



# Survey of Spring Head mires around Scad Brook, Ugborough Common 2021



Dr Belinda Wheeler MCIEEM

12 November 2021

## Contents

<b>1</b>	<b>Introduction .....</b>	<b>4</b>
1.1	<i>Background .....</i>	4
1.2	<i>Site details .....</i>	4
<b>2</b>	<b>Methods .....</b>	<b>5</b>
	<i>NVC survey.....</i>	5
	<i>Condition assessment and monitoring .....</i>	6
	<i>GIS.....</i>	6
<b>3</b>	<b>Results .....</b>	<b>7</b>
	<i>Site 1. Head of Scad Brook.....</i>	7
	Overview .....	7
	Habitats.....	7
	Condition Assessment.....	8
	Species .....	9
	<i>Site 2. Flush above Scad Brook .....</i>	10
	Overview .....	10
	Habitats.....	11
	Species .....	13
	Condition Assessment.....	13
<b>5</b>	<b>Conclusions and recommendations .....</b>	<b>14</b>
	<i>Site 1 – Scad Brook .....</i>	14
	<i>Site 2 – Flush above Scad Brook .....</i>	15
<b>6</b>	<b>References.....</b>	<b>16</b>
	<b>Appendix 1a: NVC map of Head of Scad Brook.....</b>	<b>17</b>
	<b>Appendix 1b: NVC map of Spring head mires above Scad Brook .....</b>	<b>18</b>
	<b>Appendix 2a: Digital images – Site 1, Head of Scad Brook .....</b>	<b>19</b>
	<b>Appendix 2b: Digital images – Spring head mire system above (south of) Scad Brook .....</b>	<b>22</b>
	<b>Appendix 3: NVC Quadrat Data .....</b>	<b>27</b>
	<i>Head of Scad Brook .....</i>	28
	<i>Flush above Scad Brook.....</i>	30
	<b>Appendix 4: Species Lists .....</b>	<b>33</b>

**Appendix 5: Condition Assessment Tables ..... 35**

## 1 Introduction

### 1.1 Background

This survey was commissioned by the Foundation for Common Land as part of their project **“Our Common Cause” – Our Upland Commons** – a project that aims to conserve and enhance the heritage of Commons and Commoning in Dartmoor, Yorkshire Dales, Shropshire Hill and the Lake District.

The aim of the survey was to provide a baseline assessment of the vegetation communities present and a habitat condition of the area at the head of Scad Brook and a mire/flush system on the north facing slopes above Scad Brook. It was requested that the survey would specifically:

- Align to JNCC common standards methodology appropriate for the habitat
- Assign to NVC community with maps and species list
- Collect information (albeit at less detail) about the type and condition of the surrounding habitat transitional to the mire communities.

### 1.2 Site details

Site Name:	(1) Scad Brook & (2) Flush above Scad Brook
Site Location	Ugborough Common
Statutory Designation	Dartmoor National Park
Parishes	Ugborough
District	South Hams
County	Devon
Central Grid Reference	(1) SX 6633 5985 & (2) SW 6637 5971
Area	(1) 0.13 ha & (2) 2.69 ha
Elevation	285–335 m AOD

Scad Brook issues from a spring that arises on the lower slopes of a small valley on Ugborough Common. The slopes on either side of the brook support mire vegetation flushed by springs and ground water from above. The survey area lies between Glascombe Ball and Beacon Plain above the Moorland Line (England), and within registered common land and the unenclosed open moorland of Dartmoor National Park. The whole site lies over Granite (British Geological Survey 1984), which is overlain by the Hexworthy soil series (651b), which are gritty loamy very acid soils with a wet peaty surface horizon, with a thin ironpan often present. (Soil Survey of England and Wales 1983; Cranfield University, 2019). The surveyed areas include the spring head more at the head of Scad Brook at 295m and the flush occupying the north-easterly facing slopes to the south of Scad Brook at 285–325m. This flush system occupies moderately steep north-east facing slopes where several springs issue and drain down the site. The area

is grazed by cattle, sheep and horses as part of a larger grazing unit or leas of Ugborough Common.

The site has good public access with a bridlepath running along the valley. The site is included in the Access Land of the CROW Act 2000. The site is in private ownership and was surveyed with the kind permission of the land owners.

## 2 Methods

The survey took place on 26<sup>th</sup> October 2021 after a period of heavy rain with low cloud, mist and drizzle, which hampered mapping to a degree. The surveyors were the author, Dr Belinda Wheeler MCIEEM and colleague Dr Phil Wilson MCIEEM.

### NVC survey

The vegetation survey followed standard techniques, with all vegetation stand types within the mire mapped to National Vegetation Classification (NVC) sub-community (Rodwell, 1991, 1992).

Due to limited size of the site and the complexity of the vegetation all stands were mapped to 1:1000 scale in the field to try to capture the vegetation at a fine grain. Vegetation communities of at least 10 sq m in area were mapped; those of less than 10 sq m were target-noted). Current habitat boundaries were mapped onto base maps using habitat features and National Grid co-ordinates taken in the field using hand-held GPS receivers. Practice has shown these to be accurate in most cases to at least 5m, although in small sites visual clues and surface features were also used by the surveyor to increase accuracy of mapping.

Five quadrats (one or two in very small areas of habitat) were recorded from each sub-community of sufficient size. Quadrat information included the abundance of all species of <sup>1</sup>vascular plant, terricolous bryophytes and lichens on the DOMIN scale, from which a 'constancy' score was calculated: quadrats measured 2m × 2m. All quadrat points were located to 10-figure grid references using the GPS. Quadrat data was analysed using the MATCH 2.16 software, which provides a measure of 'fit' (% match) to the data for each vegetation community in the published tables in the NVC guides (Rodwell, 1991a,b).

---

<sup>1</sup> Nomenclature for higher plants follows that of Stace (2019) and for bryophytes follows Atherton *et al.* (2010).

**Domin scale**

Domin score	% cover
10	91–100%
9	76–90%
8	51–75%
7	24–50%
6	26–33%
5	11–25%
4	4–10%
3	Many individuals, < 4%
2	Several individuals, < 4%
1	Few individuals, < 4%

**Constancy scale**

Constancy score	Frequency in samples	% frequency in samples
V	5 samples in 5	81–100%
IV	4 samples in 5	61–80%
III	3 samples in 5	41–60%
II	2 samples in 5	21–40%
I	1 sample in 5	1–20%

A 'whole site' species list was compiled and a measure of frequency on the DAFOR scale was recorded.

**DAFOR ratings:**

D = dominant A = Abundant F = Frequent O = Occasional R = Rare

L = Locally (frequent, abundant, dominant)

+ = Present

Target notes were taken in the field to describe features of interest and were mapped and some digital images were recorded to help demonstrate characters of the vegetation referred to in the results.

**Condition assessment and monitoring**

A condition assessment based on the guidelines for Common Standards Monitoring produced by JNCC for upland habitats (JNCC, 2009) was used. The condition assessment consisted of a 5–10-stop structured walk through each of the mire vegetation communities recording variables relating to the composition and structure of the vegetation at each stop including 'positive indicator' species and negative attributes. From the presence/absence data a measure of frequency for positive and negative indicator species could be determined for the stand as a whole.

**GIS**

The survey map from the field survey was digitised using QGIS 3.10 to produce Esri compatible shapefiles (.shp) and an image file (.jpg) created to provide a map for the subsequent report.

