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*

*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.*

PART I. ENTITY SUBMITTING REPORT

Is this form being submitted by the Offset Project Operator (OPO) or by the Authorized Project Designee (APD)? *Note: The person completing this form should be an OPO/APD employee.*

☒ OPO ☐ APD

Name of Person Completing Form:	Organization, if applicable:	
Sue Doroff	Western Rivers Conservancy	
Date Form Completed:	**Phone Number:**	**Email Address:**
10/20/2016 2/3/2017 3/20/2017 7/11/2017	(503)241-0151	sdoroff@westernrivers.org

PART II. OFFSET PROJECT INFORMATION

Offset Project Name:	OPR Project ID#:	ARB Project ID# (if known):
Blue Creek	ACR282	CAFR5232

Offset Project Commencement Date:	First Reporting Period Start Date:	First Reporting Period End Date:
March 19, 2015	March 19, 2015	June 30, 2016

Provide an explanation and justification for the commencement date. Specify the action(s) that identify the offset project commencement date.

March 19, 2015 was selected as the Offset Project Commencement Date because this is the date when Western Rivers Forestry acquired the full Project Area.

Green Diamond Resource Company granted Western Rivers Forestry ownership of 8,496.3 acres on November 19, 2013 (Phase A). Western Rivers Conservancy recorded a Grant Agreement with the California Wildlife Conservation Board on March 16, 2015. A copy of that Grant Agreement has been included as Attachment K. Funds secured through the Grant Agreement were used by Western Rivers Conservancy to close on the remaining 6,489.0 acres of Project Area (Phase B). On March 19, 2015 Western Rivers Conservancy conveyed this property to Western Rivers Forestry.

Optional: Provide the nearest town/city to the Project Area:
Klamath, California

PART III. OPO/APD INFORMATION

A. OPO

OPO Name:			OPO's CITSS ID#:	
Western Rivers Forestry			CA 1947	
Mailing Address:	**City:**		**State:**	**Zip:**
71 Oak Street, Suite 100	Portland		OR	97204
Contact Person:	**Phone Number:**	**Email Address:**		
Sue Doroff	(503)241-0151	sdoroff@westernrivers.org		

B. APD (if applicable) ☒ **No APD/Not Applicable**

APD Name: N/A		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? ☒ **Yes** ☐ **No**

Further documentation is required for all projects. Submit as attachment labeled "Attachment A." See Part X of this OPDR document for more information.

If "no," explain how the entity identified as the OPO has the right to undertake and list the project.

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.).

Western Rivers Forestry owns the Project Area in fee simple and holds all property interests within the Project Area that affects the trees and standing timber located within the Project Area. There is a recorded Offer to Dedicate in favor of California State Coastal Conservancy.

C. Does the offset project occur on public or private lands? ☒ **Private** ☐ **Public**

If the project occurs on public lands, proceed to questions C1 and C2. Otherwise, skip to question D.
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.

1. **Describe the public process that was used to evaluate the forest management activities and policy decisions concerning the offset project.**
   N/A
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.**
   N/A

D. Does the project employ a Qualified Conservation Easement (QCE)? ☐ **QCE** ☐ **Public Ownership**

If employing a QCE, proceed to questions D1, D2, and D3. Otherwise, skip to question E.
Supporting documentation for a QCE is required. Submit as attachment labeled "Attachment C." See Part X of this document for more information.

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.**
   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**

If "none of the above," skip to Part V. Otherwise, proceed to Optional questions E1 and E2.
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.

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.
   Western Rivers Forestry owns the property in fee simple.

PART V. OFFSET PROJECT AREA

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 document for more information.

Latitude of Offset Project Location:	Longitude of Offset Project Location:	Project Area Total Acreage:
41° 25'14.65" N	123° 52'24.62"	14,985.3 acres

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.

8,285.08 acres in Coast Redwood/Douglas-fir Mixed Conifer Assessment Area, 6,700.25 acres in Southern Cascades Mixed Conifer Assessment Area

B. Identify and describe the governing jurisdiction(s) applicable to the Project Area.

14,312.4 acres of the project area are in Humboldt County and 672.9 acres are in Del Norte County, the State of California, the United States of America.

C. Describe how the Project Area was determined.

The Project Area represents property acquired by Western Rivers Forestry from Green Diamond Resource Company and Western Rivers Conservancy. The Project Area was determined using GIS shapefiles supplied by Dan Opalach, Timberlands Investment Manager at Green Diamond Resource Company. The Project Area boundary is represented in maps included in Attachment E1 and the GIS shapefile included with this listing document.

D. Describe the existing land cover, and land use of the Project Area.

Land cover in the Project Area is representative of second growth Douglas fir and coastal redwood forests in northern California. Accordingly, the Project Area supports a healthy, diverse forest community composed of Douglas fir, redwood, California laurel, tan oak, red alder, Port Orford cedar, western red cedar, madrone, western hemlock, bigleaf maple, ponderosa pine, sugar pine, golden chinquapin, live oak, black oak, grand fir, and cottonwood. Species distribution varies with aspect and elevation transitioning from cottonwoods along Blue Creek and Bear Creek to bigleaf maple and red alder rich riparian areas to Douglas fir, redwood and tan oak on higher and drier sites.

