

APPLICATION FOR LISTING AN IMPROVED FOREST MANAGEMENT U.S. FOREST OFFSET PROJECT				
OPR Staff Use Only	Date Application Received:	OPR Tracking Number:	Date Application Reviewed:	OPR Staff Use Only
PART I. ENTITY APPLYING FOR LISTING				
Is this form being submitted by the Offset Project Operator (OPO) or by the Authorized Project Designee (APD)? Notes: 1. The person completing this form should be an OPO/APD employee. 2. If the APD is submitting this form, the OPO should submit the form <i>Designation of Authorized Project Designee</i> simultaneously.				☐ OPO ☒ APD
Name of Person Completing Form: James D. Clark		Organization, if applicable: NCRM, Inc.		
Date Form Completed: 9/15/2014		Phone Number: 707-485-7211	Email Address: jimclark@ncrm.com	
PART II. OFFSET PROJECT INFORMATION				
Offset Project Name: Brushy Mountain				
Offset Project Commencement Date: January 17, 2014		First Reporting Period Start Date: January 17, 2014		First Reporting Period End Date: September 30, 2014
Provide an explanation and justification for the commencement date. Specify the action(s) that identify the offset project commencement date. The date that field work on the inventory for the Project began is the offset project commencement date.				
PART III. OPO/APD INFORMATION				
A. OPO				
OPO Name: Coastal Forestlands, LTD., a California Limited Partnership			OPO's CITSS ID#: CA 1 7 6 9	
Mailing Address: PO Box 537		City: Willits		State: CA
Contact Person: Lori Withy		Phone Number: (707) 459-3096		Email Address: loriwithy@sbcglobal.net
B. APD (if applicable)				☐ No APD / Not Applicable
APD Name: James D. Clark			APD's CITSS ID#: CA 1 5 6 9	
Mailing Address: PO Box 435		City: Calpella		State: CA
Contact Person: James D. Clark		Phone Number: (707) 485-7211		Email Address: jimclark@ncrm.com
PART IV. LAND OWNERSHIP				
A. Is the Offset Project Operator (OPO) the owner in fee for the Project Area? Further documentation is required for all projects. Submit as attachment labeled "Attachment A." See Part X of this listing document for more information. If "no," explain how the entity identified as the OPO has the right to undertake and list the project. The OPO, Coastal Forestlands, Ltd., a California Limited Partnership, is the majority landowner of the Project Area (13,746 acres), with the remaining 2,646 acres being owned by Richard L. Padula. Richard L. Padula by written agreement has authorized Coastal Forestlands, Ltd. To act as the OPO for his 2,646 acre portion of the Project				☐ Yes ☒ No

Area.		
B. 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.). The OPO and Richard L. Padula are the only Forest Owners in fee and the only owners of property interests that affect the trees and standing timber located on the Project Area.		
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 as attachment labeled "Attachment B."</i> <i>See Part X of this listing document for more information.</i>	☒ Private ☐ Public	
1. Describe the public process that has been used to approve forest management activities and baseline. N/A		
2. Describe the documentation being submitted with this listing document demonstrating approval of planned forest management activities and baseline. N/A		
D. Will 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 listing document for more information.</i>	☐ QCE ☐ Public Ownership ☒ N/A	
1. Date that the QCE was or will be recorded. N/A		
2. Will the project take place 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 ☒ N/A	
3. Provide the terms within the easement that affect forest management. N/A		
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 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 listing document for more information.</i>		
1. Does a limited waiver of sovereign immunity between ARB and the governing body of the Tribe exist?	☐ Yes ☐ No ☒ N/A	
2. Describe how the land within the Project Area is owned. N/A		
PART V. OFFSET PROJECT AREA		
<i>Maps depicting specific elements of the Project Area are required for all projects. Submit supporting documentation as attachments labeled "Attachment E." See Part X of this listing document for more information.</i>		
Latitude of Offset Project Location: 39.6297	Longitude of Offset Project Location: -123.258	Project Area Total Acreage: 16,392
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. See Addendum to Application for Listing V.A.		
B. Identify the governing jurisdiction(s) applicable to the Project Area. See Addendum to Application for Listing V.B.		
C. Describe how the Project Area was determined. See Addendum to Application for Listing V.C..		
D. Describe the existing land cover, and land use of the Project Area. See Addendum to Application for Listing V.D.		
E. Describe the forest vegetation types within the Project Area boundary. See Addendum to Application for Listing V.E.		
F. Describe the site classes within the Project Area boundary. See Addendum to Application for Listing V.F.		

G. Describe the land pressures and climate zone/classification applicable to the Project Area. See Addendum to Application for Listing V.G.	
H. Describe the historical land uses, current zoning, and projected land use within the Project Area and surrounding areas. See Addendum to Application for Listing V.H.	
I. Describe generally the forest conditions within the Project Area, including species composition, age class distribution, and management history. See Addendum to Application for Listing V.I.	
PART VI. OFFSET PROJECT ELIGIBILITY	
A. Does the project take place on land that has greater than 10 percent tree canopy cover? <i>Supporting documentation is required. Submit as attachment labeled "Attachment F." See Part X of this listing document for more information.</i> See Addendum to Application for Listing VI.A.	☒ Yes ☐ No
B. Indicate how the offset project meets (or will meet) the definition of Natural Forest Management per Table 3.2 in the Compliance Offset Protocol US Forest Offset Projects, October 20, 2011:	
1. Native species: a) Will the project consist of at least 95 % native species based on the estimated sum of carbon in the standing live carbon pool? <i>If "no," proceed to question 1b. Otherwise, skip to question B2.</i> See Addendum to Application for Listing VI.B.1.	☒ Yes ☐ No
b) Describe how the project will meet this requirement. (Improved Forest Management Projects will be assessed using estimates of basal area per acre.) N/A	
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 B3.</i> See Addendum to Application for Listing VI.B.2.	☒ 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. N/A	
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 ☒ N/A
3. Distribution of age classes/sustainable management: a) Indicate how the project will meet the requirement for sustainable management if commercial harvesting is either planned or ongoing 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). See Addendum to Application for Listing VI.B.3(a).	
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 does meet this requirement? <i>If "no," proceed to question 3c. Otherwise, skip to question B4.</i> See Addendum to Application for Listing VI.B.3(b).	☒ Yes ☐ No

