

1 in = 3 miles

November 2013

Map Showing Towns and Roads

Note: If road is not indicated as a private road, it is public.

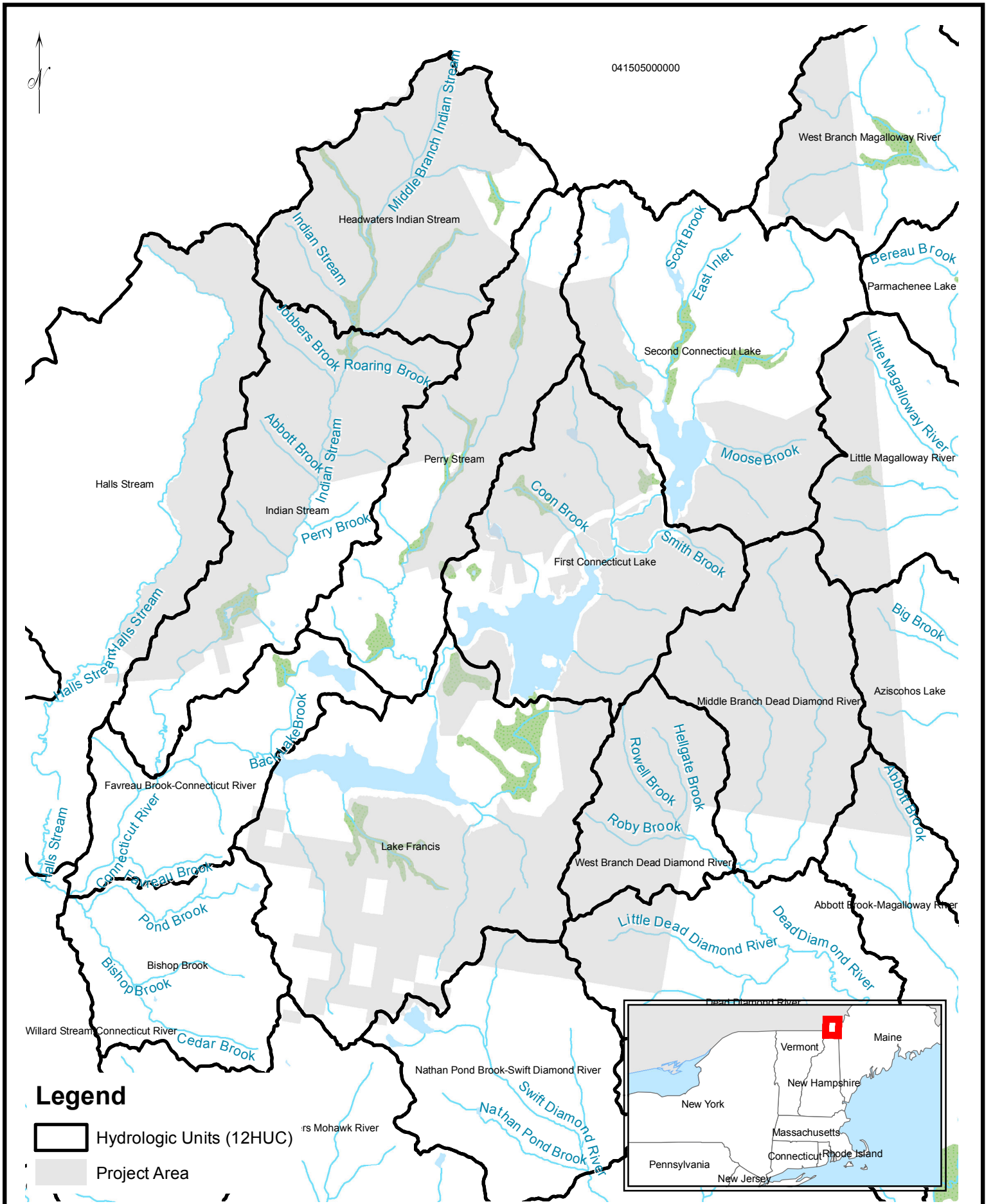
on lands belonging to

Connecticut Lakes Realty Trust
Situate in the State of New Hampshire

*and being part of an Improved Forest Management project
developed using the ARB U.S. Forests Compliance Offset Protocol
and identified as*

