AFOGNAK FOREST CARBON PROJECT MONITORING REPORT MONITORING PERIODS: 2006-2011

Document Prepared By: 3GreenTree Ecosystem Services Ltd. and Camco International Group, Inc.

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1 PROJECT DETAILS

1.1 Summary Description of Project

The Afognak Forest Carbon Project covers 3,326.5 ha (8,219.7 acres) of adjacent or proximal parcels located on the North coast (Perenosa Bay/Delphin Bay area) of Afognak Island, Alaska.

In a series of transactions outlined in Section 1.12.1 in the Project Design Document (PDD), the American Land Conservancy (ALC) and the Rocky Mountain Elk Foundation (RMEF) acquired the Afognak Carbon project properties and related timber rights from the privately owned Alaskan Native Corporations (Afognak Joint Venture, Shuyak, Inc., and Uganik Natives, Inc.) over the period of 2005-2009, with the objective of conserving the land in perpetuity. As part of these transactions, ALC/RMEF specifically retained the carbon legal title rights and right of use for the purpose of a carbon emissions reduction project; attached a permanent federal conservation easement to ensure perpetual conservation management; and transferred the remaining surface title rights to the State of Alaska.

The Afognak Forest Carbon Project achieves net GHG emission reductions and removals through the avoidance of emissions due to logging in the baseline scenario. The Afognak properties were being managed for timber production by the previous managers, with existing or pending logging plans in place across these and adjacent properties owned by the previous owners. The most plausible baseline scenario is a clear-cut, timber-harvesting scenario following minimum State of Alaska forest practice requirements and common practices clearly evident in previous logging on the project lands and adjacent lands across Afognak Island.

The project scenario is conservation management, wherein the State of Alaska manages and monitors the properties for the purpose of wilderness and ecosystem protection and enhancement activities under the terms of the title transfer agreement and federal conservation easement. The project scenario retains the current native and naturally regenerating logged forests in perpetuity to retain and sequester carbon on the property.

The project will undertake activities on a periodic basis in preparation for verification periods to monitor carbon inventory and stock changes over time. The initial monitoring period covered by this Monitoring Report includes the years from the project start date in anticipation of initial verification in 2012 (i.e. initial monitoring report period: 2006-2011). As per the Monitoring Program described in the PDD, the project undertook the following monitoring activities in late 2011/early 2012:

1. Annual Inventory Change Monitoring
2. Other Monitoring Requirements for the Project (i.e. leakage monitoring)
3. Field Plot Monitoring
4. Quality Assurance/Quality Control Measures

As the initial verification in being undertaken simultaneously with carbon inventory measurements and calculations for the project validation, the ex-post carbon calculations in the initial monitoring period are based on the same data used to create the ex-ante projections in the project design document for validation, and the results of initial period monitoring are incorporated directly into the starting inventory used for validation calculations. Note, however, that the calculations made for the ex-ante projections in the PDD were made on 5-year time steps (and then annualized using an annual average of each 5 year period as needed). The ex-post calculations in this monitoring period have been re-calculated on 1-year timesteps to better reflect the actual carbon flows by year in the monitoring period, which has resulted in some variation in ex-post calculation results as compared to the ex-ante calculations and projections in the PDD.

The project requests the verification of VCU's for the vintage years 2006-2011, as shown in Table 8.

1.2 Sectoral Scope and Project Type

Sector 14 - AFOLU

Improved Forest Management (IFM)

Logged Forest to Protected Forest (LtPF)

1.3 Project Proponent

Table 1 – Project Proponent Roles and Responsibilities

Organization	Role	Responsibilities	Contact/Address
American Land Conservancy	Project Proponent	Project co-ownership	Kerry O'Toole American Land Conservancy 250 Montgomery Street, Suite 210, San Francisco, CA 94104 415-912-3665 Kerry@alcnet.org
Rocky Mountain Elk Foundation	Project Proponent	Project co-ownership	Blake Henning Rocky Mountain Elk Foundation 5705 Grant Creek Road, Missoula, Montana 59808 406-523-0273

			bhenning@rmef.org
Camco Global	Project Proponent Representative	1. Project development support 2. Ongoing project monitoring and implementation	Charles Purshouse Camco International Group, Inc. 390 Interlocken Crescent, Suite 490, Broomfield, Colorado, 80021 303-807-6567 Charles.purshouse@camcoglobal.com

1.4 Other Entities Involved in the Project

Table 2 – Other Entities Involved in the Project Role and Responsibilities

Organization	Role	Responsibilities	Contact/Address
3GreenTree Ecosystem Services Ltd.	Implementing Partner	1. Project development 2. Ongoing monitoring and implementation support	Mike Vitt 3960 Marine Ave. Belcarra, BC, Canada V3H 4R9 Tel: +1 778-998-5478

1.5 Project Start Date

Project Start Date: January 1, 2006

The Afognak carbon project and the crediting period start dates are the start of the calendar year closest to the initial acquisitions. The Waterfall parcel and timber rights to Laura Lakes Tract B parcel were acquired Dec. 19, 2005. The Shuyak and Uganik parcels and the remaining timber harvesting rights for Laura Lakes Tract A were acquired July 17, 2009. Therefore the project start date is selected as January 1, 2006 for simplicity and annualized tracking.

1.6 Project Crediting Period

Crediting Period: 30 years – Jan 1, 2006 through Dec 31, 2035

The crediting period starts on the project start date; however note that the baseline scenario has a conservative assumption of harvesting on the properties beginning in 2008 (when the project will first generate VCU's). This partially reflects an assumption of some lead-time in the baseline to implement harvesting plans, and also recognizes the secondary acquisitions in 2009. This assumption is conservative and leads to less credits being claimed by the project over the project lifespan.

The project crediting and monitoring period is 30 years; however, ALC/RMEF intend to own the carbon title rights in perpetuity, and the federal conservation easement and related transactional agreements commit the State of Alaska to manage the Afognak property for conservation purposes consistent with the carbon project in perpetuity.

1.7 Project Location

The Afognak properties are located in parcels located to the east and west of Perenosa Bay including Delphin Bay on the north coast of Afognak Island in Alaska as shown in Figure 1. The property is located approximately 65 km (40 miles) aerial distance from the main regional town of Kodiak, AK. The Afognak property is bounded by lakes or ocean, and by various State of Alaska and private Alaska Native Corporation lands. The boundaries are surveyed and staked as shown on legally registered plats by parcel (copies of which are available upon request). Further details relating to title and use rights and title and covenant agreements and the associated timelines can be found in Section 1.12.1 of the PDD.

