Submitted text for Washington State's Public Comment Form: **Chapter 173-446 WAC: Cap-and-Invest US Forest Offsets Protocol Informal Comment Period #1**

We appreciate Ecology's engagement with the technical working group and public comments from experts as part of this process and see some improvements in the draft protocol as a result of this process. **We have a number of crucial suggestions for strengthening the scientific rigor of the protocol, which is urgently needed given that offsets must deliver on many core aspects of quality so that weak offsets do not compromise the efficacy of the Climate Commitment Act target of 95% greenhouse gas emission reductions by 2050.** These comments are based on a recent expert synthesis, involving 20 world-leading experts on forest carbon offset protocols, that we led about the crucial components for forest carbon offsets, which can be found below and are also uploaded as attachments. Please see our specific comments below and we look forward to further engaging with Ecology to help provide expertise and data to improve the draft protocol.

Anderegg, W. R., Blanchard, L., Anderson, C., Badgley, et al. (2025). Towards more effective nature-based climate solutions in global forests. *Nature*, *643*(8074), 1214-1222.

#1 RE: <u>Draft rule language (chapter 1730446 WAC)</u>

Regarding crediting periods in WAC 173-446-505, we would encourage the Department of Ecology to promote 5 year crediting periods and baseline reassessment intervals for most project types, as shorter crediting periods limit the time that baselines can be misaligned with actual conditions. The trend across the carbon market is toward more frequent (e.g. 5 year) baseline reassessment intervals. Given the amount of uncertainty within a 10 year time period, we discourage this for all project types, and especially nature-based carbon crediting projects, given the large potential for changing baselines, given uncertainty of natural growth (Brancalion and Holl 2020; Holl and Brancalion 2020) and socio-economic changes that could affect projects.

References:

- Holl, K.D. and Brancalion, P.H.S. Tree planting is not a simple solution. *Science* (2020).
- Brancalion, P. H., & Holl, K. D. (2020). Guidance for successful tree planting initiatives. *Journal of Applied Ecology*, *57*(12), 2349-2361.

Concerning WAC 173-446-520 section 14:

We think that the language "avoidable" and "unavoidable" is a better categorization to differentiate reversals, and encourage the Department of Ecology to apply this language, noting that this is the language likely being adopted by the UNFCCC's draft standard for addressing non-permanence/reversals. Such language is important, as there are examples, such as personal or business insolvency leading to the defaulting of an activity participant on their obligations, which illustrate that while a reversal may not have been intentional, it nevertheless is a result of actions by the activity participant for which they are responsible.

Concerning WAC 173-446-530:

We encourage 5 year verification and crediting periods, given the uncertainty for longer periods.

#2 Re: Proposed Revisions to US Forest Protocol:
We strongly encourage dynamic baselining to take place every 5 years instead of the proposed 10 year interval. Shorter baseline reassessment intervals limit the time that baselines can be misaligned with actual conditions, including changing policies and market dynamics. This would make crediting more scientifically rigorous.

References:

- Haya, B. K. et al. Comprehensive review of carbon quantification by improved forest management offset protocols. Front. For. Glob. Change 6, 958879 (2023).
- Coffield, S. R. et al. Using remote sensing to quantify the additional climate benefits of California forest carbon offset projects. Glob. Change Biol. 28, 6789–6806 (2022).
- Stapp, J. et al. Little evidence of management change in California's forest offset program. Commun. Earth Environ. 4, 331 (2023).

Revision 3. Revise leakage rate assumption for IFM projects
We agree that the Department of Ecology should adopt a 40% leakage rate, reflecting the findings of this metaanalysis. This is a positive development and makes the protocol more robust.

Revision 5. Revise property appraisal requirements for avoided conversion projects, including third party verification of appraisal
We agree and think this is a step in the right direction. Appraisers have strong potential conflicts of interest as they are paid by the project developer, which means there is an inherent incentive to inflate carbon estimates to be hired again. This can be the result of the well-established, largely unconscious cognitive phenomenon of self-serving bias, which can result in overcrediting through a more favorable baseline, to make a project appear more additional. **Ideally, such appraisers should be hired by the Department of Ecology instead, so that their financial interest is separate from the project developers.** This is consistent with recommendations in the literature:

Anderegg, W. R., Blanchard, L., Anderson, C., Badgley, et al. (2025). Towards more effective nature-based climate solutions in global forests. *Nature*, *643*(8074), 1214-1222.

Giles, C., & Coglianese, C. (2025). Auditors can't save carbon offsets. *Science*, *389*(6756), 107-107.

Coglianese, C., & Giles, C. (2025). Third-Party Auditing Cannot Guarantee Carbon Offset Credibility. *U of Penn Law School, Public Law Research Paper*, (25-28).

