2014 Fen Surveys of the North York Moors:

Fen Bog, Jugger Howe, Sand Dale, Troutsdale & Rosekirkdale

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Report to:

Natural England

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Acknowledgements

Background information on the sites surveyed was kindly provided by Justine Clark and Iain Diack (Natural England staff). Thanks are also due to all landowners and land managers who gave permission to the surveyors to visit their land.

1. EXECUTIVE SUMMARY

A large-scale survey of Alkaline Fens (AF) and Transition Mire and Quaking Bog (TMQB) sites in North Yorkshire in 2011 identified the need for more detailed surveys of four sites: Fen Bog SAC; Jugger Howe Beck; Troutsdale and Rosekirk Dale SSSI; part of Eller's Wood and Sand Dale SSSI and adjacent non-SSSI land. Outputs from this project include detailed accounts of each site; discussion about the 'goodness of fit' of the surveyed plant communities with the published NVC dataset and the Annex 1 habitat descriptions; possible limitations or constraints of the dataset; information gaps; and suggestions for further work. These outputs will be used in the ongoing review of SSSIs, to add interest features to existing SSSIs where currently unrecorded, and to identify un-notified sites that are of SSSI quality.

Surveys were undertaken between 30 August and 5 September, involving a 'walkover' assessment aimed at identifying the presence of target vegetation types (AF, TMQB, and Molinia Meadows (MM)), followed by detailed mapping and quadrat sampling. GPS coordinates of all quadrat locations were recorded using a hand-held device nominally accurate to 3 m; spot measurements of pH and electrical conductivity (EC) of springs and seepages were made (where water was available) using a hand-held combination meter; and representative digital photographs were taken. Target notes were made regarding site management, condition of target vegetation, water supply features, and adjacent vegetation types.

Survey data were analysed in order to identify the National Vegetation Classification (NVC) communities that are present at each site. Where unusual vegetation types were encountered that could not be easily assigned to a single NVC community, these have either been described as intermediate between two or more types, or have been compared with vegetation types described by other workers as falling beyond the current scope of the published NVC accounts.

Of the 97 quadrats recorded, a total of 38 samples were considered to be Alkaline Fen vegetation, mainly M13 mire but with seven examples of M10, and a few small examples of M37 springs. Twenty-five samples were recorded from vegetation that could be considered to be TMQB vegetation, mainly M14 mire, but with three samples of M4 mire at Fen Bog. Twelve samples were collected from vegetation that is considered to be a form of the Molinia Meadows habitat, consisting either of M24 fen meadow, or having affinities to M22 fen meadow, M24 fen meadow and M26 mire communities. Twenty two samples were recorded in other types of mire, swamp, wet heath and wet grassland vegetation: M15 (4 samples), M21 (1 sample), M22 and affinities (14 samples), MG9 (1 sample) and S9 (1 sample).

Mapped stands of target vegetation covered the following total areas: Alkaline Fen approximately 2.7 ha; Transition Mire & Quaking Bog approximately 1.1 ha; Molinia Meadow approximately 1.1 ha. Most stands were very small (between 0.001-0.2 ha), an important consideration since the minimum resolution for GIS mapping purposes is usually 0.25 ha (2500 m^2).

This project has added further detail to the documentation of nationally important M13 stands at Jugger Howe, Sand Dale and Troutsdale, and has gathered new data for extensive areas of M13 in Rosekirk Dale. Jugger Howe Beck supports many stands of M14 mire and, combined with the presence of several M13 stands there, Jugger Howe Dale can be considered one of the most important examples in England of mixed Alkaline Fen and Transition Mire. This part of the country is clearly an important locus for M13 and M14 vegetation, and it is possible that further investigation may highlight other examples.

Both Troutsdale and Sand Dale were found to support a species-rich fen meadow vegetation type that has strong affinities to M24, but also appears to have floristic links to M22 and M26. This vegetation does not appear to be well represented in the published NVC accounts, but similar vegetation has recently been described from other parts of the UK. In the light of these findings, there may be an argument for re-examining the syntaxonomic status of M24, and M26, and their relationship to other community types, using data additional to those that were available to Rodwell (1991). The syntaxonomic status of M14 and its relationship to other community types (such as M9-1(M9a), and M15a) would also benefit from re-examination using data additional to those available to Rodwell (1991).

In terms of site management, Fen Bog is part of an extensive moorland unit which is lightly grazed by sheep, and the stands of target vegetation were considered to be in favourable condition. The vegetation at Jugger Howe Beck is part of an extensive moorland management unit that appears to be only very lightly grazed by sheep and deer, and the vegetation in most of the spring and seepage areas was rather rank. The current level of grazing may not be adequate to sustain the wetland and associated invertebrate interest. Ideally the wetlands along the valley floor should become a separate site unit, so that the wetland interest can be assessed as a main interest feature, and grazing pressure should be increased along the valley bottom.

The Rosekirk Dale section of the Troutsdale and Rosekirk Dale Fens SSSI has recently been entered into Higher Level Stewardship. Scrub was cleared from the southern end of the site in 2012, and cattle grazing began in 2013, which has resulted in the opening up of previously rank and impoverished stands of wetland vegetation, and a large increase in cover of *Eupatorium cannabinum* on drier ground. Recovery of the M13 stands here should be monitored.

At Troutsdale, unit 1 appears to be lightly grazed, and scrub has been removed from several areas alongside Troutsdale Beck. Unit 2 of the SSSI, and adjacent non-SSSI land, is grazed by a small herd of cattle. Some willow scrub has been removed from the non-SSSI area south of the stream. The recovery of the wetland vegetation in these areas should be monitored.

At Sand Dale, the eastern part of Unit 2 is separated from the west by a stock-proof fence. The western side of Unit 2 at Sand Dale is currently grazed by a small herd of hardy cattle, which in most parts appear to be keeping the vegetation at an appropriate height. Grazing pressure on the eastern side also appears to be appropriate. There has been recent clearance of gorse and willow scrub near the valley bottom. Water extraction features are present on site, but they do not appear to be having a significant effect on water flow from the various springs.

The non-SSSI land on the north side of Sand Dale is open to grazing by cattle that currently graze the SSSI land on the southern side of the stream (the eastern section of SSSI unit 2). Recent scrub management and cattle grazing has led to a remarkable recovery of M13 vegetation in this compartment since the previous survey in 2011, and this area should be incorporated into the existing Eller's Wood and Sand Dale SSSI and SAC. The current management of this area, and the adjacent part of unit 2 of the SSSI, should be continued and future monitoring should be tailored to map the extent of M13 vegetation, and the extent of distinctive Alkaline Fen species present.

A number of specific management recommendations have been suggested, including increasing grazing pressure along the valley bottom of Jugger Howe Beck; monitoring the effect of grazing and scrub clearance upon the quality of Alkaline Fen vegetation at Rosekirk Dale; clearing scrub at the northern end of Rosekirk Dale fen; clearing mature conifer plantation in Unit 4 and south-eastern Unit 3 of Rosekirk Dale fen, and blocking ditches that currently drain calcareous spring-water from this area, with the aim of restoring Alkaline Fen; monitoring fen recovery in Troutsdale where scrub has been cleared; minor scrub control on the southern slopes of the western part of Unit 2 of Eller's Wood and Sand Dale SSSI, to encourage grazing of rank fen vegetation; and monitoring M13 recovery in the non-SSSI section of Sand Dale.

Further surveys of a number of sites in the North Yorkshire area would be beneficial: Ashberry Pastures SSSI; Bishop Monkton Ings non-SSSI area; Caydale SSSI; Marfield Fen SSSI; Sand Dale further east outside the SSSI; Seive Dale Fen SSSI; Sharrow Mires; and Thack Sike in Newtondale SSSI.

Where Annex 1 habitats have been recorded in this survey, but are not currently listed as a feature of a polygon, the PHT habitat inventory should be updated to include the Annex 1 habitat type(s) as an additional PHT. The Annex 1 habitat inventorys should also be updated to show the stands recorded in the present survey.

2. INTRODUCTION

Natural England has developed a series of GIS inventories for Biodiversity Action Plan (BAP) Priority Habitats, and for certain EC Habitats Directive Annex 1 fen types. The Inventories are a dynamic database that are under regular review and update as new information is made available. Separate contracts have been let previously to develop inventories for the following Annex 1 habitats: *Alkaline Fens* (AF), *Transition Mire and Quaking Bog* (TMQB), and *Molinia meadows* (MM). This contract is part of an ongoing programme of survey work to improve the quality and comprehensiveness of the inventories.

In 2011, as part of a large-scale survey of AF and TMQB sites in North Yorkshire, further detailed surveys were recommended for four sites that were particularly large or complex:

- Fen Bog SAC
- Jugger Howe Beck
- Troutsdale and Rosekirk Dale SSSI
- Eller's Wood and Sand Dale SSSI
- Land adjacent to Eller's Wood and Sand Dale SSSI

These areas have been surveyed in greater detail as part of this project. Detailed accounts of each site are given here, and discussion is also made of the 'goodness of fit' of the surveyed plant communities with the published NVC dataset and the Annex 1 habitat descriptions, possible limitations or constraints of the dataset, information gaps, and suggestions for further work.

In addition to inventory development, the outputs from this project will be used in the ongoing review of SSSIs, to add interest features to existing SSSIs where currently unrecorded, and to identify un-notified sites that are of SSSI quality.

3. PROJECT OUTPUTS

Outputs from this project comprise a report, quadrat data-files, GIS layers, and electronic photographs, and include the following components:

1. A brief description of each surveyed mire site, the target NVC plant communities found there, other notable fen communities, possible water supply characteristics and notes about site management (see Section 9 (Annex 1).
2. A discussion about the 'goodness of fit' of these plant communities with the published NVC dataset and the Habitats Directive Annex 1 habitat descriptions, and how these samples relate to a regional and national context (Section 1).
3. Results of the vegetation analysis and NVC matching process for individual quadrat samples (see Section 10 (Annex 2)).
4. Results of the vegetation analysis and NVC matching process for combined quadrat samples (constancy tables) (see Section 11.1 to Section 11.10).
5. An Excel spreadsheet for each site that contains: (i) a species list with Domin values for all quadrats recorded; (ii) pH and electrical conductivity (EC) values where these could be measured; (iii) GPS co-ordinates; (iv) the NVC community attributed to the quadrat. The quadrat data are reproduced with each site account, and also supplied as separate sheets in Excel workbook: 'NYMdata24-03-15 FINAL'.
6. Excel spreadsheets that combine all quadrat details, including a species list with Domin values, and a species list with DAFOR scores, supplied in Excel workbook: 'NYMdata24-03-15 FINAL'.
7. Maps illustrating the location and extent of target NVC communities for each site visited, with clear identification of site name. All maps are based on recent aerial photos (supplied

by Natural England), and are oriented with grid north at the top of the figure. The map images are reproduced with each site account, and also supplied as a separate image file in pdf format: 'NYM_FIGS-0150327;

8. Polygons showing the approximate extent of target plant communities at each site have been digitised by snapping to existing OS MasterMap features wherever possible, using ArcGIS version 10.0, and are provided as ESRI shapefiles projected to the British National Grid.
9. Representative digital site photographs provided on a separate DVD.