ACR199

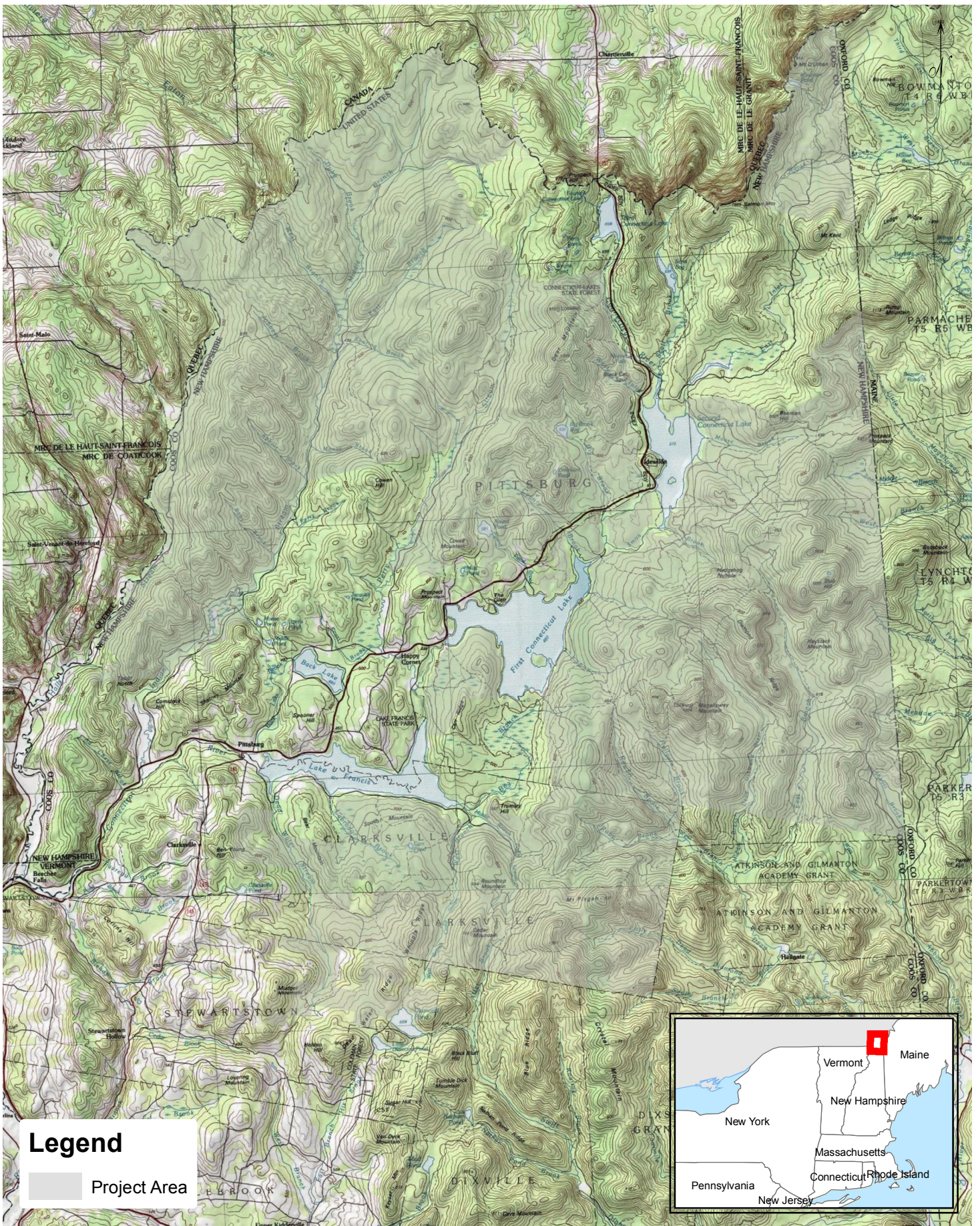
Finite Carbon - The Forestland Group CT Lakes



Map Showing Major Watercourses
on lands belonging to
Connecticut Lakes Realty Trust
Situate in the State of New Hampshire
and being part of an Improved Forest Management project
developed using the ARB U.S. Forests Compliance Offset Protocol
and identified as

