2.1.2); for each constraint provide a narrative that constraint has on forest management. <i>Submit supporting documents as attachment labeled "Attachment K". See Part X of this reporting document for more information.</i> See report, Attachment K			
6. Provide a description of the modeling techniques used to simulate the effect of any constraints on carbon stocks. See report section VIIB & Appendix B: Modeling Plan Optional: Provide a description of the modeling techniques used to simulate forest management activities that may affect carbon stocks.			
7. How does the OPO demonstrate financial feasibility of the growth and harvesting regime assumed for the baseline? (check one of the boxes) ☒ Conducting a financial analysis of the anticipated growth and harvesting regime that captures all relevant costs and returns, taking into consideration all legal, physical, and biological constraints, using regional norms or documented costs and returns for the project area or other properties in the Forest Project's Assessment Area ☐ Providing evidence that activities similar to the proposed baseline growth and harvesting regime have taken place on other properties within the Forest Project's Assessment Area within the past 15 years <i>Supporting documentation is required. Submit as attachment labeled "Attachment L." See Part X of this listing document for more information.</i>			
C. Required for Improved Forest Management Projects on <u>Public Lands ONLY</u>			
1. Provide a projection of future changes to Project Area forest carbon stocks extrapolating from historical trends.			
2. Explain how current public policy affects onsite carbon stocks and how the baseline modeling incorporates constraints imposed by all applicable statutes, regulations, policies, plans, and activity-based funding.			
3. Have carbon stocks in the Project Area been increasing or declining over the preceding ten-year period?			☐ Increasing ☐ Declining
PART IX. OTHER OFFSET PROGRAMS			
A. Have any GHG reductions or GHG removal enhancements associated with the Project Lands ever been listed or registered with, or otherwise claimed by, another registry or program, or sold to a third party prior to listing? <i>If "yes," identify the registry or program and provide details on the issued credits below.</i>			☒ Yes ☐ No
B. Have any lands within the Project Area ever been listed or registered with an offset project registry or program in the past? <i>If "yes," identify the registry or program and provide details on the issued credits below.</i>			☒ Yes ☐ No
C. Have greenhouse gas emission reductions or removal enhancements associated with lands within the Project Area been credited or claimed for the purpose of greenhouse gas mitigation or reduction goals, whether in a voluntary or regulatory context? <i>If "yes," identify the goal(s) and provide details on the reductions and removal enhancements (under "Number of Credits Issued") below.</i>			☒ Yes ☐ No
Registry / Program / Goal(s): Climate Action Reserve	Reporting Period(s): 2007-2014	Vintage(s): 2007-2014	Number of Credits Issued: 2,413,157

PART X. ATTACHMENTS

- A. If the answer to Part IV.A is “yes,” provide documentation (e.g., deed of trust, title report, etc.) showing the OPO’s ownership interest in the property and its interest in the trees and standing timber on the property. If the answer to Part IV.A is “no,” provide documentation supporting the explanation of the OPO’s right to undertake and list the project.
- B. If the answer to Part IV.C is “public,” provide documentation demonstrating explicit approval of the offset project’s management activities and baseline including any public vetting processes necessary to evaluate management and policy decisions concerning the offset project. If the project is a private lands project, mark “N/A” in the box below. The OPO may provide an “Attachment B” page with a “This Page Left Intentionally Blank - Private Lands Project” notation on the page. ☒ N/A
- C. If a Qualified Conservation Easement (QCE) has been recorded, provide a copy. The information contained in this form and the documents attached to it will be submitted to ARB so submitting a copy of the QCE as an attachment to this document fulfills the requirement in 9.1.1.1(18)(a) of the U.S. Forest protocol to provide ARB with a copy. ☒ N/A
- D. If the project is located on one of the categories of Tribal land listed in Part IV.E, provide documentation demonstrating that the land within the Project Area is owned by a tribe or private entity. Also provide documentation that demonstrates the existence of a limited waiver of sovereign immunity between ARB and the governing body of the Tribe entered into pursuant to section 95975(I) of the Cap-and-Trade Regulation. ☒ N/A
- E. Attach map(s) of the Project Area including:
1. Public and private roads
 2. Towns
 3. Major watercourses (4th order or greater), water bodies, and watersheds
 4. Topography
 5. Townships, ranges, and sections or latitude and longitude
 6. Existing land cover and land use (optional)
 7. Forest vegetation types (optional)
 8. Site classes (optional)
 9. Land pressures and climate zone/classification (optional)
 10. Historical land uses, current zoning, and projected land use within the Project Area (optional)
 11. A georeferenced shape file (or other electronic file that can be read in a geographic information system) that clearly identifies the Project Area and boundaries. *Note that the georeferenced shape file may constitute the required map if it includes the required map information listed above.*
- F. Provide supporting documentation demonstrating that the offset project takes places on land that has greater than 10 percent tree canopy cover.
- G. Attach a graph portraying the baseline onsite carbon stocks with time depicted on the x-axis and metric tons CO₂e depicted on the y-axis.
- H. Attach a diagram of the final baseline incorporating all required carbon stocks.
- I. Provide a projection of baseline and actual harvesting volumes from the Project Area over 100 years.
- J. For IFM projects on private lands ONLY: If the Project Area’s initial above-ground standing live carbon stocks are below Common Practice, submit an affidavit testifying that the inventory depicted over the past 10 years (used to determine the High Stocking Reference for the Project Area) is reasonably accurate. Also include a summary of volume harvested over the past 10 years. ☐ N/A
- K. For IFM projects on private lands ONLY: Attach supporting documentation identifying the legal constraints within the Project Area. A ‘constraints’ table with the following categories may be provided for simplicity with the following information: narrative of legal constraint, identification of specific governing law guiding the constraint, acreage, silviculture method, retention strategy. ☐ N/A
- L. For projects on private lands ONLY: Provide a description and supporting evidence, if applicable, that the growth and harvesting regime assumed for the baseline is financially feasible based on the qualifications in Section 6.2.1.3 of the Protocol. ☐ N/A

PART XI. OPO/APD SIGNATURE

Note: The person signing this Initial Reporting Period report should be the same person signing the accompanying U.S. Forest Offset Project Data Report Annual Reporting Period – All Project Types report.

In signing this form, I certify under penalty of perjury of the laws of California that the information contained in this form is true, accurate, and complete. I further certify that I am an Account Representative of the Offset Project Operator

(OPO).	
SIGNATURE: <i>Lauren Fety</i>	PRINTED NAME: Lauren Fety
TITLE: Primary Account Representative, Forest Analyst	DATE: 3/24/2017

Background for U.S. Forest Offset Project Data Report Initial Reporting Period – Improved Forest Management

Section 95976(d) of the Cap-and-Trade Regulation specifies reporting requirements for offset projects participating in the Compliance Offset Program. Offset Project Operators (OPO) or Authorized Project Designees (APD) are required to submit an Offset Project Data Report (OPDR) within four months of the end of each (annual) Reporting Period. The Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 and Compliance Offset Protocol U.S. Forest Projects, November 14, 2014 both require additional information to be included with the initial OPDR. This form is designed to help OPOs and APDs provide the extra information required for an initial OPDR by U.S. Forest offset projects. The information in this form is submitted to the approved Offset Project Registry that is listing the offset project and should also be provided to the ARB-accredited verification body that will be verifying the Offset Project Data Report.

The information to be provided in this form closely mirrors information provided in the application for listing a U.S. Forest offset project. OPOs and APDs may wish to copy the information in their project's application for listing to the extent that the information provided at the time of that application has not changed.

Where to Submit Information Contained in This Form

Please complete the information on the form using your computer. Then print, sign, and scan the form. The completed and signed information and all supporting documentation should be submitted to the appropriate [Offset Project Registry](#).

Copies of this form can be downloaded from the ARB website at:
<http://www.arb.ca.gov/cc/capandtrade/offsets/forms/forms.htm>

Detailed Instructions for U.S. Forest Offset Project Data Report Initial Reporting Period – Improved Forest Management

This form is protected with restricted editing to facilitate completing the form. If the applicant wishes to unprotect the form, the password is "form".

Part I. Entity Submitting Report:

- Indicate whether the Offset Project Operator (OPO) or Authorized Project Designee (APD) is submitting the Offset Project Data Report.
- List the name, organization, phone number, and email address of the person submitting the information. This person should be an employee of the OPO or APD, whichever entity is making the submission. The person submitting the information need not be the same person as the contact person listed for the OPO or APD in Part III and also need not be the person signing the form in Part XI.
- The person submitting the information should indicate the date the form is completed.

Part II. Offset Project Information:

- Provide the name for the offset project. Also provide the project's identification number from the approved Offset Project Registry listing the project. The ARB project identification number may also be provided if known.
- Indicate the offset project commencement date and the start and end dates of the first reporting period. Unlike with the listing form, approximations are no longer acceptable for these dates since precise dates should be known.
- Project commencement for an Improved Forest Management Project must be linked to a discrete, verifiable action that delineates a change in practice that increases sequestration and/or decreases emissions relative to the forest project's baseline. This date could be triggered by the transfer of property ownership, recordation of a conservation easement on the Project Area, or when submitting the offset project listing information.

Part III. OPO/APD Information:

- Enter contact information for the OPO and APD submitting the report. Every offset project will have an OPO. If an offset project does not have an APD, please mark the box indicating the Offset Project does not have an APD and leave the remaining fields blank.

- For both the OPO and, if applicable, the APD, enter the entity's name, its mailing address, and the name, phone number, and email address of a contact person for the entity. Also include its CITSS ID number. The CITSS ID is six characters in length, with two letters followed by four numbers (e.g., "CA1234"). **DO NOT PROVIDE THE CONFIDENTIAL CITSS ACCOUNT NUMBER**, which begins with the CITSS ID number followed by a hyphen and more numbers.

Part IV. Land Ownership:

- This part includes questions regarding land ownership and property interests.
- Further documentation is required based on the responses to some questions. See Part X of this report for more information on the precise requirements.

Part V. Offset Project Area:

- This part asks for qualitative descriptions of the offset Project Area.
- Maps are required to complement the descriptions provided in this part. See Part X of this report for more information on the precise requirements.
- The Project Area should be determined following the requirements of Section 4 of the U.S. Forest protocol.
- Assessment areas shall be determined by referencing the Assessment Area Data File available at: <http://www.arb.ca.gov/cc/capandtrade/protocols/usforestprojects.htm>

Part VI. Offset Project Eligibility:

- The questions in this part are designed to facilitate the determination of project eligibility for Improved Forest Management Projects.
- Further documentation is required based on the responses to some questions. See Part X of this report for more information on the precise requirements.
- Details on the eligibility requirements for Improved Forest Management Projects can be found in Sections 2.1.2, 3.1, and 3.8 of the U.S. Forest protocol.
- Details on the Natural Forest Management criteria can be found in Table 3.2 in the U.S. Forest protocol.

Part VII. Carbon Stock Inventory:

- Projects are required to have completed a full carbon stock inventory for the initial Offset Project Data Report. Unlike the inventory provided at the time of listing, a general description of the project's inventory methods with preliminary best estimates is no longer sufficient to meet the regulatory requirements. If the project's inventory methodology changed between the time of listing and submission of the initial OPDR, this change should be reported as a change to the information submitted at project listing when submitting the first OPDR.
- Section 6.2 of either the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 or the Compliance Offset Protocol U.S. Forest Projects, November 14, 2014 outlines the approved quantification methodologies for Improved Forest Management Projects. Further details on completing a forest project carbon inventory can be found in Appendix A of the Protocol. (There are some differences in section 6.2 and Appendix A between the two versions.)
- Follow the steps in Appendix D of the U.S. Forest protocol to quantify the project's reversal risk rating.
- The project's expected contribution to the Forest Buffer Account is determined annually based upon the project's risk of reversal and is calculated by multiplying the project specific reversal risk rating by the total net GHG reductions/removals achieved by the project. Unlike the listing application, for this OPDR an approximation of the contribution to the Forest Buffer Account is not acceptable.

Part VIII. Offset Project Baseline:

- For this OPDR, unlike the project listing application, projects are required to have a finalized baseline. A modeling plan with preliminary best estimates is no longer sufficient to meet the regulatory requirements. If the project's modeling plan or baseline estimates changed between the time of listing and submission of the initial OPDR, this change should be reported as a change to the information submitted at project listing when submitting the first OPDR.
- Note that IFM projects located on public land must present documentation demonstrating explicit approval of the offset project's management activities and baseline. These projects may report changes to the baseline within the initial OPDR if the changes have gone through a public review process and meet the Protocol requirements regarding explicit approval of the project's baseline.
- This part is divided into three sections: questions required for all Improved Forest Management Projects; questions for Improved Forest Management Projects on private lands; and questions for Improved Forest Management Projects on public lands. Answer the questions applicable to the project.

- A diagram and graph are required to complement the descriptions provided in this part. See Part X of this report for more information on the precise requirements.
- Section 6.2 of either the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 or the Compliance Offset Protocol U.S. Forest Projects, November 14, 2014 outlines the approved quantification methodologies for Improved Forest Management Projects. Instructions for considering legal and financial constraints can be found in Sections 6.2.1.2 and 6.2.1.3, respectively. Further details on modeling carbon stocks can be found in Appendix B. (There are some differences in section 6.2 and Appendix B between the two versions.)
- ARB approved growth models can be found in Appendix B, Section B.1 of either the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 or the Compliance Offset Protocol U.S. Forest Projects, November 14, 2014. (There are some differences in Appendix B between the two versions.)

Part IX. Other Offset Programs:

- Answer all questions. If the answer to any question is “yes,” identify the registry or program and provide details on the issued credits in the space provided.

Part X. Attachments:

- Provide each attachment on a separate sheet of paper and submit along with the completed Initial Reporting Period-Offset Project Data Reporting Form.
- To aid with tracking each attachment, it is recommended that the attachments are labeled to correspond with the letter in Part X that they refer to (e.g. “Attachment B”).
- When an attachment is not applicable to the project being listed, please select the “N/A” (Not Applicable) checkbox next to the requirement so that it is clear that the attachment was not inadvertently left off.