### 3 Results

#### Site 1. Head of Scad Brook

##### Overview

The small mire at the head of Scad Brook is extremely small (see map in Appendix 1a). There is an upwelling of water just to the west of a large erosion gully/peat hag but the vegetation here is that of damp acid grassland (Plate 1, Appendix 2a) and the peat gully is almost devoid of vegetation (Plate 2). To the south of this there is a smaller erosion gully beyond which there appears to be a more permanent source of water arising and there is initially an area of moderately good mire vegetation with much *Sphagnum* moss (Plates 3 & 4), which rapidly narrows and is replaced by a more species-poor rush-dominated mire community along the watercourse (Plates 5 & 6).

It is clear from the erosion gully that this area lies on relatively deep peat (up to 70cm) but there has been some loss of the habitat due to the erosion. Such gullies are initially started by water movement but gullies and peat hags are then often enlarged by stock using them for shelter and, in this case, probably by stock visiting the site to drink. The better quality mire at the top of the brook certainly shows evidence of poaching and disturbance.

With the exception of grazing, no recent management (such as drainage or cutting) was evident.

##### Habitats

These vegetation communities present are described below in relation to the National Vegetation Classification (NVC) communities within which they have been mapped (Rodwell 1992a,b).

##### **Damp acid grassland: U4 *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland / U5 *Nardus stricta*-*Galium saxatile* grassland**

Much of the vegetation in the immediate area, away from the water course of Scad Brook, is dry to damp acid grassland. The drier grassland supports U4 *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland with typical components of sheep's fescue *Festuca ovina*, common bent *Agrostis capillaris*, tormentil *Potentilla erecta*, green-ribbed sedge *Carex binervis*, heath rush *Juncus squarrosus* and heath bedstraw *Galium saxatile*. This community is typical of drier parts of the moor but occurs on and around the large erosion gully due to the lack of water retention of the deep peat due its exposure (Plate 2). As the vegetation becomes damper the grassland supports much more matt grass *Nardus stricta* and purple moor-grass *Molinia caerulea* becomes frequent with sedges such as carnation sedge *Carex panicea*. This grassland is probably closer to U5 *Nardus stricta*-*Galium saxatile* grassland. However this rapidly transitions to M6 mire along Scad Brook (see below).

### **M6a *Carex echinata*–*Sphagnum recurvum/auriculatum* mire, *Carex echinata* sub-community**

At the top (western-most part) of Scad Brook there is a small discrete area of moderate quality short-sedge fen in which *Sphagnum* moss, mostly cow's horn bog moss *Sphagnum denticulatum* and blunt-leaved bog-moss *Sphagnum palustre*, has high cover (30–50%; Plate 3,4). Purple moor-grass is very abundant but there is also much star sedge *Carex echinata*, common haircap *Polytrichum commune*, yellow sedge *Carex viridula*, green ribbed-sedge, tormentil and marsh violet *Viola palustris*. This community also forms a narrow band along the northern side of the stream but gradually disappears. Two quadrats were recorded in this community (Appendix 3a). This area is quite heavily poached by stock.

### **M6c *Carex echinata*–*Sphagnum recurvum/auriculatum* mire, *Juncus effusus* sub-community**

A soft rush *Juncus effusus* dominated community continues down Scad Brook in a more or less linear band (Plate 5,6). This community is species-poor but a fragment only and typical of its type: its dominant species are soft rush, flat-topped bog-moss *Sphagnum fallax*, star sedge and velvet bent *Agrostis canina*. There is also some marsh violet, bulbous rush *Juncus bulbosus*, cow's-horn and blunt-leaved bog-mosses and tormentil.

## **Condition Assessment**

### **M6 *Carex echinata*–*Sphagnum recurvum/auriculatum* mire**

The M6 poor fen or short sedge acid mire community on this site is priority BAP habitat of Upland Flushes, Fens & Swamps. Due to the very limited area of this habitat only a 5-stop condition assessment could realistically be carried out for the stand of M6a & M6c combined.

When considered as a whole stand the M6 in fails the condition assessment on the following mandatory attributes:

Variable	Measure	Target	Summary	Pass/Fail
Extent of feature	Yes/No	No reduction in loss of feature	?%	Fail
Presence of drainage	Yes/No	Less than 10% of total feature should show signs of drainage, resulting from ditches or heavy trampling or tracking	>10%	Fail
Cover of positive indicator species	% cover	At least 50% of vegetation cover should be made up of indicator species (25% from each of groups 1 and 2)	41% 8%	Fail

The 'loss of extent of feature' is hard to quantify but the presence of one large and one small peat scar has obviously impacted on the area occupied by this mire community. Although this cannot be proven, it is believed that prior to the erosion the area of mire community would have been wider. This loss is likely to continue to increase with further erosion from water



movement compounded by stock movement. Heavy poaching was also evident at the western end of the mire.

Whilst *Sphagnum* and sedge (group 1 species) cover was quite high, there was limited cover from group 2 species.

The fen passes the following attributes:

Variable	Measure	Target	Summary	Pass/Fail
Indicators of grazing	% cover	At least 50% of live leaves and flowering shoots of vascular species should be more than 15cm above ground surface	c. 50%	Pass
Cover of trees and scrub (all)	% cover	Less than 10% of vegetation cover should be made up of scattered native trees and shrubs.	0%	Pass
Cover of bare ground	% cover	Less than 10% of the ground cover should be disturbed bare ground	5%	Pass
Cover of purple moor-grass	% cover	Less than 20% of vegetation cover should be made up of <i>Molinia caerulea</i> .	1.5%	Pass
Frequency of indicator species	Yes/No	There should be at least 2 indicator species present in the vegetation	yes	Pass
Cover of negative species	% cover	Less than 1% of vegetation cover should be made up of , collectively <i>Anthoxanthum odoratum</i> , <i>Epilobium hirsutum</i> , <i>Holcus lanatus</i> , <i>Phragmites australis</i> , <i>Ranunculus repens</i>	1%	Pass

## Species

A total of 25 native plant species were recorded from the surveyed area (not including the damp grassland) (Appendix 4) – this list is not exhaustive as a greater number of hours in the field would not doubt yield more, especially bryophyte species (mosses and liverworts). No non-native vascular plant was recorded. These species were generally typical of these habitats; tormentil is included in the English Red Data List (Stroh *et al* 2014), as Near Threatened (NT) .

Bryophytes were mainly represented by *Sphagnum* moss with a mean cover of 40%. Cow's-horn bog-moss *S. denticulatum* was the most abundant in M6a but flat-topped bog-moss most abundant in M6c. *Sphagnum* diversity was not high with only three species present. Common haircap *Polytrichum commune* was locally abundant in M6a.

## **Site 2. Upland flush south of Scad Brook**

### **Overview**

The slope to the south of Scad Brook, below Beacon Plain, has at three least springs issuing from the hillside (area 2a, 2b and 2c on the map in Appendix 1b), and also some erosion associated with each – hence the request for this survey.

The spring at 2a arises and supports reasonable mire vegetation at the source (Plate 7) but this rapidly disappears. Just below this there are several areas of erosion – the largest of which is a large gully of exposed peat at SX 66311 59741 measuring c. 17m across and 5m depth (back to front) (Plate 8). The vegetation either side of this and below it is damp acid grassland (Plate 9), despite the presence of deep peat. The depth of peat apparent from the erosion gully is around 1m. The course of the watertrack from this spring appears unnaturally linear in places and it is believed that this area may have been ditched/drained historically; two possible drains are apparent. This area may once has supported mire vegetation and interventions may be possible here to restore better quality peatland vegetation.