4. METHODOLOGY

Preliminary desk work involved gathering available site information from Natural England, and producing survey forms and site maps for use in the field. Surveys were undertaken between 30 August and 5 September.

Surveys involved a 'walkover' assessment aimed at identifying the presence of target vegetation types (Alkaline Fen, Transition Mire / Quaking Bog, and Molinia Meadows), followed by detailed mapping and quadrat sampling. Where target wetland vegetation was present, and where time permitted, a representative quadrat with Domin[1] cover values for all plant species present was recorded in each stand, plus a full plant species list with DAFOR[2] abundance scores for the entire stand. GPS coordinates of all quadrat locations were recorded using a hand-held device nominally accurate to 3 m; spot measurements of pH and electrical conductivity (EC) of springs and seepages were made (where water was available) using a hand-held combination meter; and representative digital photographs were taken. Target notes were made regarding site management, condition of target vegetation, water supply features, and adjacent vegetation types.

Once surveys were completed, survey data were input onto Excel spreadsheets, and the data analysed in order to identify the National Vegetation Classification (NVC) communities that are present at each site. Quadrat data were initially classified individually using MATCH (Malloch, 1992). The resulting coefficients of 'fit' with various NVC plant communities were examined in the light of the written community descriptions provided in the published accounts (Rodwell 1991, *et seq.*; Wheeler, Shaw & Tanner, 2009; JNCC, 2011), and through internal discussions, with the aim of assessing which NVC type was considered to be the most likely. It should be noted that the chosen (sub-) community was not always that given the highest MATCH coefficient. To help clarify the process of assigning stands to particular NVC communities, samples of similar vegetation were also collated to produce constancy tables. Where unusual vegetation types were encountered that could not be easily assigned to a single NVC community, these have either been described as intermediate between two or more types, or have been compared with vegetation types described by other workers as falling beyond the current scope of the published NVC accounts (see JNCC, 2011).

Taxonomic revisions have occurred since the NVC accounts were published, particularly affecting bryophyte nomenclature (Smith, 2004). Several moss names occur in the titles of NVC communities; where used, these have been retained in order to maintain consistency with Rodwell (1991, *et seq.*). Old species names have been revised in the text. Higher plant nomenclature is based on Stace (2010).

[1] Domin cover values: **1:** <4% cover, with few individuals. **2:** <4% cover, with several individuals. **3:** <4% cover, with many individuals. **4:** 4-10% cover. **5:** 11-25% cover. **6:** 26-33% cover. **7:** 34-50% cover. **8:** 51-75% cover. **9:** 76-90% cover. **10:** 91-100% cover.

[2] DAFOR scale: **Dominant (D)**: A single species which prevails over other species in terms of the ground cover of a stand of a particular habitat. **Abundant (A)**: Found regularly throughout a stand of a particular habitat and contributing significantly to the ground cover of that stand (>5% cover). **Frequent (F):** Scattered plants or small clumps of plants found regularly throughout a stand and making a modest contribution to the ground cover of that stand (<5% cover). **Occasional (O):** Scattered plants generally not making a contribution to the ground cover of that stand. **Rare (R):** Not more than a few individual plants or clumps of a species recorded in a stand. **Local (L):** Restricted to particular areas or parts of a stand.

5. RESULTS

An overview map of the survey area is provided in Figure 1. Site information and species data that were gathered for each site are provided in Annex 1. These site accounts consist of a general site description; more detailed descriptions of the target vegetation types encountered and their assigned NVC communities; brief notes about wetland substrata and possible water supply characteristics in terms of WETMEC type (see Wheeler, Shaw & Tanner 2009); and comments regarding site management and condition. Each account is supplemented by a site map showing vegetation stands, quadrat and target note locations, water flow tracks where present and mappable, and tabulated records of sample descriptions, target notes, and quadrat data.

The results of vegetation data analyses using MATCH are provided for individual samples in Section 10 (Annex 2), and constancy tables for collated sample data are provided in Sections 11.1 to 11.10 (Annex 3).

5.1 SUMMARY OF SURVEYED MIRE TYPES

The plant communities that were encountered during these surveys are listed in Table 1 below, ordered within the relevant Annex 1 habitat class (based on Tratt *et al*, 2013).

Table 1. Plant communities surveyed in 2015 at Fen Bog, Jugger Howe Beck, Rosekirk Dale, Troutsdale, and Sand Dale.

Alkaline Fen vegetation
M10 *Carex dioica–Pinguicula vulgaris* mire, M10a *Carex demissa–Juncus bulbosus/kochii* sub-community
M13 *Schoenus nigricans–Juncus subnodulosus* mire, M13a *Festuca rubra–Juncus acutiflorus* sub-community M13b *Briza media–Pinguicula vulgaris* sub-community M13c *Calth palustris–Galium uliginosum* sub-community
M37 *Cratoneuron commutatum– Festuca rubra* spring
Transition Mire & Quaking Bog
M4 *Carex rostrata–Sphagnum recurvum* mire
M14 *Schoenus nigricans–Narthecium ossifragum* mire
Molinia Meadows
M24 *Molinia caerulea–Cirsium dissectum* fen meadow
Affinities to M26 *Molinia caerulea–Crepis paludosa* mire
Non-target wetland communities
M15 *Scirpus cespitosus–Erica tetralix* wet heath, M15a *Carex panicea* sub-community
M21 *Narthecium ossifragum –Sphagnum papillosum* valley mire
M22 *Juncus subnodulosus–Cirsium palustre* fen meadow, M22a *Juncus acutiflorus* sub-community and M22b *Juncus effusus* sub-community
MG9 *Holcus lanatus–Deschampsia cespitosa* grassland
S9 *Carex rostrata* swamp

A site-by-site summary of all the wetland plant communities that were sampled during this project is given in Table 2.

Of the 97 quadrats recorded, a total of 38 samples were considered to be Alkaline Fen vegetation, mainly M13 mire but with two examples of the M10 mire community in Fen Bog, four examples at Jugger Howe Beck, and one at Sand Dale. A few small examples of M37 spring vegetation were observed (but not sampled) in association with M13 vegetation.

25 samples were recorded from vegetation that could be considered to be Transition Mire and Quaking Bog vegetation, mainly M14 mire, but with three samples of M4 mire at Fen Bog.

12 samples were collected from vegetation that is considered to be a form of the Molinia Meadows habitat, consisting either of M24 fen meadow, or having affinities to all or some of M22 fen meadow, M24 fen meadow and M26 mire communities.

In addition, 22 samples were taken in other types of mire, swamp, wet heath and wet grassland vegetation: M15 (4 samples), M21 (1 sample), M22 and affinities (14 samples), MG9 (1 sample) and S9 (1 sample).

5.2 SUMMARY OF SURVEYED ANNEX 1 VEGETATION

Table 3 provides a summary of the types and areas of Alkaline Fen and Transition Mire & Quaking Bog vegetation that were sampled at these sites.

Mapped stands of target vegetation covered the following total areas: Alkaline Fen approximately 2.7 ha; Transition Mire & Quaking Bog approximately 1.1 ha; Molinia Meadow approximately 1.1 ha. Most stands were very small (between 0.001-0.2 ha). This is an important consideration, since the minimum resolution for GIS mapping purposes is usually 0.25 ha (2500 m^2).

Figure 1. Overview of North York Moors 2014 survey site locations.

Table 2. Summary of Annex 1 fen survey vegetation types and other mire vegetation recorded at Fen Bog, Jugger Howe Beck, Rosekirk Dale, Troutsdale, and Sand Dale.

Site name	Central grid reference	Alkaline Fen	No. of samples	Transition Mire & Quaking Bog	No. of samples	Molinia Meadows	No. of samples	Other vegetation	No. of samples	Total no. samples
Fen Bog SAC	485400 497920	M10	2	M4 M14	3 9					14
Jugger Howe Beck	493590 499130	M10 M13	4 4	M14	13			M15 M21 M22	4 1 1	27
Rosekirk Dale	490350 487800	M13	7					M22	3	10
Troutsdale	490100 487500	M13	4			M24 M22 / M24 / M26	2 2	M22 M22 / M23 MG9	6 1 1	16
Sand Dale	485860 484820	M10 M13	1 9			M24 M22 / M24 / M26	3 5	M22 S9 Wooded spring	3 1 1	23
Sand Dale non-SSSI	486000 484920	M13	7							7
	Total	**Alkaline Fen**	**38**	**Transition Mire & Quaking Bog**	**25**	**Molinia Meadows**	**12**	**Other vegetation**	**22**	**97**

Table 3. A summary of target mire types surveyed at Fen Bog, Jugger Howe Beck, Rosekirk Dale, Troutsdale, and Sand Dale.

Notes: AF = Alkaline Fen; TMQB = Transition Mire & Quaking Bog; MM = Molinia Meadows.

Site name	Grid reference	Interest feature	Annex 1 type	No. of samples	Feature area (ha)
Fen Bog SAC	485400 497920	M4	TMQB	3	0.023
		M10	AF	2	0.003
		M14	TMQB	9	0.075
Jugger Howe Beck	493590 499130	M10	AF	4	0.586
		M13	AF	4	0.301
		M14	TMQB	13	1.0
Rosekirk Dale	490350 487800	M13	AF	7	0.693
Troutsdale	490100 487500	M13	AF	4	0.246
		M24	MM	2	0.373
		M22 / M24 / M26	MM	2	0.362
Sand Dale	485860 484820	M10	AF	1	0.01
		M13	AF	9	0.345
		M24	MM	3	0.157
		M22 / M24 / M26	MM	5	0.166
Sand Dale non-SSSI	486000 484920	M13	AF	7	0.5
Totals		**Alkaline Fen**		**38**	**2.68 ha**
		Transition Mire		**25**	**1.1 ha**
		Molinia Meadow		**12**	**1.06 ha**

6. DISCUSSION

6.1 LINKING NVC COMMUNITIES TO EC HABITAT CATEGORIES

6.1.1 H7230 Alkaline Fen

H7230 Alkaline Fen habitat in Britain is associated with wetlands irrigated by base-rich, but not always alkaline, water (pH > 6) from springs and seepages, often on hill-slopes (i.e. soligenous[3]). Tufa deposition sometimes creates large spring mounds. This category also includes some vegetation in topogenous situations, where water is retained due to impeded drainage, fed by groundwater outflow (percolation).