Part XI. OPO/APD Signature:

- The individual signing the document must be registered in CITSS as the OPO’s Primary Account Representative or Alternate Account Representative for the entity submitting the information. The individual signing the document may be an APD employee and/or representative; but to sign the document, the individual must be an Account Representative on the OPO’s CITSS account.
- Please provide the individual’s signature, printed name, corporate title, and date signed.
- There are no attestations for this report. The attestations required for the Offset Project Data Report are included in the form U.S. Forest Offset Project Data Report Annual Reporting Period – All Project Types.

Please contact your Offset Project Registry with any questions regarding the OPDR.

Big River/Salmon Creek Forests - ARB
Offset Project Data Report
California Air Resources Board

Forest Owner and Offset Project Operator:
The Conservation Fund

Offset Project Owner: The Conservation Fund
Offset Project Name: Big River/Salmon Creek Forests - ARB
OPR Project ID#: CAR 1100
ARB Project ID#: CAFR 5106
Offset Project Owner CITSS ID#: CA 1597

Compliance Offset Protocol - U.S. Forest Projects - Adopted: November 14, 2014
Initial Reporting Period: 1/1/2015 - 4/15/2016

Offset Project Owner (OPO) Representative Registered with CITSS: Lauren Fety
Registered Professional Forester: Scott Kelly, RPF#2408

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Attachments

Attachments are included at the end of this document unless specified.

Attachment A: Ownership Interest in Big River/Salmon Creek (*separate documents*)

Attachment B: omitted N/A

Attachment C: omitted N/A

Attachment D: omitted N/A

Attachment E: Map of the Project Area

Attachment F: Canopy Cover of Big River/Salmon Creek

Attachment G: Graph of baseline onsite carbon stocks

Attachment H: Diagram of the baseline including all required carbon stocks

Attachment I: Project of Baseline and Harvest Volumes Over 100 Year Planning Horizon

Attachment J: High Stocking Reference Analysis

Attachment K: Legal Constraints

Attachment L: Financial Feasibility Estimate (*separate worksheet*)

Attachment M: Management Buffers

Appendices

Appendices are included in a separate document which accompanies this OPDR.

Appendix A: Forest Inventory Cruise Specifications

Appendix B: Modeling Plan

Appendix C: Calculation of GHG Reductions and GHG Removal Enhancements

Appendix D: Demonstration of Sustainable Long Term Management

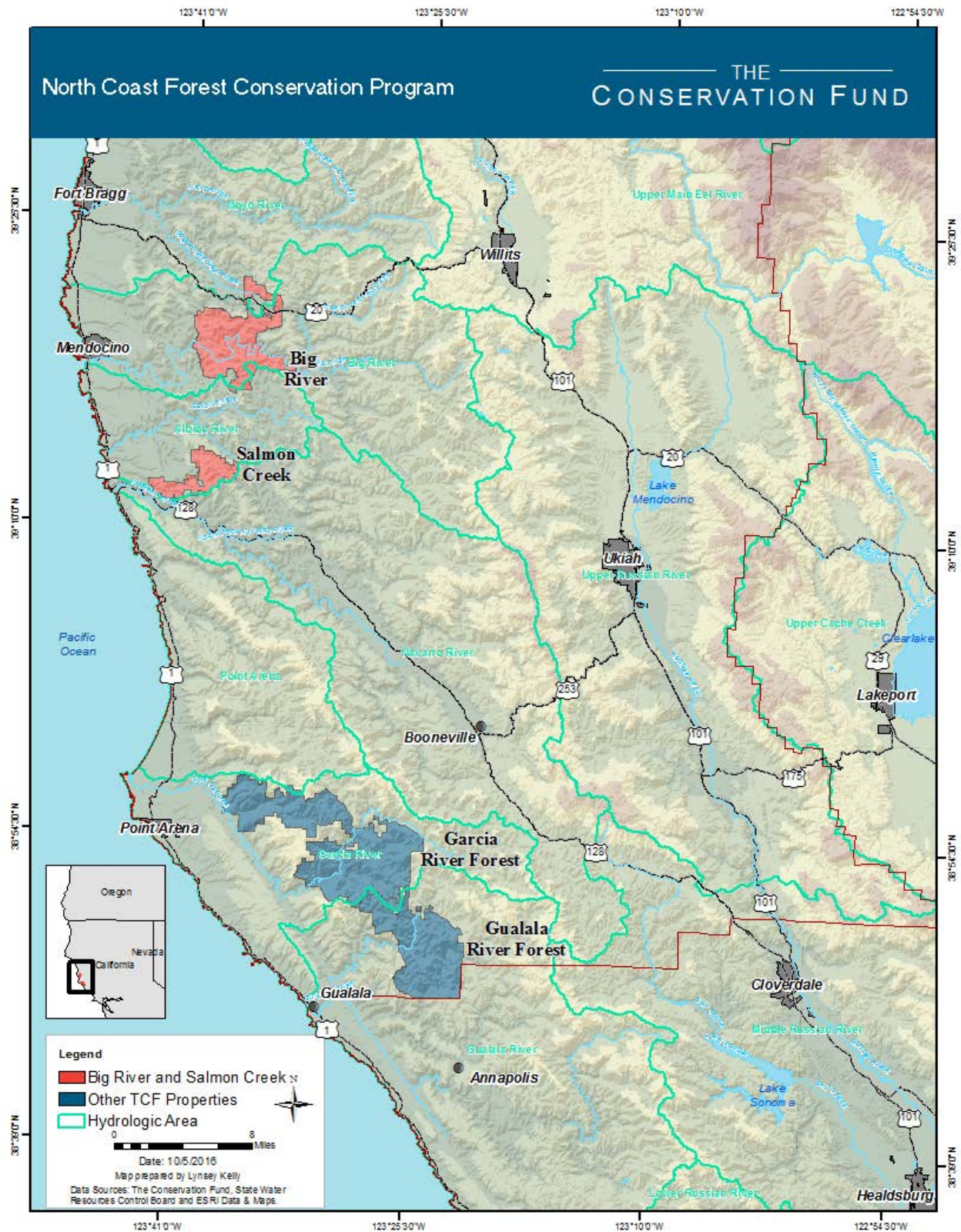
Introduction

The Big River/Salmon Creek Forests – ARB (BRSC or Project) are owned and managed by The Conservation Fund (TCF). TCF is a non-profit land conservation organization whose mission is to protect and conserve land in the USA and also to promote and sustain rural economies. TCF acquired the Big River and Salmon Creek tracts from Hawthorn Timber Company in late 2006. The BRSC carbon project was first listed with the California Climate Action Registry (CCAR) in 2007 using version 2.1 of the Forest Project Protocol (FPP). The start date of the project was January 1, 2007. The first successful verification and registration occurred in March of 2009.

Since the first verification and registration with CCAR, TCF has successfully completed full verifications for the 2007-2014 vintage years. During this time, CCAR became the Climate Action Reserve (CAR) and new versions of the Forest Project Protocol have been released. The Project is now transitioning to the Compliance Offset Protocol – U.S. Forest Projects – Adopted: November 14, 2014 (Protocol) as an Improved Forest Management Project.

This document is prepared in accordance with the Cap and Trade regulation section 95990(k) and describes the Project. It will serve as the BRSC Initial OPDR (supplementing the Initial OPDR form) and will be a living document that is updated as new management and new policies are instituted on the BRSC. This document, and associated appendices, will also serve as a change log for relevant updates and will contain a full history of the BRSC design since its inception in 2015; it will be updated as needed. Changes since listing are detailed in the modeling plan change log and in Addendum V of the Annual OPDR. This Report is intended to be accompanied by an Annual OPDR reporting form. Reporting Period 1 runs from January 1, 2015 through April 15, 2016. Subsequent Reporting Periods will start 16th of April and conclude the 15th of April the following year. The crediting period for the Project is January 1, 2015 through January 1, 2040.

The BRSC forests are composed of two separate tracts, Big River is 11,707 acres and Salmon Creek is 4,204 acres for a total of 15,911 acres for the project. Both tracts are located in Mendocino County, CA near the town of Fort Bragg (Figure 1). The properties are dominated by redwood/Douglas-fir forests and have approximately 37 miles of fish bearing streams. The BRSC has been managed for timber production since the turn of the century, and is therefore composed of a mix of large second growth along the riparian corridors with 2nd and 3rd growth forest upslope composed of uneven-age forests intermixed with even-age plantations ranging in age from 10-40 years.



IV.D.3 Terms Within the Easement That Effect Forest Management

Except for a small strip of land in the Big River tract (discussed below), the BRSC property is not subject to a conservation easement. Instead, at the time TCF purchased the property, it entered into a Memorandum of Understanding with the Wildlife Conservation Board (WCB), the California State Coastal Conservancy (CSCC) and the State Water Resources Control Board. As set forth in the Memorandum, “[t]he purpose...is to prevent fragmentation of forest-lands; protect, restore and enhance water quality and salmonid habitat; improve forest structure and increase natural diversity; and provide public access where appropriate.” These commitments were secured by an “Irrevocable Offer to Dedicate Title In Fee And Declaration of Restrictive Covenants” recorded in favor of the CSCC on November 1, 2006 as document 2006-21784 and a “Notice of Unrecorded Grant Agreement” recorded in favor of the WCB on November 1, 2006 as document 2006-21785. These encumbrances were placed on the property less than one year prior to the offset project commencement and therefore are not considered legally binding requirements (Protocol 6.2.1.2).

Separately, the property is subject to a 2002 conservation easement between the Trust for Wildlife Communities as grantor and TCF’s immediate predecessor in interest, Hawthorne Timber Company, as grantee, which restricts timber management on a narrow strip of land on the western boundary of the Big River tract directly adjacent to the Big River State Park. This conservation easement is now held by the Mendocino Land Trust.

V.A Assessment Area

The Project is within the Northern California Coast Supersection. It consists of both the Coast Redwood / Douglas-fir Mixed Conifer (CRDFMC) assessment area and the Northern California Coast Mixed Oak Woodland assessment area (NCCMOW). The CRDFMC is 13,920 acres, (88% of the area) and the NCCMOW is 1,278 acres (8% of the area). The remaining acres are dominated by grasslands. These assessment area acreages were calculated based on the California Wildlife Habitat Relationship Types Life Form criterion. Conifer forest (WHR_CON) and Mixed Forest (WHR_MIX) were considered part of the CRDFMC assessment area. Hardwood forest (WHR_HDW) was considered part of the NCCMOW assessment area. Herbaceous (WHR_HEB), Shrubs (WHR_SHB), and non-forested areas (WHR_NFO) were 714 acres (less than 5% of the area) and not considered in the common practice calculation.¹

¹ Habitat Classification Rules. California Wildlife Habitat Relationships System. 2005. 46 pages. California Department of Fish and Game California Interagency Wildlife Task Group, Sacramento, CA. Standards and Guidelines for CWHR Species Models. 2000. 43 pages. California Department of Fish and Game California Interagency Wildlife Task Group, Sacramento, CA.

V.F Site Class

The Forest Inventory and Analysis (FIA) site class for the project area is assumed to be “high” (FIA site productivity class code 1-3); no reliable FIA productivity site classes were available for the project area. The Dunning’s timber site class for the property is predominantly class III. Site tree information used in forest modeling was collected during the 2015 inventory effort.

VI.B Legal Constraints Affecting Forest Management

The BRSC lands have been in compliance with all local, state and federal regulatory requirements for the initial reporting period (1/1/2015-4/15/2016). Please see Attachment K Legal Constraints for a complete list of the legal constraints that affect forest management.

VI.D.1 & VI.D.2 Native Species

Since the project start, more than 95% of the standing carbon on the Project has been found in native species.² Additionally, no individual species represents more than 60%³ of the total basal area (BA) across the project area. TCF intends to manage the forest stands to maintain species diversity, ensuring that the Project continues to meet the requirements for composition of native species (Protocol, Table 3.2)

Table 1: % BA by Species at RP1 End

Species	%
Big Leaf Maple	0.07%
Bishop Pine	0.00%
California Bay	0.08%
Cypress	0.07%
Douglas-fir	19.40%
Giant Chinquapin	0.03%
Grand Fir	4.03%
Interior Live Oak	0.06%
California Nutmeg	0.04%
Pacific Madrone	1.46%
Red Alder	0.06%
Redwood	56.02%
Tanoak	17.35%
Toyon	0.04%
Western Hemlock	0.79%
Willow	0.08%
Wax Myrtle	0.39%

² This criterion is based on the language found in Table 3.2 of the Protocol.

³ Following the Species Diversity guidelines outlined for the Northern California Coast Supersection Assessment Area
http://www.arb.ca.gov/cc/capandtrade/protocols/usforest/usforestprojects_2014.htm/assessment_area_data_file.xlsx

VI.D.3.a Sustainable Management

Section 3.8.1 of the Protocol requires that the OPO demonstrate that the Forest Owner employs and demonstrates sustainable long-term harvesting practices on all of its forest landholdings, including the Project Area.

The Project was certified under both the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI) in 2007 and has maintained certification in good standing through 4/15/2016. All lands currently owned by TCF in the California redwood region are also certified under both standards. On a larger, organization-wide scale, all forests owned by TCF for 5 years or more were successfully certified to the SFI Forest Management Standard in 2015 (certificate issued April 2016).

Because the SFI certificate was not issued until April 2016, the initial reporting period of BRSC uses the third option listed in section 3.8.1 to demonstrate sustainable harvesting practices.

