

American Carbon Registry Monitoring Report

Instructions: The American Carbon Registry (ACR) requires that a Project Monitoring Report be provided to the verification body at each Project verification. To facilitate this requirement, use of this monitoring report template is required. Please follow all instructions found within each section and provide all requested information. If a field is not applicable, mark it as “N/A”. Please save this Monitoring Report as a PDF prior to uploading to your Project page within the ACR registry system.

Section I: Report Completed By		
1	Name	Cakey Worthington
2	Title	Director of Implementation
3	Organization	Bluesource LLC
4	Phone	(317) 491-0524
5	Email	cworthington@bluesource.com
Section II: Offset Project Information		
1	Project name	Bluesource – Klawock Heenya Improved Forest Management Project
2	ACR Project ID#	459
3	ACR account holder	Blue Source, LLC
4	Reporting period (MM/DD/YYYY–MM/DD/YYYY)	7/27/2018 – 7/26/2019
5	Project start date (MM/DD/YYYY)	7/27/2018
6	Current project crediting period (MM/DD/YYYY–MM/DD/YYYY)	7/27/2018 – 7/26/2038
7	ACR Standard Version at time of listing/initial submittal	ACR Standard Version 5.1
8	Relevant ACR Sector Standard(s) and Version(s)	NA
10	ACR-Approved Methodology Title and Version	Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands v.1.3
Section III: Project Details		
1	Project Description	<p>The Klawock Heenya Improved Forest Management Project is located on 8,619 acres of conifer, western hemlock-Sitka spruce and western redcedar-hemlock forests in Southeast Alaska. By committing to maintain forest CO₂ stocks above the regional baseline, the project will provide significant climate benefits through carbon sequestration.</p> <p>Total projected GHG removal is 664,287 mtCO₂e (without risk buffer deduction) over the first crediting period of 20 years (including GHG removal from long-term wood products).</p>

2	<p>Program of Activities Project Implementation N/A: No additional cohorts beyond those described in initial GHG plan have been added to the project.</p>															
3	<p>Project Deviations N/A: No project deviations have occurred in this reporting period.</p>															
4	<p>Regulatory Compliance The Bluesource – Klawock Heenya Improved Forest Management Project is not a required project by any law, regulation, or legally binding mandate. The project is in compliance with all local, state, and federal timber laws. An attestation has been provided to affirm these statements.</p>															
Section IV: AFOLU Projects																
1	<p>Reversals (Please note that reversals must be reported to ACR as soon as they are discovered per the ACR Risk Mitigation Agreement) N/A: No reversals have occurred.</p>															
2	<p>Carbon Pools</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Carbon Pool</th> <th style="width: 30%;">Previous (total tCO₂e)</th> <th style="width: 30%;">Current (total tCO₂e)</th> </tr> </thead> <tbody> <tr> <td>Live Tree CO₂</td> <td></td> <td style="text-align: center;">1,531,010</td> </tr> <tr> <td>Standing Dead</td> <td></td> <td style="text-align: center;">156,157</td> </tr> <tr> <td>Soil</td> <td></td> <td style="text-align: center;">n/a</td> </tr> <tr> <td>Harvested Wood Products</td> <td></td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Carbon Pool	Previous (total tCO ₂ e)	Current (total tCO ₂ e)	Live Tree CO ₂		1,531,010	Standing Dead		156,157	Soil		n/a	Harvested Wood Products		0
Carbon Pool	Previous (total tCO ₂ e)	Current (total tCO ₂ e)														
Live Tree CO ₂		1,531,010														
Standing Dead		156,157														
Soil		n/a														
Harvested Wood Products		0														
3	<p>Inventory No changes to the inventory methodology or plots were made.</p>															
Section V: Project Monitoring																
1	<p>Parameters Monitored/Modeled</p>															

Parameter	A ₁
Units	Acres
Description	Area of IFM Project
Methodology Section	Strata area figures adjusted based on stocking levels and species distribution projected in modeling and verified through inventory updates
Equation #(s)	
Source of Data	GIS shape file derived from GPS coordinates
Measurement	



Parameter	T
Units	Year
Description	Number of years between monitoring time t and t1 ($T = t2 - t1$)
Methodology	
Equation #(s)	
Source of Data	Monitoring reports
Measurement	Subtraction

Parameter	Diameter at breast height of tree
Units	Inches (to 1/10 th an inch)
Description	Tree diameter measure 4.5 feet above ground
Methodology	Measured with Loggers Tape or calipers
Equation #(s)	
Source of Data	Field measurement
Measurement	