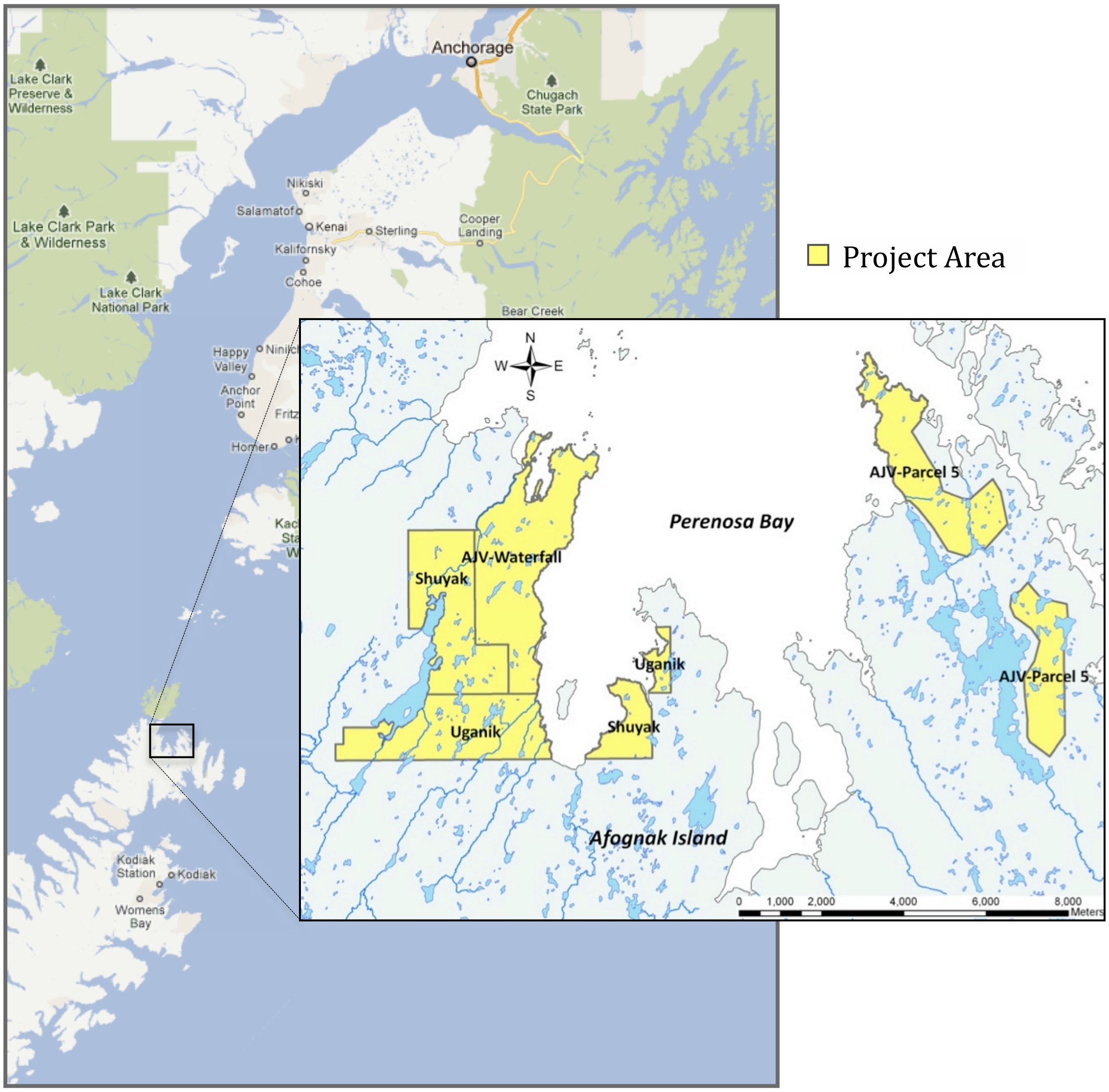

Figure 1 - An overview map of the Afognak Island carbon project showing its location relative to Anchorage Alaska and Kodiak Island. The insert shows a magnification of the individual parcels that comprise the project area.

1.8 Title and Reference of Methodology

Methodology: Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties – Version 1.0.

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The primary project activity was the elimination of the baseline logging and other development activities, which has been implemented across the entire project area as of the acquisition date of the various parcels. No material planned or unplanned activities were undertaken on any project parcel since the project start date.

The project scenario activity of forest conservation has been implemented across the project area. As planned, the project level activities are very low and have primarily included de minimis monitoring activities.

There has been only one notable action during the monitoring period, wherein a short road section (approximately 850m in length) was built to connect two existing road systems to permit the stabilization and closure of the remainder of the road system from previous logging activities. This new road segment has been identified and located via ground-based GPS, and the project forest inventory has been updated to remove this feature from initial carbon inventory entirely. As this road segment (or equivalent[1]) would have been built in both the baseline and project scenario, the change was made at the initial inventory level, which affects both the baseline and project emissions equally. This change resulted in a reduction in the total emission offsets claimed by the project.

As these first monitoring periods occurred prior to the first validation and verification, all monitoring activities were undertaken simultaneously with the initial inventory and carbon balance calculations. Therefore, no additional ex-post inventory updates were required. Leakage monitoring is equivalent to the ex-ante projections made in the PDD and updated to reflect the annual timestep detail for ex-post monitoring purposes.

2.2 Deviations from the Monitoring Plan

There are no deviations from the monitoring plan described in the Project Design document.

2.3 Grouped Project

Not Applicable

[1] To be extra conservative, the baseline modeling in the PD does not include emissions related to right of ways and road construction outside of cutblock boundaries, and also does not include conversion of projected future permanent roads to non-forested conditions (i.e. and hence all areas are assumed to be reforested). This results in less emissions offsets being claimed by the project. This new road segment would have been within the harvested areas in the baseline and therefore would have resulted in equivalent emissions as results from removing it from the initial inventory.

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

As per the Afognak Forest Carbon Project Design Document (PDD), Section 4.1, Table 15.

3.2 Data and Parameters Monitored

See Afognak Forest Carbon PDD, Section 4.2, table 16. All required parameters have been monitored.

3.3 Description of the Monitoring Plan

The Afognak Forest Carbon Project monitoring plan includes 4 primary activities, which are undertaken and managed by Camco and 3GreenTree:

1. Inventory Change Monitoring (detailed in Section 3.3.1)

   The project will undertake and document updates to the forest inventory data for the property, including at minimum: natural disturbance events (>4ha), project activities, and unplanned man-made disturbance. These spatial inventory changes will be monitored prior to each verification using a combination of aerial and ground-based surveys across the project area.

2. Other Monitoring Requirements of the Project (detailed in Section 3.3.2)

   The project will monitor annualized changes in activity shifting leakage and market leakage calculations, following the methods outlined in the PDD.

3. Field Plot Monitoring (detailed in Section 3.3.3)

   The project will update the field inventory, uncertainty calculations, and carbon calculations from field plot measurement data, as applicable, at each verification. This will include any new plot data acquired during the monitoring period, and (at minimum) data from plot re-measurements on no more than 5-year intervals from installation (i.e. first re-measurement no later than 2016).

4. Quality Assurance/Quality Control Measures (detailed in Section 3.3.4)

   The project will maintain standard operating procedures for:

   a. Collecting reliable field measurements
   b. Verifying laboratory procedures (as applicable)
   c. Verifying data entry and analysis techniques

d. Data maintenance and archiving

All elements of the Afognak Monitoring Plan for the initial monitoring period (2006-2011) were developed and implemented by Camco and 3GreenTree. In October 2011, 3 field crews were sent to Afognak Island to install the initial plot network (22 plots located across the project properties) and to complete monitoring for spatial inventory changes since the latest orthophotos. This included extensive coverage across the project area by foot (generally on route to field plot locations, but also multiple routes taken across areas with previous activities), and aerial flights in fixed wing aircraft, with a particular focus on areas along the southern border (where adjacent harvesting has occurred during the monitoring period) and within existing harvested areas (to look for unplanned harvesting, extensive blowdown, or other disturbances).

