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# Advanced forest-to-bog restoration methods are superior to fell-to-waste practice in re-establishing peatland hydrological conditions

Rebekka Artz (1), Neil Cowie (2), Mark Hancock (2), and Daniela Klein (2)

(1) The The James Hutton Institute, Craigiebuckler, Aberdeen, AB15 8QH, UK (rebekka.artz@hutton.ac.uk), (2) RSPB Scotland, Forsinard Field Centre, Forsinard, KW13 6YT, UK

Peatland restoration practices generally aim to restore the required hydrological conditions for peat formation, in addition to providing suitable habitat for re-establishment of peatland vegetation. In peatlands that have been drained and afforested with timber crops, the hydrology of these systems has been severely altered. In the two decades since restoration of such areas began, several techniques have been tried, starting originally with simply felling trees to waste into the plough furrows and blocking up main drains. A decade into restoration practices, it was realised that areas treated with these methods do not re-establish a peatland vegetation community. We tested the effects of this older practice on water table dynamics against sites treated with additional blocking of the plough furrows and crushing of the timber brash. The sites treated with the enhanced method showed average water tables more akin to that of undisturbed peatlands, and more encouragingly, less of a difference between the water tables of the features created by the plantation practices (original peat surface, plough furrow, plough throw). In addition, there is less impact of drought periods on water table drawdown in the sites treated with the enhanced restoration practice. Advanced restoration methods should therefore be considered as standard in any new forest-to-bog restoration projects.