The current land use in the Project Area is commercial timber management.

E. Describe the forest vegetation types within the Project Area boundary.

The majority of the Project Area contains Douglas fir and coastal redwood co-dominated stands with California laurel, tan oak and big leaf maple in the understory characteristic of Northern California Coast Redwood/Douglas-fir mixed conifer. A smaller portion of the Project Area contains stands co-dominated by Douglas fir, western hemlock and Port Orford cedar, with golden chinquapin, California laurel and tan oak in the understory.

F. Describe the site classes within the Project Area boundary.

The project is predominantly low site class, with approximately 77% of the project classified low site class (classes I – III) and approximately 23% of the project classified high site class (classes IV – VII).

G. Describe the land pressures and climate zone/classification applicable to the Project Area.

The Project is located in a rural area adjacent to the Six Rivers National Forest and the Siskiyou Wilderness Area. Accordingly, there is limited road access and low development pressure. However, significant portions of the Project Area are adjacent to the Klamath River and Blue Creek – both of which have significant ecological (fish habitat and migration) and recreational (boating, kayaking and fishing) value.

The Project Area is spread across three climate zones: 8a (10-15°F), 8b (15-20°F), and 9a (20-25°F) with annual average precipitation between 85-115 inches.

H. Describe the historical land uses, current zoning, and projected land use within the Project Area and surrounding areas.

The Klamath River was once one of the most productive rivers in the West and copious amounts of salmon, steelhead and rainbow trout supported Native Americans as long as 7,000 years ago.

This began to change as Euro-American fur-trappers traveled from Fort Vancouver to the Klamath region during the late 1820s. In the 1850s significant deposits of gold were discovered in the region, and to some extent gold prospecting continues today despite the region being mined long after the end of the gold rush.

Following the gold rush, logging became the dominant industry. During the early 20th century several mills were built, and much of the Klamath River watershed was harvested. Due to the high productivity of the region's forests, timber has remained a significant component of the local economy and the region is home to multiple large private timberland owners and several sawmills and biomass facilities. Timber management is expected to remain the primary land use on the majority of the local private forestlands in the region.

Prior to acquisition by Western Rivers Forestry, Green Diamond Resource Company managed the Project Area for timber production. Accordingly, the Project Area is zoned Timber Production Zone (TPZ). The TPZ ordinance is an agricultural designation allowing for continued timber production.

Today the Klamath River is a federally protected Wild and Scenic River and this project will contribute to the overall ecological health and productivity of this region.

I. Describe the forest conditions within the Project Area, including species composition, age class distribution, and management history.

Maximum Species Diversity Index (SDI) for Northern California Coast Assessment Area is 60% and Maximum SDI for Southern Cascades Assessment Area is 65%.

Based on the carbon inventory, three species make up more than 75% of the basal area within the Project Area. Douglas fir is the most dominate species and represents 31.85% of the basal area within the project area; tanoak is the second most dominant species with 24.7% of the basal area within the project area, and redwood is the third most dominant species with 21.2% of the basal area within the project area.

The remaining significant species are Red Alder (11.6% of BA), Pacific Madrone (1.7% of BA), Western Hemlock (2.4% of BA), Port Orford Cedar (1.5% of BA), Bigleaf Maple (2.0 % of BA), and California Laurel (1.3% of BA). Other minor species make up less than 1% each of the project by basal area.

Of the total project area, only 10.38% is in age classes 20 years or younger and 89.62% is 21 years or older.

The property has been managed for timber harvest since approximately 1910.

PART VI. OFFSET PROJECT ELIGIBILITY

A.	**Does the Project Area have a canopy cover that is greater than 10 percent?** *Supporting documentation is required. Submit as attachment labeled "Attachment F." See Part X of this document for more information.*	☒ **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 has not and does not 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.**
   If "no," proceed to question 1b. Otherwise, skip to question D2.

The only non-native species present in the carbon inventory is Monterey pine, consisting of 0.08% of the project based on the sum of basal area. The project consists of 99.92% native species. The below table summarizes species by the percentage of basal area.

Species	Basal Area (sqft/ac)
Black Oak	0.05%
Golden Chinquapin	0.58%
California Laurel	1.34%
Douglas Fir	31.85%
Grand Fir	0.01%
Western Hemlock	2.39%
Knobcone Pine	0.10%
Live Oak	0.11%
Bigleaf Maple	1.65%
Pacific Madrone	1.66%
Monterey Pine	0.08%
Other Harwood	0.01%
Port Orford Cedar	1.49%
Ponderosa Pine	0.54%
Red Alder	11.67%
Western Red Cedar	0.85%
Redwood	20.57%
Sugar Pine	0.07%
Tan Oak	24.64%
White Fir	0.01%
Willow, etc	0.03%
Western White Pine	0.29%

☒ **Yes**
☐ **No**

   b) **Describe how the project will meet this requirement.**
   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?**
   If "no," proceed to questions 2b and 2c. Otherwise skip to question D3.