3.3.1 Annual Inventory Change monitoring

The GIS inventory for the Afognak project area has been updated to the end of 2011 as follows:

- The spatial inventory data was initially prepared as part of the forestland appraisal process (Forest and Land Management, Inc., 2008) and updated in 2011 using the high resolution (0.6m) orthophotos of the project area taken in 2006. The orthophotos were acquired as part of the USDA-NRCS-1-06 Alaska Digital Orthoimagery program (http://browse.alaskamapped.org/#browse/available_data). These geo-referenced images were used to identify and digitize non-productive land that had not been spatially identified during the appraisal process (see Figure 2). The following images were downloaded and overlaid in compilation to cover the project area:

ID	Photo Date
n_5815217_ne_05_06_20060912.tif	09-Aug-06
n_5815217_nw_05_06_20060912.tif	09-Aug-06
n_5815217_se_05_06_20060912.tif	09-Aug-06
n_5815217_sw_05_06_20060912.tif	09-Aug-06
n_5815218_nw_05_06_20060912.tif	09-Aug-06
n_5815218_sw_05_06_20060912.tif	09-Aug-06

- The non-productive area associated with roads was accounted for by applying a 5m buffer on either side of all road lines and labeling that area as non-productive. Streams were buffered by 20m on either side and land classification within these buffers was not changed (e.g. if the area were classified as mature spruce, it was left as such). However, stream buffer areas were excluded from the potential harvest area within the baseline scenario.

- During the field plot monitoring (Activity 3) the project area was partially reviewed on the ground during plot establishment and measurement activities, and was flown from a fixed wing aircraft to look for recent disturbances that would not have been present on the 2006 orthophotos. As noted, a new road segment (was noted in the west Uganik parcel that had been recently constructed to link two existing road networks by the State of Alaska as part of a road and access management plan that was consolidating the road system and decommissioning some roads. This new section was mapped using a hand-held GPS and added to the inventory. A 5m buffer was created on either side of the road (within the GIS) and the road area was reclassified as non-productive road (Figure 2).
- No areas of timber blowdown (>4ha)[2], incidents of fire, or visible areas of pests or disease were noted on the property during ground and aerial reconnaissance. The forest is healthy and robust across all areas observed on the property and no additional spatial inventory updates were required as a result of the 2011 spatial inventory monitoring.

[2] Individual tree blowdown was rarely or occasionally observed along exposed cutblock edges, however, no specific areas of blowdown (i.e. <0.5ha or more), unstable timber faces, or ongoing/extending blowdown were observed. In fact, less blowdown was observed than experienced foresters on the ground expected. As these harvest areas are now 5-10 years old, the risk of extensive future blowdown is low, but will be monitored in future.

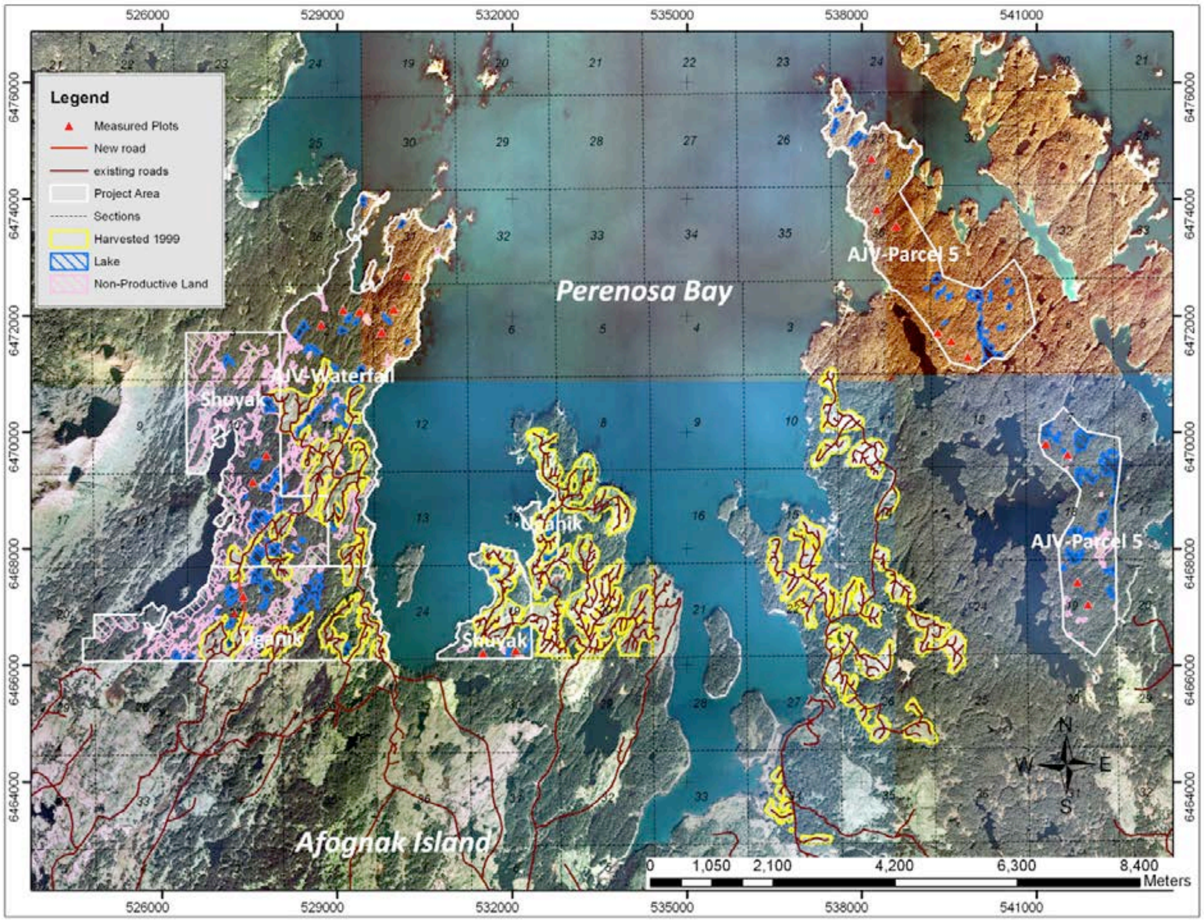

Figure 2- An overview map showing the Afognak project boundary overlaid on orthophotos taken in 2006. Existing road networks, areas harvested in 1999, and non-productive land are shown. The red triangles indicate the location of monitoring plots established in 2011.

3.3.2 Leakage monitoring

Activity shifting leakage:

The activity shifting leakage monitoring involves updating relevant project proponent logging activities on other properties owned or managed by ALC, RMEF, and/or Camco by monitoring period. Table 3 lists the level of harvesting activities on other properties owned or managed by the proponents that might have potential for activity shifting. As none of the project proponents undertake commercial harvesting on other properties, there is no evidence of activity shifting leakage during this monitoring period.