These habitats are often very small in extent, sometimes only a few square metres, but they are typically species-rich, and support many rare species.

The NVC plant communities that are considered to qualify as Alkaline Fen are M9 (but usually M9b (M9-2[4])), M10, M11 and M13. In this project only M10 and M13 plant communities were recorded. M37 springs were also noted (but not sampled) in association with some examples of the M13 plant community.

6.1.2 H7140 Transition Mire and Quaking Bog.

The NVC vegetation types considered here to qualify as Transition Mire and Quaking Bog (TM / QB) are M4, M5, M8, M9, M14 (and M21, M29, and S27 in some situations). The habitat is described in the interpretation manual as 'presenting a large range of plant communities' (European Commission, 2007), but is mainly described as occurring in topogenous situations, basins, pools, fringing open water, and on floodplains, and the occurrence of vegetation rafts is highlighted as an important feature in many sites.

It is rather unclear exactly what vegetation types, or wetland habitats, are encompassed within the CORINE definition and interpretation of TM / QB (see discussion of concepts in Wheeler & Shaw 1995a & b, and in Tratt *et al.*, 2013). Essentially the most widely accepted concept of transition mire is related to the development of a whole wetland system, rather than being specifically associated with particular plant communities. Applying this concept would mean that in some cases whole sites, supporting a range of plant communities, would be regarded as 'Transition Mire', a good example being Fen Bog SAC. However, under the definitions provided in the interpretation manual (European Commission, 2007) and in the JNCC guidance for this habitat (JNCC 2007, 2012), large parts of Fen Bog do not qualify as Annex 1 habitat because they support 'bog' vegetation (NVC communities: M18 *Erica tetralix– Sphagnum papillosum* bog and M21 *Narthecium ossifragum–Sphagnum papillosum* valley mire), which peat stratigraphical studies show has developed relatively recently (over the last 200 years or so). These 'bog' vegetation types are listed as the Annex 1 habitats 'Active raised bogs'; 'Blanket bogs' (M18); and 'Rhynchosporion' (interpreted as some types of vegetation classified as the NVC community M21). However, the Fen Bog site is clearly not a raised or blanket bog, and the extensive areas of M21 vegetation do not represent Rhynchosporion vegetation. M21 is explicitly excluded from the current JNCC definition of TM / QB (2012), and few examples of M21 can be considered as examples of Rhynchosporion vegetation. However, it is a vegetation type of national and European Union importance, and it does support some of the characteristic species listed in the interpretation manual under the Transition Mire and Quaking Bog heading, particularly in the M21a sub-community (e.g. *Rhynchospora alba* and *Carex lasiocarpa*).

[3] Terminology follows Wheeler, Shaw & Tanner (2009)

[4] See Wheeler, Shaw & Tanner (2009) for explanation of M9 sub-divisions

Because of the ambiguity of the available definitions, it can be difficult to decide when stands representing target NVC communities qualify as TM / QB habitat. Many plant communities listed as qualifying TM / QB habitat are widespread in wetlands in Britain and are often associated with other wetland habitats, so they cannot always be regarded as TM / QB. For example, M2 is often associated with pools in raised bogs; M4 is often found as acidic flushes in upland heaths and blanket mires; S27 is a widespread swamp community; and M29 often occurs in water flow tracks forming an axial stream in valley wetlands.

In this project M4, M14, and M21 were recorded, although the M21 stands were not considered to be TM / QB habitat.

6.1.3 H6410 Molinia Meadows on Calcareous, Peaty or Clayey-silt-laden soils (Molinion caeruleae)

The NVC vegetation types that are typically considered to qualify as the EU Annex 1 habitat 'Molinia Meadows on Calcareous, Peaty or Clayey-silt-laden soils (*Molinion caeruleae*)' are M24 *Molinia caerulea–Cirsium dissectum* fen meadow, and M26 *Molinia caerulea–Crepis paludosa* mire. M24 is a rather variable plant community: it can be heathy, support abundant tall herbs, or be a more 'typical' grassy form, which is mainly found in southern England. M26 is a plant community described from only a small number of sites in the north and west of England, generally supporting abundant *Crepis paludosa* and *Trollius europaeus* (JNCC, 2007 & 2012c). The habitat is described in the interpretation manual as "relatively rich in species occurring on neutral–alkaline to calcareous soils with a fluctuating water table. The soil is sometimes quite peaty and becomes dry in the summer." (European Commission, 2007).

Carex hostiana (tawny sedge), *Carex pulicaris* (flea sedge), *Cirsium dissectum* (meadow thistle) and *Succisa pratensis* (devil's-bit scabious) show particular affinity to the Molinia Meadows habitat (JNCC, 2007 & 2012c). The qualifying vegetation types usually occur as components of wet pastures or fens, and often form mosaics with dry grassland, heath, mire and scrub communities.

Cooper and MacIntosh (1996), while discussing Scottish examples of species-rich *Molinia* and *Juncus* vegetation, suggest that only examples of *Molinia*-dominated vegetation that contain *Valeriana dioica* and/or *Sanguisorba officinalis* as well as *Crepis paludosa* and/or *Trollius europaeus* should be considered to be M26.

6.2 'GOODNESS OF FIT' OF SAMPLED COMMUNITIES WITH THE NVC

It should be noted that there are a number of recognised vegetation types that appear not to 'fit' well within the NVC framework as it currently stands; these have been collated in a recent document published by JNCC (2011), and include those described by Rodwell *et al.* (2000). With this in mind, some general points can be made with regard to a number of the mire communities sampled during this survey and how they are encompassed within the NVC scheme.

6.2.1 M4: Carex rostrata–Sphagnum recurvum mire

During this survey only one stand of M4 vegetation was sampled, occupying a flooded trackway at Fen Bog SAC. The stand was characteristically dominated by a mixture of *Carex rostrata* and *Sphagnum fallax*, with locally abundant *Carex echinata, Erica tetralix, Myrica gale, Sphagnum denticulatum, S. palustre* and *Vaccinium oxycoccus*. A range of other species were scattered at low cover, including species such as *Agrostis stolonifera, Cardamine pratensis, Equisetum palustre, Juncus articulatus, Molinia caerulea, Ranunculus flammula* and *Viola palustris.* Whilst the vegetation had affinities with M2, M4 and M6, the species mix and topographic situation suggest that is should be best thought of as an example of M4 mire.

6.2.2 M10: Pinguicula vulgaris–Carex dioica mire

Only four samples of vegetation that could be confidently classed as M10 mire were surveyed during this project. These were all small stands of fairly open, very wet, low-growing bryophyte and sedge-rich vegetation that generally fit well within the description of the *Carex demissa–Juncus bulbosus/kochii* sub-community (M10a), with the exception of the stand observed at Sand Dale, which had little to distinguish between either sub-community. Some of the vegetation associated with iron-rich groundwater outflow at Jugger Howe showed strong affinities to M10a and are probably best placed in this community, but they are embedded within heathy vegetation, occuring as intricate mosaics, so they also have many affinities to M14.

6.2.3 M13: Schoenus nigricans–Juncus subnodulosus mire

Five of the six sites that were surveyed during this project were found to support the M13 base-rich mire community. At Jugger Howe Beck, the examples seen were classed as the M13a *Briza media–Pinguicula vulgaris* sub-community: they were generally undergrazed and dominated by robust species: in some cases by dense *Juncus subnodulosus* and *Schoenus nigricans*, in others by *Molinia*, *Myrica gale* and *Schoenus nigricans*, generally with a sparse understorey of grasses, sedges, forbs and bryophytes (notably in one stand with the orchid *Epipactis palustris*).

The Alkaline Fen vegetation at Rosekirk Dale was mostly M13a: it was previously derelict, though cattle grazing has recently been re-instated, and much scrub clearance has been undertaken. The stands of mire are typically open with much bare wet ground between tussocks of *Schoenus nigricans*, with scattered grasses, sedges, forbs and bryophytes. Two areas have greater affinity to the M13b *Briza media–Pinguicula vulgaris* sub-community, being more diverse and including species such as *Calluna vulgaris* and *Campanula rotundifolia* (on tussock tops), *Chara* sp. (in wet runnels), *Danthonia decumbens*, *Fissidens adianthoides*, *Hypericum pulchrum*, *Leontodon hispidus*, *Parnassia palustris*, and *Pinguicula vulgaris*.

At Troutsdale all the sampled M13 vegetation corresponds well to the description of M13b *Briza media–Pinguicula vulgaris* sub-community. The M13 vegetation in unit 2 is particularly diverse around networks of water-flow tracks fed by strong springs. At this site, M13 vegetation shows broad transitions to M22 and M24 vegetation away from the water-flow tracks.

Sand Dale within the SSSI supports large areas of very diverse calcareous mire vegetation that is grazed by cattle, and is open, wet and low-growing: it can clearly be assigned to the M13b sub-community. To the north of the SSSI, partly drained springs and flushes that have recently been cleared of planted conifers show good signs of recovery, and the vegetation there now has strong affinities to M13 mire.

6.2.4 M14: Schoenus nigricans–Narthecium ossifragum mire

M14 often develops in zones between base-rich soakways and base-poor or ombrotrophic plant communities. However, it is likely to have been inconsistently recorded in vegetation surveys because it is described in the NVC account (Rodwell, 1991) as being largely confined to south-west England, and no examples from northern England are apparently included. Despite this, data collected from Cumbria and North Yorkshire clearly place many distinctive soakway plant communities within M14 (Wheeler, Shaw & Tanner, 2009).

Of the samples surveyed during this project that were assigned to M14, MATCH analysis commonly produced a higher coefficient for M10a or M15a than for M14, and in many instances M21 was also a prominent output. To a lesser extent, M9, M17 and M25 also produced fairly high coefficients. This may be caused by a combination of factors: the NVC sample set for M14 is very small (only 15 samples: Rodwell, 1991), and these were exclusively from the south and south-east of England; M14 can be associated with both base-rich and base-poor influences, hence it may have affinities to vegetation of both base-rich conditions (e.g. M9, M10) and base-poor conditions (e.g. wet heath vegetation such as M15a; blanket mire (M17); and other acid mire types (M21 and M25)). Some seepage versions of M14 do have strong floristic affinities to some soligenous forms of M15a (and to

some types of M10). However, M10 and M14 are generally associated with strong input of telluric, relatively base-rich, water, whereas M15a is often associated with areas of endotelmic water flow within a mire (i.e. they are usually not fed by groundwater outflow), and these flow-paths can be marked out by patches of *Schoenus nigricans* or *Pinguicula vulgaris*, but lack basiphilous bryophytes.

