

DLT Listing Form Supplemental

Part V – Offset Project Area

Latitude of Offset Project Location: 33°58'50.43" N

Longitude of Offset Project Location: 82°14'1.60" W

Project Area Total Acreage: 14,589.51

Part V.A – Identify the assessment area, (or assessment areas, if the project crosses more than one) that contain Project Area lands and list the acreage of project lands within each assessment area.

The project area is located in the SE Middle Mixed Forest Piedmont Supersection. Assessment Areas (acreages shown in the table below) were determined based on stand type and dominant species information contained within a stand boundary shapefile encompassing the project area.

Assessment Area	Acres
SE Middle Mixed Forest Piedmont Loblolly-Shortleaf-Oak	13,148.67
SE Middle Mixed Forest Piedmont Riverine Hardwood	1,095.51
SE Middle Mixed Forest Piedmont Upland Hardwood	285.88
SE Middle Mixed Forest Piedmont Cypress & Swamp Hardwood	59.45
Total	14,589.51

Part V.B – Identify the governing jurisdiction(s) applicable to the Project Area.

The Project Area is located within the jurisdiction of Greenwood and McCormick Counties in South Carolina.

Part V.C – Describe how the Project Area was determined.

Davis Land & Timber LP and Eden Hall LP own 21,311.96 deeded acres in South Carolina. A Qualified Conservation Easement which avoids the conversion of forest land to agricultural land was recorded on 16,054.96 deeded acres of this ownership. Parcel shapefiles were obtained through each county tax assessor. Certain acres, including non-forested, roads, water bodies, and open fields were excluded from the easement area and mapped using ArcMap v.10.8.1, resulting in a 14,589.51-acre project area. This acreage was utilized for project carbon calculations. An appraisal was performed to define the project area in accordance with Section 2.3 of the Protocol.

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

The existing land cover is forest land including upland hardwoods, riverine and bottomland hardwoods, loblolly pine plantation, longleaf pine, mixed pine-hardwood, and quail habitat improvement areas. The land is primarily used as forest and recreational land.

Part V.E – Describe the forest vegetation types within the Project Area boundary.

The forest cover across the project area is composed of natural mixed riverine, bottomland, and upland hardwood, as well as planted southern pine, natural southern pine, and natural mixed southern pine-hardwood stands. See Part V.I below for further details related to species composition.

Part V.F – Describe the site classes within the Project Area boundary.

Site classes/site indices vary across the project area due to variability in microsite factors (e.g. soils, topography, slope aspect, etc.). Site Indices (SIs) were determined for each plot in the project area based on age (from increment cores) and total height data collected during the field inventory using the equations provided in Carmean et. al. 1989¹.

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

Prior to the execution of the Qualified Conservation Easement, the project area's foremost land pressure was conversion to agriculture. The project area is located in Climate Zone 8a according to the [USDA Plant Hardiness Zone Map](#).

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

The historical land uses of the Project Area have been forest and recreational land. The portions of the project area in Greenwood County are zoned as Rural Development District and Forest Agricultural District. The portions in McCormick County are zoned as Forest Agricultural District. The projected land use within the Project Area is wildlife habitat conservation and outdoor recreation. The surrounding areas have been converted for agricultural production by other landowners.

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

¹ Carmean, Willard H.; Hahn, Jerold T.; Jacobs, Rodney D. 1989. Site Index Curves for Forest Tree Species in the Eastern United States. Gen. Tech. Rep. NC-128. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 144 pp.