Parameter	H
Units	Feet
Description	Height of tree
Methodology	Measured with clinometer or hypsometer
Equation #(s)	
Source of Data	Field measurement
Measurement	

Parameter	Decay Class
Units	
Description	Qualitative degree of decomposition
Methodology Section	Qualitative assessment of dead tree into 1 of 4 decay classes based on class descriptions
Equation #(s)	
Source of Data	Field measurement
Measurement	

Parameter	Tree Live/Dead Status
Units	
Description	Live or Dead
Methodology	Consistent with 'KHC_Carbon_Plot_Methodology.pdf'
Equation #(s)	
Source of Data	Field measurement
Measurement	

Parameter	Defect
Units	%
Description	Qualitative percent of missing biomass
Methodology	Consistent with 'KHC_Carbon_Plot_Methodology.pdf'
Equation #(s)	
Source of Data	Field measurement
Measurement	

Parameter	Species Composition
Units	%
Description	Spp composition as a percentage of basal area
Methodology	Derived from the basal area calculations in the inventory data.
Equation #(s)	
Source of Data	Calculation of project emissions.
Measurement	

Parameter	Harvest Wood Products
Units	Metrics tons CO ₂
Description	Carbon remaining in stored wood products 40 years after harvest for the project in year t.
Methodology Section	N/A, no harvesting.
Equation #(s)	
Source of Data	Field measurement
Measurement	

Parameter	Forest Carbon
Units	Metrics tons of CO ₂
Description	Carbon stores in above and below ground live trees at the beginning of the
Methodology	Consistent with 'KHC_Carbon_Plot_Methodology.pdf'
Equation #(s)	
Source of Data	Calculation of project emissions.
Measurement	

2	<p>Monitoring Plan</p> <p>See section D2. Monitoring Plan of the GHG Plan for a detailed outline of the reporting requirements.</p>
Section VI: GHG Emission Reductions and Removals	
1	Baseline Emissions

	<p>Estimated total stock in live trees, dead trees, and wood products in July 2018, degrown from the inventory data, is 1,658,398 t CO₂e (=Live Tree CO₂ baseline + standing dead CO₂ baseline + HWP baseline). See “KHC_RP_ERT_HWP.xlsx” documentation of baseline emissions quantification.</p>																		
<p>2</p>	<p>Project Emissions</p> <p>Live tree carbon stocks in the with-project scenario were projected from an inventory in September 2018 inventory. The projection was developed by deriving individual live tree annual diameter growth rates from one 10-year cycle model run of FVS-AK with no management (reflecting the lack of timber harvest or other forest management activities occurring in the actual case during the monitoring period). The process is detailed below (and in “KHC_Start_RP_CO₂.xlsx”) and matches the process used to degrow live tree stocks from September 2018 inventory to the July 27, 2018 start date (see Klawock Heenya GHG Plan).</p> <p>Carbon stock estimates for the end of the July 27, 2018 – July 26, 2019 monitoring period were modeled via FVS-AK from the inventory data via the approach outlined below.</p> <ol style="list-style-type: none"> September 2018 inventory data were entered into FVS-AK and grown for 5 years with no management For each plot, the average annual CO₂ growth was calculated by dividing the difference between 2018 and 2023 stocks by 5. <p>Estimated total stock in live and dead trees at the end of the reporting period, grown from the inventory data, is 1,687,167 tCO₂ (= 195.8 t CO₂/ac * 8,618.9 acres).</p> <p>No burning of any kind took place in the project area. Thus, parameter <i>BS_p</i> equals zero and the outcome of equation 13 of the methodology, parameter <i>GHG_p</i>, equals zero.</p> <p>No timber harvests were implemented, generating 0 t CO₂e in harvested wood products, took place during the July 27, 2018 – July 26, 2019 monitoring period.</p> <p>Carbon in all pools/sources/sinks in the with-project scenario for the July 27, 2018 – July 26, 2019 monitoring period are detailed in the table below. Values for sources/sinks (harvested wood products and emissions due to burning logging slash) represent totals through the end of the first monitoring period.</p> <table border="1" data-bbox="261 1562 1365 1770"> <thead> <tr> <th>Date</th> <th>Live t CO₂/acre</th> <th>Standing dead t CO₂/acre</th> <th>Total Standing t CO₂/acre</th> <th>total HWP t CO₂/acre</th> <th>total GHG,P t CO₂</th> </tr> </thead> <tbody> <tr> <td>July 27, 2018</td> <td>174.3</td> <td>18.1</td> <td>192.4</td> <td></td> <td></td> </tr> <tr> <td>July 26, 2019</td> <td>177.6</td> <td>18.1</td> <td>195.8</td> <td>0.00</td> <td>195.8</td> </tr> </tbody> </table>	Date	Live t CO ₂ /acre	Standing dead t CO ₂ /acre	Total Standing t CO ₂ /acre	total HWP t CO ₂ /acre	total GHG,P t CO ₂	July 27, 2018	174.3	18.1	192.4			July 26, 2019	177.6	18.1	195.8	0.00	195.8
Date	Live t CO ₂ /acre	Standing dead t CO ₂ /acre	Total Standing t CO ₂ /acre	total HWP t CO ₂ /acre	total GHG,P t CO ₂														
July 27, 2018	174.3	18.1	192.4																
July 26, 2019	177.6	18.1	195.8	0.00	195.8														
<p>3</p>	<p>Leakage Emissions</p>																		