c) Explain how the project intends to show continuous progress toward meeting this requirement within the next 25 years. N/A	
4. Structural elements (standing and lying dead wood): How will the project ensure that structural elements are retained in sufficient quantities throughout the project life? See Addendum to Application for Listing VI.B.4.	
C. Describe the management activities that will lead to increased carbon stocks in the Project Area, compared to the baseline. See Addendum to Application for Listing VI.C.	
D. 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: N/A	☐ Yes ☒ No
E. Will the offset project employ broadcast fertilization?	☐ Yes ☒ No
F. Does the offset project take place on land that was part of a previously listed and verified Forest Offset Project? <i>If "yes," proceed to questions E1 and E2. Otherwise, skip to Part VII.</i>	☐ Yes ☒ No
1. Was the previous Forest Offset Project terminated due to an Unintentional Reversal?	☐ Yes ☐ No
2. Is the project transitioning to the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011, after previously being listed as an early action offset project?	☐ Yes ☐ No
PART VII. CARBON STOCK INVENTORY	
A. Provide a general description of the inventory methodology to be 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 the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011. IFM-1 Standing Live: See Addendum to Application for Listing VII.A. IFM-3 Standing Dead: See Addendum to Application for Listing VII.A. IFM-6 Soil (if applicable): See Addendum to Application for Listing VII.A. IFM-7 Carbon in in-use forest products: See Addendum to Application for Listing VII.A. IFM-8 Forest product carbon in landfills (if applicable): See Addendum to Application for Listing VII.A. IFM- 9 Biological emissions from site preparation: See Addendum to Application for Listing VII.A. IFM-14 Biological emissions/removals from change in harvesting on forestland outside project area: See Addendum to Application for Listing VII.A. IFM-17 Biological emissions from decomposition of forest products: See Addendum to Application for Listing VII.A.	
B. Describe the calculation methodologies to be 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 Addendum to Application for Listing VII.B. IFM-3 Standing Dead: See Addendum to Application for Listing VII.B. IFM-6 Soil (if applicable): See Addendum to Application for Listing VII.B. IFM-7 Carbon in in-use forest products: See Addendum to Application for Listing VII.B. IFM-8 Forest product carbon in landfills (if applicable): See Addendum to Application for Listing VII.B. IFM- 9 Biological emissions from site preparation: See Addendum to Application for Listing VII.B.	

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

See Addendum to Application for Listing VII.B.

IFM-17 Biological emissions from decomposition of forest products:

See Addendum to Application for Listing VII.B.

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:

See Addendum to Application for Listing VII.C.

IFM-3 Standing Dead:

See Addendum to Application for Listing VII.C.

IFM-6 Soil (if applicable):

See Addendum to Application for Listing VII.C.

IFM-7 Carbon in in-use forest products:

See Addendum to Application for Listing VII.C.

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

See Addendum to Application for Listing VII.C.

IFM-9 Biological emissions from site preparation:

See Addendum to Application for Listing VII.C.

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

See Addendum to Application for Listing VII.C.

IFM-17 Biological emissions from decomposition of forest products:

See Addendum to Application for Listing VII.C.

D. Provide a summary of the estimated inventory confidence statistics.

See Addendum to Application for Listing VII.D.

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

See Addendum to Application for Listing VII.E.

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 Compliance Offset Protocol U.S. Forest Projects, October 20, 2011.

Please see the Modeling Plan included as Attachment J.

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

This information is contained in the Modeling plan included as Attachment J

A graph portraying the baseline onsite carbon stocks, labeled "Attachment G," and a diagram of the baseline incorporating all required carbon stocks, labeled "Attachment H," are required. See Part X of this listing document for more information.

3. 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. Will the project use a harvest schedule model?

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

☐ **Yes**

☒ **No**

c. How do you plan to address age class and stratification as part of your harvest scheduling?

N/A

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

See Addendum to Application for Listing VIII.A.5.

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

1. Provide the estimated initial above ground standing live carbon stock per acre for the project, if known.

Estimated to be approximately 156.16 MgCO₂e per acre.

2. Provide the estimated adjusted above ground standing live carb stock per acre, if known.

Estimated to be approximately 156.16 MgCO₂e per acre.

3. Provide the Common Practice statistic associated with the Project Area. The Common Practice statistic for the Project Area is 86 MgCO ₂ e per acre.			
4. Are the Project Area's initial above-ground standing live carbon stocks per acre above or below Common Practice? Above If below Common Practice, what is the High Stocking Reference for the Project Area? Further documentation is required if project below Common Practice. Submit supporting documents as attachments labeled "Attachment I." See Part X of this listing document for more information. N/A			☒ Above ☐ Below
5. Does the Forest Owner(s) and its affiliate(s) own land in fee or hold timber rights on land outside the Project Area? If "no," skip to question B.6.			☒ Yes ☐ No
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)? If "no," skip to question B.6. See Addendum to Application for Listing VIII.B.5.			☐ Yes ☒ No
If "yes," is inventory data available for the LMU or will the OPO use a stratified vegetation analysis?		☐ Data available for LMU ☐ Stratified Vegetation Analysis	
6. Provide a general description of the legal constraints affecting forest management activities in the Project Area; include a description of each constraint (referring to Section 6.2.1.2 in the Protocol) as well as a narrative those constraints have on forest management. This information is included in the Modeling Plan included as Attachment J.			
7. Provide a description of the modeling techniques used to simulate the effects of the constraint. This information is included in the Modeling Plan included as Attachment J..			
8. How will 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 See Addendum to Application for Listing VIII.B.8.			
C. Required for Improved Forest Management Projects on <u>Public Lands ONLY</u>			
1. Has an initial forest carbon inventory been conducted for the Project Area?			☐ Yes ☐ No ☒ N/A
2. Provide a projection of future changes to Project Area forest carbon stocks extrapolating from historical trends. N/A			
3. Explain how current public policy will affect onsite carbon stocks and how the baseline modeling incorporates constraints imposed by all applicable statutes, regulations, policies, plans, and activity-based funding. N/A			
4. Have carbon stocks in the Project Area been increasing or declining over the preceding ten-year period?			☐ Increasing ☐ Declining ☒ N/A
PART IX. ADDITIONAL QUESTIONS			
A. Have any lands within the Project Area ever been listed or registered with an offset project registry or program in the past? If "yes," identify the registry or program and provide details on the issued credits below.			☐ Yes ☒ No
B. 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? If "yes," identify the registry or program and provide details on the issued credits below.			☐ Yes ☒ No
Registry/Program: N/A	Reporting Period(s): N/A	Vintage(s): N/A	Number of Credits Issued: N/A

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. ☒ N/A
- C. If a Qualified Conservation Easement (QCE) has been recorded, provide a copy. The listing information contained in this form and the documents attached to it will eventually be submitted to ARB so submitting a copy of the QCE as an attachment to this listing document fulfills the requirement in 9.1.1.1(18)(a) of the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 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 baseline incorporating all required carbon stocks.
- I. For 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 and a summary of volume harvested over the past 10 years. ☒ N/A

PART XI. ATTESTATIONS AND OPO SIGNATURE

 Initial	I certify under penalty of perjury under the laws of the State of California the GHG reductions and/or GHG removal enhancements for				
	Project Name:		Crediting Period Start Date:		Crediting Period End Date:
	Brushy Mountain	from	1/17/2014	to	1/16/2029
	will be measured in accordance with the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011, and all information required to be submitted to ARB is true, accurate, and complete.				
 Initial	I understand I am voluntarily participating in the California Greenhouse Gas Cap-and-Trade Program under title 17, article 5, and by doing so, I am now subject to all regulatory requirements and enforcement mechanisms of this program and subject myself to the jurisdiction of California as the exclusive venue to resolve any and all disputes arising from the enforcement of provisions in this article.				