At 2b (SX 66354 59651) another spring arises (Plate 10). There is a small area of erosion with exposed peat here but only a few metres across. There is a pool just below the spring supporting an upland rill community (Plate 11) which grades into mire vegetation on either side. The pool flows out into a soakway ( a watertrack community) which flows down the hill in an intricate mosaic with other mire vegetation. There is evidence of some poaching, probably from stock drinking at the pool, but it is not extensive. There is a very linear feature running down the hill from the spring head mire at 2b – to the west of which the vegetation is drier and dominated by bracken. This appears to be a man-made ditch/drain – it is apparent on aerial photographs – and makes a rather unnatural almost right-hand bend further down the site (see Map 1b).

A further spring is located on the eastern side of the mire system – site 2c (SX 66374 59619) – where again there is a small area of erosion forming a peat scar. Below this is a very waterlogged community that appears intermediate between bog pool and fen. The mire continues down the slope and becomes part of the same flush system that the spring at 2b contributes to. There is a central zone of wetter mire, transitional between soakway and fen, and sometimes in an intricate mosaic. The flush continues all the way down the slope until it grades out juts above the valley floor. There is certainly poaching evident at the head of 2c but this can be difficult to distinguish from the surface patterning made by the movement of water through the site.

There were several small areas of peat erosion further down the mire.

## Habitats

These vegetation communities present are described below in relation to the National Vegetation Classification (NVC) communities within which they have been mapped (Rodwell 1992a,b).

### **M35 *Ranunculus omiophyllus*–*Montia fontana* rill community**

In pooled areas below spring heads (2b) and in puddled areas further down the mire a semi-aquatic M35 *Ranunculus omiophyllus*–*Montia fontana* rill community occurs (Plate 11 ): this has a sparse to moderate cover of floating vegetation over shallow water dominated by round-leaved water-crowfoot *Ranunculus omiophyllus* but there is also some water starwort *Callitriche* sp., cow's-horn bog-moss *Sphagnum denticulatum* (syn. *S. auriculatum*) and lesser spearwort *Ranunculus flammula*. Where the community is transitional to a soakway community (see below) bog pondweed *Potamogeton polygonifolius*, bulbous rush *Juncus bulbosus* and occasional marsh pennywort *Hydrocotyle vulgaris* are present. This community is sparse and no quadrats were recorded.

### **M29 *Hypericum elodes*–*Potamogeton polygonifolius* soakway community**

M29 *Hypericum elodes*–*Potamogeton polygonifolius* soakway community is present within the mire but nowhere does it form homogeneous stands, rather it occurs in an intricate mosaic with an M6 mire community (see below) occupying the wetter parts of the flush as it moves down the hill, hollows within the mire (Plate 13), and in narrow bands down some of the water tracks. The characteristic species of this community bog pondweed and marsh St John's-wort *Hypericum elodes* were both present but the latter was occasional only. Other associates were shared with the wider mire community such as cow's-horn bog-moss, bog asphodel *Narthecium ossifragum*, common cotton-grass *Eriophorum angustifolium*, bulbous rush *Juncus bulbosus*, lesser spearwort, star sedge, yellow sedge and marsh pennywort . Purple moor-grass was present but reduced in cover in the wettest soakways. . This community is in mosaic with M6 and no quadrats were recorded as they would capture both communities.

### **M6a *Carex echinata*–*Sphagnum recurvum/auriculatum* mire, M6a *Carex echinata* sub-community**

The main vegetation community occupying most of the flush or mire running down the slope from the two springheads at 2b and 2c is a highly waterlogged short sedge acidic fen, in intricate mosaic with the M29 soakway community outlined above. There are drier areas where acid grassland and bracken stands cut into the mire (see Map 1b), and there are transitions to wet heath above and to the side (see below).

The M6a mire is relatively species-rich with c. 40 species recorded during the quadrats and condition assessment but this will not be exhaustive and more would be found given time.

Purple moor-grass was at relatively high cover in this mire and was joined by constant associates Cow's-horn bog-moss, star sedge and carnation sedge. Common cotton-grass was frequent to locally abundant with frequent bog asphodel, tormentil and marsh violet. Ericoid shrubs were present at low cover quite frequently with cross-leaved heath *Erica tetralix* and heather *Calluna vulgaris* occurring in the less flooded areas. *Sphagnum* moss cover varied from 25–50% but was diverse with 6 additional species feathery bog-moss *S. cuspidatum*, flat-topped bog-moss *S. fallax*, lesser cow's-horn bog-moss *S. inundatum*, blunt-leaved bog-moss *S. palustre*, lustrous bog-moss *S. subnitens*, and soft bog-moss *S. tenellum*. Round-leaved sundew *Drosera rotundifolia*, a tiny rosette-forming carnivorous plant of exposed peats but recorded rarely within the stand, but pale butterwort *Pinguicula lusitanica* which has a similar ecology was locally frequent although not in the quadrats. Five quadrats were recorded in this community. See Plate 10, Appendix 2; and Appendix 3, quadrats 5–9.

#### **M6d *Juncus acutiflorus* sub-community**

A small area with frequent sharp-flower-rush occurred half-way down the mire at SX6637659710. This had closer affinities to M6d *Carex echinata*–*Sphagnum recurvum/auriculatum* mire, *Juncus acutiflorus* sub-community but was small in area and not mapped individually.

#### **M15d *Scirpus cespitosus*–*Erica tetralix* wet heath, *Vaccinium myrtillus* sub-community**

In the upper and western-most part of the survey area, the M6 mire habitat and the poor damp acid grassland, respectively, graded into a wet heath community. This was quite species-poor and degraded in places with dominant purple-moor-grass and ericoid shrubs such as heather and cross-leaved heath but at low cover and frequency. Bilberry *Vaccinium myrtillus* was frequent. Peat depth was 25-60cm in these areas and the heath. Two quadrats were recorded (Appendix 3, quadrats 12 and 13)

#### **Damp acid grassland: U4 *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland / U5 *Nardus stricta*-*Galium saxatile* grassland**

The damp acid grassland surrounding the largest peat scar (2a) is probably a result of previous drainage as the area lies on deep peat, from 35–50cm). Common bent and mat grass dominate this species-poor community with low cover of tormentil, heath bedstraw and occasional marsh violet denoting dampness. Bryophytes such as spring turf-moss *Rhytidiadelphus squarrosus* and common haircap were frequent. This area should be restorable – see below. Three quadrats were recorded in this community as a baseline from which to gauge future improvements to the habitat. (Appendix 3, quadrats 10, 11, 14).

## Species

A total of 57 native plant species were recorded from the survey area during the field survey (Appendix 4) – this list is not exhaustive as a greater number of hours in the field would not doubt yield more, especially bryophyte species (mosses and liverworts). No non-native vascular plant was recorded. These species were generally typical of these habitats; some are included in the English Red Data List (Stroh *et al* 2014), such as devil's-bit scabious (Near Threatened - NT), heather (NT), cross-leaved heath (NT), round-leaved sundew (NT), common cottongrass (Vulnerable – VU), lousewort (NT) and tormentil (NT) .

Species typical of exposed peat and vulnerable to habitat loss through poor management were present: round-leaved sundew and pale butterwort – both diminutive rosette forming species.

Bryophytes were abundant, particularly *Sphagnum* moss – the bog-moss or peat-moss: an estimate for the site would be a mean of 30% cover, although it could be 20% or up to 60%.. Cow's-horn bog-moss *S. denticulatum* was the most abundant but *Sphagnum* diversity was good with at least seven species present. Common haircap *Polytrichum commune* was locally abundant in soft-rush dominated areas. Other mosses were common species typical of upland mires such as springy turf-moss *Rhytidiadelphus squarrosus*, heath plait-moss *Hypnum jutlandicum* and bog-bead moss *Aulacomnium palustre*.