Table 3 – Ex-post Activity Shifting Monitoring – 2006-2011.[3]

Property	Year	Logging Volume	Activity shifting evidence/comme
All properties outside	2006	0.0	n/a – no harvest
All properties outside	2007	0.0	n/a – no harvest
All properties outside	2008	0.0	n/a – no harvest
All properties outside	2009	0.0	n/a – no harvest
All properties outside	2010	0.0	n/a – no harvest
All properties outside	2011	0.0	n/a – no harvest

Annual market leakage calculations (annually)

Calculations for market leakage are updated each monitoring period to reflect the level of timber harvesting volume in the baseline and any changes in harvest activities in the project scenario. As planned, there have been no harvesting activities in the project during the monitoring periods of 2006-2011, and therefore the market leakage calculations remain the same as projected in the PD, subject to updating the baseline harvest levels to annual time steps, as shown in Table 7.

3.3.3 Field plot monitoring

A key component of the Afognak project monitoring for the initial period of 2006-2011 was the establishment of an initial carbon monitoring plot network across the project area during the fall of 2011. This plot network provides key stand and project level carbon inventory data which can be tracked and re-measured over time to confirm ex-post carbon inventory levels and stock changes.

Type and Number of Sampling Plots

Plot type

The plot network consists of permanent fixed and geo-located plots designed for monitoring changes in stand-level forest biomass stocks over time. Additional permanent or temporary plots may be installed over time to refine biomass stock inventory accuracy.

[3] Data reported via email on Jan 12. 2012 by Charles Purshouse of Camco, Kerry O'Toole of the American Land Conservancy and Blake Henning of the Rocky Mountain Elk Foundation.

Number of Plots, Precision, and Sample Size

A current carbon plot network of 22 plots was installed on the property during October of 2011. The methodology does not mandate a number of plots, but suggests a target standard error below 10% at 90% CI over time. Additional error is accounted for through the application of the uncertainty factor deduction (Section 4.5). The detailed plot data are provided in a file referenced in Section 5.

For the monitoring period of 2006-2011, the newly installed plot network serves to provide key carbon inventory data and uncertainty factor data.

In 2012 the project team will evaluate the need for additional or future carbon inventory data needs to support ongoing carbon stock monitoring. These may include the following: 1) installation of additional permanent sample plots, 2) conduct a spatial field survey and/or imagery analysis to enhance detailed spatial stand age data, and/or 3) undertake other inventory activities to improve the carbon stock inventory accuracy over time as needed.

Sampling Design

Plot Layout

Permanent plot locations were located using a set of UTM coordinates randomly selected via GIS analysis tools. A total of 150 random plot locations were randomly distributed across the property parcels (limited to the mature spruce analysis unit within the baseline harvest area (see Figure 2) to ensure plot coverage across the property (i.e. a target number of plots was assigned to each parcel by area, then the GIS tools were used to select plots randomly from the list of 150 possible plot locations). A total of 22 plots were sampled during Oct. 2011. The location of the monitoring plots is shown in Figure 2.

Size and Shape of Sample Plots

Permanent plots were installed with a variable circular plot size with lying deadwood transects.

Plot size (radius = 4m, 14m, or 20m) was determined based upon the DBH range of the trees within the plots with the target of measuring 40 trees in each plot. In some cases plots contained fewer than 40 trees. Plots with fewer than 40 trees, occurred in areas with: 1) very large trees, or 2) substantial canopy gaps (See plot data file referenced in Section 5).

Crews were instructed to establish a plot center and to measure the top height and DBH of each standing stem with a diameter ≥ 5cm. Species and tree condition class (Live, Dead, Snag) were also recorded: 1) ‘Live’ indicated a tree with a live crown, 2)‘Dead’ indicated recently dead with branches still largely intact, and 3) 'Snag' indicated a standing dead stem with significant loss of branches. The field crew also made note if a stem had a broken top and the recorded the height at break.

The following carbon pools were calculated from plot measurements:

- Live trees: aboveground biomass
- Standing dead trees: aboveground biomass
- Lying dead wood

Methods for determining belowground biomass are described below.

Measurement and Data Analysis Techniques

The standard operating procedures for field plot installation are available upon request and key elements summarized here to demonstrate consistency with the methodology.

Trees & Snags

Tree biomass was estimated from equations that relate biomass to DBH and/or height. Biomass equations for Sitka spruce developed in British Columbia were selected as applicable to the Afognak properties (Standish, Manning, & Demaerschalk, 1985). These equations were used in conjunction with the DBH and height data measured within the plot network to calculate total aboveground biomass within each plot (t ha^{-1}).

Aboveground biomass, B_{AG}, was measured in each permanent sample plot. Specifically, all living trees and standing snags within a sample plot with dbh ≥ 5cm were measured including height (m) and diameter (cm) at breast height (1.3m). Tree type was recorded as one of three classes including live, recently dead, and snag (see above). The components for the Standish et al. (1985) equations were selected based upon tree class as shown in Table 4.

The biomass of standing dead trees and snags were calculated and converted to area-based stand-level measurements (t ha^{-1}) by summing the total mass of the relevant aboveground components (see Table 4) of standing dead trees and snags within a sample plot (converting kg to t) and dividing the sum by the plot area in ha. This value is an estimate of the average snag biomass variable ($DOM_{SNAG,i,t}$).

Table 4 - List of Components Used to Calculate Biomass in the Standish, et al. (1985) Biomass Equations

Class	Components used (a & b)[4]	Belowground included[5]
Live	DTOTAL	Yes
Recently Dead	DWOOD + DBRAN1	No
Snag	DWOOD	No

Belowground biomass (t ha^{-1}) for live trees was calculated using equations in (Li, Kurz, Apps, & Beukema, 2003) (see equations 5b and 33b in Appendix 2 of the PDD, for the baseline and project case, respectively). Tree-level measurements (kg biomass per tree) were converted to area-based stand-level measurements (t ha^{-1}) and a conversion factor used to convert biomass into carbon. Belowground components of dead trees and snags were not included in the standing dead pool as they are included the dead belowground biomass pool, which is recognized in the carbon modelling but not monitored.

Dead organic matter

The mass of lying dead wood, DOM_{LDW}, was measured in the permanent sampling plots using the line intersect method. Two 50-m sections of line were placed at right angles across the plot center, with the line ends permanently marked with metal stakes. The diameters of all pieces of wood $\geq$ 5 cm diameter that intersect the line were measured and the density class noted.

Each piece of deadwood was assigned to one of three density classes, sound (1), intermediate (2), and rotten (3). The volume per unit area was calculated for each density class using Equations 61a-c described in the VCS methodology document. For transparency, the equation numbers used here are the same as those used in the methodology document.

$$\mathbf{V_{LDW,c} = \pi^2 * [(d_1^2 + d_2^2 \ldots d_n^2)/8L]} \qquad \textbf{(60a)}$$

[4] The Standish et al. (1985) equations include different sets of component values depending on which biomass components are required. DTOTAL = total tree dry mass, DWOOD = stemwood dry mass, DBRAN1 = dry mass of large braches (>2.5cm)

[5] Belowground biomass was estimated from aboveground biomass for live stems only. Dead stems and snags were assumed to have no live belowground biomass (only dead belowground biomass which is not included in the monitoring program).

Where,

d_1, d_2, d_n = diameter (cm) of each of *n* pieces intersecting the line, and

L = the length of the line (100 m default (Harmon, et al., 1986).

The mass of LDW in density class, *c* (t ha^{-1}), is:

$$M_{LDW,c} = V_{LDW,c} * D_{LDW,c} \qquad (60b)$$

Where,

$V_{LDW,c}$ = the volume per unit area calculated for each density class, *c*, as calculated in 60a.