	Quantification of leakage is limited to market leakage, as no activity-shifting leakage is allowed by the methodology beyond <i>de minimis</i> levels. All forestlands owned by the cities are included in the carbon project, therefore there is no activity-shifting leakage. As determined in the project GHG Plan, the applicable market leakage factor through the first crediting period is 0.4.			
4	Buffer Pool Contribution (For AFOLU and other sequestration projects only)			
	Buffer Pool contribution: GHG emissions without risk buffer deduction – GHG emissions with 18% buffer = 84,546 * 0.18 = 15,219 (this calculation rounds up to the nearest whole number).			
5	Net GHG Emission Reductions/Removals			
	Methodology calculations and estimates of net reductions and removals enhancements are detailed in the table below and in “KHC_RP_ERT_HWP.xlsx”.			
	Equation	Parameter	ACR Account Date	7/27/2018
			7/27/2019	
			ACR Account Year	2018
			2019	
		Baseline		
		$C_{BSL,TREE,t}$	Live Tree CO ₂ Baseline	1,502,241
		$C_{BSL,DEAD,t}$	Standing dead CO ₂ Baseline	156,157
	3	$C_{BSL,HWP,t}$	HWP Baseline	12,437
	4	GHG_{BSL}	GHG from Baseline logging slash burning sum stocks Baseline	0
				1,658,398
	5	$C_{BSL,AVE}$	20yr Avg Baseline	875,205
		T	Year T	0
	1,2,6 & 7	$\Delta C_{BSL,t}$	deltaC baseline	-131,101
		Project		
		$C_{P,TREE,t}$	Live Tree CO ₂ Project	1,502,241
		$C_{P,DEAD,t}$	Standing dead CO ₂ Project	156,157
		$C_{P,HWP,t}$	HWP Project	0
	13	$GHG_{P,t}$	GHG from Project logging slash burning sum stocks Project	0
				1,658,398
	11,12 &			
	14	$\Delta C_{P,t}$	deltaC project	28,769
	10	UNC_{BSL}	Uncertainty in baseline CO ₂ stocks	14.1%
	18	$UNC_{P,t}$	Uncertainty in project CO ₂ stocks	14.1%
	19	UNC_t	Total uncertainty	11.86%
	Without Buffer			
	20	$C_{ACR,t}$	Emissions reduction at t	84,546
	21	$C_{NEG,t}$	Negative C balance	0
	22	ERT_t	ERTs Issued at time t	84,546



24	IERT _t	ERTs Transferred In	0
24	OERT _t	ERTs Transferred Out	0
24	RERT _t	ERTs Retired	0
24	TB _t	Tradable Balance at time t	84,546
25	TB _{tot}	Total Tradable Balance	84,546
With Buffer			
20	C _{ACR,t}	Emissions reduction at t	69,328
21	C _{NEG,t}	Negative C balance	0
22	ERT _t	ERTs Issued at time t	69,328
24	IERT _t	ERTs Transferred In	0
24	OERT _t	ERTs Transferred Out	0
24	RERT _t	ERTs Retired	0
		Buffer Credits	15,219
24	TB _t	Tradable Balance at time t	69,327
25	TB _{tot}	Total Tradable Balance	69,327
<p>See attached appendix for further details: "KHC_RP_ERT_HWP.xlsx."</p> <p>Note: the total tradeable balance shows the amount net of 18% buffer, however as this credit amount will be supplied from a separate account, the full tradeable balance at time t (84,546) is the credit volume being requested to be issued.</p> <p>2018 vintages: 36,631 2019 vintages: 47,915</p>			
Section VII: Verification			
1	Verification		
	Verification Type: Desk Review Verification Start Date: August 7, 2019 Name of Verification Body: SCS Global Services No. of Consecutive Years Verifying Project: 1 year		