## Condition Assessment

The area around feature 2a is thought to have once supported mire. It is now (probably) drained and supports damp acid grassland. As such it cannot be condition assessed as a mire, but it would obviously fail on all attributes and criteria! We could only condition assess the existing more habitat below features 2b and 2c.

### **M6 *Carex echinata*–*Sphagnum recurvum/auriculatum* mire**

The M6 poor fen or short sedge acid mire community on this site is priority BAP habitat of Upland Flushes, Fens & Swamps. A 10-stop condition assessment was carried out for the stand of M6a including the M6a/M29 mosaic. The fine grain of this mosaic prevented assessing them separately.

When considered as a whole stand the M6 in the main mire passes the condition assessment.

The 'loss of extent of feature' is hard to quantify but the presence of peat hags and erosion within the mire do constitute loss. However this is minimal in relation to the size of the mire. The poaching evident in the mire is also a small percentage.

The fen passes the following attributes:

Variable	Measure	Target	Summary	Pass/Fail
Extent of feature	Yes/No	No reduction in loss of feature	?	Pass
Cover of purple moor-grass	% cover	Less than 20% of vegetation cover should be made up of <i>Molinia caerulea</i> .	16%	Pass
Indicators of grazing	% cover	At least 50% of live leaves and flowering shoots of vascular species should be more than 15cm above ground surface	c. 50%	Pass
Cover of trees and scrub (all)	% cover	Less than 10% of vegetation cover should be made up of scattered native trees and shrubs.	0%	Pass
Presence of drainage	Yes/No	Less than 10% of total feature should show signs of drainage, resulting from ditches or heavy trampling or tracking	<10%	Pass
Cover of bare ground	% cover	Less than 10% of the ground cover should be disturbed bare ground	5%	Pass
Frequency of indicator species	Yes/No	There should be at least 2 indicator species present in the vegetation	yes	Pass
Cover of positive indicator species	% cover	At least 50% of vegetation cover should be made up of indicator species (25% from each of groups 1 and 2)	42.5% 23.7%	Pass
Cover of negative species	% cover	Less than 1% of vegetation cover should be made up of , collectively <i>Anthoxanthum odoratum</i> , <i>Epilobium hirsutum</i> , <i>Holcus lanatus</i> , <i>Phragmites australis</i> , <i>Ranunculus repens</i>	<1%	Pass

## 5 Conclusions and recommendations

### Site 1 – Scad Brook

The mire near the head of the Scad Brook is a poor to moderate example of the Priority UK habitat of Upland Flushes, Fens and Swamps – it supports a sedge mire associated with the peatland habitat. This mire community impacted by poaching by stock and has probably been reduced in area by the change in extent of habitat from the large peat scar/erosion gully. As with the mire at Harford Moor this small mire is probably being visited by cattle/sheep to access drinking water and to shelter from the weather in the peat scar.

It is recommended that the peat scar – both the large and the small – are regraded or infilled to re-wet the area and that an alternative drinking source is created. It should be a relatively simple job to create a drinking pool for the stock given the supply of water from the spring – perhaps off to the side of the main peat scar. Infill material used to fill in the void of the peat scar such as granite rubble, and topped with heather brash or bracken brash. Or the scar could be re-graded to make a gradual slope using the peat that is present there. Wooden blocks or slow dams could be used to slow the progress of water through the area to try to widen the wetland area. The aim would be to try to widen the area of M6 mire here, which is currently confined to a linear strip.

## **Site 2 – Upland flush south of Scad Brook**

The area to the south of Scad Brook on the gentle slopes below Beacon Plain support a sedge mire or upland flush in fairly good condition. It is fed by several springs and therefore groundwater fed rather than ombrogenous (rainwater fed). It passes the condition assessment for Priority Habitat Upland Flushes, Fens and Swamps. However, there are areas of poor habitat associated with one of the springs.

The most obvious subject for peatland restoration here would be the large peat scar area at 2a. It appears on the ground that there are historic drains in this area, although they are not that clear. There is mire habitat above but the presence of damp acid grassland on the deep peat in this area certainly reflects a degradation and drying of the historic habitat. The peat scar should either be re-profiled or infilled as proposed for the Scad Brook site. Any drains should be found and blocked with (leaky) wooden dams. The aim would be a re-wetting of the peat and a move from the damp grassland of quadrats 10, 11 and 12 to a community more akin to the vegetation of either quadrats 12 and 13 (M15 wet heath) or quadrats 5–9 (M6 short-sedge acid fen).

The peat scars at the spring heads of 2b and 2c are small. There are a few further erosion areas elsewhere in this mire. The M6 mire community present here is in good condition. Poaching is evident but it is over less than 10% of the mire as a whole. It would be impossible to prevent stock from using this mire for water and removal of stock would lead to further dominance by purple moor-grass, which is already rather abundant. It already exceeds the 20% cover attribute in some areas of the mire. However, there is perhaps scope for improvement. Further wetting of the spring head areas could be achieved by slowing the flow of water through strategic dams and re-profiling of the eroded areas. Any man-made drains found lower down, such as along the western boundary of the main mire as marked on the map, could be blocked.