 Initial	I understand that the offset project activity and implementation of the offset project must be in accordance with all applicable local, regional, and national environmental and health and safety laws and regulations that apply to the offset project location. I understand that offset projects are not eligible to receive ARB or registry offset credits for GHG reductions and GHG removal enhancements that are not in compliance with the requirements of the cap-and-trade program.	
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: 	PRINTED NAME: James D. Clark	
TITLE: APD	DATE: 09/15/2014	

Background for Application of Listing an Improved Forest Management U.S. Forest Offset Project

Section 95975 of the Cap-and-Trade Regulation describes the requirements and process for an Offset Project Operator (OPO) or Authorized Project Designee (APD) to list an offset project with an approved Offset Project Registry. This form is designed to help an OPO or APD fulfill the requirements of Section 95975 of the Cap-and-Trade Regulation and of Section 9.1.1 of the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011, for listing an offset project. The Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 designates three project types: Avoided Conversion, Improved Forest Management, and Reforestation. This form is designed for Improved Forest Management projects only. The information in the completed form should be submitted to the approved Offset Project Registry with which the OPO or APD would like their offset project listed.

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 Application for Listing an Improved Forest Management U.S. Forest Offset Project

Part I. Entity Applying for Listing:

- Indicate whether the Offset Project Operator (OPO) or Authorized Project Designee (APD) is submitting the information for project listing. Section 95975(a) of the Cap-and-Trade Regulation requires that the OPO and, if applicable, the APD must register with ARB for the Cap-and-Trade Program prior to listing a project. It also requires that neither the OPO nor APD be subject to any Holding Account restrictions imposed as part of an enforcement action. To register with ARB, please visit the website for Compliance Instrument Tracking System Services (CITSS): <https://www.wci-citss.org/>
- 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. Indicate the offset project commencement date and the start and end dates of the first reporting period; approximations are acceptable if precise dates are unknown.
- 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 when the Project Area is transferred to public ownership, when a conservation easement on the Project Area is recorded, or when submitting the offset project listing information.

Part III. OPO/APD Information:

- Enter contact information for the OPO and APD requesting the offset project listing. 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 listing form 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 listing form for more information on the precise requirements.
- The Project Area should be determined following the requirements of Section 4 of the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011.
- 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 listing form 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 Compliance Offset Protocol U.S. Forest Project, October 20, 2011.
- Details on the Natural Forest Management criteria can be found in Table 3.2 in the Compliance Offset Protocol U.S. Forest Project, October 20, 2011.

Part VII. Carbon Stock Inventory:

- Projects are not required to have completed a full carbon stock inventory at the time of listing, but OPOs/APDs should be familiar with Appendix A and have a plan for how they will meet the requirements therein. Therefore, a general description of the project's inventory methods and procedures, consistent with the requirements in Appendix A.3, is required at the time of listing. ARB recognizes that some information provided will be preliminary and based on best estimates. If the project's inventory methodology changes between the time of listing and submission of the first OPDR, this should be reported as a change to the information submitted at project listing when submitting the first OPDR.
- Section 6.2 of the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 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.
- Follow the steps in Appendix D of the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 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. An approximation of the contribution to the Forest Buffer Account is acceptable.

Part VIII. Offset Project Baseline:

- Projects are not required to have a finalized baseline at the time of listing, but OPOs/APDs should be familiar with Appendix B and have a plan for how they will meet the requirements therein. A complete modeling plan reflecting the requirements in Appendix B.3 is therefore required at the time of listing. ARB recognizes that some information provided will be preliminary or based on best estimates. If the project's modeling plan or baseline estimates change between the time of listing and submission of the first OPDR, this 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.
- Section 6.2 of the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 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 of the Protocol.

- ARB approved growth models can be found in Appendix B, Section B.1 of the Compliance Offset Protocol U.S. Forest Projects, October 20, 2011.
- When a requirement 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 question was not inadvertently left unanswered.

Part IX. Additional Questions:

- Answer both questions. If the answer to either 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 application for listing.
- 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. Attestations and OPO Signature:

- Section 95975(c) of the Cap-and-Trade Regulation requires three attestations for listing an offset project. The required attestations are provided in this section. Each attestation should be initialed by the person signing the form.
- The first attestation requires the applicant to provide the offset project name and the start and end dates of the crediting period to complete the statement. The offset project name should match the name entered in Part II. The dates for the offset project's crediting period must also be provided. Please note that the dates provided in the attestation are for the crediting period, not for the first reporting period provided in Part II. The crediting period dates may be approximate if precise dates are not known.
- Amendments adopted in April 2014 to section 95975(d) require the attestations “be provided to an Offset Project Registry with the listing information, if being listed with an Offset Project Registry.”
- The individual signing the document must be registered in CITSS as the OPO's Primary Account Representative or Alternate Account Representative. 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 person's signature, printed name, corporate title, and date signed.

Please contact your Offset Project Registry with any questions.



Brushy Mountain

Addendum to Application for Listing Form

Under

Air Resources Board

Compliance Offset Protocol – U.S. Forest Projects

Adopted: October 20, 2011

Prepared September 15, 2014

Offset Project Operator	Authorized Project Designee
Coastal Forestlands, LTD., a California Limited Partnership 96 North Main St. Willits, CA 95490 (707) 459-3096	James D. Clark PO Box 435 Calpella, CA 95418 (707) 485-7211

Reporting Period

The reporting period for this Application is from 01/17/2014 to 09/30/2014.

Protocol Version

Air Resources Board

Compliance Offset Protocol – U.S. forest Projects

Adopted: October 20, 2011

Introduction

Brushy Mountain is an Improved Forest Management (IFM) Project that is seeking registration under the California Air Resources Board Compliance Offset Protocol – U.S. Forest Projects Adopted: October 20, 2011. The Offset Project Operator is Coastal Forestlands, Ltd. The proposed Project is approximately 16,392 acres in size.

V.A.

The Project is located entirely within the Southern Cascade Mixed Conifer Assessment Area and is classified as site class III and IV timberland and as such is within the "Low" "Site Class" portion of the Assessment Area.

V.B.

The Project Area is subject to the governing jurisdiction of the County of Mendocino, the State of California, and the United States of America.

V.C.