The forest cover across the project area is composed of upland hardwoods, riverine and bottomland hardwoods, loblolly pine plantation, longleaf pine, mixed pine-hardwood, and quail habitat improvement areas. The following table shows the species composition of live trees in the project area based on the project's carbon stock inventory:

70% SDI

Common Name	Species	Basal Area/Acre	% of Live Basal Area/Acre
loblolly pine	<i>Pinus taeda</i>	87.78	79.25%
sweetgum	<i>Liquidambar styraciflua</i>	6.19	5.59%
hickory spp.	<i>Carya spp.</i>	2.22	2.00%
white oak	<i>Quercus alba</i>	2.04	1.84%
eastern redcedar	<i>Juniperus virginiana</i>	1.38	1.25%
water oak	<i>Quercus nigra</i>	1.24	1.12%
southern red oak	<i>Quercus falcata</i>	1.19	1.07%
winged elm	<i>Ulmus alata</i>	1.19	1.07%
red maple	<i>Acer rubrum</i>	0.84	0.76%
green ash	<i>Fraxinus pennsylvanica</i>	0.71	0.65%
slippery elm	<i>Ulmus rubra</i>	0.67	0.60%
American elm	<i>Ulmus americana</i>	0.54	0.49%
black cherry	<i>Prunus serotina</i>	0.53	0.48%
scarlet oak	<i>Quercus coccinea</i>	0.52	0.47%
northern red oak	<i>Quercus rubra</i>	0.38	0.34%
flowering dogwood	<i>Cornus florida</i>	0.37	0.34%
cherrybark oak	<i>Quercus pagoda</i>	0.32	0.29%
black oak	<i>Quercus velutina</i>	0.30	0.27%
willow oak	<i>Quercus phellos</i>	0.30	0.27%
yellow-poplar	<i>Liriodendron tulipifera</i>	0.25	0.23%
post oak	<i>Quercus stellata</i>	0.24	0.21%
shortleaf pine	<i>Pinus echinata</i>	0.24	0.21%
blackgum	<i>Nyssa sylvatica</i>	0.21	0.19%
laurel oak	<i>Quercus laurifolia</i>	0.20	0.18%
sugarberry	<i>Celtis laevigata</i>	0.18	0.17%
eastern cottonwood	<i>Populus deltoides</i>	0.17	0.15%
American hornbeam, musclewood	<i>Carpinus caroliniana</i>	0.12	0.11%
common persimmon	<i>Diospyros virginiana</i>	0.08	0.08%
Eastern red bud	<i>Cercis canadensis</i>	0.07	0.06%
American sycamore	<i>Platanus occidentalis</i>	0.06	0.06%
Eastern hop hornbeam	<i>Ostrya virginiana</i>	0.05	0.05%
honey locust	<i>Gleditsia triacanthos</i>	0.04	0.04%
red mulberry	<i>Morus rubra</i>	0.04	0.04%
white ash	<i>Fraxinus americana</i>	0.04	0.04%
boxelder	<i>Acer negundo</i>	0.02	0.02%
longleaf pine	<i>Pinus palustris</i>	0.02	0.01%
American holly	<i>Ilex opaca</i>	0.02	0.01%
Total:		110.77	100.00%

60% SDI

Common Name	Species	Basal Area/Acre	% of Live Basal Area/Acre
loblolly pine	<i>Pinus taeda</i>	39.37	32.59%
water oak	<i>Quercus nigra</i>	10.27	8.50%
sweetgum	<i>Liquidambar styraciflua</i>	10.19	8.44%
white oak	<i>Quercus alba</i>	7.44	6.16%
yellow-poplar	<i>Liriodendron tulipifera</i>	6.45	5.34%
scarlet oak	<i>Quercus coccinea</i>	6.42	5.32%
red maple	<i>Acer rubrum</i>	4.66	3.86%
American elm	<i>Ulmus americana</i>	4.55	3.76%
cherrybark oak	<i>Quercus pagoda</i>	4.50	3.72%
laurel oak	<i>Quercus laurifolia</i>	4.09	3.38%
hickory spp.	<i>Carya spp.</i>	2.84	2.35%
post oak	<i>Quercus stellata</i>	2.75	2.28%
black willow	<i>Salix nigra</i>	2.14	1.77%
winged elm	<i>Ulmus alata</i>	1.90	1.58%
southern red oak	<i>Quercus falcata</i>	1.89	1.56%
eastern redcedar	<i>Juniperus virginiana</i>	1.85	1.53%
green ash	<i>Fraxinus pennsylvanica</i>	1.63	1.35%
slippery elm	<i>Ulmus rubra</i>	1.38	1.14%
willow oak	<i>Quercus phellos</i>	1.25	1.03%
black oak	<i>Quercus velutina</i>	1.16	0.96%
sugarberry	<i>Celtis laevigata</i>	0.93	0.77%
sugar maple	<i>Acer saccharum</i>	0.88	0.73%
American hornbeam, musclewood	<i>Carpinus caroliniana</i>	0.75	0.62%
flowering dogwood	<i>Cornus florida</i>	0.47	0.39%
blackgum	<i>Nyssa sylvatica</i>	0.46	0.38%
white ash	<i>Fraxinus americana</i>	0.40	0.33%
Eastern red bud	<i>Cercis canadensis</i>	0.09	0.08%
black cherry	<i>Prunus serotina</i>	0.07	0.06%
Eastern hop hornbeam	<i>Ostrya virginiana</i>	0.05	0.04%
Total:		120.83	100.00%