ACR199

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Legend

Project Area

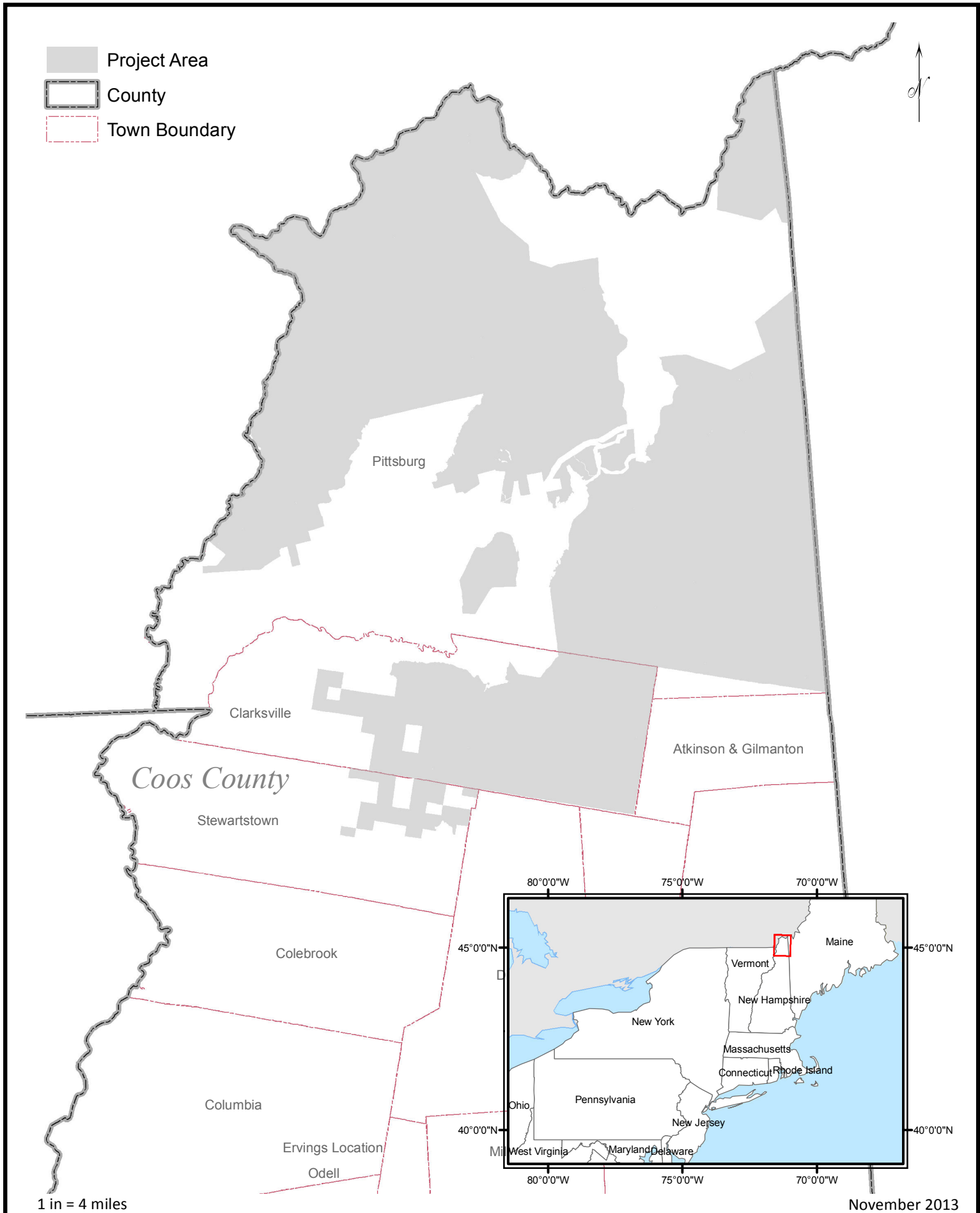
1 in = 3 miles

November 2013

*Map Showing Topography
on lands belonging to
Connecticut Lakes Realty Trust
Situate in the State of New Hampshire
and being part of an Improved Forest Management project
developed using the ARB U.S. Forests Compliance Offset Protocol
and identified as*