As described in section V.I of this report, the maximum Species Diversity Index (SDI) for Northern California Coast Assessment Area is 60% and maximum SDI for Southern Cascades Assessment Area is 65%. The most prevalent species in the project is Douglas fir, at 31.85% of the project by basal area.

☒ **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

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?
If "no," proceed to question 3c. Otherwise, skip to question D4.

☒ Yes
☐ No

Watershed Name	% Watershed Area Under 20 Years
Ah Pah Creek-Klamath River	10%
Lower Blue Creek	10%
Middle Blue Creek	0%
Pecwan Creek	18%

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.

N/A

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?

Western Rivers Forestry has no intention to actively remove lying dead wood as part of anticipated management activities. It is expected that the accumulation of lying dead wood will be commensurate with the recruitment from standing dead trees. Western Rivers Forestry intends to manage the property for ecological purposes – primarily to promote old-growth-like structure, to improve water quality, and to improve and maintain critical wildlife habitat. These management objectives should ensure that standing and lying dead wood remain in sufficient quantities.

At a minimum WRF, is committed to maintaining current levels of standing dead trees, and in all likelihood the number and distribution of snags within the project area will increase over time.

Currently, the Project has approximately 1.23 tC per acre of standing dead stocks, which is about 2% of standing live carbon stocks in standing dead stocks. Since 1 tC/ac is greater than 1% of living carbon stocks, the structural element goal for the project is 1 tC/ac. Since the project is above this goal, it satisfies the structural elements requirement.

E. Describe the management activities that will result in increased carbon stocks in the Project Area, compared to the baseline.

Western Rivers Forestry acquired the Project Area from Green Diamond Resource Company. Under Green Diamond Resource Company ownership, the Project Area was managed for commercial timber production. Even-aged management is common on commercial timberland in Northern California, and common silvicultural treatments include clearcuts, shelterwood preparation, and variable retention. This is demonstrated in Attachment L, which shows proposed harvest activities for 2015 Timber Harvest Plans in the vicinity of the Project Area.

The stocking level (average basal area of 205 ft^2 per acre) and species composition (31.85% Douglas fir, 21.2% redwood) demonstrate that if Western Rivers Forestry were to continue to manage the Project Area for commercial timber production (the baseline scenario), much of the Project Area would be considered ready for harvest. However, under the project scenario, Western Rivers Forestry intends to manage the Project Area to promote other values, primarily watershed and forest health, sustained yield, and maximum community benefit. How this will be achieved will be described in the Forest Management Plan that Western Rivers Forestry is developing with input from California Department of Fish and Wildlife, and which will be approved and monitored by the Wildlife Conservation Board. A key component of this plan will be to replace even-aged management with selection and group selection harvests, thus promoting greater age-class diversity and higher stocking levels within all stands throughout the Project Area.

While the specifics of the Forest Management Plan are still being developed, in general the Project Area is divided into two management blocks. While Western Rivers Forestry is the landowner, on the ground management activities will be implemented by foresters and forestry technicians from the Yurok Tribe.

The southern portion of the property closer to Bear Creek will be managed to provide for multiple uses including watershed and forest health, sustained yield, and maximum benefit. While some harvesting will occur in this area, it will be significantly below annual growth and will mostly follow selection and group selection techniques to improve forest health.

The portion of the Project Area to the North encompassing the mouth of Blue Creek will see very little harvest activity because the primary objective on this portion of the property is to improve water quality and further protect Blue Creek.

Timber harvests that occur within the Project Area will never exceed sustained yield levels. Future THPs will primarily employ single tree selection and, to a lesser extent, group selection techniques to promote multiple age classes and species diversity. Furthermore, there is a strong desire to limit clearcutting except in rare cases. Where appropriate (i.e. meadow restoration), clearcuts should be less than 20 acres in size.

Because the overall management objective is to provide for multiple benefits (water quality, wildlife habitat, aesthetics, soil, etc.) and to promote long-term sustainable forestry, carbon stocks in the project area will continue to increase for the foreseeable future.

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?** *This question is applicable to both voluntary and compliance markets. If "yes" proceed to questions G1 and G2. Otherwise, skip to Part VII.*	☐ **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:

A carbon inventory was started in 2013 with 154 plots in the Project Area. In 2015-2016, an additional 350 additional plots were installed. All plots were allocated in the sampling frame which is the Project Area net roads and non-forest areas. The inventory sampling design was a stratified random sample, with plots comprising the sampling units.

Stratification is based on forest stand-typing completed in 2008 by Western Timber Services. Stands were typed based on species composition, size/age class, and stocking level. The stand typing was completed using aerial imagery, existing GIS data from Green Diamond Resource Company, slope and aspect analysis, and incorporation of cruiser data from timber inventory plots installed in the same year.