The syntaxonomic status of M14 and its relationship to other community types (such as M9-1(M9a), and M15a) requires re-examination using data additional to those available to Rodwell (1991) (see Rodwell *et al.*, 2000; Wheeler, Shaw & Tanner, 2009).

6.2.5 M15: Scirpus cespitosus–Erica tetralix wet heath

A number of stands of acidic heathy vegetation were sampled during these surveys, either to provide context to the Alkaline Fen vegetation that was embedded within them, or because some supported scattered clumps of *Schoenus nigricans* (e.g. in Jugger Howe Beck). These areas were characterised by species-poor mixtures of *Calluna vulgaris, Erica tetralix, Juncus acutiflorus, Molinia caerulea,* and *Myrica gale*, with occasional *Narthecium ossifragum*. Despite the presence of *Schoenus nigricans* in some stands, this vegetation is considered to be a form of wet heath (M15) because it lacks any of the base-rich 'indicators', particularly bryophytes, that are found in the M14 stands.

6.2.6 M22: Juncus subnodulosus –Cirsium palustre fen meadow

Several areas of rush-dominated but fairly species-rich calcareous fen meadow vegetation were mapped during these surveys, all of which could be assigned to M22. At Rosekirk Dale two relatively species-poor stands associated with the drier edges of M13 vegetation were characterised by abundant *Juncus subnodulosus, Eupatorium cannabinum, Valeriana dioica,* and the moss *Palustriella commutata*; these could be assigned to the M22a typical sub-community. A larger stand was much more diverse, with additional species including *Anagallis tenella,* several small sedge species, and a range of flowering forbs (e.g. *Centaurea nigra, Galium uliginosum, Lysimachia nemorum* and *Succisa pratensis*), and a few larger flowering forbs (*Hypericum tetrapterum, Ranunculus flammula*) which had stronger affinity to the M22b *Briza media–Trifolium* spp sub-community. Similarly at Sand Dale, a small area of quite diverse wet rushy vegetation at the edge of a stand of M13 Alkaline Fen was best assigned to the M22b sub-community. In the eastern section of Sand Dale, much of the vegetation occupying the valley bottom is best assigned to M22. In the westernmost area, across the fence, the vegetation is very species-rich and is a good example of M22b. Further east the diversity decreases, and in the easternmost area the vegetation is very tall and rather species-poor - this vegetation is a good example of M22a.

At Troutsdale M22 occurs in complex mixtures and transitions with various other vegetation types including wet grassland (MG10); fen meadow with abundant *Molinia caerulea* (M24 / M26) and base-rich fen (M13). Much of the vegetation in unit 1, in areas where scrub has been cleared, show strong affinities to M22, and may develop stronger affinities to this community as the vegetation develops.

6.2.7 M24: Molinia caerulea–Cirsium dissectum fen meadow

In the eastern section of Sand Dale SSSI two stands corresponding to M24 were sampled, consisting of a low sward of *Molinia caerulea* accompanied by diverse mixtures of grasses, rushes, sedges and herbs. *Cirsium dissectum* was present in the stand represented by Quadrat 17, but was not found anywhere else. Bryophytes were sparse throughout. These samples do not represent typical M24 and also show strong affininites to M26b.

At Troutsdale, the vegetation in the south-eastern part of SSSI unit 2 consists of an extensive area of species-rich fen meadow with abundant *Molinia caerulea*, accompanied by mixtures of sedges, rushes and herbs. Both *Juncus acutiflorus* and *J. subnodulosus* occur here. Trails of *Schoenus nigricans* in this stand appear to mark lines of old ditches. This vegetation represents M24. Further west, areas of *Molina caerulea* fen meadow are rather more variable with some areas supporting a distinctive community where *Juncus subnodulosus* is absent, but *J. acutiflorus* is abundant and the herbaceous

associates include locally abundant *Hydrocotyle vulgaris* and *Stachys officinalis*. This type of vegetation is has affinities to M24 and M26 and frequently grades into rush dominated vegetation (M22).

6.2.8 Other species-rich fen meadows

In this project, several fairly small patches of grassy, sedge-rich vegetation, with affinities to M22, M24 and M26, were recorded, occurring in assocation with the Alkaline Fen vegetation. Although they do not correspond clearly to any of the NVC community types, in this project these areas have been included within the Molinia Meadows Annex 1 habitat category, even though they lack some of the main character species (i.e. *Cirsium dissectum, Crepis paludosa, Trollius europaeus*).

This vegetation type is characterised by a diverse range of sedges, rushes and grasses. Typically either *Juncus subnodulosus* or *Juncus acutiflorus* is dominant, frequently mingled with *J. articulatus* and/or *J. conglomeratus*, and grasses such as *Agrostis canina, Anthoxanthum odoratum, Briza media, Holcus lanatus, Festuca rubra* and *Molinia caerulea*. A variety of small sedges is usually present at low cover, including *Carex echinata, C. flacca, C. hostiana, C. panicea,* and *C. pulicaris*, plus low or scrambling herbs such as *Galium uliginosum, Lotus pedunculatus, Potentilla erecta, Triglochin palustre, Valeriana dioica* and *Vicia cracca*. Taller forbs are often prominent, including *Achillea ptarmica, Angelica sylvestris, Centaurea nigra, Cirsium palustre, Succisa pratensis,* and occasionally *Parnassia palustris, Sanguisorba officinalis,* and *Stachys officinalis*. A small range of common bryophytes is usually found as scattered plants, including species such as *Calliergonella cuspidata, Plagiomnium undulatum, Pseudoscleropodium purum* and *Rhytidiadelphus squarrosus*.

Somewhat similar vegetation has been sampled recently in Shropshire (Eades, Tratt & Shaw, 2012; Eades, Tratt & Shaw, 2013), which was provisionally described as intermediate between M22, M24, and M26. As suggested by those authors, it appears that this type of wetland vegetation was little sampled during the preparation of the National Vegetation Classification and is correspondingly not well represented in the published accounts. The close floristic relationships between M24, M22 and another Alkaline Fen community, M13, have been discussed in greater detail in Wheeler, Shaw & Tanner (2009).

Vegetation of this type has also been widely recorded in southern Scotland, northern England, and Wales, and it has been suggested that it should be incorporated into a new sub-community of M25 or M24 (JNCC, 2011).

6.2.9 M37: Cratoneuron commutatum–Festuca rubra spring

The M37 spring community is often very distinctive in the field, occurring as small patches of spring outflow overwhelmingly dominated by *Palustriella commutata* and/or *P. falcata*. Associated species tend to be sparse, but floristically quite varied, with species typical of various associated wetland plant communities. Therefore stands often have a similar species composition to other communities and as a result MATCH coefficients of fit to NVC communities can be quite low. In some areas M37 is associated with tufa deposition.

6.3 Regional & National Context

The wetland plant communities sampled as part of this project that fall within the scope of the Annex 1 type Alkaline Fen, Transition Mire and Quaking Bog (and a small number representing Molinia Meadows) are discussed briefly below with regard to their regional and national significance.

6.3.1 Alkaline Fen vegetation

M10: Pinguicula vulgaris–Carex dioica mire

M10 is a widespread plant community that is found throughout the UK, particularly in the north and west, and in upland areas of the country (Rodwell, 1991; Wheeler & Shaw, 1995; Wheeler, Shaw & Tanner, 2009). A number of examples have already been documented from the North York Moors region, and at least one statutory site in that area (Blaiskey Bank Springs SSSI) has been designated because of base-rich seepages that support a fine and extensive example of M10 vegetation. The few M10 mires that have been sampled as part of this project are far less extensive than that site, but they add to an important resource that is clearly a typical feature of many groundwater-fed wetlands in this area.

M13: Schoenus nigricans–Juncus subnodulosus mire

M13 vegetation is relatively widespread, but of rare occurrence, in southern Britain, and its main centres are in East Anglia and Anglesey (Rodwell, 1991; Wheeler & Shaw, 1995; Wheeler, Shaw & Tanner, 2009). There are a few important outliers elsewhere, North Yorkshire being one of those, particularly because of the extensive examples found in Dalby Forest (e.g. Seive Dale Fen SSSI; Eller's Wood & Sand Dale SSSI; Troutsdale & Rosekirk Dale Fens SSSI) and alongside Jugger Howe Beck. This project has provided further detail to the documentation of some of these sites (Jugger Howe, Sand Dale, Troutsdale), and new data for extensive areas of M13 in Rosekirk Dale. This part of the country is clearly an important locus for M13 vegetation, and it is possible that further investigation may highlight other examples.

M37: Cratoneuron commutatum–Festuca rubra spring

This community is widespread but local throughout western and northern Britain, and is most common in wetter upland areas around spring-heads and seepage lines, typically forming very small, bryophyte-domianted stands. The habitat is always base-rich and calcareous (Rodwell, 1991), often associated with tufa deposition, and although not generally considered to be a component of the 'Alkaline Fen' habitat, where it is found in association with other Alkaline Fen vegetation it is included in that habitat type by these authors.

6.3.2 Transition Mire and Quaking Bog vegetation

M4: Carex rostrata–Sphagnum recurvum mire

This kind of mire is generally found as small stands in shallow depressions on peaty ground, and is distributed throughout the British uplands from south-west England to northern Scotland.

M14: Schoenus nigricans–Narthecium ossifragum mire

Documented examples of this plant community in the published NVC accounts are very scarce, and are generally confined to southern England and East Anglia (Rodwell, 1991). However, M14 is geographically more widespread than suggested by the NVC, and examples of similar vegetation are known from North Yorkshire, Cumbria and west Scotland (Wheeler & Shaw, 1995; Wheeler, Shaw & Tanner, 2009). Jugger Howe Beck supports a large number of extensive stands that can be attributed to M14 and, combined with the presence of large M13 stands there, Jugger Howe Dale can be considered one of the most important examples in England of mixed Alkaline Fen and Transition Mire (B.D. Wheeler, pers. comm.). Clearly, therefore, the North York Moors region is also an important locus for M14 vegetation.

6.3.3 Molinia Meadows vegetation

M24: Molinia caerulea–Cirsium dissectum fen meadow

The south-west of England is one of the main centres for M24 vegetation, in particular the heathy M24c sub-community, while the typical sub-community (M24b) is scattered throughout much of England and parts of South Wales, and the *Eupatorium cannabinum* sub-community (M24a) is concentrated in East Anglia (Rodwell, 1991). Occasional examples are scattered across North Wales, central and northern England (Wheeler, Shaw & Tanner, 2009).

