Costs and benefits of peatland restoration in Scotland & public perceptions of peatlands

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Leading the way in Agriculture and Rural Research, Education and Consulting
Aims

• Provide an overview of a long term research project

• Focus on
  - What is the (extent of) public support for peatland restoration?
  - What are the general public perceptions on peatlands?
  - What are the values and motivations to engage in restoration?
Quantitative social research
Public support and benefits of restoration

• An online survey with members of the public (n=1,795)

• Views on peatlands and their restoration

• Preferences for peatland restoration (“willingness to pay”)
  - Choice Experiment

• Development of materials to communicate about peatlands and their restoration in a way that is easily understandable by the public and scientifically rigorous
Ecological condition descriptions

- Good ecological condition
- Intermediate ecological condition
- Bad ecological condition

Degradation

Restoration
Ecosystem service provision

- Good ecological condition
- Intermediate ecological condition
- Bad ecological condition

- Carbon emissions
- Water quality
- Wildlife
Communication tools for ecosystem restoration processes and benefits

• We are developed a short communication web tool, also now found on the SNH Peatland Action website

  • For land managers: www.see.leeds.ac.uk/peatland-modules/?type=assess
  • For general public: www.see.leeds.ac.uk/peatland-modules/?type=learning
Survey results

• Majority supportive of restoration

• Main reasons:
  - Opportunity to do something about climate change
  - Improved water quality
  - Cultural identity, recreational benefits (e.g. enjoy wildlife on restored peatlands)
  - Improving income generation in rural economies

• Main reasons for not supporting restoration: other priorities
Monetary valuation

- How much to restore?
- Shown as percentage of Scottish peatlands in:
  - Good ecological condition
  - (Intermediate ecological condition)
  - Bad ecological condition
- Shifts from ‘bad’ and ‘intermediate’ to ‘good’
Monetary valuation

• “Spatial” aspects: where to restore?
  - Wild land area/no wild land area
  - Areas with greater/lesser share of peatlands in land cover
Monetary valuation

• How much does it cost the taxpayer?
  - Payment towards a hypothetical Peatland Trust fund
  - Trust fund delivers the proposed improvements and would be in place over a period of 15 years
## Example choice card

<table>
<thead>
<tr>
<th></th>
<th>Business as usual</th>
<th>Restoration Option A</th>
<th>Restoration Option B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Share in GOOD condition</strong></td>
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<tr>
<td><img src="image1.png" alt="Image of GOOD condition" /></td>
<td>20%</td>
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<tr>
<td><strong>Share in BAD condition</strong></td>
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<td><img src="image2.png" alt="Image of BAD condition" /></td>
<td>40%</td>
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<tr>
<td><strong>Focus in wild land areas</strong></td>
<td>-</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Focus in areas that are</strong></td>
<td>-</td>
<td>high in peat</td>
<td>low in peat</td>
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<tr>
<td><strong>Cost per year</strong></td>
<td>£0</td>
<td>£250</td>
<td>£150</td>
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</tbody>
</table>

Tick your preferred option here

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*Source: SRUC*
Monetary valuation

- Little spatial differentiation for changes from ‘bad’ to ‘good’
- For ‘intermediate’ to ‘good’: highest value in remote areas with lots of peatlands (£400 per hectare and year)

Ø Value per hectare and year

£190

£273
Peatland Action 1st phase, example BCA

- 10,000 ha restored
- £230/ha/yr benefits
- £833/ha average upfront costs
- £0 - £100/ha/yr recurrent costs
- Discount rate: 3.5%, 15 years

<table>
<thead>
<tr>
<th>RC £0</th>
<th>NPV</th>
<th>B/C ratio</th>
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<tbody>
<tr>
<td>£0</td>
<td>£20 million</td>
<td>3.49</td>
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<tr>
<td>RC £100</td>
<td>£8 million</td>
<td>1.39</td>
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</table>

- Similar B/C ratios to other studies
- Comparison to other uses of public funding?
- Sensitive to assumptions
Sensitivity to cost

a) Poor to Good Condition/Low Concentration/Not in Wild Land Area
What’s next?

- Better understanding of the conditions under which restoration is beneficial
  - Especially important as restoration increases in scale!
  - Better data on implementation and maintenance costs
  - What are opportunity costs of restoration and how do they vary by land use and type of land ownership?
  - What evidence emerges about the effectiveness of restoration and what factors does it depend on?
  - Evidence of ‘wider’ benefits (e.g. employment etc.)?

- Future funding for peatland restoration
  - Role of potential private (PES) funding and Peatland Code?
  - Funding post Brexit
Qualitative social research
Previous research

Workshops on people’s perceptions in general:

- Uses, benefits and disbenefits
- Consequences of degradation, restoration
- Importance & preferences
- Uniqueness and distribution of uses/benefits
- Preferences in relation to restoration (location, time scale, states & proportions)
General public perceptions

The different views are often held by the same persons

Source: Byg et al. (2017)
Some results

Example: Individual preferences for peatlands in different states

<table>
<thead>
<tr>
<th>Participant</th>
<th>biodiversity</th>
<th>most uses</th>
<th>reversible</th>
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Current work

• More explicit focus on restoration
• Values & motivations
• Methods:
  – Interviews (managers, volunteers, local residents)
  – Participant observation (Portlethen, Lenzie Moss, Easter Inch Moss & Fallin Moss)
  – Workshops (Portlethen & Shetland)
Results

- The usual constraints (funding, time, people,…)
- Relational & moral values: “give something back” (consumptive & non-consumptive uses)
- World views
  - The nature of nature: fragile or resilient
  - The role of humans: people as a threat or farmers as stewards
  - Notions of balance
- Experienced trade-offs (recreation, biodiversity, other land uses,…)
- Personal interactions with peatbogs & expert knowledge → meaning, values & further interactions (e.g. beech tree removal)
- Ecological values vs. social values: the importance of small remnant sites to enable personal relationships
- Peatbog perceptions enmeshed in the wider socio-economic context of local communities & places (marginality, rural-urban divide, urban sprawl,…)

https://www.kirkintilloch-herald.co.uk/news/walkers-anger-at-moss-massacre-1-3675284
Results

• Potential for multiple benefits (private, public, intangible)

• Ambivalence and ambiguity have not acted as barriers to restoration (so far), partly linked to:
  – Flexibility of Peatland Action Programme → can encompass a variety of approaches & interests
  – The ‘experimental’ status of peatland restoration

• This might be challenged in the future (e.g. more targeted approaches, concerns about economic efficiency, etc.)

⇒ Necessary to consider how to deal with ambivalence and ambiguity in the future
Related work from the research team

Work funded by

Developed in collaboration with

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