Native species dominate the forest and account for 100% of the sum of carbon in the standing live carbon pool. In accordance with Table 3.1 of the Protocol and Section VI.C.1.a of the OPDR, native species will continue to account for at least 95% of the project area's standing live carbon pool.

Currently, approximately 36% of the Project Area is in ages less than 20 years. Because the Project Area is >10,000 acres, the age class requirement of the Protocol was assessed at the watershed level. The

watershed level age class assessment indicates that approximately 2/3rds of the watersheds that comprise the Project Area have more than 40% of their forested acres in ages less than 20 years.

The Project Area has been managed as forest and recreational land. Per the Protocol, third-party certification has been obtained by the American Tree Farm System to ensure sustainable management practices.

Part VI.A.3 – Provide the terms within the easement that affect forest management.

1. **Purposes.** The exclusive conservation purposes (collectively, the “Purposes”) of this Easement are to (i) prevent any use of the Property that will significantly impair or interfere with the Conservation Values of the Property described above, (ii) maintain continuous forest coverage consistent with the ARB Protocol and ARB regulations and (iii) prevent the conversion of all or a portion of the Property to tillable, or pastoral, acres, while allowing for traditional uses on the Property in compliance with the ARB Protocol and regulations promulgated thereunder, as applicable.

2.5(c). Notwithstanding the hereinabove reserved rights of Grantor to engage in existing agricultural uses or activities, Grantor is prohibited from converting any existing forestland to tillable acres or pastureland subsequent to the date hereof.

Part VI.G – Describe the management activities that will lead to increased carbon stocks in the Project Area compared to the baseline:

Carbon stocks are increased in the project area compared to the baseline by avoiding the conversion of the property and maintaining it in a forested state. Additionally, a third-party certified sustainable management plan has been implemented to ensure forest health and increased carbon stocks over the life of the project.

Part VII.A – Provide a general description of the inventory methodology to be used to quantify carbon stocks for each required carbon pool in the forest project’s offset boundary. The inventory methodology must describe the information required in Appendix A (b) of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015.

AC-1 Standing Live:

The inventory employs stratified random sampling on 24.0 feet (ft.) fixed radius circular plots. Within each plot all stems with a Diameter at Breast Height (DBH) greater than or equal to 5 inches were measured and species type was recorded. A sub-plot with a 10.0 ft. fixed radius was used for trees having a DBH ≥ 1.0 in. and < 5.0 in. (saplings), only measuring and recording species and DBH. For borderline trees, the distance from the plot center to the center of the base of the tree was measured to the nearest 0.1 ft.. Trees were marked with paint and were temporarily numbered to ensure measurements were accurately assigned to the corresponding tree. Distance Measuring Equipment (DME) was used to identify the plot boundary. Since the project area is flat, no slope correction was

applied. For each live tree greater than or equal to 5 in. DBH and greater than or equal to 15 feet in height, the following was recorded:

Azimuth from plot center to tree, species, DBH in inches, visual appraisal of percent defect of tree aboveground sections (top, middle, and bottom thirds), total height in feet.