The Project Area has been determined based on the best available data representing the legal description described in the title report included as Attachment A. The Project Area boundary is described and represented by the maps included as Attachment E, and the GIS data supplied in a geodatabase as a part of this Project submission. For the purpose of calculating GHG stocks, the Project Area acreage is taken from the GIS data provided with the application.

V.D.

Brushy Mountain supports a healthy, diverse forest community comprised, predominantly, of Douglas-fir, as the dominant conifer species, incense cedar, ponderosa pine, sugar pine, white fir, gray pine and hardwoods, consisting of Pacific madrone, bigleaf maple, red alder, tanoak, interior live oak, California bay laurel, black oak, white oak, California buckeye, and is bordered by properties containing the same. Across the Project Area, the ecological community shifts

with aspect, transitioning from Douglas-fir richly shaded areas and riparian areas to open, mature oak groves. Current land uses include timber production, grazing, and recreational use by the landowners and their guests.

V.E.

Habitat types on Brushy Mountain, according to the California Wildlife Habitat Relationship (WHR) system, include Douglas-fir, Montane Chaparral, Ponderosa Pine, Montane Hardwood-Conifer, Montane Hardwood, Montane Riparian, Mixed Chaparral, and Annual Grassland habitats. The Project Area is a diverse mosaic of topography and forest vegetation types. Plant diversity is relatively high on the Project Area due to convergence of many different habitat types that results from the it's topographic and geologic heterogeneity.

V.F.

The entire Project Area is classified as moderate site class III or high site class IV timberland. Please see the Modeling Plan included as Attachment J for a more detailed description of the determination of site index.

V.G.

The Project Area, as well as the general region, is characterized by a rural forest landscape with large public and private timber holdings, as well as individual rural residential lots. Properties in the general vicinity are zoned by Mendocino County as Timber Production Zone (TPZ), and Rangeland.

The market demand for 10-160 acre rural properties in Mendocino County has risen sharply in recent years, and many neighboring and nearby properties to Brushy Mountain have already been divided into small tracts used primarily for rural residential purposes. The Project Area's location is desirable due to its proximity to the town of Willits and good access from Highway 162, and the demand for rural residential properties in the area is high. The gentle slopes,

scenic vistas, good access, and proximity to local and bay area cities make this area highly desirable as a source of rural residential properties. Vineyard development is occurring in the vicinity of the Project Area, with several vineyards having been developed in the near vicinity of the Project Area in the past decade.

Brushy Mountain is in close proximity to thousands of acres of already protected and/or restricted land. The Bureau of Land Management controls a majority of the land between the southern edge of the Project Area and the Eel River as well as several in holdings inside the Project Area boundary. The State Lands Commission also controls land adjacent to the Project Area. Approximately 20 miles to the East lies the 913,306 acre Mendocino National Forest.

The Brushy Mountain Project Area consists primarily of a Mediterranean climate influenced by the proximity to the Pacific Ocean and topography. Summers are warm and winters are mild and wet, with colder weather and snowfall at higher altitudes. Temperatures range from an average low of 32 degrees F in January to an average high of 93 degrees F in July. Average annual rainfall for the Project Area is approximately 60 inches per year.

V.H.

There is a long history of human occupation and use within the Project

Area. Homesteading began in the mid-1800's and small ranches in the area raised pigs, sheep, horses, and cows. Clearings on the landscape that were flat to gently sloped were planted to annual grains or pasture for forage and hay. Fruit trees and small gardens were common near homesteads. Since early in its history the region was grazed and its timber harvested. Roads and fences and a few foundations are evidence of this agrarian past. Some of the worn fences have been replaced, and some wagon roads updated to graded gravel roads that meander about the property. Modern timber harvesting operations on the Project Area began in the 1930's and continued intermittently throughout the 1990's. No timber harvesting has taken place since 1998.

The current timberland owners acquired the properties that comprise the Project Area over a number of years. Coastal Forestlands acquired the Brushy Mountain Ranch in 1998, and Richard L. Padula acquired the Summer Camp Ranch in 1989.

The Project Area is zoned Timber Production Zone (TPZ) and rangeland. The TPZ ordinance is an agricultural designation, intended primarily for timber production. The Project Area contains 128 separate legal parcels for which Certificates of Compliance have been issued and recorded by Mendocino County.\.

V.I.

The Brushy Mountain Project Area is characterized by a mix of predominantly Douglas-fir, with some ponderosa pine, sugar pine, incense cedar, gray pine, and white fir, and hardwoods consisting of California bay laurel, interior live oak, Oregon white oak, California black oak, madrone, and other native hardwoods. Based on the 2014 inventory, the Project Area is composed of approximately 41% Douglas-fir, 13% ponderosa pine, 2% other conifers, 13% California black oak, 15% interior live oak, 7% pacific madrone, 8% White Oak, and 1% other hardwoods by basal area. The Brushy Mountain owners intend to manage the timber stands to maintain this diversity of species that supplements the dominant Douglas-fir stands.

Several age classes of timber stands exist across the Project Area as the result of past land management activities with age classes ranging from 80 years to 20 years.

There has been no timber harvesting on the Project Area since 1998. Presently, the Project Area does not have any active timber harvest plans.

VI.A.

The Brushy Mountain Project Area meets condition 1 under section 2.1.2 (page 10) of the Compliance Offset Protocol by maintaining greater than 10% tree canopy cover. Compliance is substantiated by the Orthophoto map of the Project site, that may be found in Attachment F, clearly showing canopy closure for the Project Area greater than 10% and, also, by modeling conducted in FORSEE based on the 2014 inventory, which indicated over 100% overlapping canopy for most stands.

VI.B.1.

The Brushy Mountain Project Area is characterized by a mix of Douglas-fir, native pines and other conifers, oaks, madrone, and other native hardwoods. 100% of the Project's biomass is in native species and thus the Project meets the 95% criteria for carbon in native species.

VI.B.2.

The Brushy Mountain Project Area is characterized by a mix of predominantly Douglas-fir, with some ponderosa pine, sugar pine, incense cedar, gray pine, and white fir, and hardwoods consisting of California bay laurel, interior live oak, Oregon white oak, California black oak, madrone, and other native hardwoods. Based on the 2014 inventory, the Project Area is composed of approximately 41% Douglas-fir, 13% ponderosa pine, 2% other conifers, 13% California black oak, 15% interior live oak, 7% pacific madrone, 8% White Oak, and 1% other hardwoods by basal area. The Brushy Mountain owners intend to manage the timber stands to maintain species diversity, ensuring that the Project continues to meet the requirements for composition of native species under Table 3.2 (page 20) of the Compliance Offset Protocol by maintaining species' basal area percentage below 65% , the Species Diversity Index from the Assessment Area Data File.

VI.B.3.

