

Summary report of stakeholders workshop for Defra Blanket Bog project **BD5104**  
held on 25<sup>th</sup> February 2013, 10:00 – 16:00 hrs at The Bar Convent, York

**Workshop aims:**

1. **Present current project** aims and background
2. Present **currently proposed treatments/management options**
3. Discuss **benefits, impacts and issues** of currently proposed options
4. Gather ideas for **other potential treatment/management options**
5. Explore **benefits, impacts and issues** of other options
6. **Define the best treatment combinations** and associated benefits, impacts and issues

**Attendees:**

Andreas Heinemeyer - SEI, York University	Andrew Walker – Yorkshire Water
Harry Vallack – SEI, York University	Robin Gray – Pennine Prospects
Phoebe Morton – SEI, York University	Jude Lane – RSPB
Tom Sloan – SEI, York University	David Douglas - RSPB
Richard Brand-Hardy - Defra	Richard Lindsay – University of East London
Tom Keatley – Natural England	Sophie Milner – National Trust
Andrew Clark – Natural England Y&H	Peter Welsh – National Trust
Emma Fawcett – Natural England Y&H	Rachel Pickering - North York Moors NPA
David Key – Natural England	Marian Wilby – Nidderdale AONB
Jon Hickling – Natural England Morecambe & FoB	Dongria Kondh – Calderdale Council
Andrew Clark – Natural England Y&H	James Pearce-Higgins - British Trust for Ornithology
John Barrett – Natural England	Tim Thom – Yorkshire Peat Partnership
Mark Owen – Natural England	Astrid Hanlon – Yorkshire Peat Partnership
Charles Foreman – Environment Agency	Mark Macaulay – Dinsdales Moorland Services
Robert Brotherton – Environment Agency	Richard Bamforth – Dinsdales Moorland Services
Adrian Thornton-Berry – Moorland Association	Rob Foster – Grosvenor Estate & FoB

**Apologies:** David Glaves, NE; Simon Bland, Dalefoot Compost; Patrick Thompson, RSPB; Paul Burgess, Nidderdale AONB; Andy Lloyd, North Pennines AONB Peat Partnership; Phil Gunning, Whitendale, Forest of Bowland; Pete Wilson, United Utilities; Lindsay Waddell, National Game Keepers Association; Sarah Robinson, Forest of Bowland, AONB and Rob Stoneman Yorkshire Wildlife Trust.

**1. Introduction and welcome – Introduction to the project and format for the day.**

**2. Presentation by Dr Andreas Heinemeyer (printout provided) – BD5104 *Peatland Restoration for: biodiversity, carbon and water.***

**Summary of presentation as follows:**

- **Project aims.**
- **Importance to ecosystem services.**
- **Field sites.**
- **Website.**
- **Experimental Design.**
- **Measurements:** Carbon flux, GHG emissions, C stocks, Vegetation dynamics, Water balance, Water quality, Peat pipes, Climate.
- **Heather Coverage.**
- **Catchment and Topography.**
- **Modelling: MILLENNIA peat cohort model.**
  - Modelling: Carbon and Water.

- Predicting: Up-scaling to the landscape.
- Comparing: Observed bird abundance vs. predicted *Tipulids*.
- **Current proposition for burning and mowing.**
- **Next steps:**
  - Define plot-level (5x5 m) management options “treatments”.
- **To be discussed: plot level treatments.**

**For the group work, attendees were divided into 4 separate (mixed by organisations/affiliations) discussion groups which then reported back in plenary:**

### **Session 1: Group work on current proposed treatments/management options**

**NB:** Not all ideas were developed further - **the most important are shown in bold.**

- **What height and mechanism of mowing? Standardised?**
- Brash helps *Sphagnum* establishment?
- What is the rotation frequency? Ten years seems like a short timescale
- **Starting conditions after mowing**
- **Will grazing work? What is the frequency of grazing between sites?**
- An issue with how much brash coming off. Brash useful for restoring bare peat
- Real management cost of removing brash to be included as only done manually
- Brash as a carbon store (C-cycle input), and assists with vegetation establishment (seeds)
- Ground level brash less of a fire risk- not dried in wind but sitting on wet ground so less likely to burn
- **Mowing frequency may not be practical over shorter timescale**
- Brash very popular with keepers and promotes growth – but might increase colour of water
- Does mowing as well as burning increase colour of water? → needs ‘do nothing’ control plots!
- **Vegetation survey after burning would be useful**
- Why the focus on brash?
- Rotation should match reality
- Legality (question on legality from Andrew Walker) consents for cutting required?
- Mow and removal close to burn?
- Can we make the plots more paired/balanced design?
- Control over grazing? Much too difficult to achieve
- ***Sphagnum* addition- starting conditions will affect practicality - usually *Sphagnum* addition would be done on bare peat**
- **COMPACTION needs to be assessed!**
- **Variation in micro-topography between sites, is it variable, what will the impact be and will there be scope to record it?**
- Monitoring decomposition/humification using Von Post scale.
- Scope for getting grouse counts from Estates?