The diameter of all trees was measured at breast height (4.5 feet above ground level). Diameter of trees with buttresses were measured 1.5 feet above the point of termination of the buttress when the tree was buttressed at breast height. To aid in the determination of breast height, measuring sticks (4.5 ft. in height) were carried by each team. A mark was made 1.5 feet from the end of the stick for reference when measuring DBH above buttress termination, when applicable. To avoid either missing trees or double recording, the point of initiation of measurement was marked. Measurements proceeded in either a clockwise or counter-clockwise fashion.

Percent defect was assessed visually, identifying any areas of breakage or cavities, by assigning the percentage missing (from a complete, un-damaged state, specified in 10% increments) in each of the three aboveground sections: top 1/3, middle 1/3 and bottom 1/3.

Height was measured using a hypsometer. If readings could not be acquired with the hypsometer, a clinometer was used. The hypsometer was calibrated at the beginning of each day of field work, and re-calibrated during the day if significant changes in temperature and humidity occurred. Total height was measured as the distance from ground level to the highest visible point on the crown (or apical meristem). Total height measurements require sighting the level point on the trunk, the top, and the base of the tree at ground level. When tops were missing, heights were reconstructed by referencing heights of comparable trees nearby.

AC-3 Standing Dead:

In the same plot used to first sample standing live trees, each standing dead tree with a DBH greater than or equal to 5 in. and a total height greater than or equal to 15 ft., the following were recorded:

Azimuth from plot center to tree, species (or hardwood/softwood if species/genus could not be identified), DBH in inches, total height in feet, visual appraisal of percent defect in each of the tree aboveground sections (top, middle and bottom thirds), and a qualitative assignment of decay class.

The same guidance for live trees applies to measuring standing dead trees. For assignment of decay class, the following five categories were used:

Decay class stage (code)	Limbs and branches	Top	% Bark Remaining	Sapwood presence and condition *	Heartwood condition *
1	All present	Pointed	100	Intact; sound, incipient decay, hard, original color	Sound, hard, original color
2	Few limbs, no fine branches	May be broken	Variable	Sloughing; advanced decay, fibrous, firm to soft, light brown	Sound at base, incipient decay in outer edge of upper bole, hard, light to reddish brown
3	Limb stubs only	Broken	Variable	Sloughing; fibrous, soft, light to reddish brown	Incipient decay at base, advanced decay throughout upper bole, fibrous, hard to firm, reddish brown
4	Few or no stubs	Broken	Variable	Sloughing; cubical, soft, reddish to dark brown	Advanced decay at base, sloughing from upper bole, fibrous to cubical, soft, dark reddish brown
5	None	Broken	Less than 20	Gone	Sloughing, cubical, soft, dark brown, OR fibrous, very soft, dark reddish brown, encased in hardened shell

Standing dead wood is defined as all dead trees emanating from the original stump which are standing at an angle of greater than 45 degrees relative to the ground.

AC-6 Soil (if applicable):

According to the Protocol, the soil carbon pool is only required when the following conditions in Table 4.3 are met: Site preparation activities involve deep ripping, furrowing, or plowing where soil disturbance exceeds (or is expected to exceed from the baseline characterization and modeling) 25 percent of the project area over the Project Life, or mechanical site preparation activities are not conducted on contours. Since above mentioned site preparation activities are not actively being implemented the pool is excluded.

AC-7 Carbon in in-use forest products:

Carbon in in-use forest products were calculated in accordance with Appendix C(a)(3) of the Protocol and are a function of inventoried standing live carbon stocks for baseline estimates. See AC-1 above for the associated inventory methods.

AC-8 Forest product carbon in landfills:

Carbon in landfills forest products were calculated in accordance with Appendix C(a)(4) of the Protocol and are a function of inventoried standing live carbon stocks for baseline estimates. See AC-1 above for the associated inventory methods.

AC-9 Biological emissions from site preparation:

Site preparation biological emissions are only quantified based on measured carbon stock changes in included reservoirs (SSR #AC-6, where applicable), per Table 4.3 of the Protocol. Since above-mentioned

site preparation activities are not actively being implemented, the inclusion of this pool has no net effect.