Fen meadows with affinities M22 / M24 / M26

Both Troutsdale and Sand Dale were found to support a species-rich fen meadow vegetation type that has strong affinities to M24, but also appears to have floristic links to M22 and M26. This vegetation does not appear to be well represented in the published NVC accounts, but similar vegetation has recently been described from parts of Cumbria (Tratt, Eades & Shaw, 2015), and from sites in Shropshire (Eades, Tratt & Shaw, 2013) and Staffordshire (Tratt *et al.* 2011). Elsewhere other workers have described vegetation that has affinities to M24 but also clear differences to the published NVC accounts, for example in south-west Scotland (Cooper & MacIntosh, 1996) and in parts of Wales (Blackstock, Stevens & Yeo, 1993). The recently published 'Grasslands of Wales' (Stevens *et al.*, 2010) describes vegetation from north Wales, beyond the natural distribution of *Cirsium dissectum*, that it assigns to M24.

In the light of these findings, there may be an argument for re-examining the syntaxonomic status of M24, and M26, and their relationship to other community types, using data additional to those that were available to Rodwell (1991), with the possibility of describing an additional (sub-) community that would encompass the species-rich fen meadows described here.

6.3.4 Species-rich Fen Meadow vegetation

M22: Juncus subnodulosus –Cirsium palustre fen meadow

M22 is the most widespread plant community of base-rich fens (Wheeler, Shaw & Tanner, 2009), and is found throughout most of lowland England and many parts of Wales, although it is most frequent in central and eastern England. It is maintained by grazing or mowing, and in some cases it is probably derived from other more species-rich plant communities, for example M13 in some derelict East Anglian fens.

6.4 SITE MANAGEMENT AND CONDITION

Fen Bog

Fen Bog is part of an extensive moorland unit which is lightly grazed by sheep, although no evidence of grazing was observed during the survey. However, the stands of Alkaline Fen and Transition Mire vegetation seen during this survey, which were extremely wet and apparently nutrient-poor, were considered to be in favourable condition.

Jugger

The vegetation at Jugger Howe Beck is part of an extensive moorland management unit that appears to be only very lightly grazed by sheep and deer, and the vegetation in most of the spring and seepage areas was rather rank. The current level of grazing may not be adequate to sustain the wetland and associated invertebrate interest. Ideally the wetlands along the valley floor should become a separate site unit, so that the wetland interest can be assessed as a main interest feature, and grazing pressure should be increased along the valley bottom.

Rosekirk Dale

The Rosekirk Dale section of the Troutsdale and Rosekirk Dale Fens SSSI has recently been entered into Higher Level Stewardship. Scrub was cleared from the southern end of the site in 2012, and cattle grazing began in 2013, which has resulted in the opening up of previously rank and impoverished stands of wetland vegetation, and a large increase in cover of *Eupatorium cannabinum* on drier ground. Recovery of the M13 stands here should be monitored.

Troutsdale

Unit 1 appears to be lightly grazed, and extensive scrub clearance has taken place alongside the beck.

Unit 2 is grazed by a small herd of cattle, as part of a larger grazing unit that includes semi-improved pasture to the north and west. The grazing appears to be effective in maintaining the mosaic of fen communities in this part of the SSSI.

Sand Dale

The western side of Unit 2 is currently grazed by a small herd of hardy cattle, which in most parts appear to be keeping the vegetation at an appropriate height. There has been recent clearance of gorse and willow scrub near the valley bottom, but scrub cover is higher around springs on the southern slope, and herbaceous fen vegetation is quite rank there. Water extraction features are present on site, but they do not appear to be having a significant effect on water flow from the various springs.

The eastern side of Unit 2 is part of a larger grazing unit that includes improved grassland to the south and the non-SSSI fen compartment to the north (see below). In 2011 the eastern section of unit 2 appeared very heavily grazed. However, in 2014 the grazing appears more effective in maintaining the open fen communities, with vegetation grazed to an appropriate range of heights and with no excessive poaching or overgrazing.

Sand Dale non-SSSI

This area has changed significantly since the last survey. The removal of trees (exact date not known but believed to be prior to 2007), combined with cattle grazing (this area is grazed with the eastern section of SSSI unit 2), has opened up the springs and associated water-flow tracks over much of the site, leading to the recovery of herbaceous, species-rich fen in areas influenced by groundwater outflow. The water-flow tracks here appear to have been partly ditched in the past, and sections of logs have been used to create partial dams which are likely to have encouraged the spread of base-rich spring water onto adjacent areas, creating more opportunities for the recovery of M13 vegetation on this part of the site.

6.5 RECOMMENDATIONS

6.5.1 Management Recommendations

A number of specific management recommendations are suggested:

1. Aim to increase grazing pressure along the valley bottom of Jugger Howe Beck.
2. Monitor the effect of grazing and scrub clearance upon the quality of Alkaline Fen vegetation at Rosekirk Dale. Ensure that grazing pressure in future years is not too great.
3. Undertake additional scrub clearance at Rosekirk Dale fen, particularly around springs at the northern end of Unit 3, which is currently dominated by blackthorn and *Eupatorium*. This may help reduce grazing pressure on the recently cleared M13 areas.
4. Encourage the landowner to trial cutting and removing *Eupatorium* from Rosekirk Dale fen if its dominance does not reduce naturally in the next few years.
5. Consider minor brush removal in the southern part of Rosekirk Dale fen to allow rewetting of a small area of dry M13 (see site account for details).

6. Consider extensive clearance of mature conifer plantation in Unit 4 and south-eastern Unit 3 of Rosekirk Dale fen, and blocking ditches that currently drain calcareous spring-water from this area, with the aim of restoring Alkaline Fen.
7. Consider minor scrub control on the southern slopes of the western part of Unit 2 of Eller's Wood and Sand Dale SSSI, to encourage grazing of rank fen vegetation.
8. Monitor recovery of fen vegetation in areas where scrub has been removed in Troutsdale unit 1.
9. Monitor recovery of M13 vegetation in Sand Dale non SSSI.

6.5.2 Further surveys

Further surveys of a number of sites in the North Yorkshire area would be beneficial:

- Sand Dale - non SSSI area further east. This area was looked at briefly during 2014 and would benefit from a more comprehensive survey so that future management options can be explored. Tree felling has been carried out in some areas, but the area is not currently grazed. The pond in the valley bottom appears to be used for shooting.
- Seive Dale Fen SSSI, in Dalby Forest, which supports areas of M13 vegetation, but has not been surveyed in detail for many years.
- Caydale SSSI is believed to support M13 vegetation, but no baseline data are available.
- Marfield Fen SSSI: M13 vegetation is listed as an interest feature, and was found with M22 by Bryan Wheeler and Ros Tratt during a brief visit in 2012, but the site requires a more comprehensive base-line survey.
- Sharrow Mires, near Ripon has old records for *Schoenus nigricans* and *Cladium mariscus*, and would benefit from a survey to assess whether Alkaline Fen vegetation is present.
- Remnant base-rich fen was noted in springs associated with the Holbeck stream in the non SSSI area south of Bishop Monkton Ings SSSI during a brief visit by Bryan Wheeler and Ros Tratt in 2012. A more detailed survey would be desirable to assess the nature and extent of base-rich fen vegetation in this area.
- Ashberry Pastures SSSI supports several areas of M10 vegetation, and species-rich fen meadow, but has not been surveyed in detail for many years.
- Part of Thack Sike (near Fen House, Newtondale SSSI unit 4) was visited during the 2014 survey, and some brief vegetation records and notes were made. Several patches of M10 and M22 vegetation were noted, but it is likely that the vegetation is more extensive in this small valley, and this area should be surveyed in more detail and the wetland interest features mapped.

6.5.3 Annex 1 habitat and BAP PHT inventories

The areas included in the present survey support significant areas of Annex 1 habitats Alkaline Fen, Transition Mire / Quaking Bog, and Molinia Meadows.

Some areas are already mapped in the Natural England single layer BAP Priority Habitat Type (PHT) inventory and are included as UFFS under the attribute 'additional PHT ', because they are typically smaller features than the minimum mapping unit, and are often embedded within more extensive PHTs. Where Annex 1 habitats have been recorded in this survey, but are not currently listed as a feature of a polygon, the PHT habitat inventory should be updated to include the Annex 1 habitat type(s) as an additional PHT.

The Annex 1 habitat inventorys should also be updated to show the stands recorded in the present survey.

7. REFERENCES

Abrehart, T.N. (2010). *Article 17 reporting cycle on* Vertigo geyeri *at Eller's Wood & Sand Dale SSSI/SAC & Jugger Howe Moor (North York Moors SSSI).* Unpublished report, Natural England.

Atherden, M.A. (1976). Late Quaternary vegetational history of the North York Moors. III. Fen Bogs. *Journal of Biogeography*, **3**, 115–124.

Blackstock, T., Stevens, D. & Yeo, M. (1993). *Comments on the phytosociological placement of some flushed pasture and related communities of South-west Scotland and Westmorland.* Internal report, Countryside Council for Wales, Bangor.

Eades, P., Tratt, R. & Shaw, S. (2012). *Habitats Directive Annex 1 Fen Survey: Devon, Somerset and Shropshire.* Unpublished report to Natural England.

Eades, P., Tratt, R. & Shaw, S. (2013). *Alkaline fen and Transition mire survey of the North York Moors National Park and Bishop Monkton Ings.*. Unpublished report to Natural England.

Cooper, E. & MacIntosh , J (1996). *NVC review of Scottish lowland grassland surveys.* Scottish Natural Heritage Review No. 65.

European Commission (2007). *Interpretation manual of European Union habitats* EUR 27.

Fojt, W. (1990). *Comparative survey of rich-fens of the North York Moors.* EN Research Report 128

Godfrey, A. (2005). *Survey and characterisation of Alkaline Fens in the Peak District Dales cSAC: Invertbrate Survey*. Report to English Nature (RES8855).

JNCC (2007). *Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006*. JNCC, Peterborough. Available from: www.jncc.gov.uk/article17

JNCC (2011). *A compilation of proposed additions and revisions to vegetation types in the National Vegetation Classification*. JNCC, Peterborough.

