

# Annex 2 – Natural England Upland Habitat Advice Protocol for Upland Peatland Monitoring



## Context

Restoration of upland peatlands is a key objective for Government and a shared endeavour with landowners. This will often be achieved through Long Term Plans (LTPs) or their equivalent. LTPs represent a new approach to achieving ambitious shared outcomes and, by their very nature, are often innovative and where the evidence base is still developing. Monitoring must consequently be an integral and essential part of LTPs or any other consents for restoration management, so the circumstances leading to any interventions are clearly captured, as too are the results of the intervention so that we know whether the plans are working and can identify any steps needed to improve their effectiveness as they progress.

## Use

This protocol defines a **framework** for monitoring, at the heart of which is the principle that the data collected are sufficiently robust to be able to accurately capture both the circumstances of an intervention and the outcome of it. The example overleaf illustrates this for a single intervention of a typical size. If a series of small interventions are proposed within the same area and conditions, the same number of quadrats may be located across the whole area and then assessed as a group. Natural England can advise on this on a site by site basis as necessary and include the monitoring arrangements in a plan or other consent, including those for burning for restoration purposes.

This framework has been developed to complement work underway by the Upland Management Group Blanket Bog Restoration Monitoring Task and Finish Group, commissioned by Defra in identifying a more comprehensive set of variables, reflecting biodiversity, ecosystem services, agricultural and sporting interests. Natural England will keep it under review as that work continues.

## Approach

This advice note sets out simple, standardised approaches to peatland survey and monitoring. Specifically, the majority of the note comprises an overview of the required monitoring design (including the minimum required sampling intensity), a checklist for land managers and a reporting form to show the data required. These are provided in a 'copy and paste' format so they can be adapted for this site and incorporated into LTPs or their equivalent. The advice is designed to enable Estates and others to carry out their own monitoring of peatland restoration, with support (such as training) from Natural England. Although Natural England cannot itself undertake monitoring, it will undertake some quality assurance assessments of a sample of some monitoring transects. The protocol has been designed, therefore, to be delivered by non-experts.

## Use of Data

Data is most easily recorded and submitted to Natural England using a mobile phone App, 'survey123', which can be found through the IOS App store or Android Play store. We will as an alternative provide further details on where to submit paper forms.

The data will be used at a site level to understand the conditions prior to a burn (or other intervention), and the impact of it, in order to inform future decisions. It will also be used collectively with other site data to improve the overall evidence base on peatland management, and so the protocol also requires the monitoring of control areas to assess the impact of management interventions.

Some of the data that is collected under this monitoring protocol and subsequent analyses will be made publicly available for a variety of purposes, but the source of individual data will not be revealed.

## **Peatland monitoring design, checklist and recording form**

### **Peatland monitoring design**

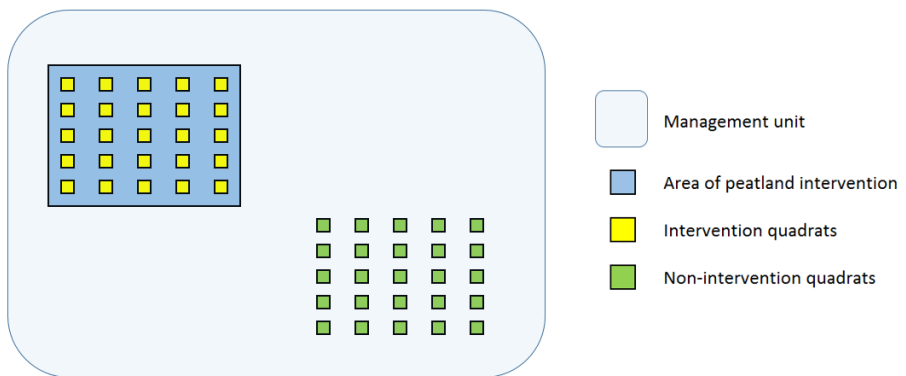
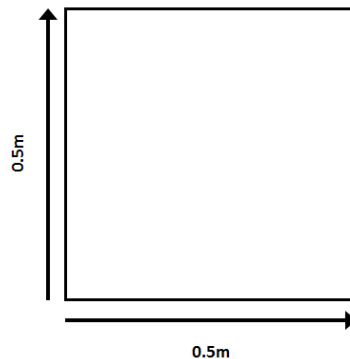
For aspects of peatland vegetation management where the evidence-base is limited, such as burning for restoration purposes, monitoring is essential. This monitoring is designed to gather data which is complementary to Natural England's statutory monitoring regimes.