AC-13 Biological emissions from clearing of forestland outside the Project Area:

Biological emissions from clearing of forestland outside project area are not an inventoried carbon pool. Rather, these are estimated using a default conversion displacement risk value (3.6%) and Secondary Effects emissions quantification (Protocol Equation 5.12).

AC-17 Biological emissions from decomposition of forest products:

Biological emissions from decomposition of forest products are quantified as a component of calculating carbon stored for 100 years in wood products (SSR #AC-7) and landfills (SSR #AC-8).

Part VII.B – Describe the calculation methodologies to be used to determine metric tons per acre for each of the carbon pools included in the Offset Project Data Report.

AC-1 Standing Live:

Standing Live will be calculated based on standardized FIA cubic foot volume and biomass equations following the Component Ratio Method. Carbon will be estimated as 50% of the dry biomass. Carbon will be converted to CO₂e using a conversion factor of 3.667.

AC-3 Standing Dead:

For all trees, gross cubic foot volume of stem wood was adjusted to deduct any portion observed missing in the central stem (referencing defect assessments for the top, middle, and bottom thirds of the aboveground portion of inventory trees), to produce sound cubic foot volume of stem wood. Sound cubic foot volume of stem wood and DBH were then used to produce estimates of biomass using the Component Ratio Method, as described in Appendix J of the FIA Database User's Manual "Biomass Estimation Using the Component Ratio Method", and referencing coefficients consolidated in the ARB database "Biomass Coefficients for Use with the Component Ratio Method." Adjustments for missing biomass and density of standing dead wood reference procedures outlined in Climate Action Reserve (2012) and density reduction factors from Harmon et al (2011). Biomass was converted to carbon applying a carbon fraction of 0.5, and carbon converted to carbon dioxide equivalent (CO₂e) applying a conversion factor of 3.667. All estimates of carbon dioxide equivalent per unit area are converted to metric tons (1000 kg) per acre.

AC-6 Soil (if applicable):

Not Applicable (see Section A)

AC-7 Carbon in in-use forest products:

Carbon in in-use forest products will be calculated based on measured harvesting volumes and regional mill efficiencies.

AC-8 Forest product carbon in landfills:

Forest product carbon in landfills will be calculated in accordance with the methodology provided in Appendix C, based on measured harvesting volumes and regional mill efficiencies.

AC-9 Biological emissions from site preparation:

Not Applicable (see Section A)

AC-13 Biological emissions from clearing of forestland outside the Project Area:

Biological emissions from clearing of forestland outside project area are estimated using a default conversion displacement risk value (3.6%) and Secondary Effects emissions quantification.

AC-17 Biological emissions from decomposition of forest products:

Biological emissions from decomposition of forest products will be quantified as a component of carbon stored in in-use forest products (AC-7) and landfills (AC-8).

Part VII.C – Provide a summary of the inventory of carbon stocks for each carbon pool.

AC-1 Standing Live: 99.5 MtCO₂e/acre

AC-3 Standing Dead: 2.0 MtCO₂e/acre

AC-6 Soil (if applicable): N/A

AC-7 Carbon in in-use forest products: 0 MtCO₂e/acre

AC-8 Forest product carbon in landfills: 0 MtCO₂e/acre

AC-9 Biological emissions from site preparation: N/A

AC-13 Biological emissions from clearing of forestland outside the Project Area: Addressed in Secondary Effects

AC-17 Biological emissions from decomposition of forest products: Addressed in AC-7 and AC-8

Part VII.D – Provide the calculation of the offset project's reversal risk rating and expected contribution to the Forest Buffer Account.

In accordance with Appendix D of the Protocol:

- Financial Risk 1%
- Risk of Illegal Harvesting 0%
- Risk of Conversion to Non-Forest Land Use 0%
- Risk of Over-Harvesting 0%
- Social Risk 0%
- Wildfire Risk 2%
- Disease or Insect Outbreak Risk 3%
- Other Catastrophic Event Risk 3%

$$100\% - [(1-1\%) \times (1-0\%) \times (1-0\%) \times (1-0\%) \times (1-0\%) \times (1-2\%) \times (1-3\%) \times (1-3\%)] = 8.71\%$$

Part VIII.A – Describe the highest value alternative land use identified in the appraisal. Supporting documentation is required. Submit a full copy of the appraisal as attachment labeled “Attachment H.” See Part X of this listing document for more information.