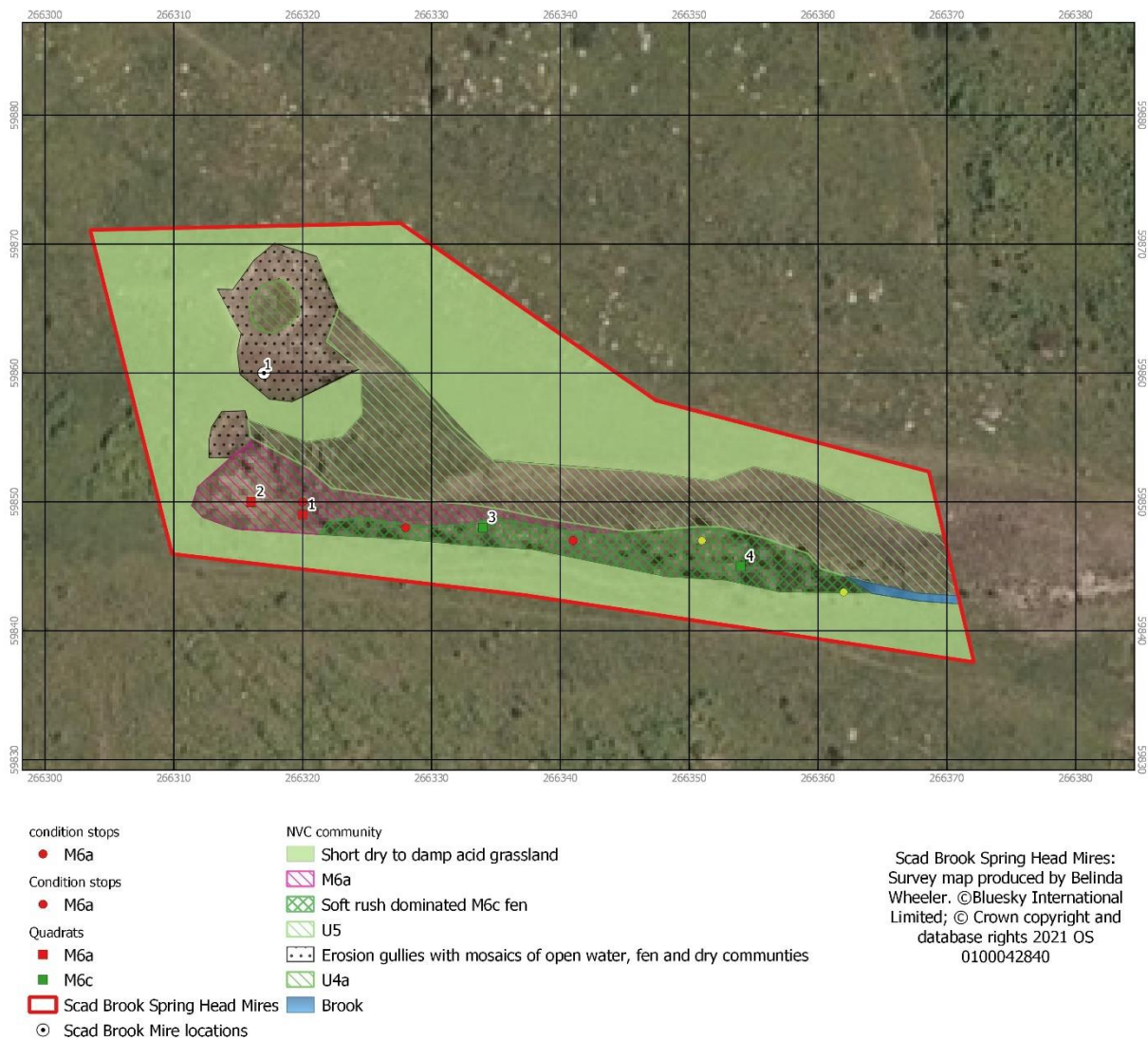
## 6 References

- Atherton, I., Bosanquet, S. & Lawley, M. (eds) (20010) *Mosses and liverworts of Britain and Ireland – a field guide*. British Bryological Society.
- Cheffings, C.M. and Farrell, L. (eds) (2005) *The Vascular Plant Red List for Great Britain*. JNCC, Peterborough at <http://www.jncc.gov.uk/>
- JNCC (2009) *Common Standards Monitoring Guidance for Upland Habitats. Version July 2009*. JNCC, Peterborough.
- Rodwell J.S. (ed.) (1992a) *British Plant Communities Volume 2. Mires and Heaths*. Cambridge University Press, Cambridge.
- Rodwell, J.S. (ed.) (1992b) *British Plant Communities, Vol. 3: Grasslands and Montane Communities* Cambridge University Press, Cambridge.
- Stace C. (2019) *New Flora of the British Isles (Fourth Edition)*. Cambridge University Press, Cambridge.
- Stroh P.H. Leach S.J., August T.A., Walker K.J., Pearman D.A., Rumsey F.J., Harrower C.A., Fay M. F., Martin J.P., Pankhurst T., Preston C.D., Taylor I. (2014) *A Vascular Plant Red List for England*. Botanical Society of Britain and Ireland, Bristol.



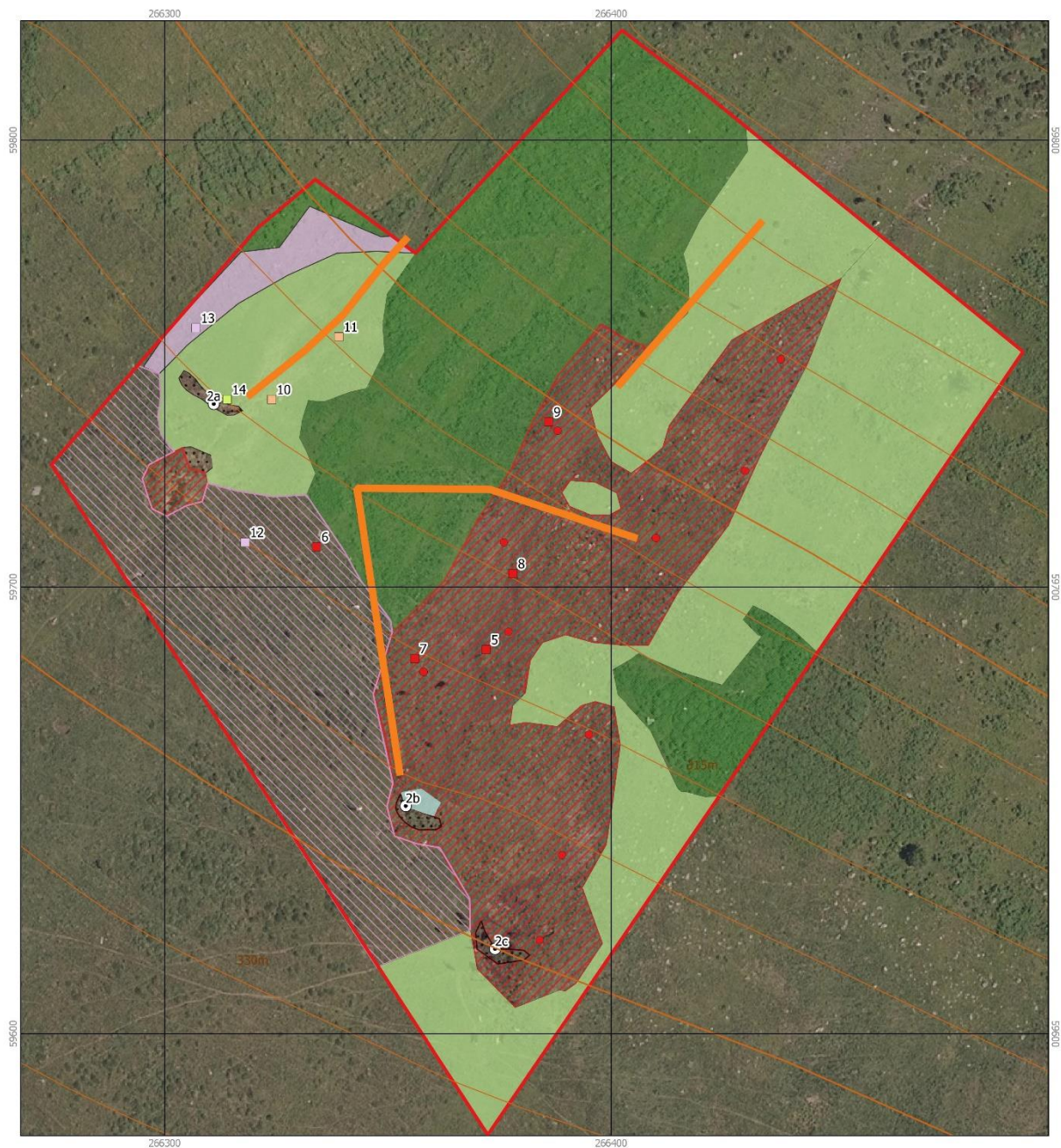
### Appendix 1a: NVC map of Head of Scad Brook

Scale: 10m grid shown



Appendix 1b: NVC map of Upland flush south of Scad Brook

Scale: 100m grid shown



- condition stops
- M6a
- Ditches
- Condition stops
- M6a
- Quadrats
- M15d
- M6a
- U4
- U4e/U5
- 177607-3\_VML\_Lines
- Index Contour Line
- Standard Contour Line
- Scad Brook Spring Head Mires
- Mire locations
- NVC community
- Short dry to damp acid grassland
- Transition from M6 fen to M15 wet heath
- M35
- Upland fen with sedge-dominated M6a
- Erosion gullies with mosaics of open water, fen and dry communities
- U20
- M15