$D_{LDW,c}$ = the density of LDW in density class, *c* (t d.m. m^{-3})

The total mass of LDW in each plot summed over all density classes (t ha^{-1}) is:

$$DOM_{LDW} = \sum M_{LDW,c} \qquad (60c)$$

Where,

$M_{LDW,c}$ = the mass of LDW in density class, *c* (t ha^{-1}), is as calculated in 60b.

Mass of dead wood is calculated as the product of volume per density class and the wood density for that class (as per equations 60 a-c). The density of LDW in the 3 classes was assumed to be 0.43, 0.34, and 0.19 (t/m^3), for the sound, intermediate, and rotten classes, respectively. These values are based upon the default values provided in (Pearson, Brown, & Birdsey, 2007).

The total mass of lying dead wood was calculated as the average of all transects. This value was then used for calculations of carbon storage in dead organic matter ($DOM_{LDW,i,t}$).

4. Quality Assurance/Quality Control Measures (QA/QC)

Afognak has standard operating procedures for: (1) collecting reliable field measurements; (2) verifying laboratory procedures; (3) verifying data entry and analysis techniques; and (4) data maintenance and archiving.

QA/QC for Field Measurements

The plot network was installed by trained field crews who had previous experience installing similar permanent carbon plots. The Afognak plot installation SOP requires blind check-cruises of a minimum of 10% of the plots. In the 2011 installation field season, 3 of the 22 plots were check-cruised using blind checks (crews swapping plots), with 100% re-measurement of all variables. The plot check cruises met the minimum DBH, height, and tree count accuracy thresholds (+/- 10% standard error at 90% confidence interval). This meets the methodology QA/QC 10% check cruise requirement.

QA/QC for Laboratory Measurements

No laboratory measurements were take for the Afognak sampling, and this section is not applicable.

QA/QC for Data Entry

Afognak data is field entered into electronic data recorders, and all data transferred electronically, which resolves many data entry error points. Blind check plots were used to test data collection and entry simultaneously, and no material errors were noted, and no unresolvable data anomalies were found.

QA/QC for Data Archiving

Afognak has document control procedures to cover the carbon monitoring data, including retaining the following for 2 years past the duration of the project, as described in the Camco Data Archiving SOP for the Afognak Forest Carbon Project:

1. The electronically collected field data was output into MS Excel format, and copies of the original data related to the original plot field measurement, check plots, and related data summaries are maintained by Camco.
2. Copies of all monitoring data analyses, models, model input and output files, carbon calculations required for this methodology, GIS inventory dated by year, and copies of the monitoring reports are maintained by Camco.
3. Records of the version and relevant change history of software or data storage media changed between monitoring periods are maintain by 3GreenTree and/or Camco as necessary.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

4.1.1 Stratification of Land Area and Updates to Spatial Inventory

The project landbase has been stratified using the analysis unit approach as described in Section 4.1 of the PDD. There have been no updates made to the spatial inventory that was established in the recent Afognak PDD (version 2.3).

4.1.2 Calculation of annual emissions/reductions

Annual emissions/reductions for the baseline scenario for the years 2008-2011 were calculated using the output from the Afognak Landscape Summary Tool (see reference to file in Section 5). Harvesting activities that occurred in 2008 were limited to the Waterfall and Laura Lakes Tract B parcels; in 2009-2011 harvesting activities were distributed throughout all parcels. The FORECAST model output, analysis units, baseline assumptions and spatial inventory data used in the carbon emissions calculations made in the project and baseline scenarios are the same as those described within the Afognak PDD v2.4. The only difference was that the LST model was run for 30 years using an annual timestep instead of 100 years using a 5-year timestep. The annual time-step approach led to some small differences in the carbon emissions output relative to the values reported in the PDD. These differences are derived from averaging errors in the 5-yr timestep model.

Output with respect to volume harvested and annual emissions/reductions (including key components) are shown in Table 5. A link to the detailed LST output file is provided in Section 5.

Table 5 - Baseline Scenario Emissions/Reductions for the Monitoring Periods 2006-2011.

Year	Project Year	Baseline (Emissions) Reductions (tCO2e)	Baseline Scenario Volume Harvested (m^3)	Baseline Net Change in Ecosystem C (tC)	Baseline Storage HWP (tC)	Baseline Storage Waste Products (tC)	Baseline Emissions Production & Waste (tC)
2006	1	0	0	0	0	0	0
2007	2	0	0	0	0	0	0
2008	3	(101,111)	91,326	(27,344)	1,165	375	(1,747)
2009	4	(105,980)	91,962	(28,669)	1,173	378	(1,759)
2010	5	(110,414)	92,595	(29,876)	1,181	380	(1,771)
2011	6	(114,477)	93,230	(30,982)	1,189	383	(1,783)

4.2 Project Emissions

4.2.1 Stratification of Land Area and Updates to Spatial Inventory

The project landbase has been stratified using the analysis unit approach as described in Section 4.1 of the PDD. There have been no updates made to the spatial inventory that was established in the recent Afognak PDD (version 2.3).

4.2.2 Calculation of annual emissions/reductions

Annual emissions/reductions for the project scenario for the years 2008-2011 were calculated using the output from the Afognak Landscape Summary Tool (see reference to file in Section 5). The FORECAST model output, analysis units, baseline assumptions and spatial inventory data used in the carbon emissions calculations made in the project and baseline scenarios are the same as those described within the Afognak PDD v2.3. The only difference was that the LST model was run for 30 years using an annual timestep instead of 100 years using a 5-year timestep. The annual time-step approach led to some small differences in the carbon emissions output relative to the values reported in the PDD. These differences are derived from averaging errors in the 5-yr timestep model.

Output with respect to volume harvested and annual emissions/reductions (including key components) are shown in Table 6. A link to the detailed LST output file is provided in Section 5.

Table 6 - Project Scenario Emissions/Reductions for the Monitoring Periods 2006-2011.

Year	Project Year	Project (Emissions) Reductions (tCO2e)	Project Scenario Volume Harvested (m^3)	Project Net Change in Ecosystem C (tC)	Project Storage HWP (tC)	Project Storage Waste Products (tC)	Project Emissions Production & Waste (tC)
2006	1	0	0	0	0	0	0
2007	2	0	0	0	0	0	0
2008	3	8,911	0	2,428	0	0	0
2009	4	8,863	0	2,415	0	0	0
2010	5	8,815	0	2,402	0	0	0
2011	6	8,732	0	2,379	0	0	0

4.3 Leakage

There was no risk of activity shifting leakage found in the monitoring period.

The market leakage calculations have been updated to reflect the ex-post annual time-step projections for the baseline, which resulted in some annualized variation from the ex-ante projected leakage levels in the PDD, however overall there is no material change to the market leakage assessment or calculations. The calculated market leakage discounts factors and related calculation factors are shown in Table 7.