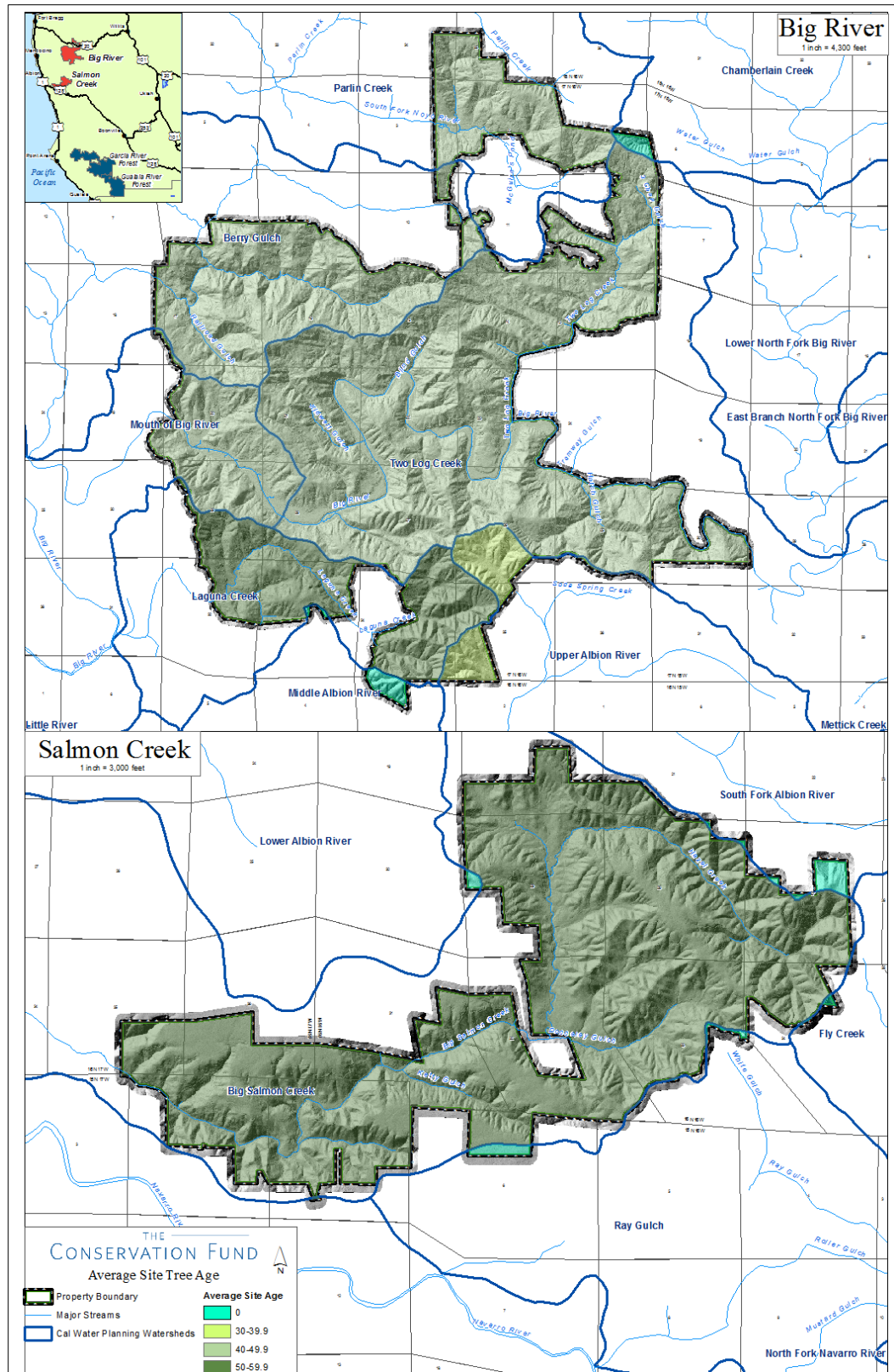
TCF uses uneven-age management on all of its holdings within the Northern California Coast Supersection Assessment Area. TCF has not created any openings in excess of 1 acre through timber management activities. Excluding grasslands and other natural openings, there are not any areas on TCF Northern California Coastal forests where the canopy has been reduced through timber management activities below 40% canopy cover in any 20 acre area. In areas where timber management has not occurred, the forest canopy cover is generally 90% or more. See Appendix D “Demonstration of Sustainable Management” for details and results of the analysis.

VI.D.3.b Age Class Distribution

Within each sub-watershed (specified by the CalWatershed Data 2.2.1) covered by the BRSC, at least 40% of the area has trees at least 20 years old (Table 2). This is based on the average age of the measured site trees in 2015 within each watershed (Figure 2).

Table 2: Average forest age by watershed.

Tract	Watershed	Acreage	Average Age	Trees Measured
Big River	Berry Gulch	1,996	43	6
	Chamberlain Creek	37	-	0
	Laguna Creek	1,421	58	10
	Middle Albion Creek	65	-	0
	Mouth of Big River	951	42	3
	Parlin Creek	871	45	4
	Two Log Creek	5,982	44	52
	Upper Albion River	383	38	2
Salmon Creek	Big Salmon Creek	4,127	54	23
	Fly Creek	4	-	0
	Lower Albion River	8	-	0
	Ray Gulch	26	-	0
	South Fork Albion River	40	-	0



VI.D.4 Structural Elements

Structural elements will be retained and recruited as would naturally occur in the forest. When timber harvesting occurs, the silviculture retains standing dead wood in the form of snags for wildlife trees. Tops are left in the woods during harvesting to increase down wood recruitment; dead wood is not be removed from the forest. The Project is making ongoing progress toward having at least 1% of standing live carbon stocks in standing dead. In the 2015 inventory, the project had just over 0.9% (2.21 MtCO₂e/acre) of standing live carbon stocks in standing dead wood. Dead wood has not been removed from the property since TCF acquisition. The Project forests are young, vigorous redwood dominated forests where there is little natural mortality (discussion in VII.A 6), and therefore structural element recruitment is an ongoing process.

VI.E Management Activities that Lead to Higher Carbon Stocks than Baseline

The forest management activities used on the BRSC are primarily of light-touch selection. This harvesting approach will generally leave more standing volume after harvests than is modeled in the baseline harvesting regimes.

Compared to the baseline, there are several changes in the management of Big River/Salmon Creek that will lead to higher carbon stocks. The BRSC is managed to increase timber stocking (both quality and quantity) with a variety of uneven-aged silvicultural approaches (primarily single-tree selection, but with some group selection and commercial thinning harvests). Forest management of BRSC is committed to growing the forest toward a fully stocked condition by cutting less than growth. The BRSC has wider no-harvest “core zone” riparian buffers than required under the California Forest Practice Rules. The combination of the reduced harvest levels and streamside retention requirements results in an increase in standing carbon stocks.

VI.G Previously Listed

The BRSC is an Improved Forest Management (IFM) project which has regularly occurring active management. It was registered with CAR as a Conservation Based Forestry Project, under protocol version 2.1, from 1/1/2007-12/31/14. This OPDR document transitions the original CAR version 2.1 project to an ARB IFM Project (Protocol adopted November 14th, 2014).

VII.A Carbon Stock Inventory

The following information is provided in accordance with Compliance Offset Protocol US Forest Projects November 14, 2014 (“Protocol”). This section serves as the forest carbon inventory (Protocol, section A3), and is supplemented by Initial OPDR Appendix A (Forest Inventory Cruise Specifications) and Appendix B (Modeling Plan).

IFM 1: Primary Effect - Standing Live Carbon Pool

IFM 3: Primary Effect - Standing Dead Carbon Pool

1. Methodology

The BRSC inventory was designed and implemented in 2015. The BRSC was sampled using a stratified random sampling design of forested areas. The first step was to identify forested areas. To determine the forested areas, a waterfall of "area subtractions" of zero carbon areas were removed from the project boundary. The first step in this waterfall is to determine the size of zero carbon road areas and remove them. Paved roads, existing permanent, and existing seasonal roads are buffered 18' from the center line in ArcGIS for a total of 36'. These zero carbon road acres are then subtracted from the Project Area to arrive at the Net Acres. Next, the polygons of natural grasslands and other nontimber greater than 2 acres and the Big River alluvium polygon (both digitized from 2012 high-resolution aerial imagery) are removed from the Net Acres to get the Forested Acres.

After the forested areas have been determined, the project is split into three strata based on management constraints. These strata are: Reserve, Watercourse and Lake Protection Zone, and Working Forest. The Reserve is the area identified in a 2002 conservation easement as a strip of land on the Big River tract where active management is restricted and no harvesting may occur. The second management stratum is the class I and II watercourse and lake protection zones (WLPZ) in which harvesting is restricted by statute to protect water quality (see Appendix B, Section VII "Location-Based Silviculture" for further description). The third stratum is the unconstrained Working Forest (WF). These strata were chosen because overtime the Reserve and WLPZ will diverge from the working forest in tree size and density. The plots were placed on a 5 chain by 20 chain grid across the property from which plots were randomly selected for sampling in a simple random/systematic stratified sampling design (SRSS).⁴

The Big River alluvium polygon, natural grasslands (at least 2 acres in size), and buffered road acres are collectively considered the Zero Carbon Acres, also called the Nontimber Stratum. The BRSC project boundary is the full 15,911 and includes roads, grasslands, gravel bars, and a river polygon. The Nontimber Stratum was not sampled and is assumed to have 0 carbon stocks/acre. As the project changes over time, the acreage in these non-forest types (as well the forested strata) may change. However, for the life of the project, roads, grasslands, and the Big River alluvium areas will always be assumed to have 0 MgCO₂e/acre. Over time, the strata designations and associated acreages will be updated as appropriate. (Note, to aid visualization maps are generally represented with only the natural openings as 'nontimber'. The buffered roads network is extensive and generally not displayed on maps).

Table 3: Strata Descriptions in BRSC

Strata Name	Strata	Gross Acres	Forest Acres	Description	Contains Forest Carbon?
Reserve	RSRV	99	93	Forest Reserve - designated in the CE	yes
Working Forest	WF	13,921	13,159	Forest Area not along streams or in the Reserve	yes
Water Lake Protection Zone	WLPZ	1,748	1,667	100' - from Main Stem Big River River Polygon 100' - from center line of Class 1 Streams 100' - from center line of Class 2 Large Streams 75' - from the center line of Class 2 streams	yes
Nontimber	NT	142	-	Nontimber – including roads & natural openings	no
	TOTAL	15,911	14,918	BRSC Forests Project Area	

