

CAR1215 Listing Addendum A

9.1.1.1

14. A description of how the offset project meets (or will meet) the definition of “Natural Forest Management” (refer to Section 3.8.2), including:

- a. Composition of native species;
- b. Distribution of age classes / sustainable management;
- c. Structural elements (standing and lying dead wood);

Due to rounding, numbers presented throughout this and other documents may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

Part VI.B.1 – the project will consist of at least 95% native species based on the estimated sum of carbon in the standing live carbon pool. The assessment shall be conducted using estimates of stems per acre for Reforestation Projects and basal area per acre for Improved Forest Management and Avoided Conversion Projects.

Example:

Species ID	Common Name	Scientific Name	BA (sqft/ac)	Percent
260	eastern hemlock	<i>Tsuga spp.</i>	6.48	7.25%
129	eastern white pine	<i>Pinus strobus</i>	10.96	12.27%
316	red maple	<i>Acer rubrum</i>	12.48	13.97%
812	southern red oak	<i>Quercus falcata</i>	9.22	10.32%
621	yellow poplar	<i>Liriodendron tulipifera</i>	8.65	9.68%
802	white oak	<i>Quercus alba</i>	12.74	14.26%
110	shortleaf pine	<i>Pinus echinata</i>	6.32	7.08%
132	Virginia pine	<i>Pinus virginiana</i>	6.00	6.72%
541	white ash	<i>Fraxinus americana</i>	6.85	7.67%
543	black ash	<i>Fraxinus nigra</i>	5.41	6.06%
740	cottonwood	<i>Populus spp.</i>	4.21	4.71%
Total Native			89.32	100.00%
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Part VI.B.2 - the Project Area will 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.

Example:

Assessment Area: Allegheny & North Cumberland Mountains Cove Forest (SDI: 70 percent)				
Species ID	Common Name	Scientific Name	BA (sqft/ac)	Percent
260	eastern hemlock	<i>Tsuga spp.</i>	21.36	20.6%
129	eastern white pine	<i>Pinus strobus</i>	36.66	35.4%
316	red maple	<i>Acer rubrum</i>	12.54	12.1%
812	southern red oak	<i>Quercus falcata</i>	6.25	6.0%
621	yellow poplar	<i>Liriodendron tulipifera</i>	9.78	9.4%
802	white oak	<i>Quercus alba</i>	5.62	5.4%
110	shortleaf pine	<i>Pinus echinata</i>	1.14	1.1%
132	Virginia pine	<i>Pinus virginiana</i>	0.98	0.9%
541	white ash	<i>Fraxinus americana</i>	2.12	2.0%
543	black ash	<i>Fraxinus nigra</i>	3.47	3.3%
740	cottonwood	<i>Populus spp.</i>	3.70	3.6%
3,748 acres			103.62	100.00%

Assessment Area: Allegheny & North Cumberland Mountains Oak-Hickory (SDI: 65 percent)

Species ID	Common Name	Scientific Name	BA (sqft/ac)	Percent
260	eastern hemlock	<i>Tsuga spp.</i>	12.20	12%
129	eastern white pine	<i>Pinus strobus</i>	16.25	16%
316	red maple	<i>Acer rubrum</i>	5.35	5%
812	southern red oak	<i>Quercus falcata</i>	21.57	21%
621	yellow poplar	<i>Liriodendron tulipifera</i>	3.94	4%
802	white oak	<i>Quercus alba</i>	20.63	20%
110	shortleaf pine	<i>Pinus echinata</i>	1.35	1%
132	Virginia pine	<i>Pinus virginiana</i>	1.98	2%
541	white ash	<i>Fraxinus americana</i>	7.39	7%
543	black ash	<i>Fraxinus nigra</i>	6.32	6%
740	cottonwood	<i>Populus spp.</i>	5.54	5%
5,721 acres			102.52	100.00%

Assessment Area: Allegheny & North Cumberland Mountains Northern Conifer (SDI: 65 percent)

Species ID	Common Name	Scientific Name	BA (sqft/ac)	Percent
260	eastern hemlock	<i>Tsuga spp.</i>	12.20	14.5%
129	eastern white pine	<i>Pinus strobus</i>	16.25	19.3%
316	red maple	<i>Acer rubrum</i>	5.35	6.4%
812	southern red oak	<i>Quercus falcata</i>	10.57	12.5%
621	yellow poplar	<i>Liriodendron tulipifera</i>	3.94	4.7%
802	white oak	<i>Quercus alba</i>	13.63	16.2%
110	shortleaf pine	<i>Pinus echinata</i>	1.35	1.6%
132	Virginia pine	<i>Pinus virginiana</i>	1.98	2.4%
541	white ash	<i>Fraxinus americana</i>	7.12	8.5%
543	black ash	<i>Fraxinus nigra</i>	6.32	7.5%
740	cottonwood	<i>Populus spp.</i>	5.54	6.6%
1,530 acres			84.25	100.00%