1. All monitoring data will be shared between land managers and Natural England within a maximum of one year from the date of a survey/monitoring visit, or made available sooner where required to inform annual reviews of LTPs/Restoration Plans. The data collected through this monitoring will be publicly available information in order to make use of its analysis in developing the evidence base (via the Peatland Monitoring Database).
2. All data should be entered into the Peatland Monitoring Database. This can either be done using an app on a mobile device or manually entered from a Peatland Monitoring Form.
3. Consult your Management Agreement/Restoration Plan/Consent etc. to identify if a management intervention is appropriate.
4. At all locations identified for further management intervention, a post or marker should be installed in the centre of the proposed area and its position recorded using an eight figure OS grid reference.
5. This information should be supplied to Natural England prior to any intervention so that a sample of those locations can be randomly selected for more detailed validation monitoring.
6. All management for peatland restoration purposes will require data to be collected prior to intervention.
7. For every intervention, comparable areas of habitat not subject to interventions should be mapped as permanent control areas and should not be subject to any further management for the life of the agreement (Consent/LTP). The controls should have similar hydrological character and the same age structure as the intervention areas, but need not be within a restricted radius of the intervention. The same data should be recorded in each control area as in the intervention areas.
8. Subsequent monitoring at five-year intervals should revisit the same quadrats using eight figure grid references recorded during previous monitoring visits and apply the same method.

# Peatland monitoring checklist

Tick

1. Your Management Agreement/Restoration Plan/Consent identifies that a management intervention is appropriate in this location.
2. All locations identified for further management, or as non-intervention plots, a post or marker has been installed with a post or marker in the centre of the proposed area.
3. Prior to an intervention a sample of those locations selected have been subject to more detailed validation monitoring by Natural England.
4. Using the diagrams below as a guide, 25 0.5m x 0.5m quadrats have been arranged at regular intervals along five transects across areas of intervention and comparable areas of habitat not subject to interventions (25 in each).<sup>1</sup>
5. The peatland monitoring form has been completed for each quadrat (50 in total).



<sup>1</sup> 25 quadrats is considered to be a suitable quantity to proportionately sample trial areas of 30m x 55m. This is comparable in size with typical grouse moor management and the recommended size of burns in the [Heather and Grass Burning Code 2007](#). If areas of intervention are smaller, quadrats may be located so as to cover several small, close-by intervention patches and assessed as a group. If areas of intervention are larger, more variability in species composition is likely and an increase in sampling intensity may be required. Natural England can advise on this if required.

## Peatland monitoring form

Surveyor and quadrat identification	
Surveyor name	
Estate name	
Date of survey	
GPS co-ordinate of a post or marker installed in the centre of the quadrat	
Quadrat validation	
Is this quadrat located within an area proposed for an intervention?	
Is this quadrat located within an area proposed as a non-intervention control?	
Past Management	
Have grips been blocked in the immediate area?	
How long ago were the grips blocked in the immediate area?	
How long since the area was last cut and if so, was the brash removed?	
How long since the area was last burnt?	
Quadrat variables	
Photograph	
Peat depth in centre of quadrat (cm).	
What growth phase is the Heather in? (pioneer, building, mature, degenerate)	
What is the % cover of Heather?	
What is the % cover of <i>Sphagnum</i> ?	
What is the % cover of Cotton-grasses?	
What is the % cover of other dwarf shrubs? (Bilberry, Crowberry etc.)	
What is the % cover of Feather mosses?	
What is the % cover of Purple moor-grass?	
Record of intervention	
What management did you carry out? (cutting/burning/none)	
If you cut the vegetation, did you remove the brash?	
Did you introduce <i>Sphagnum</i> ?	

## **Optional contribution to Moorland Change Map development**

Natural England is exploring how satellite imagery can be used to improve the efficiency of monitoring. This has huge potential to reduce the cost and time needed for on the ground monitoring in the future and to help us better understand the impact of different interventions on the recovery of peatlands. Estates can support this work by carrying out further simple monitoring, which only requires a basic identification of heather growth phases (age) or any recent vegetation management that has taken place. Natural England can provide further advice to anyone interested in supporting the development of the Moorland Change Map.