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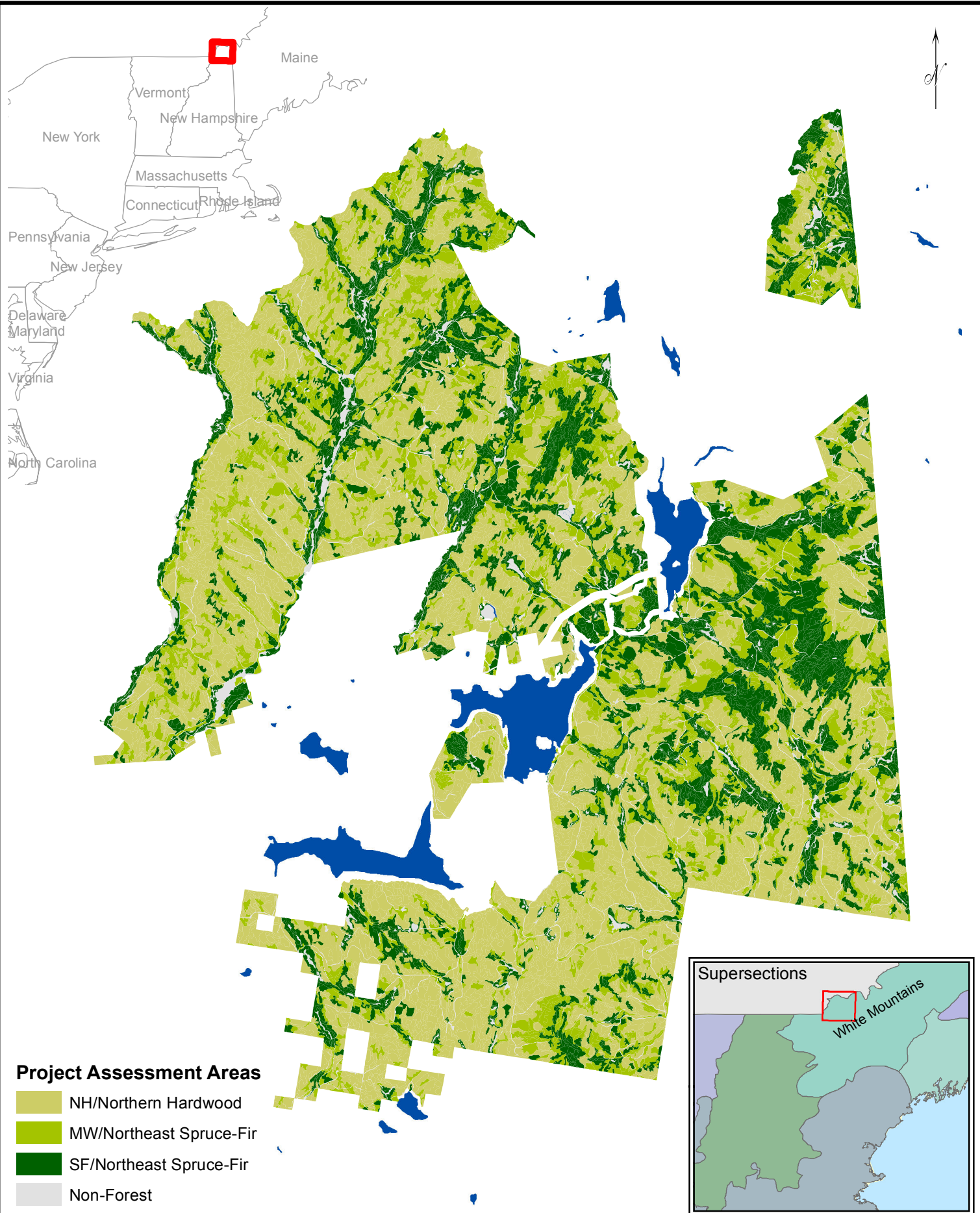


November 2013

Map Showing Counties and Townships
on lands belonging to
Connecticut Lakes Realty Trust
Situate in the State of New Hampshire
and being part of an Improved Forest Management project
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and identified as

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November 2013

Map Showing Assessment Areas
on lands belonging to
Connecticut Lakes Realty Trust
Situate in the State of New Hampshire
and being part of an Improved Forest Management project
developed using the ARB U.S. Forests Compliance Offset Protocol
and identified as

ACR199

Finite Carbon - The Forestland Group CT Lakes

Appendix G. ACR199 Baseline and Project Harvest Volumes 20140107

Year	Harvest Volume (Cubic Feet)		Year	Harvest Volume (Cubic Feet)	
	Baseline	Project		Baseline	Project
2013	14,073,167	-	2064	8,961,345	-
2014	10,003,527	1,679,475	2065	7,581,779	-
2015	9,870,080	-	2066	6,746,181	-
2016	11,042,543	-	2067	3,110,985	-
2017	5,718,380	-	2068	2,472,249	-
2018	-	-	2069	1,821,303	-
2019	-	-	2070	-	-
2020	-	-	2071	-	-
2021	-	-	2072	-	-
2022	-	-	2073	12,933,670	-
2023	14,037,417	-	2074	8,617,861	-
2024	10,052,573	-	2075	6,482,523	-
2025	9,930,181	-	2076	7,037,341	-
2026	11,046,501	-	2077	2,652,993	-
2027	5,548,993	-	2078	2,045,244	-
2028	-	-	2079	114,970	-
2029	-	-	2080	-	-
2030	-	-	2081	-	-
2031	-	-	2082	-	-
2032	-	-	2083	12,541,440	-
2033	13,768,585	-	2084	8,268,510	-
2034	9,763,648	-	2085	6,116,276	-
2035	9,731,127	-	2086	6,663,960	-
2036	8,778,336	-	2087	2,285,442	-
2037	7,039,268	-	2088	437,768	-
2038	-	-	2089	-	-
2039	-	-	2090	-	-
2040	-	-	2091	-	-
2041	-	-	2092	-	-
2042	-	-	2093	12,299,235	-
2043	13,705,280	-	2094	7,934,167	-
2044	9,719,296	-	2095	5,788,876	-
2045	8,233,359	-	2096	6,188,610	-
2046	7,147,214	-	2097	-	-
2047	5,163,411	-	2098	-	-
2048	2,736,497	-	2099	-	-
2049	-	-	2100	-	-
2050	-	-	2101	-	-
2051	-	-	2102	-	-
2052	-	-	2103	11,565,479	-
2053	13,296,133	-	2104	7,334,776	-
2054	9,377,130	-	2105	4,366,957	-
2055	7,370,911	-	2106	942,801	-
2056	6,842,098	-	2107	1,615,376	-
2057	5,533,798	-	2108	1,104,542	-
2058	1,996,369	-	2109	-	-
2059	-	-	2110	-	-
2060	-	-	2111	-	-
2061	-	-	2112	-	-
2062	-	-	2113	4,207,416	-
2063	13,183,122	-			