Of the 154 plots originally allocated in 2013, 104 plots were selected randomly across all strata in the sampling frame with uniform probability. The balance of 50 plots was selected in 2013 to improve precision in certain Douglas fir and redwood strata in the parcels acquired by WRF in 2013 (also known as the "Close A" area). These plots were also selected randomly with uniform probability in each stratum. The 350 additional plots selected in 2015-2016 were allocated randomly within strata, the sample size for each stratum set *apriori* to minimize the overall sampling error of inventory estimates. For all allocations, plot locations were selected randomly. The strata numbers, descriptions, acreages, and final number of plots (2013, 2015 and 2016) is listed below:

- Stratum 1, hardwood stands, 3,810 acres, 168 plots
- Stratum 2, mixed conifer and Douglas-fir stands, 1,231 acres, 38 plots
- Stratum 3, redwood stands, 3,818 acres, 96 plots
- Stratum 4, Douglas-fir stands with additional allocation in Close A, 2,028 acres, 59 plots
- Stratum 5, redwood stands with additional allocation in Close A, 1,640 acres, 139 plots
- Stratum 6, young even-aged stands, 1,556 acres, 4 plots
- Non-forest and roads, 902 acres, was excluded from the sampling frame

At each plot location, three nested plots were measured: an outer nest with radius 37 feet from plot center, a middle nest with radius of 17 feet, and an inner nest with radius of 12 feet. The outer nests include the area in the inner nests as well. Within the 37 foot radius plot, all standing trees with a DBH $\geq$ 12 inches were measured. Within the middle nest, all standing trees with a DBH $\geq$ 5 inches were measured. Within the inner nest, all standing live trees with DBH < 5 inches and all lying

deadwood with a DBH ≥ 5 were tallied.

For measured trees, detailed measurements were collected, including at a minimum: species, diameter, height, and missing biomass. Additional measurements varied depending on whether the tree is of commercial species or of merchantable size.

Diameter at breast height was measured using a DBH tape, to the nearest tenth of an inch. Height measurements were made to the nearest foot using an optical or ultrasonic hypsometer or rangefinder. Plot measurements were made with either a 100 foot tape or a hypsometer or rangefinder. Missing biomass was visually estimated to the nearest 10% for the whole tree. See the field measurement protocol for complete description of measurements.

Measurements were collected by the Yurok Tribe's forestry team and data was recorded on paper datasheets. Datasheets were scanned and data was digitized by the forestry team. The forestry team has retained original paper copies, and scanned versions have been saved to Dropbox and backed up to a remote server. Digitized data was then provided to the technical consultant for QAQC and biomass quantification.

As a part of the QAQC process, spot checks were made on the plot data in order to verify that the data is input correctly from the plot sheets into the Excel tree list document. Data within the tree list was sorted and pivoted by species for inputs such as DBH, height, and missing biomass in order to identify outliers. Any values that appeared to be outliers were checked against the original plot data sheets, and corrected if they are determined to be an error in the data entry. If inconsistencies were still present or items were questionable, the foresters were asked to return to the plot and take re-measurements.

Check cruises were conducted by the technical consultant in 2013 and 2016 to assess the quality of the data collection. Where inconsistencies in measurements were identified, plots were remeasured by the forestry team to correct these items.

Western Rivers Forestry will maintain a current running inventory of carbon stocks as part of their management of the project site. Plots will be re-measured at least every twelve years, per Appendix A.3 of the Protocol. Individual trees on measure plots may be grown using FVS or any other growth model approved by ARB between re-measurements, provided that it has been calibrated to accurately reflect data in earlier modeling exercises. Additional plots may be added to the inventory to improve the precision of estimates.

Individual living trees on measurement plots will be grown using a growth model approved by ARB between re-measurements. All 154 plots measured in 2013 were grown forward to 2016 to match the current reporting period. Tree and plot data for plots numbers 0-249 were put into FVS using the same calibration as described in section VIII.A.1 of this document. Tree list (.fvs) files were generated with 2013 inventory data for all trees 5" DBH and greater. Stand list (.slf) files were generated with plot-specific information. Field measured site trees were used to calibrate site index for each plot using the same methods described in section VIII.A.1 of this report. Once the raw 2013 plot data were put into FVS, they were grown forward with no management for three years to 2016. The output FVS files were then exported into a .csv.

The grown-forward data were combined with the 2015-2016 inventory data in order to estimate 2016 carbon stocks. Only grown-forward diameters and heights were used to update 2013 inventory records; species, decay class, and missing biomass from the original field measurements

were applied. Inventory data from trees that were identified as standing dead in the 2013 inventory were left unchanged in the combined tree list. Standing dead trees are assumed to remain, as-is, until subsequent field measurements.

Additional plots may be added to the inventory to improve the precision of estimates. Plots may be retired if new strata are delineated. Data from retired plots is not to be used for the calculation of onsite carbon stocks or the inventory sampling error. The confidence deduction is to be applied to the sampling error of the inventory using the most recent field measurements for all unretired plots.

Upon event of natural disturbance (such as fire, wind, pests) that may alter the carbon stocks in the project area, the affected area will be delineated into appropriate strata and all plots within the affected area re-measured prior to subsequent verification. All affected areas that are greater than ten acres must be delineated.