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- (a) The Brushy Mountain project will employ natural forest management practices as described in items VI.B.1, VI.B.2, VI.B.3(b), and VI.B.4 as well as sustainable harvesting practices if it elects to conduct commercial harvesting in the future. Commercial harvesting is not currently planned in the Project Area for the near term. If the forest owners elect to conduct commercial harvesting in the future, sustainable long-term harvesting practices will be demonstrated using one of the compliant options allowed under section 3.8.1 of the Protocol.
- (b) There are currently no immediate plans to harvest on the Brushy Mountain Project Area. In the future, the Brushy Mountain owners will employ management practices which meet the sustainable management requirements under Table 3.2 (page 21) of the Compliance Offset Protocol by maintaining less than 40% of the Project's forested acreage in ages less than 20 years. Present conditions for the Project Area already satisfy these requirements.

VI.B.4.

The Brushy Mountain Forest Owners do not actively remove lying dead wood as a part of their stand management activities. It is expected that the accumulation of lying dead wood will be commensurate with recruitment from standing dead trees. The Brushy Mountain Forest Owners are committed to maintaining if not increasing, the number of standing dead trees within the Project Area as a component of their forest management objectives. The Brushy Mountain Forest Owners do not currently, nor do they intend in the future to actively pursue salvage operations on their timberlands except in the event of fire, disease or other disturbance. The Brushy Mountain Forest Owners have a policy of allowing standing dead trees to remain and recruiting large specimen trees across their ownerships as components of their overall timber management strategy as evidenced by the specimens of old growth Douglas-fir, ponderosa pine, California black oak, and Pacific madrone found throughout the Project Area.

The Brushy Mountain Project Area has not recently undergone any salvage harvesting. Therefore, all that must be demonstrated is that the greater of one metric ton of carbon per acre or 1% of standing live carbon stocks is present in standing dead wood, or that progress towards these targets is ongoing. The project currently contains an average of 1.29 Mg C per acre and 2.4% of standing live carbon stocks in standing dead wood. Therefore, the project currently meets the aforementioned standing dead wood target.

VI.C.

The Forest Owners intend to allow conifer and hardwood stocking levels to develop on the Project Area in excess of the minimum requirements of the California Forest Practice Rules.

At a minimum, management activities conducted on the Project Area must exceed the minimum standards which define the baseline, while also conforming to specific requirements of the Forest Project Protocol. Changes in Project carbon stocks over time will also be governed by economic decisions such that more or less carbon may be sequestered over any given period. Therefore, a combination of economic decisions by the Forest Owners as to whether or not to commercially harvest the Project Area combined with the constraints imposed by the California Forest Practice Rules, and specific terms of the Forest Project Protocol will guide carbon stock levels over time. As this is the case, it is impossible to characterize a definite set of activities over time which will define future carbon stocks for the Project.

VII.A.

IFM-1 Standing Live:

Standing live carbon has been inventoried based on sample plots installed in 2014. The inventory specifications are included as Attachment K. The cruise design consists of the installation of sample points on a systematic grid 20 chains by 20 chains in size anchored with a random starting location.

The sample design includes the installation of fixed area plots to measure both live and dead conifers and hardwoods. A 1/100th acre fixed area plot was installed at each sample point to sample trees 1" DBH to 3.5" DBH; a 1/50th acre fixed area plot was installed at each sample point to sample trees 3.6" DBH to 10.5" DBH; and, a 1/5th acre fixed area plot was installed at each sample point to sample trees 10.6" DBH and larger.

Attachment K describes the procedures for collecting field measurements, specific criteria pertaining to data collection, stratification rules, and documentation on quality assurance and quality control. Documentation of analytic methods and biomass equations used to translate field measurements into volume or biomass carbon estimates is included in Part B below.

Cruise data from field cards were reviewed for completeness and entered into an Access database. Plot data within the database was extensively sorted and queried to look for data entry errors. This process has resulted in a final data set for cruise processing. The Access database serves as the repository for inventory data and is accessed by the growth and yield model during growth and yield simulations.

As timber management activities take place on the Brushy Mountain Project Area, or disturbances such as fire or mortality resulting from pathogens or other factors occur, plots installed in 2014 will be relocated and remeasured within areas that have been harvested, treated for hardwood reduction, or subject to disturbance. By 2026, all of the plots installed in 2014 will have been remeasured regardless of whether or not the plot had been harvested, treated for hardwood reduction, or subject to other disturbance. On this basis, Brushy Mountain will maintain a forest inventory system that will meet the inventory specifications and requirements contained in Appendix A of the Protocol, with plots which are no more than 12 years old..

Updating the Project's carbon stocks from year to year will involve the following steps:

1. Any newly installed inventory plots will be incorporated into the inventory estimate.
2. Existing inventory plots will be updated using FORSEE as described in the modeling plan.
3. Updating the forest inventory for harvests or disturbances that have occurred during the previous year through the installation of new plots, or adjustments to previous plot data.
4. Inventory updates following harvest or disturbance will be re-measured within 12 months of the harvest or disturbance.
5. A revised inventory confidence deduction will be calculated following the update process in years when a field verification will be conducted, otherwise the last verified inventory confidence deduction shall be applied.

IFM-3 Standing Dead:

As described above, and in Attachment K, standing dead trees were sampled in conjunction with standing live trees.

IFM-6 Soil (if applicable):

Excluded because the conditions in Table 5.2 of the Protocol that would require inclusion of this pool (site preparation involving deep ripping, furrowing, or plowing where soil disturbance exceeds 25 percent of the Project Area over the Project Life, or mechanical site preparation activities not conducted on contours) are not planned.

IFM-7 Carbon in in-use forest products:

Carbon in in-use forest products has not been generated by the Project as no harvesting has occurred since the Offset Project Commencement Date. Part B below will include documentation of analytic methods and biomass equations used to translate future harvest volumes delivered to the mill into appropriate carbon in in-use forest products values.

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

Carbon in landfills is a component of carbon related to forest products. No forest products have been generated by the Project as no harvesting has occurred since the Offset Project Commencement Date. Part B below will include documentation of analytic methods and biomass equations used to translate future harvest volumes delivered to the mill into appropriate forest products carbon in landfill values.

IFM-9 Biological emissions from site preparation:

As IFM-6 is an excluded carbon pool, IFM-9 is also an excluded pool.

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

Part B below will include documentation of analytic methods and biomass equations used to translate future harvest volumes delivered to the mill into appropriate values for the calculation of this carbon pool.

IFM-17 Biological emissions from decomposition of forest products:

This is quantified as a component of IFM-7 and IFM-8 per Appendix C of the Protocol.

VII.B.