Appendix K. ACR199 Baseline Inventory, Growth and Harvest by Year v1.0

Year	Standing Live (IFM1) tCO2e		Standing Live Increment (IFM1) tCO2e		Carbon Harvested in Wood Delivered to Mill tCO2e	
	Per Acre	Total	Per Acre	Total	Per Acre	Total
2013	75.39	10,635,174	-	-	-	-
2014	72.65	10,248,592	(2.74)	(386,581)	2.02	284,694
2015	70.68	9,970,306	(1.97)	(278,287)	1.85	260,570
2016	68.45	9,655,454	(2.23)	(314,851)	1.86	262,293
2017	65.87	9,292,165	(2.58)	(363,289)	2.08	293,237
2018	65.36	9,219,909	(0.51)	(72,257)	1.08	152,350
2019	67.22	9,481,815	1.86	261,907	-	-
2020	69.10	9,747,015	1.88	265,199	-	-
2021	71.00	10,015,183	1.90	268,168	-	-
2022	72.92	10,286,803	1.93	271,620	-	-
2023	74.86	10,560,092	1.94	273,289	-	-
2024	71.23	10,047,575	(3.63)	(512,517)	2.53	357,218
2025	69.49	9,802,469	(1.74)	(245,107)	1.63	229,347
2026	67.48	9,519,252	(2.01)	(283,217)	1.62	228,553
2027	65.20	9,196,726	(2.29)	(322,526)	1.73	244,054
2028	64.81	9,142,372	(0.39)	(54,354)	0.94	133,168
2029	66.56	9,389,716	1.75	247,344	-	-
2030	68.34	9,639,889	1.77	250,172	-	-
2031	70.15	9,895,707	1.81	255,818	-	-
2032	72.01	10,157,383	1.86	261,676	-	-
2033	73.90	10,424,543	1.89	267,160	-	-
2034	70.31	9,918,529	(3.59)	(506,015)	2.41	340,330
2035	68.18	9,617,505	(2.13)	(301,024)	1.69	239,089
2036	66.13	9,328,953	(2.05)	(288,551)	1.64	231,457
2037	64.31	9,071,887	(1.82)	(257,067)	1.55	218,813
2038	63.29	8,927,660	(1.02)	(144,227)	1.17	164,589
2039	64.95	9,162,246	1.66	234,586	-	-
2040	66.64	9,400,616	1.69	238,370	-	-
2041	68.36	9,643,439	1.72	242,823	-	-
2042	70.11	9,890,451	1.75	247,012	-	-
2043	71.92	10,144,816	1.80	254,365	-	-
2044	68.89	9,717,525	(3.03)	(427,291)	2.19	308,363
2045	67.21	9,480,789	(1.68)	(236,736)	1.55	219,309
2046	65.99	9,308,496	(1.22)	(172,293)	1.40	197,099
2047	64.78	9,137,955	(1.21)	(170,541)	1.23	173,047
2048	64.29	9,069,313	(0.49)	(68,642)	0.96	136,081
2049	64.84	9,146,603	0.55	77,290	0.51	72,608
2050	66.57	9,390,415	1.73	243,812	-	-
2051	68.33	9,638,250	1.76	247,835	-	-
2052	70.12	9,890,657	1.79	252,407	-	-
2053	71.94	10,147,587	1.82	256,929	-	-
2054	68.49	9,660,740	(3.45)	(486,846)	2.00	281,780
2055	66.26	9,347,246	(2.22)	(313,495)	1.52	215,032
2056	65.20	9,197,788	(1.06)	(149,457)	1.23	173,974
2057	64.07	9,038,405	(1.13)	(159,383)	1.18	166,046
2058	63.50	8,957,218	(0.58)	(81,188)	1.01	142,785
2059	64.29	9,068,517	0.79	111,299	0.38	52,970
2060	65.94	9,302,130	1.66	233,613	-	-
2061	67.63	9,540,531	1.69	238,401	-	-