### **Discussion on feedback from Session 1 group work**

**Impacts of mowing:** Producing the fine brash required for the project might require a double cut of the mower (i.e. two passes) which would cause more **compaction impact**. (**Note:** Subsequent to the workshop it has been determined that the solution is for the mower to move more slowly to achieve fine brash in just one pass). Could **monitor impact of mowing on vegetation from surveys** and assess impact of machinery on vegetation colonisation. Will cutting affect micro-topography? Effect of mowing + brash + *Sphagnum* treatment may be via brash-created microclimate. Could assess **costs of fuel** used and related increased **C emissions from fuel combustion**. Would measure of decomposition of peat be helpful? Would downstream phosphate monitoring be useful to measure impact of brash application?

**Possible obstacles** - consent may be required for large scale cutting on sites? Brash may provide microclimate for ticks? Impact on the Historic Environment Record (HER), have HER checks been followed?

## Session 2: Group work on potential alternative treatments/management options and other considerations

- Consider cotton grass introduction as a peat forming species as an alternative to *Sphagnum*?
- Vary density of grazing pressure - but this would be a huge new experiment
- **Longer term funding** would be required to develop some of these ideas
- Compaction - new plots or compare to non-treatment areas?
- Cost of management (time/labour)? Does it scale?
- Look at nutritional value of heather at different ages? Harvesting could be followed up in the lab by analyses on protein production etc.
- **Do nothing 'no management plots' as comparisons were strongly recommended by three out of the four discussion groups (more than 2/3<sup>rd</sup> of attendees voted to replace the excl. grazing plots with an uncut 'do nothing' treatment as a control/comparison to other treatments)**
- Could also look at vegetation structure (rather than just the current composition)
- Invertebrate survey would be useful – *tipulids* in particular
- Water quality – what are the impacts of leaving brash on the surface?
- Application of different *Sphagnum* spp phased and/or other moss and grass spp.
- Impact of different flail heights on heather productivity.
- Herbicide application – any validity in herbicide application? **Was felt to be too risky.**
- Biodiversity and microtopography.
- Impact of different cutting timing.
- Impact of different mowing machinery specifications on compaction, re-growth and diversity.

### Final discussion and recommendations

It was pointed out that cotton-grass was present at all plots and several other suggestions were already addressed within the project (i.e. same mowing height and different frequencies, annual vegetation surveys, mow and burn plot sizes and frequency matching reality, management cost analysis, water quality assessment, different mowing approaches/machinery); others were to be considered (i.e. micro-topography, Von Post, invertebrates, phosphate, nutritional value, compaction) and it was agreed to drop the exclusion of grazing treatment in exchange for a much more valuable 'do nothing' control. This would enable not only assessing naturally occurring changes (e.g. climatic) but also allow a direct comparison of treatment and burning plots, specifically in respect to plant growth rates, productivity, nutritional value and water and carbon cycling. In the final discussion a paper by Swanson in a Finish journal was mentioned looking at peat formation by latitude in response to low water tables still enabling peat growth with the right *Sphagnum* species present (i.e. terrestrial species).

Final recommendation resulted in the following revised list of plot-level treatments as part of a balanced experimental design:

**Control (burn)**

**Control (burn) + *Sphagnum***

**T1 mowing + brash**

**T2 mowing - brash**

**T3 mowing frequency + brash + *Sphagnum***

**T4 mowing frequency - brash + *Sphagnum***

**T5 'do nothing' no management/uncut control treatment (no burn, no mow)**

The participants were thanked for their enthusiasm and interest in the project and for all their hard work and valuable contributions during the workshop. **The workshop closed at 16:00 hrs.**