

“The methodology used in the Royal Society of Edinburgh report stands in marked contrast to the rigorous standards of formal evidence synthesis that have become well established in fields such as medicine and health, and are increasingly adopted in environmental management. The report appears to be based on a combination of information extracted from the submitted responses to the consultation supported by selected findings from published literature. The methods adopted to search for and select the cited publications is very unclear. In many cases this seems to be based on the support they could provide for the statements made in the narrative of the report. In only a few cases does the report quote the actual quantitative evidence provided by the cited research studies, or the important context or caveats that are attached to their findings. This creates a high risk of bias in comparison with the standards required for formal systematic review as set out by the [Collaboration for Environmental Evidence](#). It is crucial that such formal methods are used to distinguish more objective research-based evidence from subjective opinion.”

“A specific example of the concerning use of evidence in the report concerns the issue of the benefits of different types of forest for carbon sequestration. A key conclusion of the report (paragraph 161) states “Commercial conifer is poorer at sequestering carbon compared with mixed native species planting”. While the basis for this conclusion is not made clear, it does not seem to be derived from the evidence presented in chapter (9) on “Carbon capture by trees”, which reports in paragraph 98 the more rapid take up of carbon by conifer production forestry species than by native broadleaved species, although it does also state the potential for long-lived natural forests to ultimately store more carbon than plantations. Crucially, however, this chapter also reports in paragraph 101 that “harvested woodlands can constitute a greater long-term carbon sink than unharvested woodlands if the harvested trees are replaced by planting and the majority of the wood products are long-lived”. These findings are based on the cited reference Matthews et al. (2022, Quantifying the Sustainable Forestry Carbon Cycle, Summary Report, Forest Research), which is an exemplar of thorough rigorous analysis.

The paragraph 161 conclusion therefore seems to be based only on the final paragraph (91) of chapter (7) on “Current schemes and potential reform of financial support”, which states “this report recommends that this money be reallocated to native and non-commercial woodlands that will lead to greater carbon capture (Sing et al., 2018).” However, Sing et al.’s broad review does not provide strong evidence for this major recommendation given that its coverage of carbon capture is much less rigorous or substantial than that of Matthews et al. (2022). Importantly, Sing et al. report this result with the key caveat “Carbon is ‘in-forest’ carbon stocks and does not account for carbon stored in harvested wood products and the substitution of fossil fuels”, which is not acknowledged in the Royal Society of Edinburgh report. “

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