Table 7 – Market Leakage Discount Factors – Monitoring Period 2006-2011

Year	Project Year	Change in Harvest Volume (tCO_2e)	-20% Change tCO2e Harvested	Market Leakage Discount (% of total VCU's)
2006	1	0	0	0.0%
2007	2	0	0	0.0%
2008	3	67,034	(13,407)	12.2%

2009	4	67,500	(13,500)	11.8%
2010	5	67,965	(13,593)	11.4%
2011	6	68,430	(13,686)	11.1%

4.4 Calculation of the Uncertainty Factor

As described in Section 4.5 of the PDD, an Uncertainty Factor including inventory and model error terms were calculated based upon the comparison of the stand-level measures of net aboveground ecosystem C within the field plots and the associated model-projected values. The value of the Uncertainty Factor was determined to be 6.9% based upon a calculated Inventory error (EI) term of 11.9% and a model error (EM) term of 3.5%.

In summary, the Uncertainty Factor is determined from the inventory and model error terms as follows:

Uncertainty Factor =

If EP < 10% then 1.5%;

If EP > 10% then 1.5% + EP – 10%

where:

EP = EI + EM

EP = Total project error (%)

EI = Inventory error at the 90% confidence interval (%, expressed as the absolute value of the ± error term).

EM = Model error (%). May be positive (model > measured value) or negative (model < measured value).

The spreadsheet used in the calculation of the Uncertainty Factor is referenced in Section 5. The outcome of the deduction taken by the project to account for the uncertainty factor calculation is shown in Table 8.

4.5 Calculation of Non-Permananse Buffer VCU's

The projects calculated contributions to the VCS Non-Permanence Buffer Pool are shown by vintage year in the 5th column in Table 8.

The Non-Permanence Risk Assessment shown in Section 5 has not changed from the assessment shown in Appendix 1 in the PDD. The outcome of this risk assessment is the application of a **10% Non-Permanence buffer** to each year in the monitoring period.

It is somewhat unclear how to treat the release of credits from the buffer pool in the first verification, which is typically undertaken every 5 years based on a re-assessment of the project risk assessment. In this case, with a project start date of 2006 (i.e. 5 years ago), it could be assumed that the initial release of buffer credits should occur in 2011. However, given this is the first validation/verification of the risk assessment, it does not seem possible to document a change to the risk assessment. In addition, as the project has conservatively assumed the baseline activities would not begin until 2008 (resulting in 2006 and 2007 generating no emissions reduction VCU's), it seems logical and conservative to delay the buffer release to a future period. Therefore, the project proposes to begin the 5 year buffer release period in 2008 (the first year credits are requested for issuance), which would delay the buffer release assessment to the 2013 verification.

4.6 Summary of GHG Emission Reductions and Removals

The determination of net GHG Emissions and the associated calculation of total saleable VCUs were made following the approach and equations described in Section 4.4 of the PDD. The results for the 2006-2010 verification periods are shown in Table 8. The Afognak Carbon Model v.3 spreadsheet used to calculate the values shown in Table 8 is referenced in Section 5. The variations from the ex-ante projections made in the PDD are related solely to the shift to annual modeling timesteps.

Table 8 - Total Ex-Post VCU's for Issuance for the 2006-2011 Monitoring Period Verification, (and Terms Used in Their Calculation).

Year	Net Emissions Reductions (tCO_2e)	Leakage Risk Discount (tCO_2e)	Uncertainty Risk Discount (tCO_2e)	Non-Perm. Buffer Set-Aside (tCO_2e)	Cumulative Buffer Account (tCO_2e)	Release From Buffer (tCO_2e)	**Saleable VCU's (tCO_2e)**
2006	0	0	0	0	0	0	**0**
2007	0	0	0	0	0	0	**0**
2008	110,022	(13,407)	(6,666)	(10,828)	10,827	0	**79,121**
2009	114,843	(13,500)	(6,993)	(11,308)	22,136	0	**83,042**
2010	119,229	(13,593)	(7,289)	(11,746)	33,882	0	**86,601**
2011	123,209	(13,686)	(7,557)	(12,143)	46,024	0	**89,823**

The Afognak Forest Carbon Project therefore requests verification and issuance of the VCU’s for each year shown in Table 8, including the VCU’s to be issued to the Non-Permanence Buffer Pool (i.e. Non-Perm. Buffer Set Aside column) and the VCU’s to be issued to the Project Proponents (i.e. Saleable VCU’s column).

5 ADDITIONAL INFORMATION

A list of supporting files used in the calculation of carbon offsets for the 2008-2011 period is provided in Table 9.

Table 9 - Supporting files used in the calculation of carbon offsets for the 2008-2011 period. The names of worksheets in which specific data and/or calculations are located are also shown.

Description	File Name	Worksheet
Tree measurement data from monitoring plots	Afognak plot data & UF Jan. 2012.xlsx	Tree data
Tree-level biomass calculations	Afognak plot data & UF Jan. 2012.xlsx	Tree data
Downed wood debris data and mass calculations	Afognak plot data & UF Jan. 2012.xlsx	CWD Data
Stand-level biomass & carbon calculations	Afognak plot data & UF Jan. 2012.xlsx	Summary
Uncertainty Factor calculations	Afognak plot data & UF Jan. 2012.xlsx	Uncertainty Factor Calculation
QA Check Plot Data	Afognak plot data & UF Jan. 2012.xlsx	Tree data, CWD data, Summary
Landscape Summary Tool: Carbon calculations	Afognak LST April 20, 2012.xlsx	Annual curve based calculations
Landscape Summary Tool: Carbon calculations	Afognak LST April 20, 2012.xlsx	Annual curve based calculations
Calculation of C storage and emissions associated with the production of HWP	Afognak Carbon Model v3.2 – Monitoring 2006-2011.xlsx	Annualized HWP Carbon Model
Calculation of Market Leakage	Afognak Carbon Model v3.2 – Monitoring 2006-2011.xlsx	Ann. Summary Tables & Figs
Calculation of Saleable VCUs	Afognak Carbon Model v3.2 – Monitoring 2006-2011.xlsx	Ann. Summary Tables & Figs

APPENDIX 1 – NON-PERMANENCE RISK ASSESSMENT

This assessment uses the latest approvaed VCS non-permanence tool as per the methodology requirement: VCS AFOLU Non-Permanence Risk Tool, v.3.1.

Non-Permanence Risk Assessment Summary and Buffer Determination for the Monitoring Period 2006-2011:

Table 10 - Afognak Non-Permanence Risk Rating

RISK CRITERIA	Afognak RISK RATING	RISK SCORE
INTERNAL RISKS		
1. Project Management		
a) Species Planted	The project does not involve operational reforestation, and reforestation within the baseline (and relating to previous management) are based on natural regeneration from on-site native tree sources.	**0**
b) Ongoing Enforcement	The project area is now managed by the State of Alaska DNR staff along with adjacent state managed forests. No history of illegal activities (and the access and infrastructure requirements are clear barriers) exist in the region. No supplemental enforcement is required.	**0**
c) Management Team	LOW – The project management team at ALC/RMEF, Camco, and 3GreenTree hold all necessary experience related to all project activities, including experience developing and managing VCS forest and non-forest carbon projects. Camco, as the Project Proponent Partner and primary project manager, is one of the world's leading carbon project companies, with extensive experience globally across all major carbon standards, for multiple project types. 3GreenTree, as the Project Implementing Partner, is one of the leading forest carbon project developers with experience including creating methodology VM0012, developing the	**0**