Scad Brook Spring Head Mires:  
 Survey map produced by Belinda  
 Wheeler. ©Bluesky International  
 Limited; © Crown copyright and  
 database rights 2021 OS  
 0100042840

**Appendix 2a: Digital images – Site 1, Head of Scad Brook**



**Plate 1** Head of Scad Brook.



**Plate 2** Peat hag /erosion gully just below the Spring head with deep peat exposed.



**Plate 3** Short sedge acidic fen (M6a) and smaller peat gully at second spring head.



**Plate 4** Close-up of above: highly waterlogged and rich in *Sphagnum* moss



**Plate 5** View down Scad Brook (East) with water track entering from north (left).



**Plate 6** Soft rush dominating mire further down Scad Brook (looking West) (M6c)

**Appendix 2b: Digital images – Upland flush south of Scad Brook**



**Plate 7** Spring at site 2a with mire vegetation (centre of image)



**Plate 8** Erosion gully at 2a with 1m exposed peat and damp grassland above (note wetland/heathland habitat in background)



**Plate 9** Damp acid grassland below erosion gully at 2a – poor habitat and eroded peat



**Plate 10** Pool below spring head at site 2b – M35 rill community surrounded by fen.



**Plate 11** Rill community in pool at 2b



**Plate 12** Highly waterlogged mire just below the spring at 2c.





**Plate 13** M29 soakway and M6a mire mosaic below 2c.



**Plate 14** Waterlogged M6a mire on lower slopes



**Plate 15** Lower mire grading into acid grassland – high cover of purple moor-grass

### Appendix 3: NVC Quadrat Data

#### Key:

##### Domin scale

Domin score	% cover
10	91–100%
9	76–90%
8	51–75%
7	24–50%
6	26–33%
5	11–25%
4	4–10%
3	Many individuals, < 4%
2	Several individuals, < 4%
1	Few individuals, < 4%

##### Constancy scale

Constancy score	Frequency in samples	% frequency in samples
V	5 samples in 5	81–100%
IV	4 samples in 5	61–80%
III	3 samples in 5	41–60%
II	2 samples in 5	21–40%
I	1 sample in 5	1–20%

## Head of Scad Brook

### M6a *Carex echinata*-*Sphagnum recurvum/auriculatum* mire; *Carex echinata* sub-community

Quadrat code	1	2				
Surveyor	BRW	BRW				
Date	26/11/2021	26/11/2021				
Grid Ref (GPS)	SX 66330 59857	SX 66323 59855				
Quadrat size (m × m)	2 × 2	2 × 2				
Slope	gentle	gentle				
Aspect	E	E				
Peat depth	35	65				
Description	M6a	M6a				Constancy
<i>Agrostis capillaris</i>	5	5				
<i>Carex echinata</i>	5	5				
<i>Nardus stricta</i>	5	4				
<i>Polytrichum commune</i>	4	3				
<i>Sphagnum denticulatum</i>	4	5				
<i>Sphagnum palustre</i>	4	5				
<i>Agrostis canina</i>	3	3				
<i>Carex binervis</i>	3	2				
<i>Molinia caerulea</i>	3	2				
<i>Potentilla erecta</i>	3					
<i>Viola palustris</i>	3	4				
<i>Carex viridula</i>	2					
Liverwort	2					
<i>Scutellaria minor</i>	2					
<i>Anthoxanthum odoratum</i>		4				
<i>Juncus bulbosus</i>		2				
<i>Pteridium aquilinum</i>		1				
<i>Juncus bulbosus</i>		2				
<i>Pteridium aquilinum</i>		1				

**M6c *Carex echinata*-*Sphagnum recurvum/auriculatum* mire; *Juncus effusus* sub-community**

Quadrat code	3	4				
Surveyor	BRW	BRW				
Date	26/11/2021	26/11/2021				
Grid Ref (GPS)	SX 66339 59853	SX 66361 59853				
Quadrat size (m × m)						
Slope	2 × 2	2 × 2				
Aspect	gentle	gentle				
Photo number	E	E				
Peat depth	30	20				
Description	M6c	M6c				<b>Constancy</b>
<i>Juncus effusus</i>	6	6				
<i>Carex echinata</i>	6	4				
<i>Sphagnum fallax</i>	6	3				
<i>Agrostis canina</i>	5	7				
<i>Agrostis capillaris</i>	4	5				
<i>Sphagnum denticulatum</i>	3	4				
<i>Sphagnum palustre</i>	3					
<i>Viola palustris</i>	2	3				
<i>Juncus bulbosus</i>	2					
<i>Potentilla erecta</i>	1	2				
<i>Carex binervis</i>		2				
<i>Nardus stricta</i>		2				
<i>Galium saxatile</i>		2				
Liverwort		2				
<i>Molinia caerulea</i>		1				

## Upland Flush south of Scad Brook

M6a *Carex echinata*-*Sphagnum recurvum/auriculatum* mire; *Carex echinata* sub-community

Quadrat code	5	6	7	8	9	
Surveyor	PJW	PJW	PJW	PJW	PJW	
Date	26/11/2021	26/11/2021	26/11/2021	26/11/2021	26/11/2021	
Grid Ref (GPS)	SX 66372 59686	SX 66334 59709	SX 66356 59684	SX		
Quadrat size (m × m)	2 × 2	2 × 2	2 × 2	2 × 2	2 × 2	
Slope	moderate	moderate	moderate	moderate	moderate	
Aspect	N	N	N	N	N	
Peat depth	100	35	70	15	70	
Description	M6a	M6a	M6a	M6a	M6a	<b>Constancy</b>
<i>Molinia caerulea</i>	8	6	6	6	6	V
<i>Sphagnum denticulatum</i>	5	5	5	5	5	V
<i>Carex panicea</i>	5	3	3	4	5	V
<i>Carex echinata</i>	2	4	3	4	4	V
<i>Eriophorum angustifolium</i>	3	5	5	5		IV
<i>Carex viridula</i>	4		2	2	3	IV
<i>Erica tetralix</i>	4		2	2	2	IV
<i>Narthecium ossifragum</i>	2		2	4	2	IV
<i>Potentilla erecta</i>	1		2	2	3	IV
<i>Sphagnum subnitens</i>		3		5	4	III
<i>Agrostis canina</i>		3		3	5	III
<i>Juncus squarrosus</i>	4			2	2	III
<i>Nardus stricta</i>		2	3	2		III
<i>Calluna vulgaris</i>	1		3	2		III
<i>Viola palustris</i>			1	1	2	III
<i>Juncus bulbosus</i>	5		2			II
<i>Carex binervis</i>		4	3			II
<i>Aulacomnium palustre</i>					5	I
<i>Sphagnum tenellum</i>					4	I
<i>Juncus acutiflorus</i>					3	I
<i>Sphagnum fallax</i>	2					I
<i>Breutelia chrysocoma</i>	2					I
<i>Polytrichum commune</i>		2				I
<i>Festuca ovina</i>		2				I
<i>Sphagnum cuspidatum</i>		2				I
<i>Sphagnum inundatum</i>			2			I
<i>Rhytidiadelphus squarrosus</i>					2	I
<i>Sphagnum palustre</i>					2	I
<i>Pinguicula lusitanica</i>				1		I
<i>Succisa pratensis</i>				1		I
<i>Hylocomnium splendens</i>					1	I
<i>Calliergonella cuspidata</i>					1	I