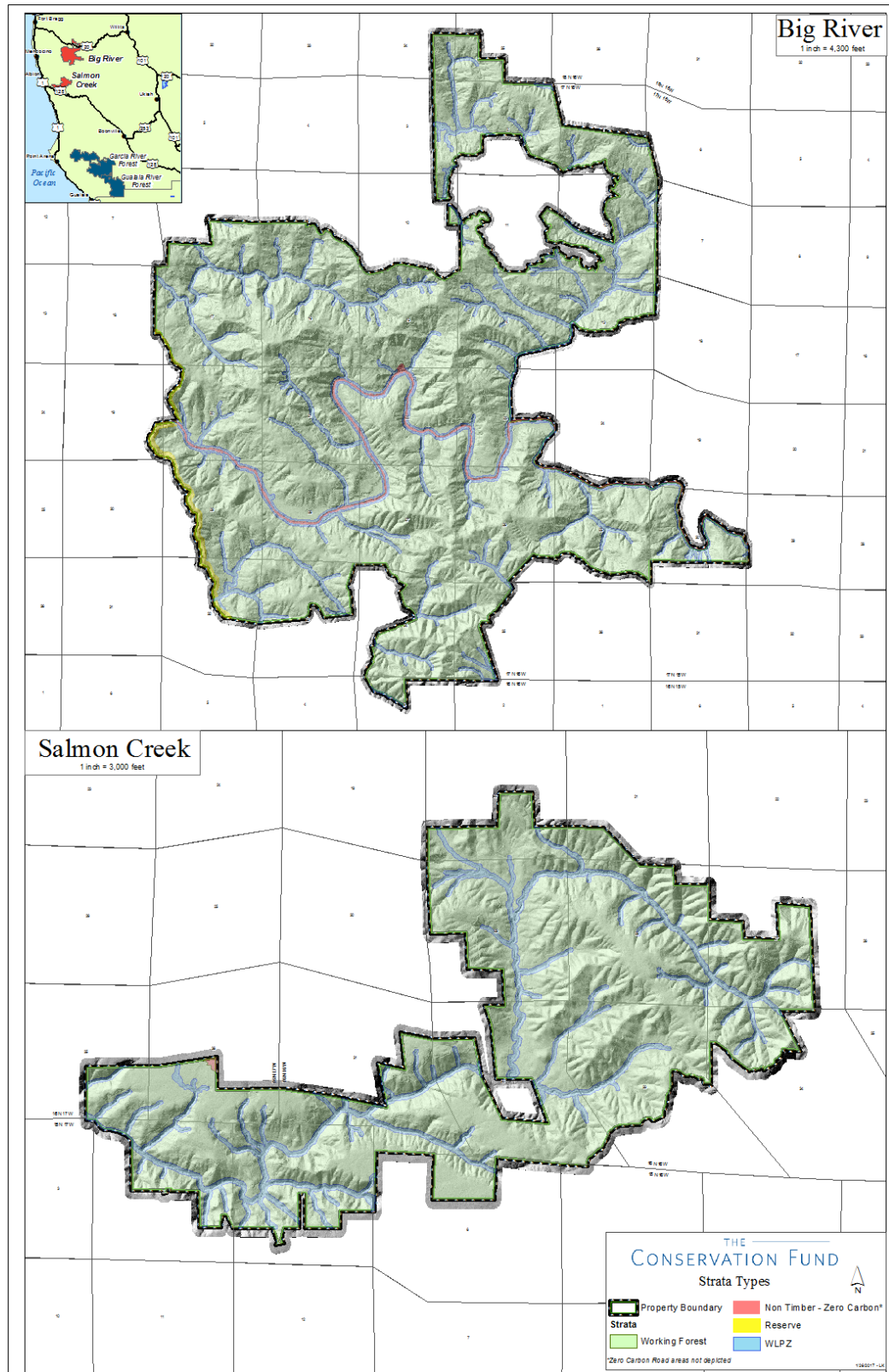


Figure 3: Strata Types

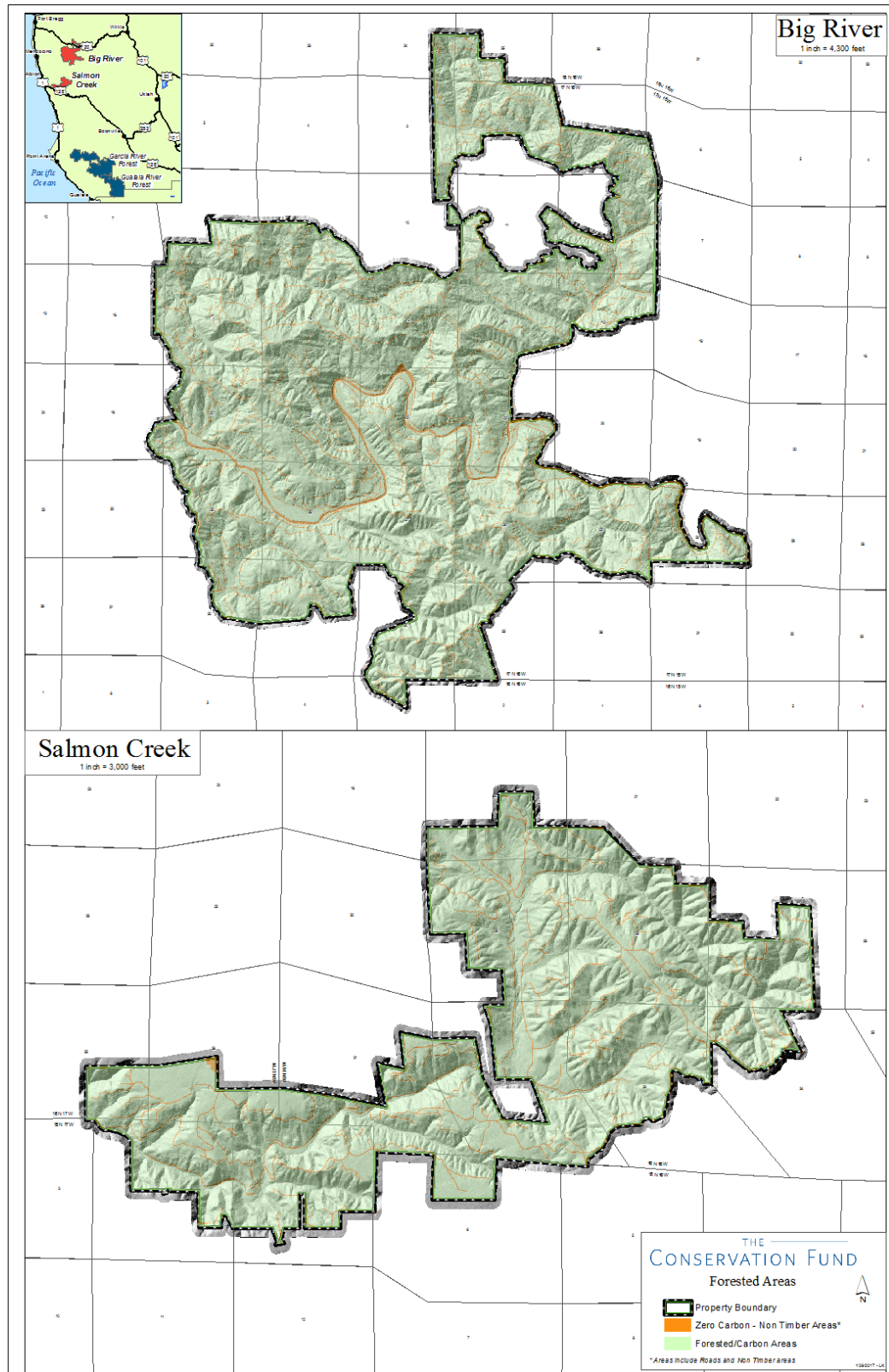


Figure 4: Forested Areas

2. Offset Project Boundary

The BRSC measures carbon in standing live trees and in standing dead trees in all forested strata. Within the offset project boundary there are the three forest strata and also a Nontimber Stratum which is not sampled and is assumed 0 MgCO₂e/acre. The project area is 15,911 acres, which coincides with the entire property boundary of the Big River and Salmon Creek tracts owned by The Conservation Fund including natural openings and roads.

3. Field Measurement Procedures

Carbon stocks were inventoried in forested areas in 2015. Appendix A details the on-the-ground inventory data collection procedures used in the 2015 inventory. Below is a brief description of the field measurement procedures.

Sampling of standing live and dead trees uses a 1/10 acre fixed area plot for conifer species and a nested 1/20 acre plot for hardwoods species. All hardwood trees greater than or equal to 5 inches are sampled on the 1/20 acre plot; all conifer species greater than or equal to 5 inches are sampled on the 1/10 acre plot. All live trees less than 5 inches, but at least 2.5 inches in DBH, are measured in a 1/100th acre fixed area regeneration plot. The inventory design sub-samples tree height by measuring tree height on approximately a third of the plots. Trees not measured for height are estimated using the equation forms outlined in Eng⁴ (2012) or using FORSEE's estimation methods (Modeling Plan, Section III and Section X).

The forest inventory will be periodically updated through new a forest inventory that re-measures the fixed area plots. It is likely that the forest inventory will be collected on a rolling basis where a portion of plots will be re-measured annually instead of conducting a forest-wide inventory periodically. The portion of the inventory which does not have new field data will be updated to the common year using FORSEE (for more information on forest modeling procedures, see the Modeling Plan). Forest inventory data will be maintained and collected so that at any point in time all forest inventory data will be 12 years old or less.

The forest inventory will also be updated each year there is a measurable disturbance resulting from timber harvesting or natural disaster such as fire or wind storm. All plots impacted by the disturbance will be re-measured to document the change in carbon stocks. The cruising methodology described in Appendix A will be used for all re-measurements of plots. As plots are re-cruised, the previous values will be removed, archived and retained (Modeling Plan, Section III).

After inventory data is collected in the field, it is transferred to an electronic format (or between electronic formats if a data logger was used) by the timber

⁴ Eng, H. 2012. Tree Height Estimation in Redwood/Douglas-fir Stands in Mendocino County. Pages 649-654. General Technical Report - Proceedings of coast redwood forests in a changing California: A symposium for scientists and managers, Pacific southwest Research Station, Forest Service, U.S. Department of Agriculture, Albany, CA.

cruiser or by TCF staff. The inventory data is then brought into the forest inventory growth and yield database system.

Within the database system the biomass and carbon calculations are performed (Section VII B) which are the basis for the calculation of statistical accuracy and confidence deduction (methods in Modeling Plan, Section IV & Section XI and results below in OPDR Section VII D).

4. Quality Assurance and Quality Control Procedures

All forest inventory data is check-cruised for accuracy and completeness of field measurements; the check done is completed on a cruiser-by-cruiser basis. The check cruise passes if total merchantable BF/acre and metric tons of C/acre are within 10% of the check cruiser's estimate and if these estimates are not statistically different using a paired t-test at the 90% confidence level. After field data collection, values are transferred into Microsoft Access for another level of QA/QC review. This process is also discussed in the Modeling Plan (Section III).

5. Data Management Systems and Procedures

The BRSC project uses a forest growth and yield model as well as in-house computer code to manage the forest inventory and make projections of future forest conditions. Currently, TCF uses the FORest and Stand Evaluation Environment (FORSEE) Software developed by the California Growth and Yield Modeling (CAGYM) cooperative (<http://www.cagym.com/>). FORSEE is an approved growth model found in the Protocol. Use of the model and data management systems are further discussed in the Modeling Plan.

6. Description of Known or Potential Diseases

There are relatively few diseases that impact trees throughout the Project and most impact individual or small groups of trees. At this point, landscape scale disease outbreaks resulting in widespread mortality have not been observed. The following diseases are known to occur on the ownership which may result in declining tree vigor and mortality of select individual trees:

Red Ring Rot (*Phellinus pini*) causes heartwood and sapwood decay in a wide range of conifer species and is the most common form of wood decay seen in coastal California forests. Infections in Douglas-fir are common on the property and it is also seen in sugar pine. Visual indicators of infestation include brownish, bracket-like conks on the bole of the tree and swollen branch nodes. Damage is most prevalent in older stands (generally over 50 years) and in areas that have been subject to multiple partial harvest entries; broken limbs and bole scars serve as entry points for the disease.

Black stain root disease (*Leptographium wagneri* var *psedutsugae*) is a vascular root disease common in Douglas-fir throughout the Pacific Northwest. The disease causes a black staining in the sapwood of the roots and lower bole. Outward signs of infection include chlorotic foliage and reduced leader growth. Patches of trees

infested with this disease are most commonly seen in areas with disturbed soil, such as adjacent to truck roads, landings, and skid trails.

Velvet top fungus (*Phaeolus schweinitzii*) causes a root and butt rot in Douglas-fir and sugar pine. This disease is most common in older trees and often leads to loss of structural support and windthrow. There are few outward signs of infection other than clumps of brownish, irregularly lobed caps that emerge from roots around the base of infected trees. In advanced cases bole swelling can be significant.

Brown cubical rot (*Poria sequoia*) and white ring rot (*Poria albipellucida*) cause heart rot in redwood, but almost never lead to tree mortality.

Sudden Oak Death is caused by the exotic oomycete *Phytophthora ramorum*. It is not confirmed in the Project, but is known to be present in the Big River watershed. The disease has a very wide host range and mortality has been seen in tanoak, interior live oak, California black oak, and canyon live oak. Outward signs of infection include reddish, oozing stem cankers and foliage dieback. California bay trees are not killed by the disease, but are suitable hosts and important sources of inoculum.

VII B Calculation Methodologies

IFM 1: Primary Effect – Standing Live Carbon Pool

Individual trees have the approved Protocol biomass and carbon equations applied to them to calculate their biomass and carbon equivalents (Table 3)⁵. The biomass estimates are then summed and converted to metric tons of biomass per hectare at the plot level. These per hectare biomass estimates are the input variable in a regression developed by Cairns et al.⁶ to estimate below ground biomass (BGB) from above ground biomass (AGB). All estimates of belowground biomass are applied at the plot level to metric tons of biomass/hectare of standing live trees. Standing live biomass (SLB) is the sum of AGB and BGB.

⁵ The approved DBH to biomass regressions were all taken from the USFS Pacific Northwest Research Station documentation that can be found here:

http://www.arb.ca.gov/cc/capandtrade/protocols/usforest/usforestprojects_2014.htm

⁶ Cairns, M. A., S. Brown, et al. (1997). "Root biomass allocation in the world's upland forests." *Oecologia* 111(1): 1.

Table 4: Volume, Biomass, and Density Equations and Coefficients by Known Species in BRSC

Species	Scientific Name	Code	Bole Volume	Bark Biomass	Live Branch Biomass	Specific Gravity	Wood Density
Big Leaf Maple	<i>Acer macrophyllum</i>	BM	37			0.44	27.46
Bishop Pine	<i>Pinus muricata</i>	BP	16	14	11	0.45	28.08
California Bay	<i>Umbellularia californica</i>	CB	33			0.51	31.82
Cypress	<i>Cupressus sp.</i>	CY	19	13	10	0.41	25.58
Douglas-fir	<i>Pseudotsuga mensziesii</i>	DF	3	8	6	0.45	28.08
Giant Chinquapin	<i>Chrysolepis chrysophylla</i>	GC	32			0.42	26.21
Grand Fir	<i>Abies grandis</i>	GF	32	2	1	0.35	21.84
Interior Live Oak	<i>Quercus wislizenii</i>	LO	44			0.59	36.82
California Nutmeg	<i>Torreya californica</i>	NM	8	13	10	0.41	25.58
Madrone	<i>Arbutus mensziesii</i>	PM	40			0.58	36.19
Red Alder	<i>Alnus rubra</i>	RA	26	20	16	0.37	23.09
Redwood	<i>Sequoia sempervirens</i>	RW	24	17/13*	10	0.36	22.46
Tanoak	<i>Lithocarpus densiflorus</i>	TO	34			0.58	36.19
Toyon	<i>Heteromeles arbutifolia</i>	TY	41			0.52	32.45
Unknown	N/A	UK or XX	41			0.52	32.45
Western hemlock	<i>Tsuga heterophylla</i>	WH	6	15	12	0.42	26.21
Willow species	<i>Salix sp.</i>	WI	40			0.36	22.46
Wax Myrtle	<i>Myrica californica</i>	WM	41			0.52	32.45

*Where DBH > 39.37 inches use Equation 17 for RW, otherwise use equation 13. All equations are taken from the documentation provided by ARB and calculated by FIA (9-19-2014)⁷. This table only includes species known to occur in the Project. If additional species are identified in the future, the equations will be identified in the FIA documentation and/or through consultation with ARB.

The recommended belowground biomass equation is used to calculate the belowground biomass using the aboveground biomass. This equation is applied at the plot level and is applied to the sum of all standing live wood. That equation is:

Equation 1: Belowground biomass – $BBD = \exp(-0.7747 + 0.8836 \times \ln(ABD))$

BBD – belowground biomass density

ABD – aboveground biomass density in kg/ha – this is a per plot value.

Total standing live aboveground carbon is calculated in Microsoft Access using in-house computer code; the biomass and carbon code follow the equation required by the Protocol and provided on the ARB website (Table 3; FIA 9-19-2014). After biomass has been calculated, summary queries in the database are used to compile aboveground and belowground values. Per acre carbon values are converted to CO_{2e} values by multiplying by 3.664 as specified by the Protocol. All per acre values are then scaled to the forest level by multiplying by the stratum area.

The aboveground biomass of standing live trees with broken tops (defect code 91X) is calculated using the broken top height as a true height; this is a conservative but straightforward method. If a broken top tree had a field measured height, then this value is used as the tree height. For unmeasured broken top trees, the percent missing height as recorded by the field crew is subtracted from the calculated height

⁷ “Volume Estimation for Species in Projects Located in CA, OR, WA (Updated: 9/19/2014) (https://www.arb.ca.gov/cc/capandtrade/protocols/usforest/2014/volume_equations.pdf) and “Biomass Equations for Species in Projects Located in CA, OR, WA (Updated: 9/19/2014) (https://www.arb.ca.gov/cc/capandtrade/protocols/usforest/2014/biomass_equations.pdf) Documents available on the ARB website: http://www.arb.ca.gov/cc/capandtrade/protocols/usforest/usforestprojects_2014.htm

from the height regression. Then, the biomass of the tree is calculated using the revised regressed height as the tree height.