Appendix K. ACR199 Baseline Inventory, Growth and Harvest by Year v1.0

2062	69.36	9,783,535	1.72	243,004	-	-
2063	71.12	10,032,098	1.76	248,563	-	-
2064	68.38	9,645,537	(2.74)	(386,561)	2.11	297,200
2065	66.12	9,327,284	(2.26)	(318,252)	1.54	217,054
2066	64.60	9,112,732	(1.52)	(214,552)	1.27	179,473
2067	63.68	8,983,156	(0.92)	(129,576)	1.11	155,960
2068	63.98	9,025,723	0.30	42,567	0.58	81,335
2069	64.57	9,108,016	0.58	82,294	0.47	65,597
2070	65.53	9,244,338	0.97	136,322	0.34	48,566
2071	67.20	9,479,584	1.67	235,246	-	-
2072	68.90	9,719,471	1.70	239,887	-	-
2073	70.62	9,961,712	1.72	242,241	-	-
2074	67.03	9,455,573	(3.59)	(506,139)	2.14	301,990
2075	65.15	9,190,102	(1.88)	(265,471)	1.43	202,004
2076	64.17	9,051,279	(0.98)	(138,824)	1.14	161,445
2077	62.46	8,810,552	(1.71)	(240,726)	1.30	182,998
2078	62.72	8,847,645	0.26	37,093	0.49	68,690
2079	63.36	8,937,090	0.63	89,445	0.38	54,267
2080	64.85	9,148,346	1.50	211,256	0.02	3,051
2081	66.43	9,370,785	1.58	222,439	-	-
2082	68.02	9,595,293	1.59	224,508	-	-
2083	69.62	9,820,198	1.59	224,905	-	-
2084	65.20	9,197,151	(4.42)	(623,047)	2.07	292,396
2085	63.35	8,936,808	(1.85)	(260,342)	1.41	198,292
2086	62.32	8,791,254	(1.03)	(145,555)	1.07	150,570
2087	60.67	8,558,627	(1.65)	(232,626)	1.25	176,072
2088	61.02	8,607,983	0.35	49,355	0.42	59,106
2089	62.25	8,780,529	1.22	172,547	0.08	11,615
2090	63.70	8,985,445	1.45	204,915	-	-
2091	65.18	9,193,808	1.48	208,363	-	-
2092	66.70	9,408,210	1.52	214,402	-	-
2093	68.23	9,624,696	1.53	216,485	-	-
2094	63.53	8,961,098	(4.70)	(663,597)	2.01	283,959
2095	61.08	8,616,305	(2.44)	(344,793)	1.44	202,585
2096	59.59	8,405,560	(1.49)	(210,746)	1.05	147,696
2097	57.72	8,142,789	(1.86)	(262,770)	1.15	162,603
2098	58.94	8,314,719	1.22	171,929	-	-
2099	60.21	8,493,601	1.27	178,882	-	-
2100	61.51	8,677,284	1.30	183,683	-	-
2101	62.83	8,863,047	1.32	185,763	-	-
2102	64.19	9,055,072	1.36	192,025	-	-
2103	65.58	9,250,468	1.39	195,396	-	-
2104	61.81	8,719,644	(3.76)	(530,823)	1.92	271,446
2105	60.16	8,486,987	(1.65)	(232,657)	1.23	173,603
2106	59.89	8,447,579	(0.28)	(39,408)	0.73	103,406
2107	60.83	8,580,195	0.94	132,616	0.18	25,355
2108	61.81	8,719,220	0.99	139,025	0.27	38,714
2109	62.97	8,883,318	1.16	164,098	0.19	26,471
2110	64.43	9,089,237	1.46	205,919	-	-
2111	65.96	9,304,254	1.52	215,017	-	-
2112	67.54	9,527,201	1.58	222,947	-	-
2113	69.12	9,749,955	1.58	222,753	-	-

Appendix L. ACR199 RP1 Harvested Wood Products Worksheets v1.0

Section 1. Data Inputs

Table 1. Key to worksheet inputs

The key below provides a color-coded reference to cells in this worksheet where inputs are provided directly by the users of this spreadsheet. Assumptions are populated based on external data sources, and either calculations or outputs are conducted automatically. An action is required by the user anywhere a "Step" is indicated.