**M15d *Scirpus cespitosus*-*Erica tetralix* wet heath, *Vaccinium myrtillus* community**

Quadrat code	12	13				
Surveyor	PJW	PJW				
Date	26/11/2021	26/11/2021				
Easting	66318	66307				
Northing	55710	59758				
Quadrat size (m × m)	2 × 2	2 × 2				
Slope	moderate	moderate				
Aspect	N	N				
Peat depth	25	60				
Description	M15d	M15d				<b>Constancy</b>
<i>Molinia caerulea</i>	7	8				
<i>Hylocomium splendens</i>	6	3				
<i>Agrostis capillaris</i>	5	4				
<i>Potentilla erecta</i>	4	3				
<i>Calluna vulgaris</i>	4					
<i>Nardus stricta</i>	3	3				
<i>Festuca ovina</i>	3	3				
<i>Agrostis canina</i>	3	2				
<i>Galium saxatile</i>	3					
<i>Pseudoscleropodium purum</i>	3					
<i>Vaccinium myrtillus</i>	3					
<i>Carex binervis</i>	2	3				
<i>Rhynchospora squarrosus</i>	2					
<i>Cladonia furcata</i>	2					
<i>Anthoxanthum odoratum</i>	1					

**Damp acid grassland U4 *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland / U5  
*Nardus stricta*-*Galium saxatile* grassland**

Quadrat code	10	11	14			
Surveyor	PJW	PJW	PJW			
Date	26/11/2021	26/11/2021	26/11/2021			
Easting	66322	66337	66314			
Northing	59742	59756	59742			
Quadrat size (m × m)	2 × 2	2 × 2	2 × 2			
Slope	moderate	moderate	moderate			
Aspect	N	N	N			
Peat depth	35	35	50			
Description	U4/U5	U4/U5	U4			<b>Constancy</b>
<i>Agrostis capillaris</i>	8	7	9			
<i>Nardus stricta</i>	5	5	3			
<i>Carex binervis</i>	4	4	2			
<i>Anthoxanthum odoratum</i>	3		3			
<i>Potentilla erecta</i>	2	3	3			
<i>Rhynchospora squarrosus</i>	2					
<i>Galium saxatile</i>		1	3			
<i>Polytrichum commune</i>		2	3			
<i>Viola palustris</i>		2				
<i>Hypnum jutlandicum</i>		2				
<i>Festuca ovina</i>		3				



## Appendix 4: Species Lists

Nomenclature follows Hill *et al* (2008) and Stace (2019).

DAFOR ratings:

D = dominant A = Abundant F = Frequent O = Occasional R = Rare

L = Locally (frequent, abundant, dominant)

+ = Present

**Table 2 Species list whole mire site**

Scientific name	Common name	Scad Brook (1) Frequency	Upland Flush (2) Frequency
<i>Agrostis capillaris</i>	Common Bent	LA	O
<i>Agrostis canina</i>	Velvet Bent	A	LA
<i>Anagallis tenella</i>	Bog Pimpernel		R
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	LF	R
<i>Aulacomnium palustre</i>	Bog Bead-moss		O
<i>Callitriche sp.</i>	Water-starwort		R
<i>Calluna vulgaris</i>	Heather (Ling)		O
<i>Carex binervis</i>	Green-ribbed Sedge	F	F
<i>Carex echinata</i>	Star Sedge	A	F-LA
<i>Carex nigra</i>	Common Sedge		R
<i>Carex panicea</i>	Carnation Sedge	R	F
<i>Carex pilulifera</i>	Pill Sedge		R
<i>Carex viridula</i>	Yellow Sedge	F	F
<i>Cladonia impexa</i>	lichen		R
<i>Cladonia furcata</i>	Lichen		O
<i>Drosera rotundifolia</i>	Round-leaved Sundew		R
<i>Eleocharis multicaulis</i>	Many-stalked Spike-rush		O
<i>Erica tetralix</i>	Cross-leaved Heath		F
<i>Eriophorum angustifolium</i>	Common Cottongrass		A
<i>Festuca ovina</i>	Sheep's Fescue	R	LF
<i>Galium saxatile</i>	Heath Bedstraw	R	LF
<i>Hydrocotyle vulgaris</i>	Marsh Pennywort		O
<i>Hypericum elodes</i>	Marsh St John's-wort		O
<i>Hylocomium splendens</i>	Glittering Wood-moss		O
<i>Hypnum jutlandicum</i>	Heath Plait-moss	R	O
<i>Juncus acutiflorus</i>	Sharp-flowered Rush		LF
<i>Juncus bulbosus</i>	Bulbous Rush	LA	LA
<i>Juncus effusus</i>	Soft Rush	LA	O
<i>Juncus squarrosus</i>	Heath Rush	R	F
<i>Molinia caerulea</i>	Purple Moor-grass	F	A
<i>Nardus stricta</i>	Mat-grass	F	F
<i>Narthecium ossifragum</i>	Bog Asphodel		LA
<i>Pedicularis sylvatica</i>	Lousewort		R
<i>Pinguicula lusitanica</i>	Pale Butterwort		O
<i>Polygala serpyllifolia</i>	Heath Milkwort		O
<i>Polytrichum commune</i>	Common Haircap	LA	LF
<i>Potamogeton polygonifolius</i>	Bog Pondweed		LA
<i>Potentilla erecta</i>	Tormentil	F	F

Scientific name	Common name	Scad Brook (1) Frequency	Upland Flush (2) Frequency
<i>Pseudoscleropodium purum</i>	Neat Feather-moss		R
<i>Pteridium aquilinum</i>	Bracken	R	LA
<i>Ranunculus omiophyllus</i>	Round-leaved Water-crowfoot		LA
<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	O	LF
<i>Scutellaria minor</i>	Lesser Skullcap	R	R
<i>Sphagnum cuspidatum</i>	Feathery Bog-moss		O
<i>Sphagnum denticulatum</i>	Cow-horn Bog-moss	A	A
<i>Sphagnum fallax</i>	Flat-topped Bog-moss	LA	LA
<i>Sphagnum inundatum</i>	Lesser Cow-horn Bog-moss		R
<i>Sphagnum palustre</i>	Blunt-leaved Bog-moss	F	O
<i>Sphagnum subnitens</i>	Lustrous Bog-moss		F
<i>Succisa pratensis</i>	Devil's-bit Scabious		R
<i>Viola palustris</i>	Marsh Violet	F	F
<i>Vaccinium myrtillus</i>	Bilberry		O
Liverwort		R	R

**Appendix 5: Condition Assessment Tables**

*Frequencies: totals out of 10 stops. 1–2 = rare (R), 3–4 = occasional (O),  $\geq 5$  = frequent*

Short Sedge Acid Fen M4–M6 – Head of Scad Brook

Date: 26/10/2021	Site:	Scad Brook site 1	Assessed by		BRW & PJW														
<b>Short Sedge Acidic Fen</b>																			
Variable	Measure	Target	Whole feature estimate															Summary / Freq.	Pass/ Fail
Extent of feature	Yes/No	No reduction in loss of feature																?	Fail
Indicators of grazing	% cover	At least 50% of live leaves and flowering shoots of vascular species should be more than 15cm above ground surface																Yes	Pass
Cover of trees and scrub (all)	% cover	Less than 10% of vegetation cover should be made up of scattered native trees and shrubs.																0%	Pass
Presence of drainage	Yes/No	Less than 10% of total feature should show signs of drainage, resulting from ditches or heavy trampling or tracking																>10%	Fail
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>Summary / Freq.</b>	<b>Pass/ Fail</b>
		<b>Grid reference (10 figure)</b>	266362,59851	266351,59854	266341,59854	266328,59857	266320,59858												
Cover of bare ground	% cover	Less than 10% of the ground cover should be disturbed bare ground	1	3	2	1	2											2%	Pass
Frequency of indicator species	Yes/No	There should be at least 2 indicator species present in the vegetation	Y	Y	Y	Y	Y											Y	Pass
Cover of positive indicator species	% cover	At least 50% of vegetation cover should be made up of indicator species (25% from each of groups 1 and 2)	25 5	35 10	35 10	40 2	70 10											41% 8%	Pass Fail
Cover of negative species	% cover	Less than 1% of vegetation cover should be made up of , collectively <i>Anthoxanthum odoratum</i> , <i>Epilobium hirsutum</i> , <i>Holcus lanatus</i> , <i>Phragmites australis</i> , <i>Ranunculus repens</i>	0	1	0	0	0											0%	Pass
Cover of purple moor-grass	% cover	Less than 20% of vegetation cover should be made up of <i>Molinia caerulea</i> .	1	0	1	3	2											1.5%	Pass

Scad Brook Continued.