The aboveground biomass of trees which have 10% or more missing volume – cavities from disease, wildfire, or physical damage – are calculated in a two-step process. First, the biomass of the tree is calculated. Then, the percent missing volume is subtracted from originally calculated biomass value.

The standing live biomass for the project activity is calculated each year based on any new inventory data collected and/or grown forward tree lists. The standing live biomass for the baseline is also calculated as described above for the baseline timeframe.

IFM 3: Primary Effect – Standing Dead Carbon Pool

Standing dead wood biomass is calculated based on the DBH and height measured in the field (all dead trees are measured for height). For dead trees with only limited decay (recently dead trees – snags with decay class 1), the full volume and biomass is calculated in exactly the same fashion as for live trees. For snags with more advanced decay (decay classes 2 to 5), volume and biomass are calculated only for the portion of the tree remaining (Table 5). The recommended belowground biomass equation from Cairns et al 2007 is used to calculate the belowground biomass using the plot level values of standing dead aboveground biomass (Equation 1).

Table 5: Volume basis for biomass calculation of snags

Decay Code	Conifers	Hardwoods
1	All Aboveground tree portions	All Aboveground tree portions
2	Bole and Bark only	Bole and Bark only
3	Bole only	Bole only
4	Bole only	Bole only
5	Bole only	Bole only

Then, the decay adjusted biomass is calculated by applying the species specific relative density factors from Harmon et al (2011)⁸(Table 6). The decay classes used to categorize dead trees are those defined by the US Forest Service for their Forest Inventory and Analysis (FIA) plots and their description can be found in Appendix A. Dead tree biomass is converted to carbon assuming carbon is 50% of biomass. Carbon is converted to CO_{2e} for standing live and standing dead pools by multiplying by 3.664 as required in the Protocol.

⁸ Harmon, M. E., C. W. Woodall, B. Fasth, J. Sexton., and M. Yatkov. 2011. Differences Between Standing and Downed Dead Tree Wood Density Reduction Factors: A Comparison Across Decay Classes and Tree Species. Pages 40. Research Paper NRS-15, United States Department of Agriculture, Forest Service, Northern Research Station.

Table 6: Relative density factors (Mt/m³) from Harmon et al (2011)

Species	Scientific Name	Code	Live Trees (FIA values)	Decay Class 1	Decay Class 2	Decay Class 3	Decay Class 4	Decay Class 5
Big Leaf Maple	<i>Acer macrophyllum</i>	BM	0.44	0.979	0.766	0.565	0.45	0.45
Bishop Pine	<i>Pinus muricata</i>	BP	0.45	0.953	0.95	0.927	0.598	0.598
California Bay	<i>Umbellularia californica</i>	CB	0.51	0.982	0.793	0.618	0.525	0.525
Cypress	<i>Cupressus species</i>	CY	0.41	0.994	0.951	0.902	0.605	0.605
Douglas-fir	<i>Pseudotsuga menziesii</i>	DF	0.45	0.892	0.831	0.591	0.433	0.433
Giant Chinquapin	<i>Chrysolepis chrysophylla</i>	GC	0.42	0.99	0.8	0.54	0.43	0.43
Grand Fir	<i>Abies grandis</i>	GF	0.35	1.013	0.966	0.855	0.574	0.574
Interior Live Oak	<i>Quercus wislizenii</i>	LO	0.7	1.02	0.841	0.705	0.591	0.591
California Nutmeg	<i>Torreya californica</i>	NM	0.41	0.994	0.951	0.902	0.605	0.605
Madrone	<i>Arbutus menziesii</i>	PM	0.58	0.982	0.793	0.618	0.525	0.525
Red Alder	<i>Alnus rubra</i>	RA	0.37	1.03	0.903	0.535	0.393	0.393
Redwood	<i>Sequoia sempervirens</i>	RW	0.36	0.994	0.951	0.902	0.605	0.605
Tanoak	<i>Lithocarpus densiflorus</i>	TO	0.58	0.982	0.793	0.618	0.525	0.525
Toyon	<i>Heteromeles arbutifolia</i>	TY	0.52	0.99	0.8	0.54	0.43	0.43
Unknown	N/A	UK or XX	0.52	0.99	0.8	0.54	0.43	0.43
Western hemlock	<i>Tsuga heterophylla</i>	WH	0.42	0.9	0.83	0.661	0.38	0.38
Willow species	<i>Salix sp.</i>	WI	0.36	0.982	0.793	0.618	0.525	0.525
Wax Myrtle	<i>Myrica californica</i>	WM	0.52	0.99	0.8	0.54	0.43	0.43

* Chinquapin, Wax Myrtle, Toyon, and unknown species use the default hardwood decay values in Table 6 of the Harmon et al. (2011) publication. This table only includes species known to occur in the Project. If additional species are identified in the future, the equations will be identified in the FIA documentation and/or through consultation with ARB.

IFM 6: Primary Effect – Soil Carbon Pool

The soil carbon pool is excluded since no site preparation activities are used.

IFM 7: Primary Effect – In-Use Forest Product Carbon Pool

The in-use forest product carbon pool is calculated each year when a harvest occurs. The baseline forest product carbon pool is also calculated for all harvest events. In use forest product carbon is calculated following the instructions described in Appendix C of the Protocol. The mill efficiency used is based on conifer only milling for the Pacific Coast Southwest region. Appendix B, the modeling plan, shows the coefficients used to convert the milled material (after the efficiency deduction is applied) into product classes. These coefficients are taken from the Assessment Area file provided on the ARB's website. The total in-use forest product carbon pool calculation follows table C.2 in the Protocol. The final CO₂e estimate is converted from carbon by multiplying by 3.664.

IFM 8: Primary Effect – Forest Product Carbon in Landfills Pool

The forest product in landfill carbon pool is calculated each year when a harvest occurs. The baseline forest product carbon pool is also calculated for all harvest events. Landfill forest product carbon is calculated following the methods described in Appendix C of the Protocol. The mill efficiency used is based on conifer only milling for the Pacific Coast Southwest region. Appendix B, the modeling plan, shows the coefficients used to convert the milled material (after the efficiency deduction is applied) into product classes. These coefficients are taken from

Assessment Area data of the Protocol. The total landfill forest product carbon pool calculation follows table C.3 in the Protocol. The final CO₂e estimate is converted from carbon by multiplying by 3.664.

IFM 9: Secondary Effect – Site Preparation Emissions

Site Preparation Emissions are excluded since no site preparation activities are used.

IFM 14: Secondary Effect – Changes in Harvesting Outside of Project Area

The market leakage effects are estimated using a default 20% “leakage” factor applied to the difference in the actual yearly harvest volume relative to modeled baseline harvest levels.

IFM 17: Secondary Effect – Forest Product Decomposition Emissions

Forest product decomposition emissions are quantified as a component of the in-use forest products and landfill forest products calculations.

VII.C Summary of Carbon Stocks

The start date of the project was January 1, 2007. The first successful verification and registration occurred for the 2007 vintage credits was in March 2009. Since the first verification and registration with CCAR, TCF has successfully completed verifications for the 2008-2014 vintage years. For the transition to the ARB Protocol, a new inventory design was used; it is described in Appendix A, “Forest Inventory Cruise Specifications”. The new inventory was completed in 2015, and represents the carbon stocks as of 10/1/2015. The trees were then grown forward to 3/31/2016, which represents the carbon stocks at the end of reporting period 1. Methods for adjusting the inventory are further discussed in Appendix B, “Modeling Plan”.

The forest was also “backcast” to January 1, 2007; this backwards adjustment of starting stocks was used to calculate carbon stocks for 2004-2014. The adjusted stocks were also the basis for the baseline modeling following the Transition guidance. Carbon stocks for the end of reporting period 1 (1/1/2015-4/15/2016) in are shown in Table 6 below. Also see Appendix C “Calculation of GHG Reductions and GHG Removals Enhancements” for credit calculations.

In Appendix A, the Protocol requires that the carbon stocks be presented by stratum. Table 9A and 9B below show total metric tons CO₂e by stratum for standing live trees.

Table 7: Standing live and dead carbon stocks (metric tons) for initial reporting period: 4/15/15

Carbon Pool	Source	Gross MtCO₂e/Acre
Standing Live Carbon Stocks	Sampling results of trees	239.42
Standing Dead Carbon Stocks	Sampling results of standing dead trees	2.21
Shrubs and Herbaceous Understory	N/A	-
Soil	N/A	-
Total		241.62

IFM 1 Standing Live:

The standing live carbon pool for the initial reporting period is 239.42 MtCO₂e/acre; 3,571,731 MtCO₂e for the project.

IFM 3 Standing Dead:

The standing dead carbon pool for the initial reporting period is 2.21 MtCO₂e/acre; 32,942 MtCO₂e for the project.

IFM 6 Soil: N/A

IFM 7 Carbon in in-use forest products:

The calculated amount of in-use forest carbon is 2,603 MtCO₂e for the initial reporting period.

IFM 8 Forest product carbon in landfills:

The calculated amount of forest carbon products in landfills is 1,682 MtCO₂e for the initial reporting period.

IFM 9 Biological emissions from site preparation: N/A

IFM 14 Biological emissions/removals from change in harvesting on forestland outside Project Area:

The biological emissions/removals carbon pool is -11,578 MtCO₂e for the project.

IFM-17 Biological emissions from decomposition of forest products:

This is quantified as a component of IFM-7 and IFM-8 as described above.

VII.D Summary of Inventory Confidence Statistics

Stratified random sampling formulae are used to calculate the sampling error for the Project, for details see the Modeling Plan (Section IV; Section XI). The Project has a sampling error of less than 5% at the 90% confidence interval (Table 8). There is an inventory confidence deduction because the sampling error was more than 5.0%. The sampling error for the inventory was 5.23%; the confidence deduction is 0.2%

Table 8: Standing Live Carbon: Summary of RPI

Mean standing live & standing dead	65.95	MgC/Acre
SE of mean	2.10	MgC/Acre
SE*1.645 (90% CI)	3.45	(2.10)*(1.645)
Sampling Error of 90% CI	5.23%	(3.45)÷(64.75)
Inventory Confidence Deduction	0.2%	(5.23%-5.0%= 0.23, rounds to 0.2%)

Appendix A of the Protocol requires the identification the metric tons CO_{2e} by stratum and the percentage of carbon each stratum represents in relation to the total project area (Table 9A & Table 9B).

Table 9A Standing Live Carbon

Strata	No of Plots	Carbon (C/acre)			Total Forest Acres	C Total	MtCO _{2e} Total	Percent Standing Live
		Average	Std. Dev.	Std. Error				
Reserve	10	72.25	29.68	9.39	93	6,700	24,550	1%
Working Forest	414	59.85	42.30	2.08	13,159	787,558	2,885,614	81%
WLPZ	53	108.31	64.53	8.86	1,667	180,563	661,581	19%
Total	477	65.34		2.08	14,918	974,821	3,571,745	

Table 9B Standing Dead Carbon

Strata	No of Plots	Carbon (C/acre)			Total Forest Acres	C Total	MtCO _{2e} Total	Percent Standing Dead
		Average	Std. Dev.	Std. Error				
Reserve	10	0	0	0	93	0	0	0%
Working Forest	414	0.63	2.52	0.12	13,159	8,324	30,498	93%
WLPZ	53	0.40	0.95	0.13	1,667	667	2,444	7%
Total	477	0.60		0.11	14,918	8,991	32,942	

VII.E Risk of Reversal Calculation

The calculation of reversal risk rating follows the rules laid out in Appendix D of the Protocol. Because the full project is not covered by a qualified conservation easement (QCE), the project uses the non-QCE option and the risk of reversal ratings and the buffer pool contribution is 19.236%. The project's annual Forest Buffer account contribution for the first reporting period is 17,546 MtCO_{2e} (19.236% of 91,213 MtCO_{2e}).

Table 10: Reversal Risk Rating and Buffer Pool Contribution Calculation

Risk Category	Risk Rating
Financial Failure	5%
Illegal Harvesting	0%
Conversion	2%
Over Harvesting	2%
Social	2%
Wildfire	4%
Disease/Insect	3%
Other Catastrophic Events	3%
Total Buffer Pool Contribution	19.236%

Calculation of Buffer Pool Contribution from Risk Ratings:

$$100\% - (((1-0.05)*(1-0.02)*(1-0.02)*(1-0.02)*(1-0.04)*(1-0.03)*(1-0.03)*100)) = 19.236\%$$

VIII.A.2 Baseline Carbon Stocks

Attachment G, below, shows the baseline for aboveground standing live carbon stocks. Attachment H also shows the final baseline average as well as the common practice stocks.⁹ The common practice value for BRSC project is 180.79 MtCO₂e/acre. Because the starting stocks of the projects (147.86 MtCO₂e/acre) are below the common practice baseline, a high stocking reference assessment was completed.

The high stocking reference, 80% of the highest value for aboveground carbon stocks within the project area for ten years prior to project commencement, is 140.31 MtCO₂e/acre (Attachment J). The minimum baseline level is 147.86 MtCO₂e/acre, following the calculation in the Protocol (Eq 6.6). See the Attachment J for a description of the methodology used to calculate the high stocking reference.

After calculating the Initial Carbon Stocks (ICS) (147.86 MtCO₂e/acre), the HSR (140.31 MtCO₂e/acre), the common practice value (180.79 MtCO₂e/acre), and the WCS (147.86 MtCO₂e/acre), the minimum baseline level (MBL) was assessed following the method in the Protocol (Equation 6.6). First, the HSR and ICS were compared and the larger value (ICS) was selected. Next, the common practice value and the WCS were compared and the smaller value selected (WCS). Finally, the results of the previous two assessments were compared and the highest value selected; this is the MBL. The MBL is 147.86 MtCO₂e/acre.

⁹ See Attachment I for a breakdown of the components of the baseline model.

Following the regulation, the project baseline was modelled from the date of the offset project transition plus 100 years. The baseline runs from project commencement date in 2007 to 2115.