Step Guidance, which generally describes user input needed
Project data entered annually by Project Submitter
Assumptions and/or data populated automatically
Default Values
Data calculated automatically for input into the Calculation Worksheet

Table 2. Project Characteristics

Step 1. Using the pull-down menus where provided, enter the current reporting period project data into Table 2. If multiple hardwood and/or softwood harvest units were recorded, consolidate into one hardwood and one softwood harvest unit using the conversion factors in Table 4.

Region:"	Northeast (NE)
Reporting Period:	7-Jan-14
Harwood Harvest Units:	Cords
Softwood Harvest Units:	Cords
From the Reserve's Assessment Area Data File.	

Table 3. Volume in Logs Delivered to Mill

Step 2. Enter the name of the mill(s) and the volume of harvested wood sent to the mill during the current reporting period in Table 2. Both the hardwood and softwood volumes must be categorized based on the wood product classes shown below. If wood products class data is insufficient, categorize the unknown wood products as "miscellaneous". Default mill efficiencies are provided based on Table 5. The default values may be overwritten if mill-specific data is available and is verifiable.

Mill	Hardwood						Softwood						Paper	
	Wood Product Classes					Mill Efficiency	Wood Product Classes					Mill Efficiency		
	Mill Efficiency	Lumber	Oriented Strandboard	Non Structural Panels	Misc Products		Lumber	Plywood	Oriented Strandboard	Non Structural Panels	Misc Products			
Local Mill	61.4%	3,521	-	116	680	65.0%	11,682	59.9%	5,475	-	-	-	51.3%	91
	61.4%	-	-	-	-	65.0%	-	59.9%	-	-	-	-	51.3%	-
	61.4%	-	-	-	-	65.0%	-	59.9%	-	-	-	-	51.3%	-
	61.4%	-	-	-	-	65.0%	-	59.9%	-	-	-	-	51.3%	-
	61.4%	-	-	-	-	65.0%	-	59.9%	-	-	-	-	51.3%	-
	61.4%	-	-	-	-	65.0%	-	59.9%	-	-	-	-	51.3%	-
Gross Total:	61.4%	3,521	-	116	680	65.0%	11,682	59.9%	5,475	-	-	-	51.3%	91
Net Total:		2,162	-	71	418		7,593		3,116	-	-	-		43

Section 2. Estimates of Carbon Storage in Wood Products and Emissions associated with Harvested Trees

Table 4. Estimates of CO₂-equivalent (CO₂e) in Harvested Wood Products associated with Project Activities

Units	Hardwood					Softwood					Sum		
	Lumber	Oriented Strandboard	Non Structural Panels	Misc Products	Paper	Lumber	Plywood	Oriented Strandboard	Non Structural Panels	Misc Products		Paper	
Project carbon in harvested wood delivered to mills (Cubic Feet)	264,064	-	-	8,713	51,000	876,119	410,660	-	-	-	-	68,919	1,679,494
Project carbon in harvested wood delivered to mills (tCO ₂ e)	7,108	-	-	235	1,373	23,592	7,917	-	-	-	-	1,329	41,415
Project carbon transferred to wood products (Cubic Feet)	162,136	-	-	5,360	31,314	869,678	233,668	-	-	-	-	36,355	1,007,222
Project carbon transferred to wood products (tCO ₂ e)	4,364	-	-	144	843	15,328	4,505	-	-	-	-	662	25,098
% Product	17%	0%	1%	3%	59%	17%	0%	0%	0%	0%	3%	10%	
Long-term storage in in-use wood products (tCO ₂ e)	1,091	-	-	55	148	989	2,098	-	-	-	-	40	4,343
Long-term storage in wood products in landfills (tCO ₂ e)	1,807	-	-	90	383	2,728	1,342	-	-	-	-	121	6,454

Table 5. Estimates of CO₂-equivalent (CO₂e) in Harvested Wood Products associated with Baseline Activities

Units	Hardwood					Softwood					Sum		
	Lumber	Oriented Strandboard	Non Structural Panels	Misc Products	Paper	Lumber	Plywood	Oriented Strandboard	Non Structural Panels	Misc Products		Paper	
tCO ₂ e	10,486	-	-	2,025	38,991	10,031	-	-	-	-	-	1,368	101,222
% Product	17%	0%	1%	3%	59%	17%	0%	0%	0%	0%	3%	10%	
Long-term storage in in-use wood products (tCO ₂ e)	2,622	-	-	131	356	2,262	4,644	-	-	-	-	79	10,030
Long-term storage in wood products in landfills (tCO ₂ e)	4,341	-	-	119	919	6,540	2,989	-	-	-	-	244	15,053