Plots can also be added to areas post-harvest or post-disturbance in order to increase the precision of carbon estimates from removal or loss. In these cases, harvest or disturbed areas will be stratified and delineated into separate strata. In the event that plots are not installed post-harvest or post-disturbance, the acreage of the harvest or disturbed area shall be determined through a combination of a digitized harvest or disturbance area in a GIS and a review of harvest records if available. The total loss in carbon stocks shall be estimated based on the determined harvest or disturbance area size and the average carbon stock density for this area prior to harvest or disturbance. The harvest area shall be assumed to be a clear-cut and the total harvest acres must multiplied by a carbon stock density weighted by the proportion of area in each pre-harvest stratum interesting with the harvest area. The same procedure shall be used for disturbed areas. This carbon stock estimate must then be removed from the project's total carbon stocks for the reporting period as an emission according to the requirements of the applicable Offset Protocol.

There are three known potential pests and diseases that may affect the health of the project's inventory: bear damage, sudden oak death, and severe drought.

Bear Damage: The primary agent affecting redwoods within the Project Area is black bear damage. Damaged is caused by the bears peeling the bark and then eating the cambial layer on pole-sized to 25 inch DBH redwood trees. Damaged trees may become partially or completely girdled resulting in increases susceptibility to infection, or mortality for fully girdled trees. Damage usually occurs from May through early June.

Sudden oak death: Sudden Oak Death is also a concern within the Project Area. SOD is an introduced disease that kills native oak and tanoak trees in California. SOD is caused by Phytophthora ramorum, a microscopic organism that is spread during the late spring in northern California. According to a map produced by the Berkeley Forest Pathology and Mycology Lab, average SOD infections per square kilometer are towards to lower end of the spectrum in northern Humboldt and southern Del Norte Counties.

Drought: While the Project Area has not experienced significant drought in recent years, climate change presents the possibility that drought may impact forest health in the future. Douglas fir trees are commonly affected by increased drought, and may become prone to Douglas fir beetle attacks. Similarly, drought stressed pines may be more susceptible to mountain pine beetle and western pine beetle outbreaks.

IFM-3 Standing Dead:

Standing dead was also measured in the carbon inventory following the same inventory

methodology described for IFM-1. Standing dead trees in the outer nested plot with height ≥ 15 feet and DBH ≥ 12 inches and standing dead trees in the middle nested plot with height ≥ 15 feet and DBH ≥ 5 inches were measured, with measurements including species, height, diameter, decay class, and missing biomass.

Decay class was also estimated in the field using the following definition:

Status Code	Description
D1	Dead, with large and small branches and twigs
D2	Dead, with large and small branches and no twigs
D3	Dead, with large branches only
D4	Dead, with no branches

The original 4 class system was altered to coincide with the definitions for the 5 classes used by Harmon (2011). The inventory protocol has been updated to reflect the 5-class system for future inventory updates.

Standing dead trees are assumed to remain, as-is, until subsequent field measurements. Inventory data from trees that were identified as standing dead in the 2013 inventory were left unchanged in the combined tree list.

IFM-6 Soil (if applicable):

N/A

IFM-7 Carbon in in-use forest products:

Mill receipts for harvested wood products are recorded and retained by the OPO.

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

Mill receipts for harvested wood products are recorded and retained by the OPO.

IFM- 9 Biological emissions from site preparation:

N/A

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

The default 20% secondary effects factor applied to difference between actual and baseline harvest volumes.

IFM-17 Biological emissions from decomposition of forest products:

Mill receipts for harvested wood products are recorded and retained by the OPO.

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:

Carbon was calculated for all trees on plots greater than or equal to 5" DBH and 15' in height. Volume in all trees was calculated using ARB-approved species-specific volume equations (dated 09/19/2014). Bole biomass was then estimated by multiplying the calculated volume by the species' wood density and subtracting missing biomass estimated in the field. Additional calculations for bark and crown biomass were completed, if necessary for that species.

Estimates of biomass were subsequently expanded to a per acre estimate based on the plot expansion factor (0.098734 for trees with DBH ≥ 12" and 0.020843 for trees with 12" ≥ DBH ≥ 5"). At the plot-level, tons of carbon-dioxide equivalents (tCO2e/ac) were calculated from biomass (t/ac) by multiplying by 0.5 (tC/t biomass), and 3.664 (tCO2e/tC).

Carbon in belowground carbon was estimated using the Cairns (1997) equation. Carbon for each plot is converted to a one hectare plot and the equation is applied.

Carbon is then summarized at the stratum level. To arrive at the project-level estimate, stratum estimates are weighted by their acreage and the weighted estimates are summed.

IFM-3 Standing Dead:

Carbon in standing dead trees is calculated using the same volume and biomass equations, as described for IFM-1.

Density reduction factors from Harmon (2011) were applied to bole, bark, and crown biomass. The original 4 class system was altered to coincide with the definitions for the 5 classes used by Harmon (2011). See the table below for the adjustments made in order to assign proper status codes to standing dead trees.