	largest VCS forest carbon project in North America, and extensive forest management and ecosystem modeling expertise. Additional details on key staff have been provided to the audit team.	
d) Project Team Location	The ALC and RMEF have an ongoing active programs in Alaska and proximal to Afognak Island. Camco and 3GreenTree are located within easy travel distance to the project site in Colorado and British Columbia, respectively. Camco is the primary project manager, and the base for the project is considered their offices near Denver, Colorado.	**0**
e) Mitigation: Team AFOLU/Carbon Experience	3GreenTree holds significant experience developing and managing VCS AFOLU projects (further details at: http://3greentree.com/whatwe'vedone.html). Key staff include Mike Vitt BScF, MBA; Clive Welham, PhD., RPBio, and Brad Seely, PhD. (http://3greentree.com/team.html) . Camco holds significant experience developing and managing VCS non-AFOLU projects and projects under other carbon standards (further details at: http://www.camcoglobal.com/en/ourexpcarb.html). Key project staff include Charles Purshouse and Wiley Barbour (http://www.camcoglobal.com/en/managementteam.html).	**-2**
f) Adaptive Management Plan	As a protected forest conservation project, no specific additional adaptive management plans exist beyond retaining a robust fully functional native ecosystem.	**0**
Total Project Management (PM) = [a + b + c + d +e +f]	**PM = 0 + 0 + 0 + 0 + -2 + 0 =**	**-2**
2. Financial Viability		
a, b, c, d) Project Cashflow	The acquisition costs and subsequent donation are complete and considered sunk costs. The project operating costs will be breakeven in less than 4 years from this risk assessment,	**0**

BreakEven Timeline	leading to the selection of risk rating “d”. See tab “Financial Viability” in the Afognak Carbon Model listed in Appendix 3.	
e, f, g, h) Funding Securement	The project has all of the necessary funding to cover the total cash required until breakeven, and therefore the selected risk rating is “h”.	**0**
i) Mitigation: Project Callable Financial Resources	The project management team have the callable financial resources to finance the project through operating breakeven, and hence has selected the mitigation rating “i”. See http://www.camcoglobal.com/en/invsannouncements.html for extensive financial reporting related to Camco that demonstrate callable financial assets to cover the project operating costs.	**-2**
Total Financial Viability (FV)	**FV = 0 + 0 + -2 =** **(may not be less than zero)**	**0**
3. Opportunity Cost		
a, b, c, d, e, f) NPV of Most Profitable Alternative	The NPV of the timber harvesting in the baseline scenario is likely between 20% more to 20% less than the returns from carbon in the project scenario, on an operational EBITDA basis and excluding consideration of acquisition capital. This leads to the selection of risk rating “d”. The range is dependent on market conditions for logs and comparative VCU market price projections. See tab “Financial Viability” in the Afognak Carbon Model listed in Appendix 3 for a basic demonstration NPV calculation.	**0**
g) Mitigation: Non-profit project proponent	ALC/RMEF are non-profit conservation organizations, however the project has selected risk mitigation rating “i” instead.	**0**

h) Mitigation: Legal Commitments over Project Period	Afognak is protected by a Federal Conservation Easement over 100 years vs. a project crediting period of 30 years, , however the project has selected risk mitigation rating "i" instead.	**0**
i) Mitigation: Legal Commitments over Project Period	The Afognak project area is protected by a legally binding perpetual Federal Conservation Easement over 100 years, so the project has applied the risk mitigation rating "i"	**-8**
Total Opportunity Cost (OC)	**OC = 0 + -2 + -8 =** **(may not be less than zero)**	**0**
4. Project Longevity		
a, b) Length of legal agreement vs. crediting period	The Afognak has a legally binding Federal Conservation Easement that mandates continuation of the project scenario conservation management in perpetuity. The project crediting period is 30 years, however as per Section 2.2.4, Item 5 in the risk rating tool, the presence of a legally binding perpetual (i.e. >100 year) conservation rating assigns the project longevity score of zero. This risk rating assignment over-rides the internal risk calculations in "a" and "b".	
Total Project Longevity (PL)	**PL = Default risk rating of zero =**	**0**
	TOTAL INTERNAL RISKS = (PM + FV + OC + PL) **= -2 + 0 + 0 + 0 =** **(may not be less than zero)**	**0**
EXTERNAL RISKS		

6. Land Tenure		
a, b) Ownership of rights	The carbon proof of right and right of use are held by ALC and RMEF, while the surface rights are owned by the State of Alaska under a Federal Conservation Easement, which results in a selection of risk rating "b".	**2**
c, d) Ownership disputes	There are no known land ownership disputes, as asserted by ALC/RMEF as per title search and insurance processes and government due diligence during the transactions. Given the history of the land transaction (from long held federal land to native corporations in land treaty settlement, to willing sale from native corporation to ALC/RMEF/State of Alaska as fee simple, the likelihood of outstanding land ownership dispute is very low. Therefore the project has selected a risk rating of zero (as per 2.3.1, Item 2 – there are no additional disputes to be added to the risk score), and neither "c" nor "d" are applicable.	**0**
e) Mitigation: Legal Commitment > Project	The Afognak project is protected by a Federal Conservation Easement to continue project scenario management practices in perpetuity (>100 years), therefore the project has applied the risk mitigation "e".	**-2**
f) Mitigation: Dispute Resolution	There are no land or tenure disputes related to the Afognak Property, therefore risk mitigation "f" is not applicable.	**0**
Total Land Tenure (LT)	**LT = 0 + -2 + 0** **(total may not be less than zero)**	**0**
7. Community Engagement		
a, b, c)	No populations are living on the project area or within 20km of the project area; nor are populations reliant on the property area for subsistence purposes. Therefore this risk rating is	**0**

	not applicable to the project, as per section 2.3.2 in the tool.	
Total Community Engagement (CE)	**CE =**	**0**
8. Political Risks		
a, b, c, d, e) WGI Governance Score	United States average for the period of 2006-2010 = 1.22, therefore risk rating "e" has been applied. WBI Governance Indicators for this period:	**0**
f) Mitigation: Activities in	The U.S. has an established FSC standard body, hence risk mitigation rating "f" has been applied.	**-2**

Sources	Year	Percentile Rank (0-100)	Governance Score (-2.5 to +2.5)	Standard Error
13	2010	87.2	1.16	0.14
13	2009	86.3	1.13	0.14
13	2008	85.1	1.08	0.14
13	2007	84.1	1.09	0.14
12	2006	86.1	1.09	0.14
8	2010	56.6	0.31	0.23
8	2009	55	0.32	0.23
8	2008	60.1	0.43	0.24
8	2007	52.9	0.23	0.23
8	2006	57.2	0.35	0.24
7	2010	90	1.44	0.22
7	2009	88.5	1.4	0.21
7	2008	89.3	1.52	0.22
7	2007	90.8	1.58	0.21
7	2006	89.8	1.55	0.19
7	2010	90.4	1.42	0.23
7	2009	90.9	1.39	0.22
7	2008	93.2	1.55	0.22
7	2007	92.2	1.5	0.22
7	2006	95.6	1.65	0.2
12	2010	91.5	1.58	0.15
12	2009	91.5	1.54	0.15
11	2008	91.8	1.66	0.16
11	2007	91.9	1.6	0.16
10	2006	91.4	1.59	0.15
11	2010	85.6	1.23	0.15
11	2009	84.7	1.16	0.15
11	2008	91.7	1.45	0.15
10	2007	85.9	1.29	0.17
10	2006	85.4	1.27	0.16