For modeling purposes, the property has been broken into four separate management types: WLPZ buffering Class I streams, WLPZ buffering Class II streams, Working Forest (unconstrained harvest area), and No Harvest areas, primarily to account for the Northern Spotted Owl and other special status species. To calculate the total baseline, all four areas were modeled and combined, and then the standing dead pool was added. In the figure 2, Attachment G below, the solid, thick purple line shows the final baseline model and the dashed horizontal orange line is the baseline average of this model. The baseline model in the no harvest acres and the WLPZ acres steadily grows carbon stocks over time. The reserve and working forest shows an initial rapid decline in stocks followed by more steady growth due to the initial harvest and hardwood management silviculture. Further description of the baseline management regimes can be found in the Modeling Plan (Appendix B).

The graph below reflects the modeled harvest. In the first 20 years, the unconstrained portion of the property is harvested aggressively. Stands are then re-entered periodically when they meet the minimum criteria for re-entry as defined in the modeling plan or ten years whichever is later. Stands harvested using the transition method must have a minimum of 75 ft² of conifer basal area/acre before re-entry and only two transition harvests are allowed per stand (plot). Stands harvested using the selection method must have a minimum of 100 ft² of conifer BA/acre for entry and can be harvested down to 75 ft² of conifer BA using. Stands are re-entered at a minimum of 10 years after they are harvested. There is a period of stock growth after the initial entry followed by a leveling out of harvest rates as the forest reaches a sustainable yield stream as can be seen in the slow but steady increase towards the end of the baseline modeling period.

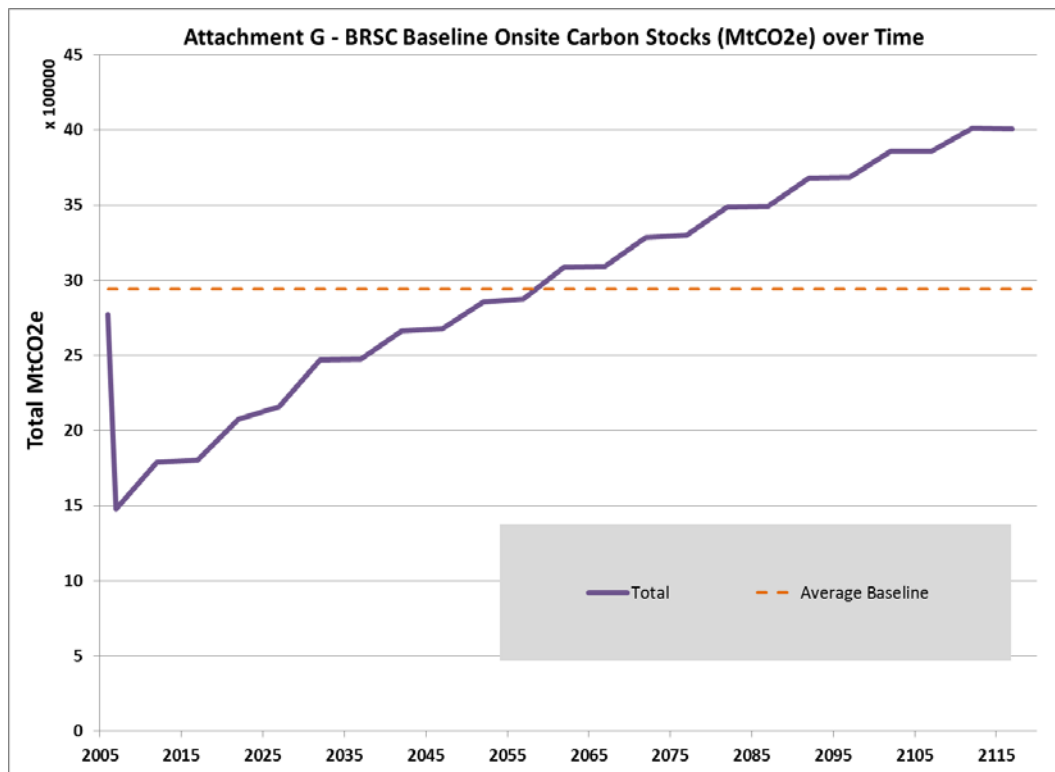


Figure 5: Attachment G - Baseline Model

Compared to the baseline management scenario, management of Big River/Salmon Creek Project will lead to higher carbon stocks. There are increased “no harvest” riparian buffers that extend 50 feet on either side of class I streams landward starting from the watercourse and lake transition. The baseline scenario allows harvesting within this zone, provided overstory canopy retention, and this change will increase carbon stocks. The remaining portion of the BRSC will be managed using an uneven age selection regime which is designed to increase forest stocks over time. The selection harvest in some areas will include a hardwood competition reduction treatment intended to reduce the prevalence of tanoak trees.

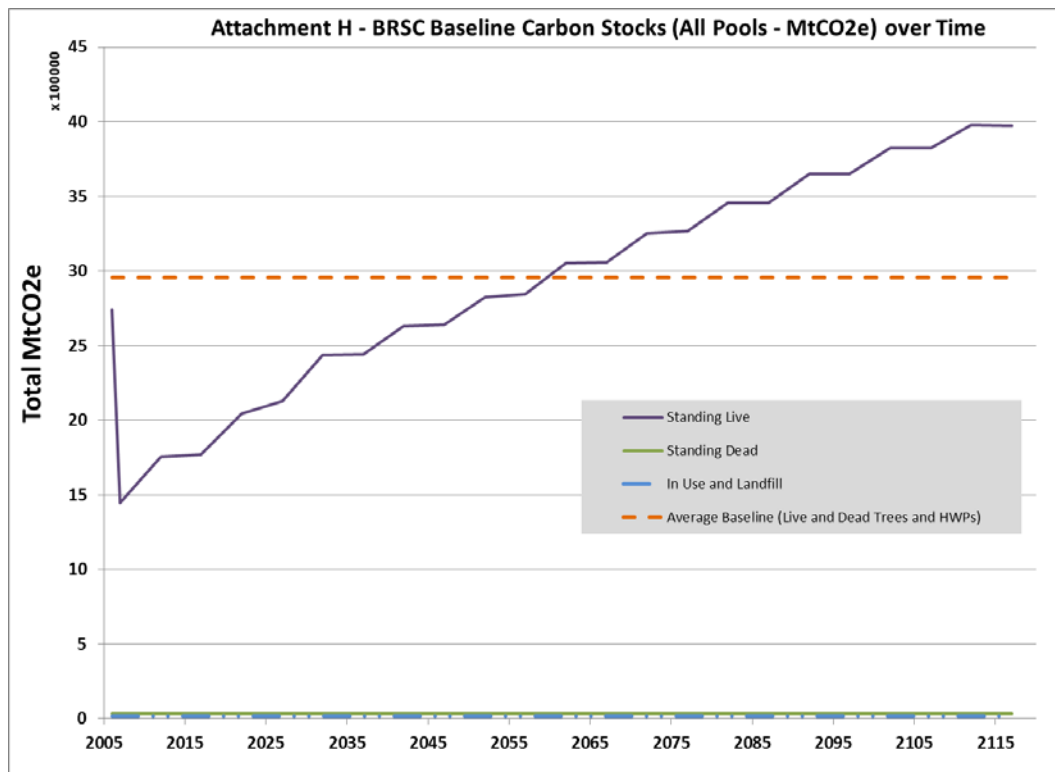


Figure 6: Attachment H - BRSC Baseline Carbon Stocks All Pools6

VIII.A.5 Carbon Stored Long Term

The table below summarizes the 100-year harvested wood product (HWP) carbon storage by product class. There is no regional market for hardwoods (tanoak or true oaks), so only conifer products are included. This table also shows the final annual addition of HWP storage after applying the 80% HWP production factor to adjust for market responses to HWP production.

Table 11: Harvested Wood Product Summary – Annual Addition by Product Class

	Product Values (based on 100 year average) MtCo2e	IFM 7: 100 Year Product MtCO2e	IFM 8: 100 Year Landfill MtCO2e	100 Year Product and Landfill Total MtCO2e	80% of HWP Totals
SW Lumber	19,663	9,104	5,860	14,964	11,971
HW lumber	0	0	0	0	0
SW Plywood	380	184	109	293	234
Oriented Strandboard	0	0	0	0	0
NonStruc Panels	49	19	17	36	29
Misc Prods	19	3	9	12	10
Paper	145	8	26	34	27
Total:	20,257	9,319	6,020	15,339	12,271

VIII.B.4 LMU & WACS

The Conservation Fund owns land within Mendocino County but outside of the existing Logical Management Unit (LMU) for BRSC. Section 6.2.1.1 of the protocol states “A ‘logical management unit’ or ‘LMU’ is defined as all land that the Forest Owner and its affiliate(s)... either own in fee or hold timber rights on, and which it or they manage as an explicitly defined planning subunit.”

The Conservation Funds owns ~53,000 acres in Mendocino County in 4 distinct tracts in 3 separate LMU’s. The Big River Forest and Salmon Creek Forests are managed as a single unit. All four tracts occur in different watersheds, excepting very small overlap between the Garcia River Forest and the Gualala River Forest and they are all serviced by their own unique road network. Each LMU was purchased individually and has different financial requirements as well as conservation easement restrictions, they are by necessity managed as individual tracts. Each LMU is a unique project with its own inventory and yield stream, and can successfully demonstrate financial feasibility. Therefore, the weighted average aboveground standing live carbon stocks (WCS) for landholdings within the same LMU as the Big River/Salmon Creek Forests is equivalent to the BRSC carbon stocks.

Table 12: The Conservation Fund's LMUs

Tract	Acres	Watershed	LMU	CAR ID#	Type
Garcia River Forest	23,780	Garcia River	Garcia	102	Conservation Based Forest Management version 2.1
Gualala River Forest	13,537	Gualala River	Gualala	660	Improved Forest Management version 3.2
Big River	11,707	Big River	BR/SC	408	Conservation Based Forest Management version 2.1
Salmon Creek	4,204	Salmon Creek	BR/SC	408	Conservation Based Forest Management version 2.1

VIII.B.7 Financial Feasibility Analysis

A test of the financial feasibility of the baseline model was run in accordance with section 6.2.1.3 of the Protocol. This analysis showed there is a positive net present value (NPV) associated with the harvesting of timber under the baseline scenario. The baseline scenario reflects all legal and regulatory constraints and the costs of logging and values of logs were conservatively estimated so these conclusions will likely hold even with significantly worse market conditions and/or harvesting costs. The result of this analysis showed a positive NPV throughout the baseline modeling period (2007-2115) (Attachment L).

Changes since Project Listing

Since the project listing document was filed, there have been several changes to the listing document. See the Annual Reporting Period Document for a list of these changes.

Note, changes in calculation methodology are documented in the change log in the Modeling Plan, Appendix B.