Revision 6. Set buffer pool contributions in consideration of regional risks
The consideration of regional variation of risk is a step in the right direction, but we have serious concerns with the proposed maximum caps and risk reductions. Regarding buffer pool contributions, Haya et al. (2023) found that about 26% was probably a conservative floor for stand-clearing disturbance and timber harvest disturbances in REDD+ projects, while Wu et al. (2023) observed that roughly 36% of area in California's compliance offset projects was

projected to lose carbon over the twenty-first century in a mid-range emissions scenario. Badgley et al. (2022) found that California's compliance forest offset protocol's buffer pool is severely undercapitalized from fire. We have work in review that indicates that buffer pools in California's program may be too small by a factor of 3-9. Therefore, total maximum buffer pool contributions may well need to be over 30% to robustly account for risk.

Critically, the predetermined maximum buffer pool contributions for fire (12%) and biotic risks (8%) are not scientifically defensible or robust. The buffer pool contribution for all risks, especially fire risks, should represent scientifically-assessed risk, and not be limited to a predetermined cap. Furthermore, we urge the Department of Ecology to reconsider the 80% buffer pool contribution reduction offered for implementing risk reduction treatments, which very likely overcompensates for the actual risk reduction accomplished by treatments and is not based on robust scientific evidence. **Risk reduction to buffer pool contribution should be updated to be based on rigorous scientific evidence for each specific risk factor.**

References:

Hurteau, M. D., Hungate, B. A. & Koch, G. W. Accounting for risk in valuing forest carbon offsets. Carbon Balance Manag. 4, 1 (2009).

Anderegg, W. R. et al. Climate-driven risks to the climate mitigation potential of forests. Science 368, eaaz7005 (2020).

Badgley, G. et al. California's forest carbon offsets buffer pool is severely undercapitalized. Front. For. Glob. Change 5, 30426 (2022).

Anderegg, W. R. L., Trugman, A. T., Vargas G., G., Wu, C. & Yang, L. Current forest carbon offset buffer pool contributions do not adequately insure against disturbance-driven carbon losses. Glob. Change Biol. 31, e70251 (2025).

Wu, C. et al. Uncertainty in US forest carbon storage potential due to climate risks. Nat. Geosci. 16, 422–429 (2023).

Wu, C. et al. Carbon reversal risks from climate-sensitive disturbances in US forests. In AGU Fall Meeting Abstracts Vol. 2023, GC54D-06 (2023).

Revision 12. Alternative approaches for quantifying certain types of reversals

We believe that the language "avoidable" and "unavoidable" is a better categorization to differentiate reversals, and encourage the Department of Ecology to apply this language, noting that this is the language likely being adopted by the UNFCCC's draft standard for addressing non-permanence/reversals. Such language is important, as there are examples, such as personal or business insolvency leading to the defaulting of an activity participant on their obligations, which illustrate that while a reversal may not have been intentional, it nevertheless is a result of actions by the activity participant for which they are responsible.

Revision 15. Require that projects be developed in line with a Protocol adopted by Ecology in order to receive a DEBs designation

Topic 5. Allow insurance mechanisms in lieu of buffer pool contribution

Buffer pool accounts are far more robust than the insurance products described in the public consultation draft. Insurance policies would need to be required to be held for the entire 100+ year lifetime of a project. Yet, critically, insurance products only insure for a short period of time (e.g. 5-10 years).

In contrast, an adequately capitalized buffer pool could theoretically insure nature-based carbon credits for 50-100 years, which is likely the period of time carbon will need to be stored in such projects to make a real climate mitigation impact depending on emission scenario (Anderegg et al 2025). Instead of allowing insurance products to address durability, the Department of Ecology should better capitalize their buffer pool, based on rigorous, peer-reviewed, independent data sources without a maximum contribution cap to have adequate credits to insure risk of reversal given increasing climate risks.

References:
Anderegg, W.R.L., Blanchard, L., Anderson, C. *et al.* Towards more effective nature-based climate solutions in global forests. *Nature* 643, 1214–1222 (2025). https://doi.org/10.1038/s41586-025-09116-6

Topic 8. Revise 100-year project commitment within the US Forest Protocol
We agree with the Department of Ecology that project time commitments shorter than 100 years for projects that are at risk of reversal are not compatible with the requirements of the cap-and-invest program. The best science suggests that the project commitment period for any project at risk of reversal should be 100 years. This is not only to have a consistent project duration across jurisdictions linked to the program; it is also the scientifically robust choice. Carbon from a project must be sequestered until at least peak warming to have a real climate mitigation impact. The IPCC SSP2-4.5 emissions pathway mapping scenarios with intermediate GHG emissions suggests that peak warming will occur some time after 2100. Therefore, a 100 year durability requirement is a robust and scientifically grounded choice.

References:
IPCC, 2023: *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, 184 pp. doi: 10.59327/IPCC/AR6-9789291691647