Table 6. Calculations to be inserted into the Calculation Worksheet

Calculation Sheet Inputs (for Current Reporting Period)	Row Location in Calculation Worksheet
Actual Project Carbon in Harvested Wood Delivered to Mill (tCO ₂ e)	41,542 10 (Excel 21)
Actual Project Carbon in Trees Harvested for Wood Products (tCO ₂ e)	979,172 23 (Excel 23)
Actual Project Carbon Stored Long-term in Wood Products (tCO ₂ e) - End Landfill	10,799 13 (Excel 24)
Actual Project Carbon Stored Long-term in Wood Products (tCO ₂ e) - Ind Landfill	10,799 14 (Excel 25)
Baseline Carbon Stored Long-term in Wood Products (tCO ₂ e) - End Landfill	4,338 15 (Excel 26)
Baseline Carbon Stored Long-term in Wood Products (tCO ₂ e) - Ind Landfill	10,799 16 (Excel 27)

Table 7. Harvested Wood Carbon - Harvested Tree Carbon

This table uses the 100-year baseline data to calculate a ratio of carbon in trees harvested for wood products to carbon in harvested wood delivered to the mill.

Baseline Carbon in Trees Harvested for Wood Products (tCO₂e) (from Row 21) 23,761

Baseline Carbon in Harvested Wood Delivered to Mill (tCO₂e) (from Row 23) 10,723

Multiplier of Carbon in Wood Delivered to Mill to Carbon in Trees Harvested for Wood Products

Section 3. Conversion Assumptions

Table 8. Volume multipliers for converting timber and chip units to Cubic Feet

Unit	Factor
Bone Dry Tons	71.9
Bone Dry Units	62.3
Cords	75
Cubic Meters	35.3
Cunits-Chips (CCF)	100
Cunits-Roundwood	100
Cunits-Whole tree chip	125
Green tons	31.9
MBF Drywood	222
MBF-International 1/4"	160
MBF-Scrimber ("C" or "Small")	145
MBF-Scrimber ("Large" or "Long")	145
MCF-Softwood Cubic Feet	1000
Oven Dried Cord Tonnage	75.8

Source: American Forest & Paper Association's Sustainable Forestry Initiative Program Annual Progress Reporting Form

Table 9. Conversion Factors: to convert volume estimates to CO₂e

Cubic Feet / Hardwood Harvest Unit	75
Cubic Feet / Softwood Harvest Unit	75
SG of Softwoods by Region	0.371
SG of Hardwoods by Region	0.18
Tree Carbon/Wood Carbon	2.35
Cubic Feet to Cubic Meters	0.0283168466
Portion of Carbon in Biomass	0.65
Carbon to CO ₂ e	3.67

Source

Table 8	Table 11	Table 7	-	Reserve FPP
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Table 10. 100-year average storage factors

Wood Product Class	In-Use	Landed
Softwood Lumber	0.463	0.291 ^a
Hardwood Lumber	0.250	0.141 ^a
Softwood Plywood	0.464	0.287
Orientation	0.582	0.333
Non Structural Panels	0.300	0.344
Miscellaneous Products	0.176	0.454
Pages	0.658	0.178

Source: Resins Forest Project Proposal, Appendix C.1-C.4 C.4

Table 11. Average regional factors: specific gravity (SG) and mill efficiencies (ME)

Region	SG	Specific Gravity	Saw Log ME	Pulp ME	SG	Specific Gravity	Saw Log ME	Pulp ME
Midwest	0.518	0.614	0.650	0.371	0.591	0.689	0.513	
Northeast (NE)	0.473	0.585	0.655	0.360	0.630	0.514		
Northern Lake States (NLS)	0.518	0.585	0.685	0.434	0.630	0.614		
Northwestern States (NPS)	0.585	0.685	0.585	0.360	0.630	0.614		
Pacific Northwest, East (PWE)	0.424	0.568	0.568	0.396	0.637	0.637		
Pacific Northwest, West (PWW)	0.415	0.531	0.531	0.426	0.740	0.500		
Pacific Northwest (PSW)	0.510	0.568	0.568	0.399	0.675	0.675		
Rocky Mountain, North (RMN)	0.389	0.568	0.568	0.394	0.704	0.704		
Rocky Mountain, South (RMS)	0.383	0.568	0.568	0.369	0.704	0.704		
Rocky Mountain, Southeast (SE)	0.508	0.609	0.591	0.462	0.638	0.553		
South Central (SC)	0.529	0.587	0.581	0.463	0.629	0.570		

Source: USDA Forest Service, Forest Inventory and Analysis Program database of forest surveys (SG) and Technical Guidelines for Voluntary Reporting of Greenhouse Gas Program (ME). Average wood specific gravity is the density of wood based on the density of water based on dry mass associated with green log volume.