The highest value alternative land use is “Farmlands/Tillable Acreage/Pastureland” in accordance with the appraisal.

Part VIII.B – Provide an estimate of the rate of conversion and removal of onsite carbon stocks.

As specified in Section 5.3.1 of the Protocol, the rate of conversion was estimated based on planning documentation that specifies the timeframe of the conversion at 3 years.

Part VIII.C – Compare the fair market value of the anticipated alternative land use for the Project Area with the value of the current forested land use.

The fair market value of the anticipated alternative land use for the Project Area was appraised to be \$41,240,000. The fair market value of the current forested land use was appraised to be \$19,450,000. The appraised value of the alternative land use is 112% higher than the appraised value of the current forested land use.

Part VIII.D – Provide the calculation for the Discount for Uncertainty of Conversion Probability.

Protocol Equation 5.11: If $((VA/VP - 1) \geq 0.8)$, then $ACD = 0$

$((41,240,000/19,450,000)-1) = 1.12$, which is > 0.8 and therefore no Avoided Conversion Discount is applied.

Part VIII.E – Describe the project’s modeling plan, following the requirements and methods in Appendix B(h) of the Compliance Offset Protocol U.S. Forest Project, June 25, 2015. A matrix documenting any and all legal constraints affecting forest management activities in the project area, labeled “Attachment I”, is required. See Part X of this listing document for more information.

The modeling plan will use Forest Vegetation Simulator (FVS) Southern Variant growth and yield model and will be calibrated using the regional options available. A mixture of silvicultural methods including even-aged systems will be employed. Trees will be retained based on similar species that were present at the time of harvest. Harvest frequency will be determined as necessary to promote the health of the forest and maintain natural forest management practices. Regeneration assumptions will be based on species specific variants. No legal constraints affect management practices in the Project Area. Site indices are described by species in the FVS Southern Variant overview. The baseline will be modeled and

presented in accordance with the conversion planning documentation with complete removal of carbon stocks over a three-year time frame. A detailed modeling plan will be provided along with the Offset Project Data Report.

Part VIII.F – Estimate the project’s baseline onsite carbon stocks and provide a qualitative description. Explain any annual changes in baseline carbon stocks over time. A graph portraying the baseline onsite carbon stocks, labeled “Attachment J”, and a diagram of the baseline incorporating all required stocks, labeled “Attachment K”, are required. See Part X of this listing document for more information.

Attachment J portrays baseline onsite carbon stocks (consolidated) with time depicted on the x-axis and MtCO₂e depicted on the y-axis. Attachment K portrays a diagram of the baseline incorporating all required carbon stocks (separated by pool).

The projected changes in onsite carbon stocks over one hundred years in the baseline scenario are based on the amortization rate specified in conversion planning documentation (complete removal over three years). The initial RP is equal to 182 days, or approximately one-sixth of the timeframe of conversion.

Total baseline stocks (including all pools) as of the end of the first RP equals 1,226,067.2 MtCO₂e. This was computed as the removal of approximately 1/6 (244,407.7 MtCO₂e) of the Project Area’s initial onsite carbon stocks at the time of offset project commencement (1,470,474.9 MtCO₂e). The remaining carbon stocks will be harvested during the second through fourth RPs, in accordance with the three-year conversion timeframe and in compliance with Section 5.3.1 of the Protocol (see Attachments J & K for further details).

Part VIII.H – Provide an estimate of carbon that will be stored long-term in harvested wood products in the baseline.

AC-7 Carbon in In-Use Forest Products: 0 MtCO₂e (current RP – BCWPin-use, y)

154,339.3 MtCO₂e (entire baseline period – BCWPin-use, n)

AC-8 Forest Product Carbon in Landfills: 0 MtCO₂e (current RP – BCWPlandfill, y)

122,060.1 MtCO₂e (entire baseline period – BCWPlandfill, n)