Positive indicator species - key species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
<b>(1) <i>Hydrocotyle vulgaris</i></b>																	0
<b>(1) <i>Carex</i> (small to medium)</b>	1	1	1	1	1												5
<i>Carex echinata</i>	1	1	1	1	1												5
<i>Carex nigra</i>																	
<i>Carex panicea</i>			1	1	1												
<i>Carex viridula</i>		1	1	1													3
<b>(1) <i>Sphagnum</i> spp.</b>	1	1	1	1	1												5
<i>Sphagnum capillifolium</i>																	
<i>Sphagnum cuspidatum</i>																	
<i>Sphagnum denticulatum</i>	1	1	1		1												4
<i>Sphagnum fallax</i>	1																1
<i>Sphagnum palustre</i>																	1
<i>Sphagnum subnitens</i>					1												
<i>Sphagnum papillosum</i>																	
<b>(1) <i>Potentilla palustris</i></b>																	0
(2) <i>Epilobium palustre</i>																	
(2) <i>Eriophorum angustifolium</i>																	
(2) <i>Juncus acutiflorus</i>																	
(2) <i>Menyanthes trifoliata</i>																	
(2) <i>Potentilla erecta</i>	1	1	1	1													4
(2) <i>Ranunculus flammula</i>																	
(2) <i>Succisa pratensis</i>																	
(2) <i>Viola palustris</i>	1	1	1	1	1												5
<b>Other positive indicator species</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
<i>Anagallis tenella</i>																	
<i>Calluna vulgaris</i>																	
<i>Drosera</i> spp.																	
<i>Erica tetralix</i>																	
<i>Narthecium ossifragum</i>																	
<i>Pedicularis sylvatica</i>																	
<i>Pinguicula lusitanica</i>																	
<i>Potamogeton polygonifolius</i>																	
<i>Polygala serpyllifolia</i>																	
<i>Scutellaria minor</i>				1													1

Short Sedge Acid Fen M4–M6 – Upland Flush

Date: 26/10/2021		Site: Spring head mires above Scad Brook		Assessed by		BRW & BRW														
Short Sedge Acidic Fen																				
Variable	Measure	Target	Whole feature estimate															Summary / Freq.	Pass/ Fail	
Extent of feature	Yes/No	No reduction in loss of feature																?	Fail	
Indicators of grazing	% cover	At least 50% of live leaves and flowering shoots of vascular species should be more than 15cm above ground surface	y	n	y	y	y	y	y	y	y							Yes	Pass	
Cover of trees and scrub (all)	% cover	Less than 10% of vegetation cover should be made up of scattered native trees and shrubs.																0%	Pass	
Presence of drainage	Yes/No	Less than 10% of total feature should show signs of drainage, resulting from ditches or heavy trampling or tracking																<10%	Pass	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Summary / Freq.	Pass/ Fail	
		Grid reference (10 figure)	266384,59621	266389,59640	266395,59667	266377,59690	266376,59710	266410,59711	266430,59726	266438,59751	266388,59735	266358,59681								
Cover of bare ground	% cover	Less than 10% of the ground cover should be disturbed bare ground	2	20	0	5	5	2	0	2	1	1						3.8%	Pass	
Frequency of indicator species	Yes/No	There should be at least 2 indicator species present in the vegetation	y	y	y	y	y	y	y	y	y							Yes	Pass	
Cover of positive indicator species	% cover	At least 50% of vegetation cover should be made up of indicator species (25% from each of groups 1 and 2)	50 2	40 20	60 15	35 25	40 50	40 40	60 25	30 25	40 10	30 25						42.5% 23.7%	Pass ±Pass	
Cover of negative species	% cover	Less than 1% of vegetation cover should be made up of , collectively <i>Anthoxanthum odoratum</i> , <i>Epilobium hirsutum</i> , <i>Holcus lanatus</i> , <i>Phragmites australis</i> , <i>Ranunculus repens</i>	0	0	0	0	0	0	0	0	0	0							Pass	
Cover of purple moor-grass	% cover	Less than 20% of vegetation cover should be made up of <i>Molinia caerulea</i> .	0	0	2	10	20	15	30	30	25	30						16%	Pass	

Continued.

Positive indicator species - key species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
<b>(1) <i>Hydrocotyle vulgaris</i></b>	1		1														2
<b>(1) <i>Carex</i> (small to medium)</b>	1	1	1	1	1	1	1	1	1	1							10
<i>Carex echinata</i>	1	1	1	1	1	1	1	1	1	1							10
<i>Carex nigra</i>																	
<i>Carex panicea</i>			1	1	1	1	1	1	1	1							8
<i>Carex viridula</i>		1	1	1					1	1							5
<b>(1) <i>Sphagnum</i> spp.</b>	1	1	1	1	1	1	1	1	1	1							10
<i>Sphagnum cuspidatum</i>			1	1		1											3
<i>Sphagnum denticulatum</i>	1	1	1	1	1	1	1	1	1	1							10
<i>Sphagnum fallax</i>																	
<i>Sphagnum palustre</i>									1								1
<i>Sphagnum papillosum</i>																	
<i>Sphagnum subnitens</i>					1	1	1		1								4
<i>Sphagnum tenellum</i>									1								1
<b>(1) <i>Potentilla palustris</i></b>																	
(2) <i>Epilobium palustre</i>																	
(2) <i>Eriophorum angustifolium</i>			1	1	1	1	1	1	1	1							8
(2) <i>Juncus acutiflorus</i>		1		1	1				1								4
(2) <i>Menyanthes trifoliata</i>																	
(2) <i>Potentilla erecta</i>		1		1		1	1	1	1	1							7
(2) <i>Ranunculus flammula</i>																	
(2) <i>Succisa pratensis</i>																	
(2) <i>Viola palustris</i>	1	1	1	1		1	1	1	1	1							9
<i>Total indicator species per stop</i>	4	6	8	9	6	8	7	6	11	7							<i>Total</i>
<b>Other positive indicator species</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
<i>Anagallis tenella</i>																	
<i>Calluna vulgaris</i>						1				1							2
<i>Drosera</i> spp.				1				1									2
<i>Erica tetralix</i>				1	1	1		1	1	1							6
<i>Hydrocotyle vulgaris</i>	1		1														2
<i>Narthecium ossifragum</i>			1	1	1	1	1	1	1	1							8
<i>Pedicularis sylvatica</i>			1														1
<i>Pinguicula lusitanica</i>					1												1
<i>Potamogeton polygonifolius</i>				1													1
<i>Polygala serpyllifolia</i>					1	1		1									3
<i>Scutellaria minor</i>						1											1
<i>Succisa pratensis</i>																	