JNCC (2012b). *Habitat Account – H7230 Alkaline Fen*. http://jncc.defra.gov.uk/ProtectedSites/SACselection/habitat.asp?FeatureIntCode=H7230

JNCC (2012c). *Habitat Account – H6410 Molinia Meadows*. http://jncc.defra.gov.uk/ProtectedSites/SACselection/habitat.asp?FeatureIntCode=H6410

Malloch, A.J.C. (1992). *MATCH – a computer programme to aid the assignment of vegetation data to the communities and subcommunities of the National Vegetation Classification.* University of Lancaster, Lancaster.

Preston C.D., Pearman D. & Dines T. (2002). *New Atlas of the British & Irish Flora.* Oxford University Press, Oxford.

Prosser, M. & Wallace, H. (2010). *NVC Survey: Fen Bog SAC*. Unpublished report for Yorkshire Wildlife Trust.

Rodwell, J. (ed.) (1991). *British Plant Communities, Volume 2. Mires & Heaths.* Cambridge University Press, Cambridge.

Rodwell, J. (ed.) (1992). *British Plant Communities, Volume 3. Grasslands and Montane Communities.* Cambridge University Press, Cambridge.

Rodwell, J.S., Dring, J.C., Averis, A.B.G., Proctor, M.C.F., Malloch, A.J.C., Schaminée, J.N.J., & Dargie T.C.D. (2000). *Review of coverage of the National Vegetation Classification*. JNCC Report No. 302. Joint Nature Conservation Committee, Peterborough.

Smith, A.J.E. (2004). *The Moss Flora of Britain and Ireland*. 2nd Ed., Cambridge Univ. Press, Cambridge.

Stace, C. (2010). *New flora of the British Isles (3rd edition).* Cambridge University Press.

Stevens, D.P., Smith, S.L.N., Blackstock, T.H., Bosanquet, S.D.S. & Stevens, J.P. (2010). *Grasslands of Wales. A survey of lowland species-rich grasslands, 1987-2004.* University of Wales Press, Cardiff.

Tratt, R., Parnell, M., Eades, P.A., & Shaw, S.C. (2013). *Development of Inventories for Annex 1 habitats 'Alkaline Fen' and 'Transition Mire & Quaking Bog' in England*. Natural England.

Tratt, R., Eades, P.A., Shaw, S.C. & Meade, R. (2011). *Upland flushes of North-east Staffordshire: vegetation and hydro-ecology*. Unpublished report to Natural England.

Wheeler B.D., Shaw S.C. & Tanner K. (2009). *A wetland framework for impact assessment at statutory sites in England and Wales*. Environment Agency, Bristol.

8. ELECTRONIC OUTPUTS

The following electronic outputs have been provided on a DVD:

- The Final Report, in pdf form ('NYM fens 2014 DRAFT 27-03-15').
- Excel workbook ('NYMdata24-03-15 FINAL'). This workbook is also split by site.
- ESRI shapefiles projected to the British National Grid.
- Photographs supplied as electronic images labelled by photograph number (as listed in quadrat data spreadsheets), and separated into folders labelled by site name.
- Figures are embedded in the report, but also provided separately as an electronic pdf file: 'NYM_FIGS_20150327'.

9. ANNEX 1:

SITE ACCOUNTS

9.1 FEN BOG

[Within Newtondale SSSI, Unit 2]

Vegetation types, quadrat locations and selected target notes are shown in Figure 2 (following this account); target notes, quadrat descriptions and quadrat records are provided in tabulated form at the end of this account. MATCH analyses for individual quadrats and constancy tables are shown in Annexes 2 and 3 respectively. The general site location is shown in Figure 1.

9.1.1 Site Description

This survey was undertaken on Fen Bog SAC in the Yorkshire Wildlife Trust Nature Reserve area within unit 2 of Newtondale SSSI. The site comprises an extensive area of wetland in the valley bottom in north Newtondale, occupying a trough at the watershed of the Pickering Beck, which flows south, and Ellerbeck, which flows north. The peat deposits are up to 10 m deep (Atherden, 1976), and much of the site supports ombrotrophic vegetation characterised by abundant *Sphagnum* (mainly *S. papillosum*, with occasional *S. magellanicum*) and dwarf shrubs.

On the eastern margin of Fen Bog there are several springs and flushes that feed into the main wetland area and are associated with complex mosaics of pools and soakways in the main, topogenous, part of the wetland. In the northern part of the site some of these springs and flushes are quite base-rich, and support many species characteristic of Alkaline Fen, including bryophytes such as *Aneura pinguis, Campylium stellatum, Scorpidium cossonii, Scorpidium revolvens* and *Scorpidium scorpioides*, the sedges *Carex dioica, C. lasiocarpa* and *Eleocharis quinqueflora,* and scattered *Pinguicula vulgaris*. Mingled with these areas are more extensive soakways and associated vegetation types that are less base-rich, with mixtures of species typical of Alkaline Fen (as above) and other species more characteristic of base-poor habitats, including plants such as *Carex limosa, Carex rostrata, Eleocharis multicaulis, Menyanthes trifoliata, Potentilla palustris, Rhynchospora alba,* and *Sphagnum fallax*. These areas are considered to be examples of Transition Mire and Quaking Bog habitat.

Further south and west, and on the west side of the railway line, the marginal springs and flushes are base-poor, characterised by abundant *Carex echinata* and *Eriophorum angustifolium* with much *Sphagnum denticulatum.* There the associated pools and soakways lack the base-rich 'indicators', particularly the bryophytes, found in the northern part of the site.

9.1.2 Target Vegetation

<u>Alkaline Fen (EC Annex 1 habitat)</u>

M10a *Carex dioica–Pinguicula vulgaris* mire, *Carex demissa–Juncus bulbosus/kochii* sub-community

M10 vegetation is present as two very small stands (Q1 & Q2) occupying open and very low-growing, flushed swards at and slightly above the base of the steep heather-clad slope on the eastern edge of the main wetland area. The vegetation in these stands comprises a short turf of *Carex dioica, C. echinata, Eleocharis quinqueflora, Eriophorum angustifolium, E. latifolium, Juncus articulatus J. bulbosus,* and *Rhynchospora alba*. *Narthecium ossifragum* and *Succisa pratensis* are abundant with short shoots of *Erica tetralix*. *Drosera rotundifolia, Pinguicula vulgaris* and *Selaginella selaginoides* are scattered throughout amongst a patchy carpet of bryophytes including *Aneura pinguis, Campylium stellatum, Riccardia multifida* and *Scorpidium scorpioides*.

Upslope of these M10 stands is a more acidic seepage originating close to the path through dry heathland vegetation. The M10 patches grade out into acidic mire vegetation with *Carex lasiocarpa*.

Transition Mire and Quaking Bog (EC Annex 1 habitat)

Affinitiy to M14 *Schoenus nigricans–Narthecium ossifragum* mire

Quadrats 5, 9-14 were recorded in an extensive water track feature that flows sluggishly toward the north-west corner of the site. The water track is moderately base-enriched (pH 6.1-6.9) and supports abundant *Carex rostrata, Menyanthes trifoliata* and *Potamogeton polygonifolius*, with widespread *Drosera rotundifolia,* and typically small patches of *Aneura pinguis, Campylium stellatum, Scorpidium revolvens* and *Scorpidium scorpioides*, particularly along the edges of the water track. A range of other small sedges and rushes are found scattered but locally abundant across the stand, including *Carex demissa, C. dioica, C. panicea, C. lasiocarpa, C. limosa, Eleocharis multicaulis, E. quinqueflora, Eriophorum angustifolium, Juncus bulbosus* and *Rhynchospora alba*. Other species include scattered plants of *Anagallis tenella, Erica tetralix, Equisetum palustre, Myrica gale, Narthecium ossifragum, Pinguicula vulgaris,* and rarely *Potentilla palustris* and *Sphagnum inundatum*. Laterally the water track vegetation grades into the surrounding acidic mire vegetation (probably M21, see below), while towards the track at the northern end of the site the water track loses its characteristic base-loving bryophytes.

This vegetation does not fit readily into the scheme of the NVC, although it has some affinity to M14 mire, and to a range of other communities: M9, M10, M21 and M29, amongst others (see MATCH outputs from individual samples, and a constancy table constructed from the amalgamation of all samples, in Annexes 2 & 3 respectively). As noted in Wheeler, Shaw & Tanner (2009), in the published NVC scheme M14 is described as a community of southern England, although it was created on the basis of only 15 samples. However, related vegetation has been described from parts of Cumbria, in base-enriched soakways lacking *Schoenus nigricans*, that have their strongest affinities with M9a and M14. Many of the known examples of M14 occur as axial water tracks in valleyhead mires, embedded within more acidic M21 vegetation, as appears to be the situation at Fen Bog. It is considered that this example may be best described as M14, although perhaps there is a need to re-examine this phytosociological unit in light of the additional data that are now available.

A second, smaller stand (Quadrats 3 and 4) is again an atypical example of M14 vegetation, lacking *Schoenus nigricans*, and with some affinity to M10. It is situated almost immediately adjacent to the south-eastern edge of the main axial water track. The M14 vegetation marks out three small seepages and soakways that arise near the base of the heather-clad eastern margin of the site, converge, and flow gently westwards into the main axial water track. The vegetation comprises a mossy carpet of *Campylium stellatum,* with scattered *Aneura pinguis, Scorpidium revolvens, S. scorpioides* and rarely *Sphagnum inundatum*, beneath an open sward of small sedges and rushes, including *Carex lasiocarpa, C. panicea, Eleocharis multicaulis, E. quinqueflora, Eriophorum angustifolium, E. latifolium, Juncus acutiflorus, J. bulbosus,* and *Rhynchospora alba. Myrica gale* is locally abundant, and *Drosera rotundifolia, Erica tetralix, Molinia caerulea, Potamogeton polygonifolius, Narthecium ossifragum* and *Selaginella selaginoides* also occur here.

M4 *Carex rostrata–Sphagnum recurvum* mire

The route of an old trackway across the northern section of the site is now semi-submerged, and the resulting elongated pools support semi-aquatic poor-fen dominated by *Carex rostrata, Sphagnum fallax* and *Sphagnum palustre*, with scattered *Erica tetralix, Molinia caerulea, Myrica gale, Sphagnum denticulatum* and *Viola palustris* (see Quadrats 6-8). The stand is roughly 40 m long by 3-6 m wide.