IFM-1 Standing Live:

Above-ground standing live carbon in trees 1" DBH and larger werecalculated using the appropriate biomass equation by species taken from the Compliance Offset Protocol U.S. Forest Offset Projects page on ARB's website (<http://www.arb.ca.gov/cc/capandtrade/protocols/usforestprojects.htm>). The current biomass equation documentation provided by ARB is included as Attachment L . The equations referenced below are not reproduced here for the sake of minimizing

redundancy. These equations are used to generate biomass estimates for the above-ground portion of standing live trees, and hard snags. These equations will be referred to as the “FIA equations” herein.

Each species can have as many as three FIA equations in order to calculate tree biomass.

The FIA equations used by species are as follows:

Species	Bole Cubic Ft Volume	Bark Biomass	Live Branches Biomass
Douglas-fir	Equation 3	Equation 8	Equation 6
Cypress	Equation 19	Equation 13	Equation 10
Sugar pine	Equation 20	Equation 10	Equation 8
Ponderosa pine	Equation 5	Equation 9	Equation 7
Gray Pine	Equation 5	Equation 9	Equation 7
Incense Cedar	Equation 19	Equation 12	Equation 10
White fir	Equation 23	Equation 1	Equation 1
Other Conifer	Equation 17	Equation 21	Equation 17
Tanoak	Equation 34	None	None
Pacific madrone	Equation 40	None	None
Live oak	Equation 44	None	None
Black oak	Equation 41	None	None
White oak	Equation 41	None	None
California laurel	Equation 33	None	None
Golden chinkapin	Equation 32	None	None
Bigleaf maple	Equation 37	None	None
Red Alder	Equation 26	Equation 20	Equation 16
Other hardwood	Equation 41	Equation 20	Equation 16

Tonnes of standing live biomass per sample plot are calculated as follows:

For equations that use total tree height in meters, tree height is calculated by multiplying the trees total height in feet by 0.3048. Trees per hectare are calculated by multiplying trees per acre by 2.471. Tree diameter at breast height (“DBH”) in centimeters (cm) is calculated by multiplying its DBH by 2.54.

Bole Biomass:

The Cubic foot volume of each tree is calculated as the volume of the total stem from ground to tip (includes the top and stump). FIA refers to this value as CVTS. Bole biomass is calculated by multiplying the cubic volume by the wood density, and then dividing by 2.20462 to calculate weight in kilograms (kg). Above-ground biomass in kilograms (Kg) per acre is calculated by multiplying the FIA calculated kg per tree by each tree's per acre value.

Bark and Live Branches Biomass:

The above referenced FIA equations produce biomass in kg for the various parts of the above-ground portion of each tree. Above-ground biomass in kilograms (Kg) per acre is calculated by multiplying the FIA calculated kg per tree by each trees per acre value.

Missing volume of each tree is recorded as a percentage missing by 1/3rd segment of the tree (top, middle, bottom) as adapted from the Climate Action Reserve's "Quantification Guidance for Use with Forest Carbon Projects" dated November 15, 2012. The total heights of trees with broken tops were calculated from their measured top heights using FORSEE. If 1/3rd of the calculated tree height was less than the measured top height, then the break was assumed to be above the bottom 3rd of the tree. Likewise, if 2/3rds of the calculated tree height was less than the measured tree height, the break was assumed to be in the top 3rd of the tree.

Missing volumes of damaged trees that were recorded in the field were then added to the estimated volume missing if there was a broken top. The total missing percentage of each tree is calculated based on 65% of the trees biomass being in the bottom 1/3rd , 25% in the middle 1/3rd, and 10% in the top 1/3rd. The total percentage of the tree that is missing is then calculated and multiplied by various biomass components of the tree as calculated above to calculate the net biomass of each component.

The net Kg per acre value of each tree on the plot is summed to derive above-ground live biomass Kg per acre for the plot. This value is used to calculate the respective below-ground live biomass component for the plot.

Below-ground live carbon is calculated at the plot level using the model provided by Cairnes et. al. specified on page 86 of Appendix A of the Protocol. The formula has as its input, above-ground live biomass in Mg per hectare, and outputs below-ground biomass in Mg per hectare. Total net above-ground live carbon in Kg per acre for each plot is converted to Mg of biomass per hectare by multiplying by 2.471, and then dividing by 1000. After calculating the below ground component in Mg per hectare using the Cairnes model, the results are converted to Kg per acre by multiplying by 1000 and dividing by 2.471.

Total standing live biomass for each plot is the sum of the above-ground and below-ground live biomass Kg per acre. Mg of carbon (Mg C) per acre per plot is then calculated by multiplying by 0.5 to estimate carbon biomass. Mg C per acre is converted to CO₂-equivalent by multiplying by 3.664.

IFM-3 Standing Dead:

Data on standing dead trees will be collected as a part of the Brushy Mountain inventory. In general, the amount of carbon stored in a standing dead tree is based on the proportion of the tree remaining standing, and the condition of the tree, or its decay class. The standing dead carbon pool includes trees 5" DBH and larger, with a minimum height of 15'.

Standing dead trees from the inventory data are classified into six decay classes based on descriptions contained on page 12 of General Technical Report NRS-29 (Harmon et al, 2008). These decay classes are generally described as follows:

-
- | | |
|---------|---|
| Class 0 | Tree has recently died with leaves intact. |
| Class 1 | Leaves mostly still attached, intact bark, fine twigs, and branches. |
| Class 2 | Leaves mostly gone, fine branches mostly gone, bark loose and starting to fall off. |
| Class 3 | A few large branches or stubs remain, bark falling off in large patches, softwood sloughing is evident. |
| Class 4 | Highly decomposed, no branches, little bark, broken off top. |
| Class 5 | Mostly decomposed, no branches, very little bark, broken off close to the ground. |

Biomass for standing dead trees includes the bole and bark components calculated using the FIA biomass equations described above and following the same procedures as for live trees other than the manner in which missing volume is calculated.

Missing volume of each tree is recorded as a percentage missing by 1/3rd segment of the tree (top, middle, bottom) as adapted from the Climate Action Reserve's "Quantification Guidance for Use with Forest Carbon Projects" dated November 15, 2012. The total heights of trees with broken tops are calculated from their measured top heights using FORSEE. If 1/3rd of the calculated tree height is less than the measured top height, then the break is assumed to be above the bottom 3rd of the tree. Likewise, if 2/3rds of the calculated tree height is less than the measured tree height, the break is assumed to be in the top 3rd of the tree.

Missing volumes of damaged trees that are recorded in the field are then added to the estimated volume missing if there was a broken top. The total missing percentage of each tree is calculated based on 65% of the trees biomass being in the bottom 1/3rd , 25% in the middle 1/3rd, and 10% in the top 1/3rd. The total percentage of the tree that is missing is then calculated and multiplied by various biomass components of the tree as calculated above to calculate the net biomass of each component.

Once the net biomass of each tree has been calculated, a relative density is applied by species and decay class. The relative density is in relation to the green density of sound wood, or the tree's wood density. The table below lists the relative densities applied by species and decay class taken from General Technical Report NRS-29 (Harmon et al, 2008).

