

Evidence Table

**Evidence Table**

Name of Evidence Review:	Upland Evidence Review
Name of Review Sub-topic (if any):	Tracks
Review Question	Do tracks lead to enhanced erosion of blanket peat?

Study Details	Population and setting	Methods of allocation to intervention / control	Outcomes and methods of analysis (inc effect size, CIs for each outcome and significance)	Results	Notes
<p>Authors: Robroek, B. J. M., Smart, R. P. &amp; Holden, J.</p> <p>Year: 2010</p> <p>Aim of study: The impact of tracks upon blanket peat vegetation and hydrochemistry.</p> <p>Study design: Quantitative Experimental</p> <p>Quality Score: 2++</p> <p>External validity: 2++</p>	<p>Source population: Blanket Bog</p> <p>Eligible Population: n/a</p> <p>Inclusion &amp; exclusion criteria: n/a</p> <p>Setting: North Pennines, UK.</p>	<p>Methods of allocation: Sampling of three tracks across blanket bog subject to different levels of use.</p> <p>Intervention description: recording of vegetation, hydrological and chemical data, collection of vegetation and assessment of bulk density of peat through collection of cores.</p> <p>Control / comparison description: one track was a control, 5 meters north of</p>	<p>Primary outcome measures: vegetation and hydro-chemical differences between tracks.</p> <p>Secondary outcome measures: n/a</p> <p>Follow-up periods: experiment run over two years.</p> <p>Methods of analysis: Species differences,</p>	<p>Note that these are tracks accessed by foot, relevant to Review as occasional use by vehicles likely to have similar impacts.</p> <p>1) Track use clearly impacted the vascular plant community, aside from biomass loss tracks resulted in lower species richness with a much slower</p>	<p>Limitations identified by author: Recognition in particular that the controls around many of the processes (especially DOC) are poorly known/understood.</p> <p>Limitations identified by review team: None</p> <p>Evidence gaps and/or recommendations for further research: 1) Longer-term study</p>

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		<p>the other two.</p> <p>Sample sizes: 3 tracks, with subplots.</p> <p>Baseline comparisons: vegetation and biomass at start of experiment.</p> <p>Study sufficiently powered: No power given but likely to be statistically sound from evidence presented.</p>	<p>biomass and hydro-chemical differences.</p>	<p>recovery of vascular plants compared with Sphagnum.</p> <p>2) Most recently abandoned track had highest bare peat cover.</p> <p>3) Track-type did not significantly affect non-sphagnum mosses.</p> <p>4) Sphagnum moss type was affected by track type and was lowest on the most recently used track.</p> <p>5) The absence of vegetation increased the amount of run-off events drastically.</p> <p>6) Over whole study period, mean DOC concentrations were not</p>	<p>to explore vegetation dynamics in recovery.</p> <p>2) comparison with similar routes created by vehicle use.</p> <p>Sources of funding: One author funded by Philip Leverhulme Prize.</p>
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				<p>significantly different between tracks.            7) Mean POC concentrations in the surface water of the most recently used track significantly higher than the other two with POC concentrations in the surface runoff decreasing with increasing Sphagnum.            8) pH did not differ significantly between tracks.            9) Bulk density was not affected by track use.</p>	
<b>Study Details</b>	<b>Population and setting</b>	<b>Methods of allocation to intervention / control</b>	<b>Outcomes and methods of analysis</b> (inc effect size, CIs for each outcome and significance)	<b>Results</b>	<b>Notes</b>
Authors: Grieve, I. &	Source	Methods of allocation: n/a	Primary outcome	Note that these	Limitations identified

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<p>Gilvear, D.</p> <p>Year: 2008</p> <p>Aim of study: To quantify impacts of disturbance due to construction of wind farm on the fluxes of dissolved organic carbon and suspended sediment in streams during immediate post-constructional phase.</p> <p>Study design: Experimental quantitative.</p> <p>Quality Score: 2++</p> <p>External validity: 2++</p>	<p>population: Blanket bog.</p> <p>Eligible Population: n/a</p> <p>Inclusion &amp; exclusion criteria: n/a</p> <p>Setting: Scotland, UK</p>	<p>Intervention description: Construction of 400 ha wind farm site with 36 turbines and 20 km of tracks on blanket bog.</p> <p>Control / comparison description: control for work neighbouring catchment.</p> <p>Sample sizes: 6 streams draining from wind farm and 3 control streams.</p> <p>Baseline comparisons: No pre-construction data.</p> <p>Study sufficiently powered: Power not given but results likely to be statistically sound.</p>	<p>measures: The effect of wind farm construction on DOC and sediment export.</p> <p>Secondary outcome measures: n/a</p> <p>Follow-up periods: data collected over 18 months as series of campaigns.</p> <p>Methods of analysis: Correlations, linear regression, two-way analysis of variance.</p>	<p>include the turbine sites and tracks combined.</p> <p>1. Significantly increased concentrations of DOC and sediment were observed in streams draining the wind farm site.</p> <p>2. Impacts of greater DOC and sediment concentrations on the stream systems are likely to be significant through discolouration, reduction of light transmission through the water column and siltation of salmonid spawning gravels.</p> <p>3. Suspended</p>	<p>by author: Study sampling carried out at time of year when DOC concentrations at maximum so figures may over-estimate annual fluxes.</p> <p>Limitations identified by review team: More work on the POC element would have increased value of the study.</p> <p>Evidence gaps and/or recommendations for further research:</p> <p>1) Separating out DOC/POC generation from tracks and turbines.</p> <p>2) Is volume of DOC/POC generated from a site related to the size of the site?</p> <p>3) Do the concentrations of</p>
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