Other Mire Vegetation

M21 *Narthecium ossifragum–Sphagnum papillosum* valley mire, and

M21b *Vaccinium oxycoccos–Sphagnum recurvum* sub-community

The vegetation immediately surrounding the stands described above is characterised by species of acidic mire habitat, and it is typically dominated by a mixture of *Molinia caerulea, Narthecium ossifragum, Myrica gale*. *Sphagnum capillifolium, S. fallax* and *S. subnitens*. Though not sampled, this may be referable to M21b (TN3). Part of this stand, reaching from the edge of the M10 northwards to the M14 stands, and encircling a small pool with *Typha latifolia* (TN1 and 2), also supports abundant *Carex lasiocarpa*, with locally abundant *Carex rostrata*. Several other plants including *Carex echinata, Drosera rotundifolia, Eriophorum angustifolium, Festuca rubra,* and *Potentilla erecta* are scattered throughout. This vegetation also has affinities to M21 valley mire.

9.1.3 Wetland Substrata & Water Supply

The peat substratum is very deep over much of the site and the stratigraphy has been studied in detail by Atherden (1976). The peat deposits are mainly 'fen' peat, laid down under minerotrophic conditions, with many fragments of monocots including *Phragmites australis*. Bog peat is only present at the very surface of the deposits, indicating that it is relatively recent in origin.

Flushes and soakways (not marl- or tufa-forming) pH 6.0–6.9; EC 140–320 µS cm^{-1}.

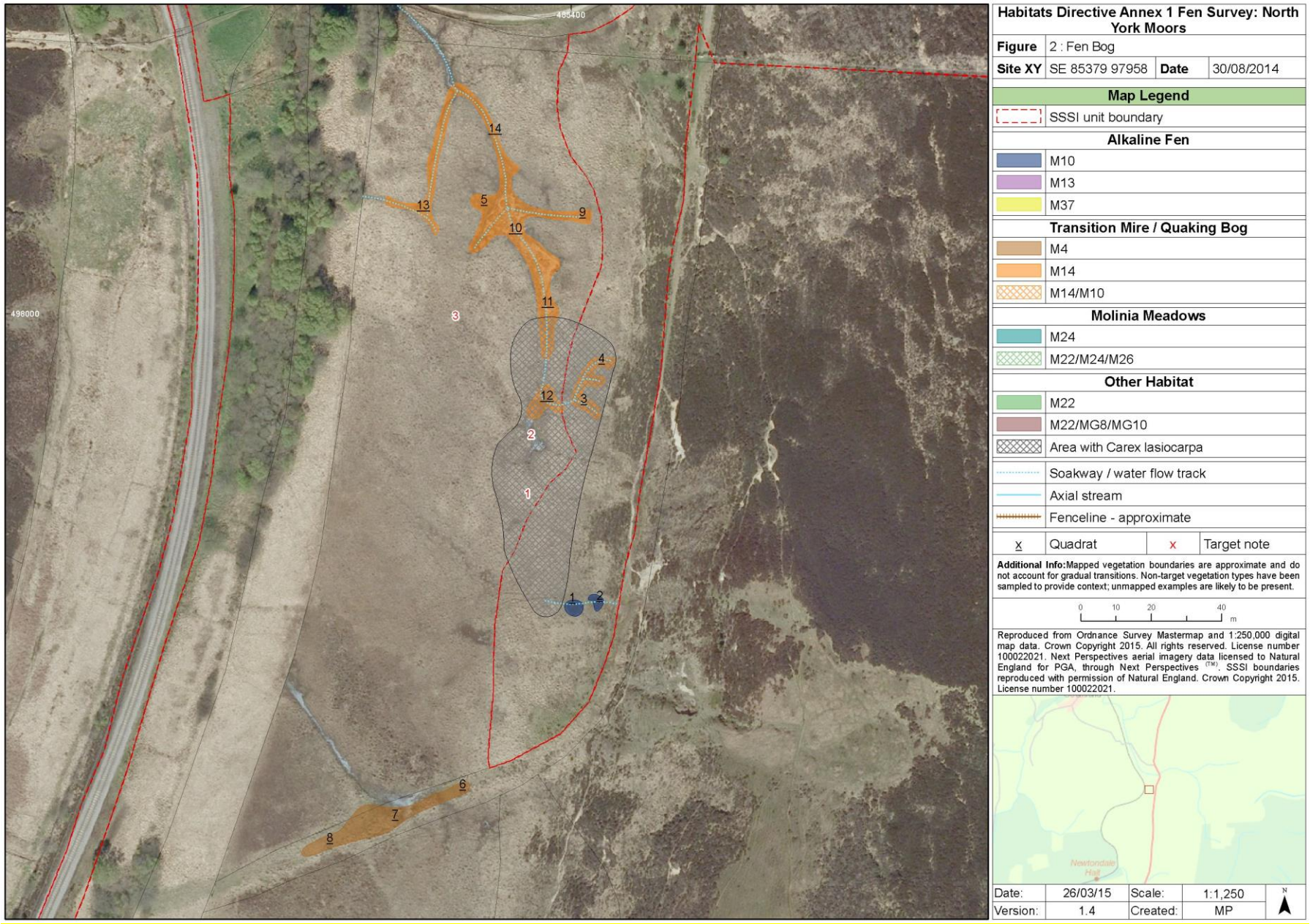
M21 area with *Carex lasiocarpa* pH 4.3; EC 230 µS cm^{-1}.

Possible WETMECs: 10b Permanent seepage slopes, diffuse seepage; WETMEC 14 Seepage percolation troughs; WETMEC 15a Topogenous seepage flow-tracks.

9.1.4 Site Management

There was no evidence of grazing during the survey; however the site is part of an extensive moorland unit which is lightly grazed by sheep. Some cutting of *Typha latifolia* was noted around a small pool near the southern end of the M14 water track area. The stands of Alkaline Fen and Transition Mire vegetation were found to be botanically diverse despite their fairly small size, and they are considered to be an important component of the conservation interest at Fen Bog. There were no indications of inappropriate levels of grazing, no signs of artificial drainage, and no scrub encroachment within any of the surveyed wetland features. Consequently they were considered by these surveyors to be in favourable condition.

Figure 2. Fen Bog SAC.



Quadrat ID	Fen Bog SAC: Quadrat Description	Photo ref
Q1	A tiny patch at the base of slope (c. 2x2 m), open and low-growing, with a range of small sedges and rushes such as *Carex dioica, C. echinata, Eleocharis quinqueflora, Eriophorum angustifolium, E. latifolium, Juncus articulatus* and *Rhynchospora alba*. Low-growing *Molinia*, and *Narthecium ossifragum* are abundant, with *Drosera rotundifolia, Pinguicula vulgaris* and *Selaginella selaginoides* scattered amongst a range of bryophytes including much *Campylium stellatum* and *Scorpidium scorpioides*. [M10a]	DSC01084 & DSC01086
Q2	A stand as Q1, slightly upslope and larger (c. 3x4 m), with some *Carex demissa, Erica tetralix, J. bulbosus,J. articulatus* and *Succisa pratensis.* [M10a]	DSC01085
Q3	Three small seepages and soakways with abundant *Campylium stellatum,* scattered *Aneura pinguis, Scorpidium revolvens, S. scorpioides* and rarely *Sphagnum inundatum*, beneath an open sward of small sedges and rushes. *Myrica gale* is locally abundant, also some *Drosera rotundifolia, Erica tetralix, Molinia caerulea, Potamogeton polygonifolius, Narthecium ossifragum* and *Selaginella selaginoides.* [M14]	DSC01100
Q4	As above. [M14]	DSC01104
Q5	Adjacent to the extensive M9a-1 water track. Open vegetation with abundant *Carex rostrata* and *Rhynchospora alba* over *Scorpidium scorpioides* and *Potamogeton polygonifolius*. A range of other species at low cover: *Anagallis tenella, Aneura pinguis, Carex dioica, Carex demissa, Drosera rotundifolia, Eleocharis multicaulis, E. quinqueflora, Eriophorum angustifolium, Menyanthes trifoliata, Pinguicula vulgaris* and *Sphagnum inundatum* [M14]	
Q6	Semi-submerged trackway dominated by *Carex rostrata* and *Sphagnum fallax,* with frequent *Carex echinata, S. denticulatum, Juncus articulatus,* and scattered *Cardamine pratensis, Eriophorum angustifolium, Viola palustris, Molinia caerulea, Potamogeton polygonifolius* and *Ranunculus flammula.* [M4]	DSC01092
Q7	As Q6 but less diverse, with more *Carex rostrata*, plus some *Myrica, Vaccinium oxycoccos*, and *Sphagnum palustre*. [M4]	DSC01098
Q8	Similar to Q7, also with frequent *Erica tetralix* and abundant *Sphagnum palustre.* [M4]	
Q9	Side-arm of an extensive water track, with abundant *Carex rostrata, C. panicea, Menyanthes trifoliata, Eleocharis quinqueflora* and *Potamogeton polygonifolius*, also scattered *Aneura pinguis, Drosera rotundifolia, Erica tetralix, Myrica gale* and *Rhynchospora alba* [M14]	DSC01106
Q10	Broad central part of water track with abundant *Carex rostrata, Menyanthes trifoliata* and *Potamogeton polygonifolius* and *Rhynchospora alba* with scattered *Aneura pinguis, Campylium stellatum, Drosera rotundifolia,* and *Juncus bulbosus.* Rarely a few small stems of *Phragmites australis.* [M14]	DSC01107
Q11	Toward the southern end of the stand, again dominated by *Carex rostrata,* with abundant *Potamogeton polygonifolius,* and frequent *Campylium stellatum, Carex demissa, C. panicea, Drosera rotundifolia, Eleocharis quinqueflora, Scorpidium revolvens*, and rarely *Carex limosa.* [M14]	DSC01112
Q12	Situated in an indistinct patch at the southern end of the water track, lacking *Carex rostrata,* but dominated by *Carex lasiocarpa*, with frequent *Campylium stellatum, Menyanthes trifoliata, Potamogeton polygonifolius*, *Scorpidium revolvens,* and *S. scorpioides*, and scattered plants of *Aneura pinguis, Erica tetralix* and *Myrica gale.* [M14]	DSC01115
Q13	A drier side-arm of the main water-track, with abundant *Carex rostrata, Campylium stellatum* and *Potamogeton polygonifolius*, and frequent *Carex demissa, C. panicea, Drosera rotundifolia, Juncus bulbosus Myrica gale Scorpidium revolvens, Scorpidium scorpioides*, and rarely *C. dioica* and *Equisetum palustre.* [M14]	DSC01116
Q14	Near the northern end of the stand, with abundant *Carex rostrata, Campylium stellatum, Potamogeton polygonifolius* and *Myrica gale*, widespread *Rhynchospora alba,* and scattered *Aneura pinguis, Carex panicea, Erica tetralix, Eriophorum angustifolium, Juncus articulatus, Juncus bulbosus, Menyanthes trifoliata, Molinia caerulea,* and *Narthecium ossifragum.* [M14]	

Target note	Fen Bog SAC: Target Note Description	Photo ref
TN1	An extensive patch of *Carex lasiocarpa* growing with abundant *Carex rostrata, Molinia caerulea, Narthecium ossifragum* and *Myrica gale*. *Sphagnum capillifolium, S. fallax, S. subnitens* and occasional *S. papillosum* form low hummocks. Several other plants including *Carex echinata, Drosera rotundifolia, Eriophorum angustifolium, Festuca rubra,* and *Potentilla erecta* are scattered throughout. This vegetation is referable to M21 *Narthecium ossifragum–Sphagnum papillosum* valley mire. It reaches from the edge of the M10 stands northwards to the M14 stands, and encircles a small pool with *Typha latifolia*.	DSC01087
TN2	A small stand of *Typha latifolia* associated with a small pool that marks the southern-most end of the M14 soakway. The *Typha* showed signs of recent management by cutting.	
TN3	Not sampled, but of similar species composition to TN1 though lacking *Carex lasiocarpa* and *Carex rostrata*. Probably also referable to M21.	

