CHESTNUT CARBON CONSERVATION PROJECT NON-PERMANENCE RISK REPORT

Document Prepared by Forest Carbon Works, PBC

Project Title	Chestnut Carbon Conservation Project
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1 INTERNAL RISK

Project Management		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	No planting is planned as part of the project.	0
b)	Encroachment on the project area by outside actors is not expected.	0
)	Management team includes individuals with necessary skills to undertake all project activities. Product team leader has over 15 years of experience developing carbon projects using the VCS Standard and California Air Resources Board registries. Product team director has over 5 years of experience developing carbon projects using the VCS Standard and California ARB registries.	0
d)	Management team maintains a presents in project host country.	0
e)	Mitigation: Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting under the VCS Program, California Air Resources Board, and others. Product team leader has over 15 years of experience developing carbon projects using the VCS Standard and California Air Resources Board registries. Product team director has over 5 years of experience developing carbon projects using the VCS Standard and California ARB registries.	-2
f)	Mitigation: Adaptive management plan in place. See Adaptive Management plan for details on how project proponent has identified and plans to address risk in the project.	-2
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		-4

Financial Viability		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Project cash flow breakeven point is greater than 10 years from the current risk assessment. Annex M provides a model for breakeven point at 44 years.	3
b)	Project cash flow breakeven point is greater than 7 and up to 10 years from the current risk assessment	0

c)	Project cash flow breakeven point greater than 4 and up to 7 years from the current risk assessment	0
d)	Project cash flow breakeven point is 4 years or less from the current risk assessment	0
e)	Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven	0

f)	Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven	0
g)	Project has secured 40% to less than 80% of funding needed to cover the total cash out required before the project reaches breakeven	0
h)	Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven	0
i)	Mitigation: Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven. Documentation of callable financial resources is available in Annex M.	-2
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)] Total may not be less than zero.		1

Opportunity Cost		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated Baseline activity is modeled over 100% more productive than project activity. The baseline scenario was chosen as the alternative scenario with the highest financial profit, which is intensive harvest. Profits from modeled baseline are 228% higher than the project scenario. See NPV Investment Analysis v1.0, Annex AD.	8
b)	NPV from the most profitable alternative land use activity is expected to be between 50% and up to100% more than from project activities	0
c)	NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than from project activities	0
d)	NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated	0
e)	NPV from project activities is expected to be between 20% and up to 50% more profitable than the most profitable alternative land use activity	0

f)	NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity	0
g)	Mitigation: Project proponent is a non-profit organization	0
h)	Mitigation: Project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over the length of the project crediting period. Per eligibility criterion 2e of the project, all landowners participating in the project shall participate in the agreement that the landowner shall continue forest management practices that protect credited carbon stocks for at least 60 years. This is detailed in Section 2 of the signed agreement in Annex D.	-2
i)	Mitigation: Project is protected by legally binding commitment continue management practices that protect the credited carbon stocks over at least 100 years.	0
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)] Total may be less than 0.		6

Project Longevity		
a)	Without legal agreement or requirement to continue the management practice	0
b)	With legal agreement or requirement to continue the management practice Per eligibility criterion 2e of the project, all landowners participating in the project shall participate in the agreement that the landowner shall continue forest management practices that protect credited carbon stocks for at least 60 years. This is detailed in Section 2 of the signed agreement in Annex D.	0
Total Project Longevity (PL) May not be less than zero		0

Internal Risk	
Total Internal Risk (PM + FV + OC + PL) Total may not be less than zero.	3

2 EXTERNAL RISKS

Land Tenure and Resource Access/Impacts		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Ownership and resource access/use rights are held by same entity, Chestnut Carbon.	0
b)	Ownership and resource access/use rights are held by different entity(s) (e.g., land is government owned and the project proponent holds a lease or concession)	0
c)	In more than 5% of the project area, no known disputes exist over land tenure or ownership. Evidenced through project Eligibility Criterion 2j and Section 6.1 of Annex D.	0
d)	No known disputes exist over access/use rights (or overlapping rights)	0
e)	WRC projects unable to demonstrate that potential upstream and sea impacts that could undermine issued credits in the next 10 years are irrelevant or expected to be insignificant, or that there is a plan in place for effectively mitigating such impacts.	0
f)	Mitigation: Project area is protected by a legally binding commitment to continue management practices that protect carbon stocks over the length of the project crediting period. Per eligibility criterion 2e of the project, all landowners participating in the project shall participate in the agreement that the landowner shall continue forest management practices that protect credited carbon stocks for at least 60 years, this is longer than the 25 year crediting period. This is detailed in Section 2 of the signed agreement in Annex D.	-2
g)	Mitigation: Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims. No known disputes over land tenure, ownership, or access/use rights exist on any PAIs at this time.	0
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e + f + g)] Total may not be less than zero.		0