Year:	Average Scc
2010	1.19
2009	1.16
2008	1.28
2007	1.22
2006	1.25
5 Yr. Avg:	**1.22**

2.3.3		
Total Political (PC)	**PC = 0 + -2** **(may not be less than zero)**	**0**
TOTAL EXTERNAL RISKS	**= LT + CE + PC** **= 0 + 0 + 0 =**	**0**
NATURAL RISKS		
a) Fire (F)	Likelihood: >100 years - These are very wet coastal rainforests with fire return intervals in excess of 500 years. Significance: Major - Spatial separation of properties and breaks created by logging inside and outside the project area, lakes, ocean, etc. reduce the risk of extensive damage. Mitigation: The Alaska DNR has extensive fire fighting expertise and capability, however this remote location and lack of other valuable development assets would reduce their response spending. The existing all weather road system would contribute ground based fire capabilities, and mobile fire fighting equipment would conceivably be available from Kodiak and mainland Alaska. We have not applied the mitigation factors because of the remote project location.	**0**
b) Pest and Disease (PD)	Likelihood: Every 50-100 years (conservatively) - While Sitka spruce is susceptible to several pest and disease agents through its range in the northwestern coastal region of North America, it is clear that the risk of stand-replacing events is much greater in the southern portion of its range (e.g. south of Alaska) (Burns, 1990). Agents that can impact sitka spruce include the following: o White pine weevil (*Pissodes strobe*) – significant damaging agent in Oregon, Washington and	**1**

southern British Columbia. Not a problem in Alaska due to cooler temperatures (Burns, 1990)

  - Spruce aphid – mainly a problem for ornamental trees, short-lived epidemics (Burns, 1990)
  - Root-collar weevil (*Stremnius carinatus*) – only causes mortality in seedlings (Burns, 1990).
  - Spruce bark beetle (*Dendroctonus rufipennis*) – periodically damages stands throughout the range (Burns, 1990), but tends to 'thin' stands instead of causing stand replacing mortality. Berg et al ((Berg, Henry, Fastie, De Volder, & Matsuoka, 2006)) report a mean return interval of 52 years on the Kenai Peninsula and found that it outbreaks generally cause a thinning effect after which residual trees show a positive growth response and generally close canopy within a 5-10 year period.

- There is no evidence or record of extensive pest or disease outbreaks in the Afognak forests. The project area is old growth, native forest that would be naturally resilient to most pest and disease. Based on the forest age, it is clear no observable stand changing outbreak has occurred in the past 150-250 years.
- To account for the impact of endemic gap disturbance events from natural disturbance agents, the stand-level simulations conducted in FORECAST included the periodic disturbance events for Sitka spruce. These events occurred every 20 years beginning at age 40 and caused mortality of 3% of the live spruce stems distributed evenly across the size profile. This modeled disturbance regime produces a snag population that is consistent with the snag population observed in the field plots.

Significance: Major

- However, as the Afognak forest is a single tree species, there is risk that IF an outbreak was to occur, there could be damage across the forest. We are unaware of an example of

	a devastating, stand replacing type of outbreak in natural coastal rainforest ecosystems on Afognak, so the risk of devastating outbreak is low or non-existent. Mitigation: The project proponents and Alaska DNR have extensive experience with forest health assessments and management, and therefore if an encroaching outbreak was found, management actions could be undertaken to avoid expansion. However, we have not applied the risk assessment mitigation factor as a conservative measure.	
c) Extreme Weather (W)	Likelihood: Every 50 to 100 years - Although this area is subject to severe marine weather, and particularly wind, there is no visible evidence of large areas of blowdown or other weather induced damage on the project site. In fact, ground reconnaissance saw a notable lack of even single tree blowdown and breakage (as would be expected in this coastal environment). This site had none of the blowdown evidence common to, for example, coastal BC. These forests appear remarkably well adapted to their environment. To be conservative, we have assumed that some type of major wind event might affect the property on a 50-100 year interval. Significance: Insignificant - there is no evidence of visible or stand replacing weather damage events on the project area. Stand ages are consistently above 160 years. Therefore we have assumed that extreme weather might impact individual or small groups of trees via blowdown or breakage, the openings of which would be recovered relatively rapidly by the surrounding stand. Mitigation: No mitigation factor has been applied.	**0**
d) Geological Risk (G)	Likelihood: >100 years - The Afognak properties lie within an active volcanic and tectonic region. There are no active volcanoes or active fault	**0**

	lines on Afognak Island (http://www.avo.alaska.edu/map), however, similar to the west coast of North America there is a major fault line several hundred miles southwest which caused a major earthquake and tsunami in 1964. The property was also subject to significant ash fall from a volcano on mainland Alaska (Novarupta, 161km NW) in 1912, which was the largest global volcanic eruption of the 20th century, and the largest in Alaskan recorded history. No other major events have occurred since white settlement in the late 1700's, and the likely return interval is in the hundreds, if not thousands of years. Significance: Minor - The 1964 earthquake was the largest ever recorded in North America (9.2) and the second largest in the world, with an epicenter within 150km of Afognak. This major earthquake, aftershocks and landslides on the mainland unleashed a series of the largest tsunamis ever recorded. Kodiak and Afognak Islands were hit by 6-20m waves (i.e. see www.wcatwc.arh.noaa.gov/web_tsus/19640328/kodiak.gif), which affected manmade structures in Kodiak and various other villages significantly. However, there is no obvious evidence of impact in the forests along the beach on the properties. The terrain is rolling and would be very stable landforms, and certainly the current forests have stood for at least 160-250 years. The lack of damage from the very large tsunami shows either the bay was relatively protected on this event and/or that there is enough elevation gain from the shoreline to prevent significant forest damage. It is our assessment that given the magnitude of the events on the record and the lack of material damage to the project area forests, that the risk of an earthquake or tsunami impacting a significant amount of carbon biomass on the properties is low, and under the worst conditions might be related to lower elevation shoreline areas involving a very low proportion of the carbon involved in the project. - Similarly, the 1912 Novarupta eruption blanketed Afognak	

	and Kodiak Islands with over 1 foot of ash, which had detrimental affects on humans and wildlife; however the affects on spruce trees were short-lived. Tree ring studies by Eggler (Eggler, 1967) showed spruce on the mainland near Afognak had depressed growth for 2-4 years, followed by an increase in growth for the following decade. Other studies show short term growth can be limited after major ash events, but trees survive and can improve growth in future years. It is our assessment that there is no direct damage threat from volcanoes on the property, and the impacts of major ash events are limited to short term growth inhibition followed by longer term growth enhancement; and such the overall significance to the site carbon balance will be minor (or even positive). Mitigation: No mitigation adjustment has been made.	
e) Other Natural Risk (ON)	No other known natural risks affect the property, and hence this risk element is not applicable.	**0**
Total Natural Risk (NR)	**NR = 0 + 1 + 0 + 0 + 0**	**1**
4. OVERALL RISK RATING		
a) INTERNAL RISK	**= 0**	
b) EXTERNAL RISK	**= 0**	
c) NATURAL RISK	**= 1**	
TOTAL RISK RATING = 1 (default minimum risk rating = 10%, as per Section 2.5.2) **THE PROJECT WILL APPLY A PERMANENCE BUFFER RISK RATING OF 10.0% FOR THE MONITORING PERIOD**		

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