Status Code	Original Definition	Harmon Definition	Decay Class assigned for calculations	Rationale for crosswalk
D1	Dead, with large and small branches and twigs	All limbs and branches are present; the top of the crown is still present; all bark remains; sapwood is intact, with minimal decay; heartwood is sound and hard.	**D1**	The original definition versus that of Harmon is relatively the same thus the status code "D1" can remain the same (i.e. all components still present)
D2	Dead, with large and small braches and no twigs	There are few limbs and no fine branches; the top may be broken; a variable amount of bark remains; sapwood is sloughing with advanced decay; heartwood is sound at base but beginning to decay in the outer part of the upper bole.	**D2**	The original definition versus that of Harmon is relatively the same thus the status code "D2" can remain the same (i.e. larger components and some smaller components present but smallest components are not)
D3	Dead, with large branches only	Only limb stubs exist; the top is broken; a variable amount of bark remains; sapwood is sloughing; heartwood has advanced decay in upper bole and is beginning at the base.	**D3**	The original definition versus that of Harmon is relatively the same thus the status code "D3" can remain the same (i.e. only largest components are present)
D4	Dead, with no branches	Few or no limb stubs remain; the top is broken; a variable amount of bark remains; sapwood is sloughing; heartwood has advanced decay at the base and is sloughing in the upper bole.	**D5**	The original definition for "D4" encompasses both the "D4" and "D5" classes made by Harmon (i.e. largest components are not present at all). Decay class 5 is conservatively selected for calculations.
D5	-	No evidence of branches remains; the top is broken; <20 percent of the bark remains; sapwood is gone; heartwood is sloughing throughout.	-	-

Carbon at the plot level, including belowground, as well as at the stratum- and project-level is calculated in the same manner as IFM-1.

IFM-6 Soil (if applicable):

N/A

IFM-7 Carbon in in-use forest products:

Carbon in in-use forest products is calculated following Appendix C of the Protocol. The quantity of wood harvested is recorded and retained by the OPO. Total carbon (whole tree), as well as carbon in trees delivered to mills is calculated using these records. Total carbon in in-use forest products is calculated using ARB regional mill efficiency rates and 100-year average storage factors.

No harvesting occurred in the project area during the reporting period.

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

Forest product carbon in landfills is calculated following Appendix C of the Protocol. The quantity of wood harvested is recorded and retained by the OPO. Total carbon (whole tree), as well as carbon in trees delivered to mills is calculated using these records. Total forest product carbon in landfills is calculated using ARB regional mill efficiency rates and 100-year average storage factors.

No harvesting occurred in the project area during the 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:

Biological emissions/removals from change in harvesting on forestland outside of the project area were calculated using a default 20% secondary effects factor applied to the difference between the actual and baseline harvest volumes.

IFM-17 Biological emissions from decomposition of forest products:

Biological emissions from decomposition of forest products is calculated as a component of the carbon stored in IFM-7 and IFM-8.

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:

212.56 tCO2e/acre

IFM-3 Standing Dead:

4.49 tCO2e/acre

IFM-6 Soil (if applicable):

N/A

IFM-7 Carbon in in-use forest products:

0 tCO2e

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

0 tCO2e

IFM- 9 Biological emissions from site preparation:

N/A

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

-21,856.33 tCO2e

IFM-17 Biological emissions from decomposition of forest products:

0 tCO2e/ac (Quantified as a component of IFM-7 and IFM-8)

D. Provide a summary of inventory confidence statistics.

The estimated sampling error is 5.32% of the inventory estimate. The sampling error is estimated by first computing the standard error of the estimated mean carbon, multiplying the standard error by the z-value of 1.645 and 100, and then dividing by estimated mean carbon.

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

This project does not employ a Qualified Conservation Easement so the following percentages were used to determine the estimated contribution to the buffer account:

Financial risk – 5%
Conversion risk – 2%
Overharvesting risk – 2%

Social risk – 2%
Natural disturbance risk I – 4%
Natural disturbance risk II – 3%
Natural disturbance risk III – 3%

100% - ((1.0 - 0.05)*(1.0 - 0.02)*(1.0 - -0.02)*(1.0 - 0.02)*(1.0 - 0.04)*(1.0 – 0.03)*(1.0 – 0.03))

19.2% expected contribution to the buffer pool = 103,991 tCO2e

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.

Silvicultural Methods

The baseline scenario consists of managing the entire project area for Douglas fir timber production using even-aged management.

As most of the property consists of mature timber, final rotation harvests for all stands will occur within the first 40 years of the model. Mature stands will be clear-cut and replanted with 300 TPA of Douglas fir. The Klamath variant of FVS has a partial establishment model, which predicts stump sprouting for certain species. Species present in regeneration plots from the inventory but not represented in the sprouting model are parameterized for natural regeneration after final rotations at the densities predicted from the inventory.