Relative Density by Species and Decay Class:

Species	Decay Class (DC)					
	DC0	DC1	DC2	DC3	DC4	DC5
Douglas-fir Interior	1	0.858	0.723	0.444	0.305	0.329
Ponderosa pine	1	0.889	0.876	0.868	0.339	0.495
Sugar Pine	1	1	0.788	0.553	0.364	0.407
White fir	1	0.958	0.759	0.47	0.381	0.33
Incense cedar	1	1	0.845	0.76	0.42	0.366
California Foothill pine	1	0.916	0.826	0.697	0.421	0.407
Cypress (spp)	1	0.956	0.827	0.678	0.426	0.366
Other Interior Conifers	1	0.916	0.826	0.697	0.421	0.407
California black oak	1	0.981	0.779	0.665	0.416	0.428
California-laurel	1	0.944	0.734	0.583	0.37	0.282
Interior live oak	1	0.981	0.779	0.665	0.416	0.428
Pacific madrone	1	0.944	0.734	0.583	0.37	0.282
Oregon white oak	1	0.981	0.779	0.665	0.416	0.428
Red alder	1	0.99	0.836	0.505	0.277	0.3
Bigleaf maple	1	0.941	0.709	0.533	0.317	0.241
Tanoak	1	0.944	0.734	0.583	0.37	0.282
California Buckeye	1	0.944	0.734	0.583	0.37	0.282
Other Interior Hardwoods	1	0.981	0.779	0.533	0.317	0.241

Below-ground standing dead carbon is calculated at the plot level using the model provided by Cairnes et. al. specified on page 86 of Appendix A of the Protocol. The formula has as its input, above-ground biomass in Mg per hectare, and outputs below-ground biomass in Mg per hectare.

Total standing dead biomass for each plot is the sum of the above-ground and below-ground standing dead biomass Mg per acre. Mg of carbon (Mg C) per acre per plot is then

calculated by multiplying by 0.5 to estimate carbon biomass. Mg C per acre is converted to CO₂- equivalent by multiplying by 3.664.

IFM-6 Soil (if applicable):

Excluded because the conditions in Table 5.2 of the Protocol that would require inclusion of this pool (site preparation involving deep ripping, furrowing, or plowing where soil disturbance exceeds 25 percent of the Project Area over the Project Life, or mechanical site preparation activities not conducted on contours) are not planned.

IFM-7 Carbon in in-use forest products:

Wood products delivered to the mill in any period is calculated beginning with the cubic volume of harvested conifer trees 10" DBH and larger. Conifers smaller than 10" DBH are not included as they are too small to be delivered to the mill. The dry weight of wood products in pounds is calculated by multiplying the wood density in lbs/cubic foot by the cubic volume for each softwood species harvested based on the CVTS values derived from the FIA equations listed above. Bark and branch biomass are not included in the volume harvested. The wood densities utilized are those for the Douglas-fir forest type and are included in Table C.1 of Appendix C of the Protocol. The dry weight is multiplied by 0.5 to convert the weight to carbon weight only. The weight of carbon in lbs is divided by 2,204.6 to get the carbon weight in metric tonnes (Mg).

Mg of carbon is then multiplied by 0.675 to account for mill efficiencies, taken from the Compliance Offset Protocol U.S. Forest Offset Projects page on ARB's website (<http://www.arb.ca.gov/cc/capandtrade/protocols/usforestprojects.htm>).

The resulting Mg carbon value after accounting for milling efficiencies is then passed to the wood products worksheets for calculating long-term in-use wood products storage. The wood products carbon is separated into product classes and multiplied by the respective

100-year average storage factor. The tables below list the assignment of wood products by class per the most current Assessment Area Data File taken from the Compliance Offset Protocol U.S. Forest Offset Projects page on ARB's website (<http://www.arb.ca.gov/cc/capandtrade/protocols/usforestprojects.htm>), as well as the 100-year average storage factors applied to each wood product class per table C.2 of Appendix C of the Protocol.

Wood Products by Class

% Softwood Lumber	69.501%
% Hardwood lumber	0.656%
% Softwood Plywood	27.695%
% Oriented Strandboard	0.000%
% Non Structural Panels	0.095%
% Miscellaneous Products	0.553%
% Paper	1.500%

100-year Storage Rates Average Values from Appendix C, In-Use Table C.2

Softwood Lumber	0.463
Hardwood lumber	0.250
Softwood Plywood	0.484
Oriented Strandboard	0.582
Non Structural Panels	0.380
Miscellaneous Products	0.176
Paper	0.058
Weighted Average	0.310

Average carbon stored in in-use wood products is calculated using equation C.1. Carbon is converted to CO₂-equivalent by multiplying by 3.67. This value is combined with IFM-8 using equation C.3 to represent $WP_{total, y}$ for the reporting period.

$WP_{total, y}$ for the reporting period represents $AC_{wp, y}$ in equation 6.1. Average in-use wood products produced by the baseline analysis ($BC_{wp, y}$) are deducted from actual wood products produced each reporting period ($AC_{wp, y}$) in equation 6.1 and the resulting calculation is multiplied by 80% to account for the "Market Response".

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

Wood products delivered to the mill in any period is calculated beginning with the cubic volume of harvested conifer trees 10" DBH and larger. Conifers smaller than 10" DBH are not included as they are too small to be delivered to the mill. The dry weight of wood products in pounds is calculated by multiplying the wood density in lbs/cubic foot by the cubic volume for each softwood species harvested. The wood densities utilized are those for the Douglas-fir forest type and are included in Table C.1 of Appendix C of the Protocol. The dry weight is multiplied by 0.5 to convert the weight to carbon weight only. The weight of carbon in lbs is divided by 2,204.6 to get the carbon weight in metric tonnes (Mg).

Mg of carbon is then multiplied by 0.675 to account for mill efficiencies, taken from the Compliance Offset Protocol U.S. Forest Offset Projects page on ARB's website (<http://www.arb.ca.gov/cc/capandtrade/protocols/usforestprojects.htm>).

The resulting Mg carbon value after accounting for milling efficiencies is then passed to the wood products worksheets for calculating long-term landfill wood products storage. The wood products carbon is separated into product classes and multiplied by the respective 100-year average storage factor. The tables below list the assignment of wood products by class per the most current Assessment Area Data File taken from the Compliance Offset Protocol U.S. Forest Offset Projects page on ARB's website, (<http://www.arb.ca.gov/cc/capandtrade/protocols/usforestprojects.htm>), as well as the 100-year average storage factors applied to each wood product class per table C.3 of Appendix C of the Protocol.