Attachment A: Ownership Interest in Big River/Salmon Creek

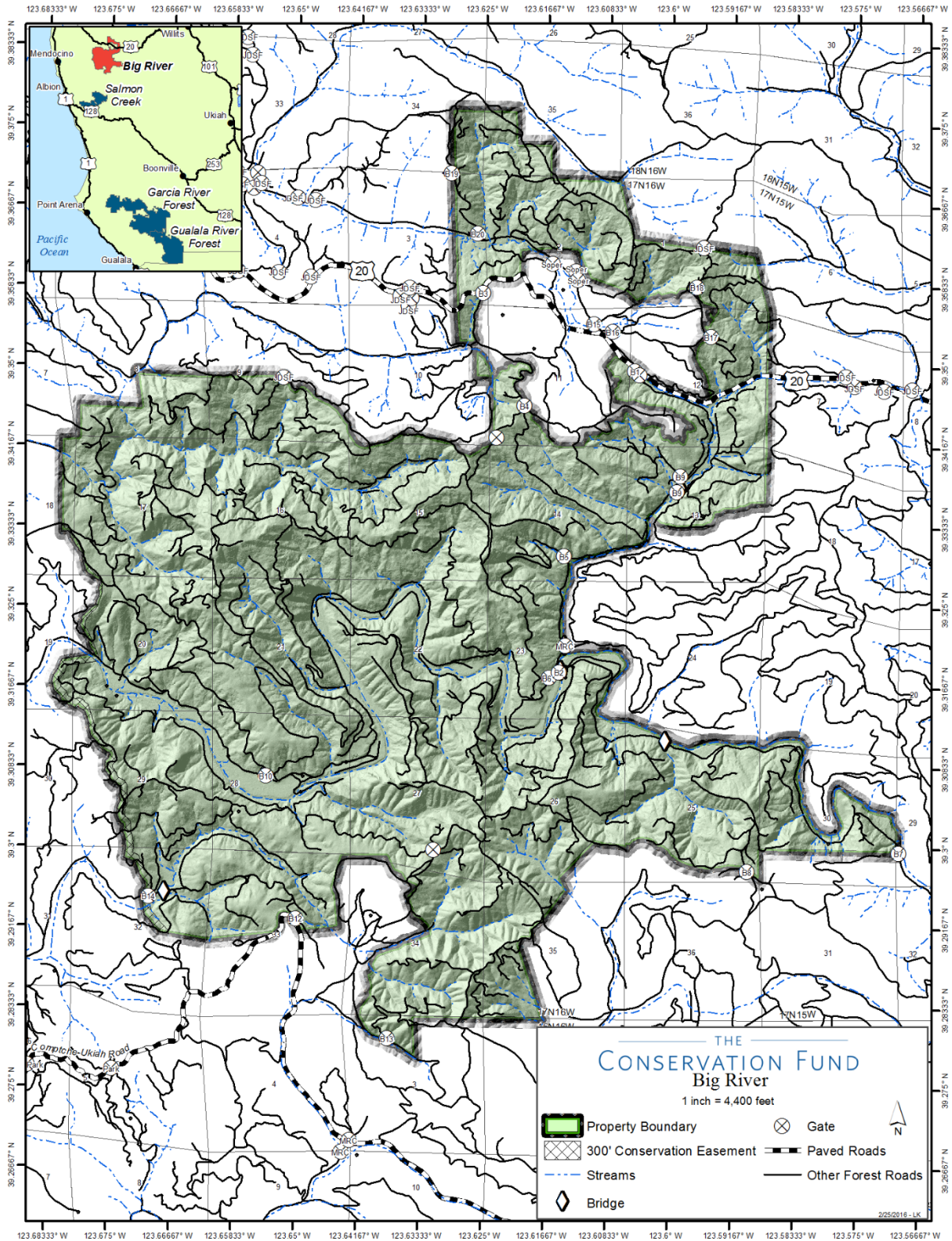
Please see attached pdfs -

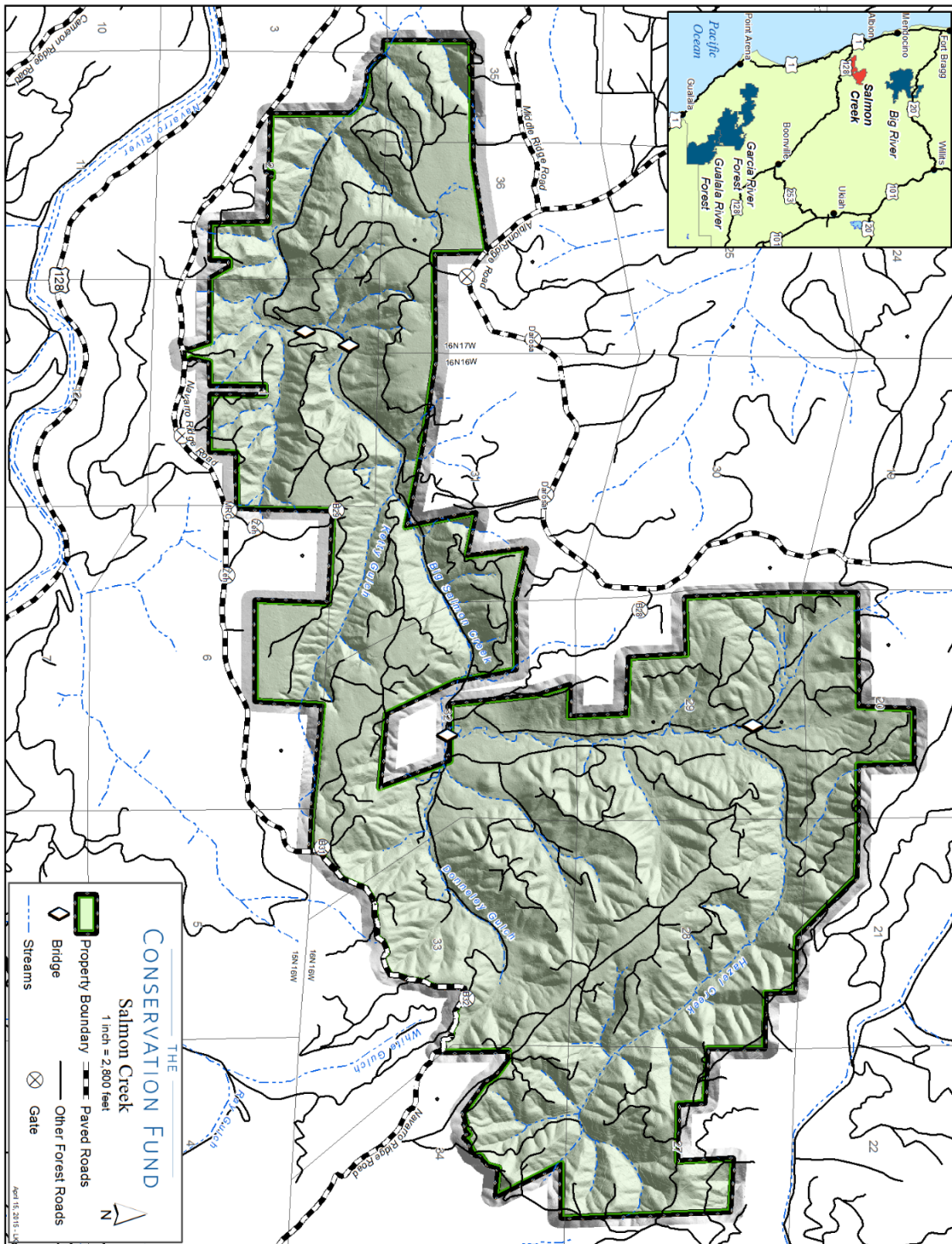
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AttachmentA_TCF_OfferToDedicate_BRSC_OPDR.pdf

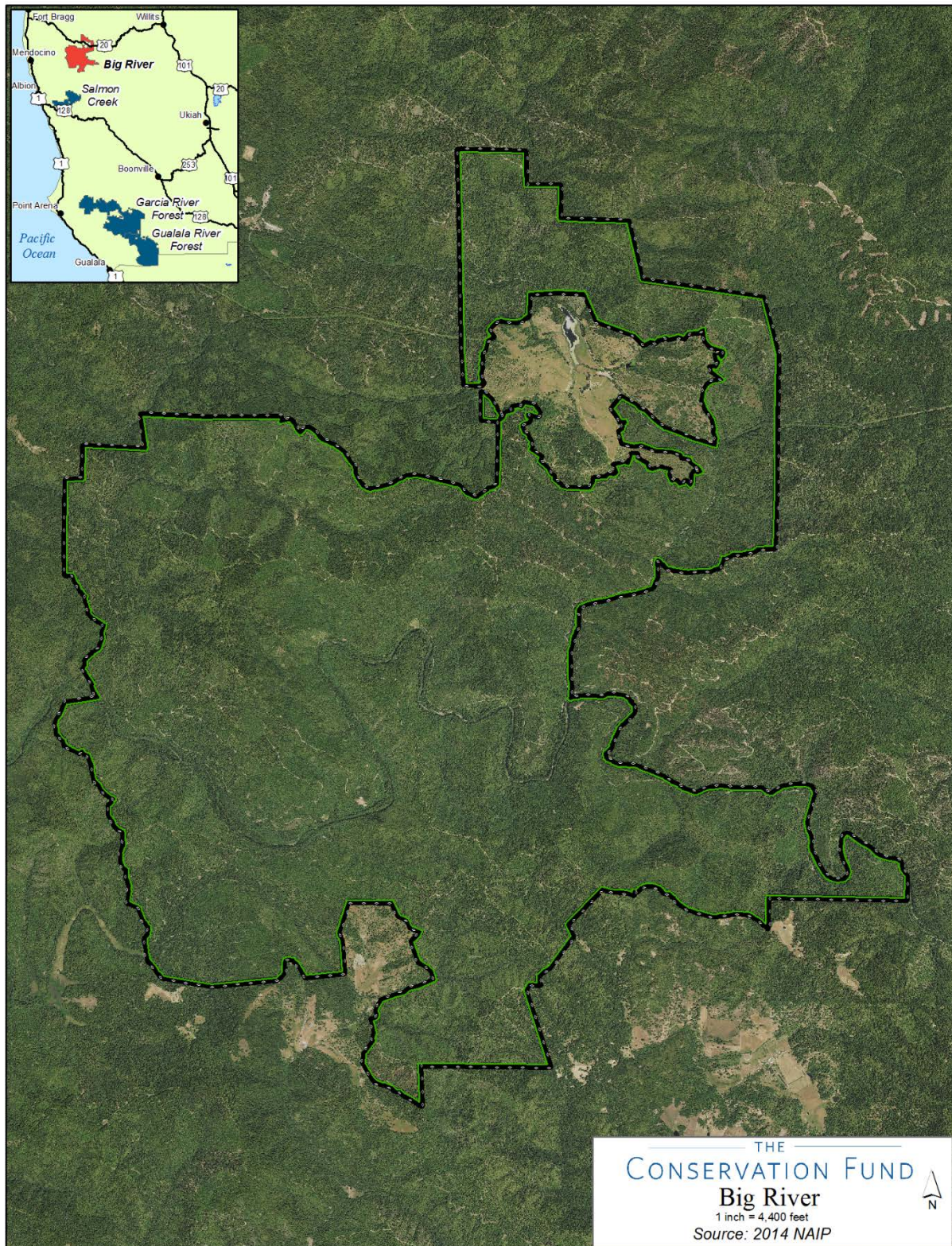
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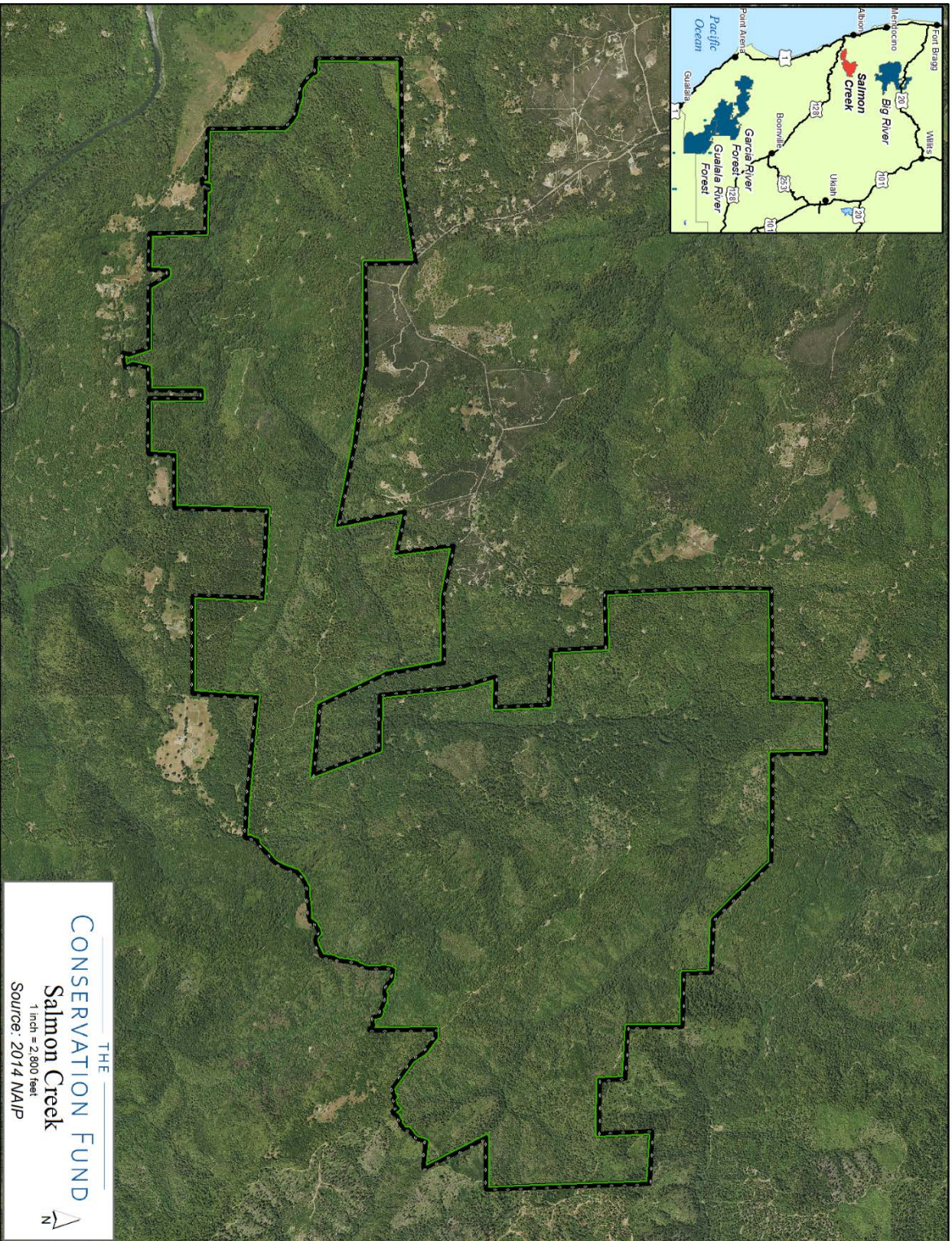
Attachment E: Map of the Project Area