After final rotation and planting, a stand is re-entered for a pre-commercial thinning at approximately age 20. At this treatment, stands are thinned from below to 120 square feet of basal area per acre, removing suppressed trees and generate more space for healthy growth. At approximately age 35, stands are entered again and commercially thinned to 75 square feet per acre with retention preference to Douglas fir and redwoods. Stands reach final rotation at approximately age 60, where they are clearcut and replanted, repeating the cycle.

Legal Constraints

Stream Class 1 - 150 foot buffer around Class 1 waterways
Stream Class 2 - 100 foot buffer around Class 2 waterways
Stream Class 3 - 50 foot buffer around Class 3 waterways
Stream Class 4 - 100 foot buffer around Class 4 waterways

NDDB Species - Natural Diversity Database species subject to surveying and habitat and avoidance requirements

Federal List - Subset of NDDB species that are threatened and endangered under federal law; Pacific fisher is the only listed species in the project

Northern Spotted Owl Detections - No changes to nesting habitat within 500 feet; no changes to roosting habitat within 1000 feet

Northern Spotted Owl Territories - 500 acres of owl habitat must be maintained within 0.7

miles of NSO detections, and 1336 acres within 1.3 miles

Salamander Detections - Salamander observations from landowner data.

Pacific Fisher Detections - Pacific fisher observations from landowner data

Clear Cut Ajacency - Forest Practice Rules for even-aged silviculture require at least 300 feet between harvested units

Stocking Standards - Minimum planting and residual basal area standards for Resource Conservation from the Forest Practice Rules

Site Index

A site tree was designated, cored, and measured at each plot in the inventory. The site trees were filtered by a number of factors to ensure quality site trees were selected. The following filters were used to select eligible site trees:

- Trees must be between the ages of 35 years and 120 years.
- Trees must possess site curves from Dunning and Reineke.
- Trees must be 50 feet in height or greater.
- Trees must not have any defect in the top third.
- Trees must be dominant or codominant (taller than the average height of all trees measured on the plot).

The equations found in Hanson (2002) derived from Dunning and Reineke (1933) were used to calculate site class for each eligible site tree. For plots without a site tree or with an ineligible site tree, the project average Douglas fir with a site index of 92 was assigned.

Model and Model Calibration

Forest Vegetation Simulator (FVS) was used to model project stocks. The Klamath Mountains (NC) variant was selected, due to the project's location. Due to the project's adjacency to Six Rivers National Forest, location code 510 was selected within the NC variant. The NC variant recognizes 11 species of trees. The document FVS_SpeciesCrosswalk was used to assign species codes to species not listed in the NC variant overview document. Plant association code was assigned to stands by leading species, as described in the following table:

Leading Species	FVS Sequence Number	Plant Association Species Type
Alder	90	Douglas-fir-red alder/vine maple/Siberian springbeauty
Conifer	426	Western hemlock-Port-Orford-cedar
Douglas fir	95	Douglas-fir-giant chinquapin-tanoak
Hardwood	182	Tanoak-giant chinquapin/California huckleberry-salal
Pine	262	Sugar pine-western white pine/huckleberry oak-pinemat manzanita

Redwood	354	Redwood
Young	97	Douglas-fir-giant chinquapin/Pacific rhododendron-salal

Default pulpwood and sawtimber specifications for Region 5 from the NC variant were used. In reality, merchantability specifications would be changed over time as milling systems and markets evolved. The model did not assume how merchantability specifications would have changed over the modeling period and thus these specifications were fixed throughout the modeling period.

The origin year was calculated by subtracting the age of the management tree from the year of measurement for each plot. Aspect, slope, and elevation are computed in a GIS using a digital elevation model acquired from the USGS National Map Viewer. For growing plots forward, these are calculated at each plot. For baseline modeling, these are calculated at the modeling unit level.

The NC variant uses a partial establishment model that included default regeneration from stump sprouts for some species in both regions. Any species that were not represented in the default FVS stump sprouting model were added in as natural regeneration.

The FVS model was implemented by constructing logical modeling units, resampling tree data and assigning site index to each modeling unit, and running the model for the baseline and project scenarios.

The basis of the modeling units were the stand-level vegetation cover type polygons. Constraint layers were created for each of the constraints mentioned above. These constraint layers were unioned with the stand-level vegetation cover type polygons, creating a shapefile containing the stands and constraints. These were then merged adjacent units of the same stratum or divided until it had reached a size between 5 and 40 acres.

In order to produce the final keyword files needed for the FVS modeling process, the 2016 inventory data and modeling units were run through a resampling procedure. The resampling process for the tree data was intended to produce modeling units and corresponding tree lists that were representative of the project for the modeling process.

Some modeling units contained inventory plots and thus had a known tree list. Other uncruised modeling units did not contain inventory plots. Where modeling units did not contain inventory plots, representative tree lists were compiled.

To compile representative tree lists for uncruised modeling units, a non-parametric resampling method was used. Similar methods had been used by Gehringer (2006) and for other ARB-approved projects. Plots were randomly selected from the inventory plot list with probabilities proportional to their original selection probability under the inventory sampling design. Non-parametric resampling – also known as the bootstrap – theoretically guaranteed that the resampled subset was a representative population. Five plots were selected for each uncruised modeling unit from inventory plots in the same stratum. Individual tree records from these plots were used to compile representative tree lists for

uncruised modeling units. Representative tree lists therefore represented five plots.