Community Engagement		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating

a)	Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted No known stakeholders/households are reliant on the project area. No households exist on any PAIs.	0
b)	Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted No known stakeholders are reliant on project area.	0
c)	Mitigation: The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area No known stakeholders are reliant on project area.	0
Total Community Engagement (CE) [where applicable, (a + b + c)] Total may be less than zero.		0

Political Risk		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Governance score of less than -0.79	0
b)	Governance score of -0.79 to less than -0.32	0
c)	Governance score of -0.32 to less than 0.19	0
d)	Governance score of 0.19 to less than 0.82	0
e)	Governance score of 0.82 or higher Average World Governance Indicator for the United States is 1.24 (World Bank)	0
f)	Mitigation: Country is implementing REDD+ Readiness or other activities, as set out in this Section 2.3.3. United States FSC standards body exists.	-2
Total Political (PC) [as applicable ((a, b, c, d or e) + f)] Total may not be less than zero.		0

External Risk

Total External Risk (LT + CE + PC) Total may not be less than zero.	0

3 NATURAL RISKS

Southeast United States

Natural Risk (Fire)	
Significance	Minor: The USDA identifies most southern forest types having fire regimes that are frequent and of low-severity, while sand pine and cedar forests can be stand-replacing, with return intervals of 25-60 years[1]. Krofcheck et al. 2019 describes longleaf pine ecosystems as low intensity surface fire dominant, with infrequent wildfires occurring in well managed landscapes.[2]
Likelihood	Every 10 to less than 25 years. A more frequent likelihood was conservatively selected to account for climate disruption and more frequent drought not captured in literature as of yet.
Score (LS)	2
Mitigation	1

Natural Risk (Pest and Disease outbreaks)	
Significance	Major: Fei at al. 2019 estimate that over 40% of the United States forests' biomass is at risk of being lost due to pests and disease. Since the project boundary is the entire US, the project proponent has conservatively selected Major with a high likelihood of every 10 to 25 years. [2]
Likelihood	Every 10 to less than 25 years
Score (LS)	5
Mitigation	1

[1] Stanturf, John A.; Wade, Dale D.; Waldrop, Thomas A.; Kennard, Deborah K.; Achtemeier, Gary L. 2002. Fire in southern forest landscapes. In: Wear, D.M and Greis, J. editors. 2002. Southern Forest Resource Assessment. P. 607-630 (Chapter 25) Gen. Tech. Rep. SRS-53. Asheville, NC: U.S. Dept. Agric., Forest Service, Southern Research Station

[2] Krofcheck, D. J., Loudermilk, E. L., Hiers, J. K., Scheller, R. M., and Hurteau, M. D.. 2019. The effects of management on long-term carbon stability in a southeastern U.S. forest matrix under extreme fire weather. Ecosphere 10(3):e02631. 10.1002/ecs2.2631

[3] Fei, Morin, Oswat, Liebhold. 2019. Biomass losses resulting from insect and disease invasions in US forests. PNAS 116 (35)

17371-17376. Available: https://www.pnas.org/doi/full/10.1073/pnas.1820601116

Natural Risk (Extreme Weather)	
Significance	Major: Elliot and Swank estimate that approximately 30% of southern hardwood forests are subject to mortality from drought.[3] Holm et al. estimates that up to 39% of aboveground biomass is subject to loss from hurricane damage.[4]
Likelihood	Every 10 to less than 25 years. Conservatively chosen due to increasing large storms and droughts documented in the last 10 years.
Score (LS)	5
Mitigation	1

Natural Risk (Geologic Risk)	
Significance	Insignificant. Earthquakes are not common in the region.
Likelihood	Once every 100 years or more
Score (LS)	0
Mitigation	1

[3] Elliot & Swank. 1994. Impacts of drought on tree mortality and growth in a mixed hardwood forest. Journal of Vegetation Science 5 (2). Available: https://doi.org/10.2307/3236155

[4] Holm et al. 2017. Shifts in biomass and productivity for a subtropical dry forest in response to simulated elevated hurricane disturbances. Environmental Research Letters 12 (025007).

Average risk scores over entire project area:

Score for each natural risk applicable to the project (Determined by (LS × M)	
Fire (F)	2
Pest and Disease Outbreaks (PD)	5
Extreme Weather (W)	5
Geological Risk (G)	0
Other natural risk (ON)	0
Total Natural Risk (as applicable, F + PD + W + G + ON)	12

4 OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION

4.1 Overall Risk Rating

Risk Category	Rating
Internal Risk	3
External Risk	0
Natural Risk	12
Overall Risk Rating (a + b + c)	15

4.2 Calculation of Total VCUs

Year	Net GHG emission reductions or removals (tCO_2e)	Buffer Risk Rating (%)	VCUs eligible for Issuance
5 July 2022 – 31 December 2022	1,722	15	1,464
1 January 2023 - 31 January 2023	470	15	400
Total	2,192	15	1,864