Attachment F: Canopy Cover of Big River/Salmon Creek

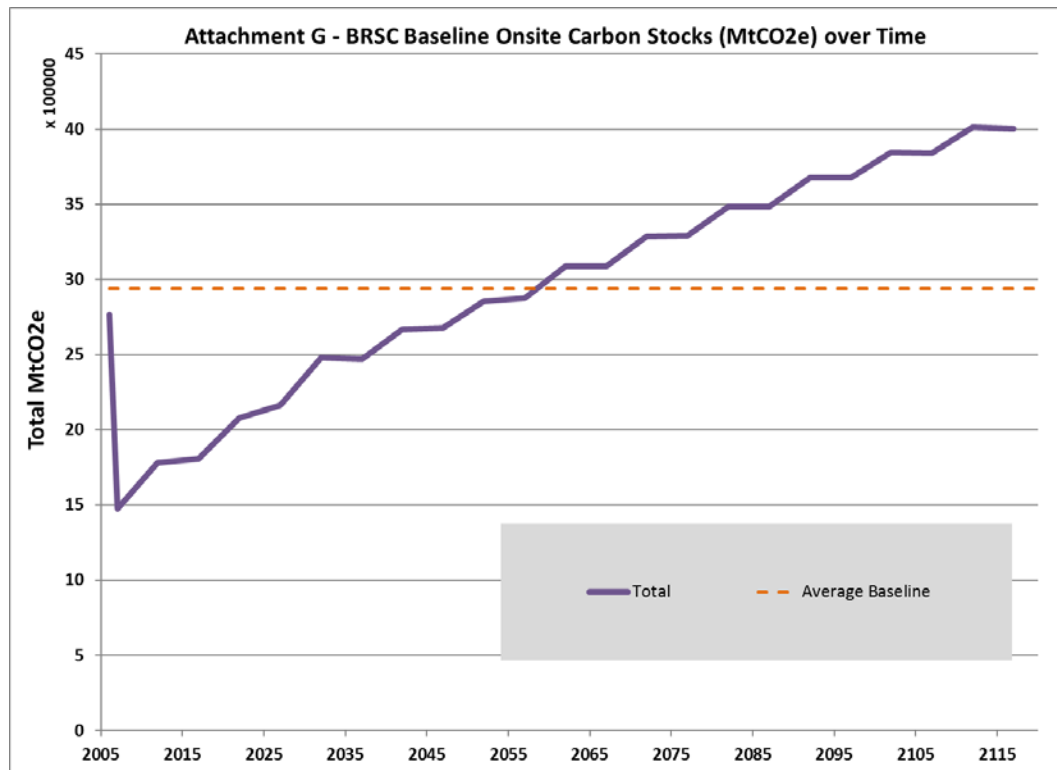




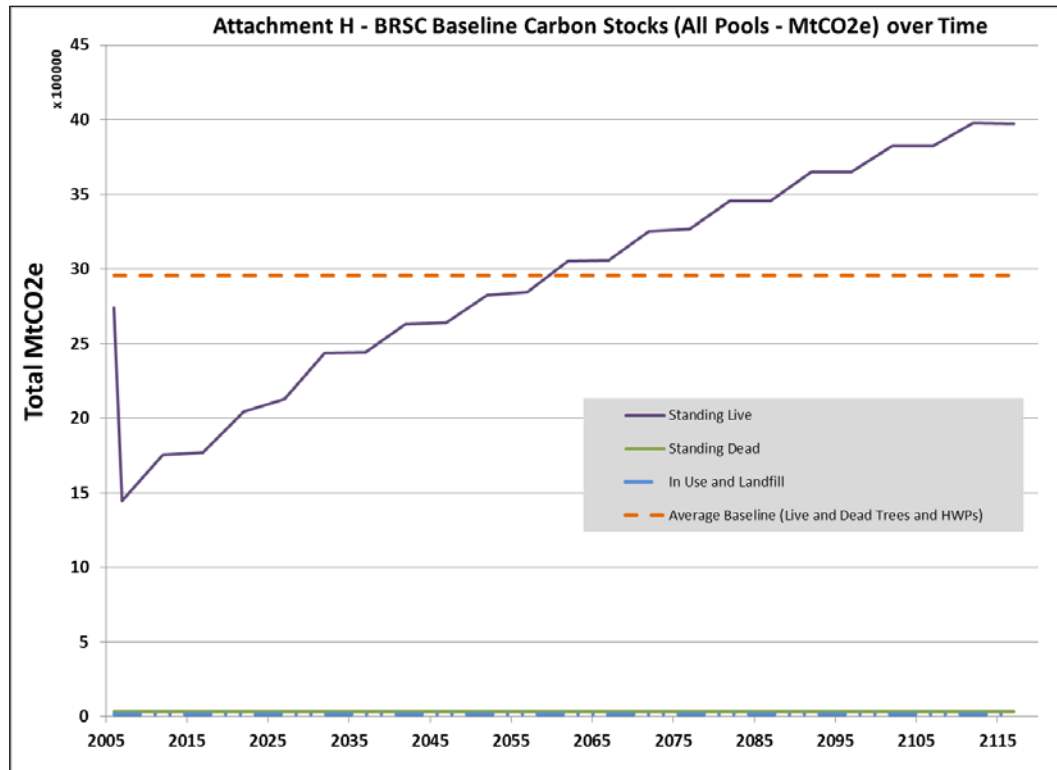
THE
CONSERVATION FUND
Salmon Creek
1 inch = 2,500 feet
Source: 2014 NAIP



Attachment G: Graph of baseline onsite carbon stocks



Attachment H: Diagram of the baseline including all required carbon stocks



Attachment I: Project of Baseline and Harvest Volumes Over 100 Year Planning Horizon

The modeled baseline scenario harvests significantly more board feet timber per year than TCF plans to harvest based on Long Term Sustained Yield modeling (LTSY); see comparison in Table 16. Note, the Actual Harvested Values for operations which have taken place between project commencement in 2007 and project transition in 2015 are presented in Table 17. Actual harvests levels have been substantially lower per year than the LTSY projections. The tables below show the final baseline model which account for all legal constraints on a per acre basis (Table 13) and for the entire Big River/ Salmon Creek Forests Project (Table 14).

Baseline carbon stocks (MtCO₂e/acre)

Elapsed Time ¹⁰	5-Year Period Start	MtCO ₂ e/acre				
		Standing Live	Standing Dead	In Use and Landfill	Total	Baseline
start	2006	183.3	2.21	1.03	186.6	198.0
0	2007	96.6	2.21	1.03	99.8	198.0
5	2012	117.4	2.21	1.03	120.6	198.0
10	2017	118.9	2.21	1.03	122.1	198.0
15	2022	137.0	2.21	1.03	140.2	198.0
20	2027	142.8	2.21	1.03	146.0	198.0
25	2032	163.9	2.21	1.03	167.2	198.0
30	2037	163.4	2.21	1.03	166.7	198.0
35	2042	176.6	2.21	1.03	179.8	198.0
40	2047	177.2	2.21	1.03	180.4	198.0
45	2052	189.1	2.21	1.03	192.4	198.0
50	2057	190.5	2.21	1.03	193.7	198.0
55	2062	204.8	2.21	1.03	208.1	198.0
60	2067	204.9	2.21	1.03	208.2	198.0
65	2072	218.0	2.21	1.03	221.2	198.0
70	2077	218.4	2.21	1.03	221.6	198.0
75	2082	231.2	2.21	1.03	234.5	198.0
80	2087	231.3	2.21	1.03	234.5	198.0
85	2092	244.1	2.21	1.03	247.4	198.0
90	2097	244.3	2.21	1.03	247.5	198.0
95	2102	255.6	2.21	1.03	258.9	198.0
100	2107	255.2	2.21	1.03	258.5	198.0
105	2112	266.9	2.21	1.03	270.1	198.0

¹⁰ Elapsed Time represents the amount of time during the 5-year modeling period begins. For example, the modeled period beginning in 2112 runs 5 years. It has an elapsed time of 105 years at the period start and 110 at the period end.

Baseline carbon stocks for the Big River/ Salmon Creek Project (MtCO₂e)

Elapsed Time	5-Year Period Start	MtCO ₂ e for BRSC				
		Standing Live	Standing Dead	In Use and Landfill	Total	Baseline
start	2006	2,734,879	32,942	15,339	2,783,161	2,954,023
0	2007	1,441,159	32,942	15,339	1,489,440	2,954,023
5	2012	1,750,984	32,942	15,339	1,799,265	2,954,023
10	2017	1,773,094	32,942	15,339	1,821,375	2,954,023
15	2022	2,043,654	32,942	15,339	2,091,935	2,954,023
20	2027	2,130,130	32,942	15,339	2,178,411	2,954,023
25	2032	2,445,651	32,942	15,339	2,493,932	2,954,023
30	2037	2,438,001	32,942	15,339	2,486,282	2,954,023
35	2042	2,634,331	32,942	15,339	2,682,612	2,954,023
40	2047	2,642,963	32,942	15,339	2,691,244	2,954,023
45	2052	2,821,682	32,942	15,339	2,869,963	2,954,023
50	2057	2,841,941	32,942	15,339	2,890,222	2,954,023
55	2062	3,055,825	32,942	15,339	3,104,106	2,954,023
60	2067	3,057,008	32,942	15,339	3,105,289	2,954,023
65	2072	3,252,012	32,942	15,339	3,300,293	2,954,023
70	2077	3,258,097	32,942	15,339	3,306,378	2,954,023
75	2082	3,449,783	32,942	15,339	3,498,065	2,954,023
80	2087	3,450,249	32,942	15,339	3,498,531	2,954,023
85	2092	3,642,229	32,942	15,339	3,690,511	2,954,023
90	2097	3,644,522	32,942	15,339	3,692,803	2,954,023
95	2102	3,813,403	32,942	15,339	3,861,684	2,954,023
100	2107	3,807,922	32,942	15,339	3,856,204	2,954,023
105	2112	3,981,147	32,942	15,339	4,029,428	2,954,023

Note: “2006” represents starting stocks (1/1/2007).

Baseline modeled harvests

5-year Period Start	BF/acre			MBF Harv/Year
	Avg Forest BF/acre	Annual Growth (BF/forested acre)	Annual Harvest (BF/harvested acre)	
2007	19,549	start	3,128	29,638
2012	12,196	1,657	678	792
2017	15,341	1,307	964	8,496
2022	15,914	1,078	1,247	2,504
2027	18,763	1,817	1,056	8,107
2032	19,693	1,242	1,148	2,114
2037	23,020	1,813	1,349	11,190
2042	23,103	1,365	1,695	4,980
2047	25,450	2,165	1,332	10,963
2052	25,606	1,364	1,490	5,729
2057	27,614	1,891	1,403	10,893
2062	27,761	1,432	1,306	4,615
2067	30,180	1,790	1,436	11,350
2072	30,187	1,437	1,317	5,226
2077	32,417	1,763	1,321	10,855
2082	32,567	1,351	1,340	5,349
2087	34,707	1,768	1,272	10,576
2092	34,928	1,316	1,299	5,220
2097	37,087	1,731	1,258	10,438
2102	37,350	1,311	1,263	5,200
2107	39,510	1,695	1,259	10,479
2112	39,747	1,306	1,265	5,167

Projected Annual Harvesting under Sustained Yield (Actual) Management and Baseline Management Scenario

5-Year Period Start	Sustained Yield Plan Projected MBF Harvested/ Year	Baseline Business-As-Usual Baseline Modeled MBF Harvested/Year
2007	NA	29,638
2012	5,311	792
2017	5,296	8,496
2022	6,236	2,504
2027	6,454	8,107
2032	9,710	2,114
2037	5,453	11,190
2042	7,622	4,980
2047	11,397	10,963
2052	6,843	5,729
2057	10,110	10,893
2062	7,562	4,615
2067	11,002	11,350
2072	8,422	5,226
2077	6,466	10,855
2082	6,153	5,349
2087	10,983	10,576
2092	10,619	5,220
2097	9,752	10,438
2102	7,162	5,200
2107	9,855	10,479
2112	9,855	5,167

Note: The actual harvest volumes for years 2007-2015 are shown below.

Actual Harvested Volumes on the Project since Commencement in January 2007

Year	MBF Harvested by Species			Harvest Total (MBF)
	Redwood	Other Conifer	Douglas- Fir	
2007	2,794.07	106.68	662.95	3,563.70
2008	3,524.36	7.37	195.93	3,727.66
2009	1,420.62	6.32	127.74	1,554.68
2010	4,931.57	33.26	514.97	5,479.80
2011	329.84	133.81	208.07	671.72
2012	2,985.88	471.95	798.78	4,256.61
2013	633.77	231.83	609.95	1,475.55
2014	1,628.02	455.38	1,002.50	3,085.90
2015	1,567.46	187.0	851.44	2,605.9

Attachment J: High Stocking Reference Analysis

The Big River/Salmon Creek Project initial starting stocks (147.86 MtCO₂e/acre) are below the common practice baseline (180.79 MtCO₂e/acre), so a review of the High Stocking Reference is required. The High Stocking Reference for the project area is “defined as 80 percent of the highest value of aboveground standing live carbon stocks per acre within the Project Area during the preceding 10-year period” (Protocol, pg 48). For the BRSC, the decade prior to project commencement is 1997-2007. Timber inventory records were not available for the project area during this time, so historical aerial imagery was reviewed.

The analysis showed that the year with the highest value for canopy cover and also aboveground standing live carbon stocks was the first year reviewed (1998). The HSR was calculated to be 140.31 MtCO₂e/acre.

Analysis: i-Tree Canopy Cover

Following the Transition Guidance¹¹, an i-Tree Canopy Cover assessment was conducted on the project area. One-hundred and ten points were randomly generated using the i-Tree canopy tool; the error was less than 5%. These points were then imported to Google Earth Pro where historical imagery was available for 1998, 2003, and 2006. A close review of the 110 random points found that the highest tree canopy cover percentage was found in 1998.

Therefore, the HSR is 80% of the carbon stocks in 1998. Following the Transition Guidance and using the aboveground live initial starting stocks of 148.01 MtCO₂e/acre, the 1998 carbon stocking was calculated as 175.56 MtCO₂e/acre ((147.86 MtCO₂e/acre*87.3%)/73.6% = 175.38 MtCO₂e/acre). Thus, the HSR is 80% of the 1998 stocks (175.38 MtCO₂e/acre *80% = 140.31 MtCO₂e/acre), a value of 140.31 MtCO₂e/acre.

Historical Canopy Cover of BRSC

Year	Tree Cover	Non-Tree Cover
1998	87.3% (±3.18)	12.7% (±3.18)
2003	82.7% (±3.60)	17.3% (±3.60)
2006	73.6% (±4.20)	26.4% (±4.20)

¹¹ Guidance for Transitioning Early Action Projects to the California Air Resources Board's Compliance Offset Protocol U.S. Forest Projects. California Air Resources Board, March 2015. Available: http://www.arb.ca.gov/cc/capandtrade/protocols/usforest/usforestprojects_2014.htm

Attachment K: Legal Constraints

- Z'Berg-Nejedly Forest Practice Act of 1973 (California Public Resources Code – Division 4, Chapter 8): Designed to protect, enhance & restore California's timberland.
- California Forest Practice Rules (Title 14, California Code of Regulations, Chapter 4): Regulations used to implement the Forest Practice Act that govern timber operations.
- California Timberland Productivity Act of 1982 (Gov.C. 51100 et seq.): The intent of this Act is to “*encourage investment in timberlands based on reasonable expectation of harvest*”, and to “*discourage premature or unnecessary conversion of timberland to urban and other uses*”.
- California Environmental Quality Act (CEQA) (Pub.Res.C. 21000 et seq.): statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.
- Porter-Cologne Water Quality Control Act (California Water Code, Division 7. Water Quality): This is the primary vehicle for implementation of California's responsibilities under the federal 1972 Clean Water Act.
- Clean Water Act of 1972 (33 U.S.C. §1251 et seq.): The Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.
- California Endangered Species Act (Fish & G.C. 2050 et seq.): Protects and Preserves all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, that are threatened with extinction.
- Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884): The Act provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend

Attachment L: Financial Feasibility Estimate

See attached excel workbook -

AttachmentL_FinancialFeasibilityEstimate_BRSC_OPDR.xlsx

Attachment M: Management Buffers