Wood Products by Class

% Softwood Lumber	69.501%
% Hardwood lumber	0.656%
% Softwood Plywood	27.695%
% Oriented Strandboard	0.000%
% Non Structural Panels	0.095%
% Miscellaneous Products	0.553%
% Paper	1.500%

100-year Storage Rates Average Values from Appendix C, In Landfill Table C.3

Softwood Lumber	0.298
Hardwood lumber	0.414
Softwood Plywood	0.287
Oriented Strandboard	0.233
Non Structural Panels	0.344
Miscellaneous Products	0.454
Paper	0.178
Weighted Average	0.199

Average wood products carbon stored in landfills is calculated using equation C.2. Carbon is converted to CO₂-equivalent by multiplying by 3.67. This value is combined with IFM-7 using equation C.3 to represent $WP_{total, y}$ for the reporting period.

$WP_{total, y}$ for the reporting period represents $AC_{wp, y}$ in equation 6.1. Average in-use wood products produced by the baseline analysis ($BC_{wp, y}$) are deducted from actual wood products produced each reporting period ($AC_{wp, y}$) in equation 6.1 and the resulting calculation is multiplied by 80% to account for the “Market Response”.

IFM-9 Biological emissions from site preparation:

As IFM-6 is an excluded carbon pool, IFM-9 is also an excluded pool.

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

The Protocol refers to this carbon pool as Secondary Effects which are calculated using equation 6.10 of the Protocol. Secondary Effects of harvesting less than the average wood products produced by the baseline growth and yield analysis are calculated by subtracting the average carbon in harvested trees prior to delivery to a mill (PDM) generated by the baseline analysis from the actual carbon in harvested trees prior to delivery to a mill, and then multiplying the difference by 20%. As Secondary Effects are only calculated in years when actual wood products produced are less than the annual average under the baseline analysis, the resulting calculation is either zero, or a negative number.

The PDM calculation each annual reporting period will be calculated based on a ratio between the average volume of wood delivered to the mill generated by the baseline analysis, and the average PDM value generated by the baseline analysis. Each reporting period, this ratio will be applied to the actual volume of wood delivered to a mill.

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.C.

IFM-1 Standing Live: This carbon pool will be calculated each year as described in parts A and B above. A preliminary estimate of the current standing live carbon pool is 3,190,476 MgCO₂e.

IFM-3 Standing Dead: This carbon pool will be calculated each year as described in parts A and B above. A preliminary estimate of the current standing dead carbon pool is 79,354 MgCO₂e.

IFM-6 Soil (if applicable): N/A

IFM-7 Carbon in in-use forest products: This carbon pool will be calculated each year as described in parts A and B above. No harvesting is planned during the initial reporting period.

IFM-8 Forest product carbon in landfills (if applicable): This carbon pool will be calculated each year as described in parts A and B above. No harvesting is planned during 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: This carbon pool will be calculated each year as described in parts A and B above. A preliminary estimate of biological emissions/removals due to this leakage is 8,598 MgCO₂e annually.

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.

Stratified random sampling formulas taken from Shiver and Borders (1996) will be used to calculate the sampling error for the Brushy Mountain Project once mean standing live and standing dead pools have been determined. Preliminary estimates of the inventory confidence statistics are as follows:

Mean standing live and standing dead pools	54.33	Mg C per acre
SE of mean	1.22	Mg C per acre
SE of mean as %	2.24 %	1.22 ÷ 54.33
Sampling Error of 90% CI	3.68 %	(2.24 %) * 1.645
Inventory Confidence Deduction	0.0%	3.7*0% - 5.0%

*3.68 rounds to 3.7

VII.E.

The risk ratings shown on the next page assume that the Project will not employ a Qualified Conservation Easement.

Project Area Reversal Risk Rating:

Risk Category	Contribution to Reversal Risk Rating
Financial Failure	5.0%
Conversion	2.0%
Over-harvesting	2.0%
Social	2.0%
Wildfire	4.0%
Disease/Insect	3.0%
Other Catastrophic	3.0%
Total Buffer Pool Contribution	19.2%

The Project's reversal risk rating is calculated as follows:

$$100\% - (((1-0.05)*(1-0.02)*(1-0.02)*(1-0.02)*(1-0.04)*(1-0.03)*(1-0.03)*100)) = 19.2\%$$

VIII.A.5.

Following the calculation methodologies described in section VII B above, the baseline modeling presented in the Modeling Plan (Attachment J) generates an average annual value for

each of the above described wood products carbon pools. Actual wood products values for In-use, Landfill, and Prior to Delivery to the Mill (“PDM”) are calculated based on a flow of wood products over the 100-year planning period. The table below presents an estimate of the average wood products stored long-term values that will be generated by the baseline analysis.

Woods Products Class	Mg C/ acre	Total Mg CO2e
Average Annual Carbon 100-year In-Use	0.136	8,156.02
Average Annual Carbon 100-year Landfill	0.087	5,231.00
Average Annual Carbon in Harvested Trees Prior to Delivery to the Mill	0.719	43,233.84

VIII.B.5.

Although the Forest Owners own lands outside of the Project Area and within the same Logical Management Unit (LMU), the Project Area's initial above ground standing live carbon stocks are above Common Practice. The minimum baseline level (MBL) for the Project was determined through the use of equation 6.5 which does not require the calculation of the Project's weighted average above-ground standing live carbon stocks (WCS) within the LMU.

VIII.B.8.

In modeling the baseline for standing live carbon stocks, the Forest Owner must incorporate financial constraints that could affect baseline growth and harvesting scenarios. The Compliance Offset Protocol provides two means by which the Forest Owner may demonstrate that the growth and harvesting regime assumed for the baseline is financially feasible. The first approach involves a financial analysis of the growth and harvesting regime, while the second approach provides evidence that activities similar to the assumed baseline growth and harvest scenario have taken place on other properties within the Forest Project’s Assessment Area within the past 15 years and that harvesting activities have taken place on sites comparable to

the Project Area. The Brushy Mountain Project will demonstrate financial feasibility using the second approach under section 6.2.1.3 (page 52).

Within CAL watersheds intersected by the Project Area, many timber harvest documents have been approved over the 15-year period leading up to the Project start date in 2014. These past harvesting activities have taken place on slopes similar to those of the Project Area, on equivalently zoned lands, with similar species composition to the Project Area, and with similar road access and yarding method constraints.

X Attachments

The following attachments are included as a part of this application for listing:

Attachment A - Title Report for the Brushy Mountain Ranch, and Summer Camp Ranch.

Attachment E – Maps of the Project Area, including an ESRI Geodatabase that represents the Project Area.

Attachment F – Orthophoto map of the Project Area.

Attachment G – A Draft graph portraying the expected baseline.

Attachment H – A Draft diagram of the expected baseline.

Attachment J – Draft Modeling Plan

Attachment K – Inventory Specification

Attachment L – Volume and Biomass Equations