Both a baseline and a project scenario were modeled in FVS over 100 years. Model outputs of growth and yield estimates were organized by modeling unit and then compiled into databases for processing. Due to the large data size of the model outputs, the databases were used to run calculations and queries on the model outputs. The results of the calculations were condensed and transferred from the databases into an Excel workbook in order to best display and summarize the modeling results.

Standing dead was assumed to stay static over the 100 year model. Carbon in standing dead was estimated at 4.49 tCO2e/ac from inventory calculations. As the baseline scenario includes clearcutting and the removal of all standing dead trees at every harvest, carbon in standing dead in the baseline scenario would decrease from current inventory estimates over the 100 year model. Therefore it is conservative to assume standing dead is static throughout the 100-year model.

Quality control checks were implemented throughout the modeling process. Inventory data was reviewed and spot-checked for data entry errors. In addition, modeling inputs including keyword files, parameterization data, stand and treelist files, and the optimization dashboard were checked for errors and proper functioning. Model results of residual growth and yield, as well as cut and post-harvest retention lists from FVS were reviewed by exporting records to Excel workbooks. Average growth, cut, and post-harvest retention records by year were examined by basal area, trees per acre and maximum, minimum, and mean tree diameter. Data checks were completed in order to ensure that the residual basal area post-harvest was accurate, that the post-harvest stand conditions reflected the prescribed silvicultural treatment, and that the modeled growth rates were realistic.

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.

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

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.
17,703.96 tCO2e per 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 <u>Private Lands ONLY</u>

1. Provide the initial above ground standing live carbon stock (per acre) for the project.
171.88 tCO2e/acre

2. Provide the Common Practice statistic (per acre) associated with the Project Area.
138.24

3. Summarize how the Project's initial above-ground standing live carbon stock compares to Common Practice. Initial above-ground carbon stocks are higher than Common Practice. **Are the initial above-ground standing live carbon stocks above or below Common Practice?** Above **If below Common Practice, what is the High Stocking Reference for the Project Area? Describe the Project Area's live tree carbon stocks over the previous 10 years.** *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.*	☒ **Above** ☐ **Below**
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? If "no," skip to question B.5.	☐ **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)? *If "no," skip to question B.5.*	☐ **Yes** ☐ **No**
Optional: If "yes," is inventory data available for the LMU or will the OPO use a stratified vegetation analysis? *If "no," skip to question B.5.*	☐ **Data available for LMU** ☐ **Stratified Vegetation Analysis**
Optional: Identify the Minimum Baseline Level for above-ground standing live carbon stocks for the Project Area:	

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.

Submit supporting documents as attachment labeled "Attachment K". See Part X of this reporting document for more information.

Stream Class 1 - 150 foot buffer around Class 1 waterways
Stream Class 2 - 100 foot buffer around Class 2 waterways
Stream Class 3 - 50 foot buffer around Class 3 waterways
Stream Class 4 - 100 foot buffer around Class 4 waterways

NDDB Species - Natural Diversity Database species subject to surveying and habitat and avoidance requirements

Federal List - Subset of NDDB species that are threatened and endangered under federal law; Pacific fisher is the only listed species in the project

Northern Spotted Owl Detections - No changes to nesting habitat within 500 feet; no changes to roosting habitat within 1000 feet

Northern Spotted Owl Territories - 500 acres of owl habitat must be maintained within 0.7 miles of NSO detections, and 1336 acres within 1.3 miles

Salamander Detections - Salamander observations from landowner data. No changes within 500 feet of detection.

Pacific Fisher Detections - Pacific fisher observations from landowner data. No changes within 500 feet of detection.

Clear Cut Adjacency - Forest Practice Rules for even-aged silviculture require at least 300 feet between harvested units

Stocking Standards - Minimum planting and residual basal area standards for Resource Conservation from the Forest Practice Rules

6. **Provide a description of the modeling techniques used to simulate the effect of any constraints on carbon stocks.**
All spatial constraints are digitized and stands are modeled to match required management under such constraints.
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**
Supporting documentation is required. Submit as attachment labeled "Attachment L." See Part X of this listing document for more information.

C. Required for Improved Forest Management Projects on Public Lands ONLY

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? *If "yes," identify the registry or program and provide details on the issued credits below.*	☐ **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? *If "yes," identify the registry or program and provide details on the issued credits below.*	☐ **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? *If "yes," identify the goal(s) and provide details on the reductions and removal enhancements (under "Number of Credits Issued") below.*	☐ **Yes** ☒ **No**

Registry/Program/Goal(s):	Reporting Period(s):	Vintage(s):	Number of Credits Issued:

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(l) 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 CO_2e 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:	**PRINTED NAME:** SUE DOROFF
TITLE: PRESIDENT, WESTERN RIVERS FORESTRY	**DATE:** JULY 11, 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.