Assessment Area: Allegheny & North Cumberland Mountains Mixed Pine-Hardwood (SDI: 60 percent)

Species ID	Common Name	Scientific Name	BA (sqft/ac)	Percent
260	eastern hemlock	<i>Tsuga spp.</i>	10.20	12.7%
129	eastern white pine	<i>Pinus strobus</i>	14.25	17.8%
316	red maple	<i>Acer rubrum</i>	5.35	6.7%
812	southern red oak	<i>Quercus falcata</i>	10.57	13.2%
621	yellow poplar	<i>Liriodendron tulipifera</i>	3.94	4.9%
802	white oak	<i>Quercus alba</i>	13.63	17.0%
110	shortleaf pine	<i>Pinus echinata</i>	1.35	1.7%
132	Virginia pine	<i>Pinus virginiana</i>	1.98	2.5%
541	white ash	<i>Fraxinus americana</i>	7.12	8.9%
543	black ash	<i>Fraxinus nigra</i>	6.32	7.9%
740	cottonwood	<i>Populus spp.</i>	5.50	6.9%
1,272 acres			80.21	100.00%

Assessment Area: Allegheny & North Cumberland Mountains Pine (SDI: 75 percent)

Species ID	Common Name	Scientific Name	BA (sqft/ac)	Percent
260	eastern hemlock	<i>Tsuga spp.</i>	10.49	11.7%
129	eastern white pine	<i>Pinus strobus</i>	14.25	15.9%
316	red maple	<i>Acer rubrum</i>	6.35	7.1%
812	southern red oak	<i>Quercus falcata</i>	10.57	11.8%
621	yellow poplar	<i>Liriodendron tulipifera</i>	4.94	5.5%
802	white oak	<i>Quercus alba</i>	13.63	15.2%
110	shortleaf pine	<i>Pinus echinata</i>	4.58	5.1%
132	Virginia pine	<i>Pinus virginiana</i>	5.68	6.4%
541	white ash	<i>Fraxinus americana</i>	7.12	8.0%
543	black ash	<i>Fraxinus nigra</i>	6.32	7.1%
740	cottonwood	<i>Populus spp.</i>	5.50	6.2%
6,460 acres			89.43	100.00%

Assessment Area: Allegheny & North Cumberland Mountains Northern Hardwoods (SDI: 70 percent)

Species ID	Common Name	Scientific Name	BA (sqft/ac)	Percent
260	eastern hemlock	<i>Tsuga spp.</i>	9.36	9.5%
129	eastern white pine	<i>Pinus strobus</i>	8.25	8.4%
316	red maple	<i>Acer rubrum</i>	13.25	13.4%
812	southern red oak	<i>Quercus falcata</i>	6.43	6.5%
621	yellow poplar	<i>Liriodendron tulipifera</i>	12.98	13.1%
802	white oak	<i>Quercus alba</i>	12.84	13.0%
110	shortleaf pine	<i>Pinus echinata</i>	4.36	4.4%
132	Virginia pine	<i>Pinus virginiana</i>	6.51	6.6%
541	white ash	<i>Fraxinus americana</i>	12.87	13.0%
543	black ash	<i>Fraxinus nigra</i>	6.35	6.4%
740	cottonwood	<i>Populus spp.</i>	5.54	5.6%
7,530 acres			98.74	100.00%

Part VI.B.3b - Please see Part V.I – 100% of the Project Area is older than 20 years old.

Part VI.B.4 – if the project does not meet the maximum of 1% of standing live stocks or 1 ton of carbon (C), then the project will ensure that structural elements are retained in sufficient quantities throughout the project life by continuing to implement project activities that do not include the active harvest or removal of standing or lying dead wood. Structural elements are also incorporated into management planning and through enrollment in the Sustainable Forestry Initiative certification.

Example of analysis:

Year	Metric tonnes CO ₂ e		Metric tonnes C		Percent
	TSL	TSD	TSL	TSD	
2015	116.25	2.00	31.73	0.55	1.72%