North York Moors Fen Survey 2014							
Site	Fen Bog	Fen Bog	Fen Bog	Fen Bog	Fen Bog	Fen Bog	Fen Bog
Quadrat number	Q1	Q2	Q3	Q4	Q5	Q6	Q7
BAP habitat	LF	LF	LF	LF	LF	LF	LF
Annex 1 habitat	AF 7230	AF 7230	TMQB 7140	TMQB 7140	TMQB 7140	TMQB 7140	TMQB 7140
Likely NVC type	M10	M10	M14	M14	M14	M4	M4
Surveyor	PE	PE	PE	PE	PE	PE	PE
Date	30/08/2014	30/08/2014	30/08/2014	30/08/2014	30/08/2014	30/08/2014	30/08/2014
Easting	485400	485404	485396	485402	485370	485361	485343
Northing	497918	497918	497978	497982	498033	497866	497852
pH	6		6.1		6.5	6.1	
EC (µS cm-1)	320		190		280	140	
Quadrat size (m2)	2x2m	2x2m	1x4m	1x4m	2x2m	2x2m	2x2m
Photo ref	DSCO01085	DSCO01086	DSCO01100	DSCO01104		DSCO01092	DSCO01098
No. of species	18	20	20	16	17	15	6
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis stolonifera						1	
Anagallis tenella					1		
Aneura pinguis		2	1	1	1		
Anthoxanthum odoratum						1	
Briza media						1	
Campylium stellatum	5	4	7	7			
Cardamine pratensis						1	
Carex demissa		4			1		
Carex dioica	1	2			1		
Carex echinata	2					5	
Carex lasiocarpa	1		4	5			
Carex limosa							
Carex panicea	3	4	6	3			
Carex rostrata					5	6	8
Drosera rotundifolia	1	3	3	4	1		
Eleocharis multicaulis				1	1		
Eleocharis quinqueflora	1	4	4		1		
Equisetum palustre	1	3	1			1	
Erica tetralix		3	3	3	1		
Eriophorum angustifolium	2		3	3	1	1	
Eriophorum latifolium	1	2	4				
Festuca ovina	1						
Juncus acutiflorus		1	1				
Juncus articulatus		2				1	
Juncus bulbosus		3	1				
Menyanthes trifoliata					1		
Molinia caerulea	4	4	3	3	1	3	3
Myrica gale			5	4			4
Narthecium ossifragum	3	3	1	3			
Phragmites australis							
Pinguicula vulgaris	1	3			2		
Polytrichum commune							
Potamogeton polygonifolius	4		4	4	5	2	
Ranunculus flammula						1	
Rhynchospora alba	1		1	2	4		
Riccardia multifida		2					
Scorpidium revolvens			3	4			
Scorpidium scorpioides	5	4	4	4	5		
Selaginella selaginoides	1	1	3				
Sphagnum denticulatum						4	
Sphagnum fallax						8	8
Sphagnum inundatum				2	1		
Sphagnum palustre							4
Succisa pratensis		4					
Vaccinium oxycoccos							1
Viola palustris						1	

North York Moors Fen Survey 2014							
Site	Fen Bog	Fen Bog	Fen Bog	Fen Bog	Fen Bog	Fen Bog	Fen Bog
Quadrat number	Q8	Q9	Q10	Q11	Q12	Q13	Q14
BAP habitat	LF	LF	LF	LF	LF	LF	LF
Annex 1 habitat	TMQB 7140	TMQB 7140	TMQB 7140	TMQB 7140	TMQB 7140	TMQB 7140	TMQB 7140
Likely NVC type	M4	M14	M14	M14	M14	M14	M14
Surveyor	PE	PE	PE	PE	PE	PE	RT
Date	30/08/2014	30/08/2014	30/08/2014	30/08/2014	30/08/2014	30/08/2014	30/08/2014
Easting	485325	485398	485384	485391	485389	485357	485373
Northing	497850	498029	498023	498006	497980	498035	498053
pH			6.9			6.1	
EC (µS cm-1)			280			150	
Quadrat size (m2)	2x2m						
Photo ref		DSCO01106	DSCO01107	DSCO01112	DSCO01115	DSCO01116	
No. of species	8	12	10	9	9	13	14
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis stolonifera							
Anagallis tenella							
Aneura pinguis		1	1		1		1
Anthoxanthum odoratum							
Briza media							
Campylium stellatum			2	4	4	7	5
Cardamine pratensis							
Carex demissa				1		1	
Carex dioica						1	
Carex echinata							
Carex lasiocarpa					9		
Carex limosa				1			
Carex panicea		5		1		5	1
Carex rostrata	8	6	7	8		5	5
Drosera rotundifolia		1	1	1		1	
Eleocharis multicaulis							
Eleocharis quinqueflora		5		4			
Equisetum palustre						1	
Erica tetralix	4	2			2		3
Eriophorum angustifolium	3		1				2
Eriophorum latifolium							
Festuca ovina						1	
Juncus acutiflorus							
Juncus articulatus							1
Juncus bulbosus			1			4	1
Menyanthes trifoliata		5	4		2		1
Molinia caerulea	4	2					3
Myrica gale		1			1	4	5
Narthecium ossifragum							1
Phragmites australis			1				
Pinguicula vulgaris							
Polytrichum commune	1						
Potamogeton polygonifolius		5	7	6	4	5	5
Ranunculus flammula							
Rhynchospora alba		1	4				4
Riccardia multifida							
Scorpidium revolvens		1		4	4	4	
Scorpidium scorpioides					4	4	
Selaginella selaginoides							
Sphagnum denticulatum							
Sphagnum fallax	8						
Sphagnum inundatum							
Sphagnum palustre	6						
Succisa pratensis							
Vaccinium oxycoccos	4						
Viola palustris							

9.2 JUGGER HOWE

[Within North York Moors SSSI, parts of Units 91 and 179]

Vegetation types, quadrat locations and selected target notes are shown in Figure 3, Figure 4 and Figure 5 (following this account); target notes, quadrat descriptions and quadrat records are provided in tabulated form at the end of this account. MATCH analyses for individual quadrats and constancy tables are shown in Annexes 2 and 3 respectively. The general site location is shown in Figure 1.

9.2.1 Site Description

Jugger Howe Beck marks the south-western boundary of Unit 91 of the North York Moors SSSI, and comprises a small but deeply incised stream at the base of a steep-sided meandering valley. The lower slopes of much of the valley support wet heath vegetation characterised by a mixture of *Calluna vulgaris, Erica tetralix, Molinia caerulea* and *Myrica gale*, with a series of distinct wetland areas on the gentler slopes near the valley floor. Most areas of wetland are found on the north-eastern side of the beck, and these are generally sourced by seepages and springs that arise close to the break of slope near the valley bottom, although there are some examples of springs and seepage areas higher upslope, and on the south-western side of the beck.

Extensive areas of Alkaline Fen are found in the south-eastern part of the valley, mainly comprising M13 mire vegetation with locally abundant *Epipactis palustris*, but with some iron-rich springs forming sparsely vegetated runnels and pools that support M10-like vegetation. A small area of M10 mire is also found further upslope on the south-western side of the beck (in Unit 179), embedded within wet heath vegetation.

North-west from the M13 Alkaline Fen area, a series of distinct seepages and flushes are present on the lower slopes of the northern side of the beck, supporting Transition Mire and Quaking Bog habitat. These mires mostly consist of an intricate network of soakways with calcicolous bryophytes, small sedges and *Pinguicula vulgaris*, with mounds of *Sphagnum* and heathy vegetation in between. *Schoenus nigricans* and *Juncus subnodulosus* are generally prominent throughout this vegetation type, and in most cases it can clearly be assigned to the M14 mire community, although some examples are quite rank and impoverished, and have affinities to M15 wet heath vegetation.

The 'mixed mire' vegetation at Jugger Howe Beck, combining extensive areas of M13 and M14 mire types, is of rare and localised occurrence in the UK, and this site is considered by the authors as being of national importance.

9.2.2 Target Vegetation

<u>Alkaline Fen (EC Annex 1 habitat)</u>

M10a *Carex dioica–Pinguicula vulgaris* mire, *Carex demissa–Juncus bulbosus/kochii* sub-community

On the south-west side of the beck there is an area of quite steeply sloping wet heath (see Q11), extending from a vigorous iron-rich spring and seepage area near the top of the slope (TN6), beneath a steep shaley scarp, down to the beck. The vegetation is predominantly wet heath, dominated by a mix of *Molinia caerulea* and *Myrica gale*, with much *Calluna vulgaris*, *Erica tetralix*, and *Narthecium ossifragum*. However, water from the spring spreads out to form a series of small soakways and water tracks, associated in places with bare ground, and supporting patches of low-growing, base-rich fen embedded in the wet heath (see Q12). These areas are characterised by abundant *Pinguicula vulgaris*, small sedges and rushes such as *Carex echinata, C. flacca, C. panicea, Juncus bulbosus*, and base-loving bryophytes such as *Aneura pinguis, Campylium stellatum, Ctenidium molluscum, Fissidens adianthoides, Riccardia multifida, Scorpidium cossonnii*. Grazing is very light in this area.

Similar vegetation was associated with ochreous springs and networks of water flow tracks and shallow pools (with vivid rust-coloured iron-rich groundwater outflow resembling tomato soup) occuring on steep, stepped slopes on both sides of Jugger Howe Beck (Q16, 17, 18; TN 13). The vegetation in these areas was very sparse with scattered *Anagallis tenella, Pinguicula vulgaris*, sedges including *Carex dioica* and *C. echinata* and scattered bryophytes, mainly *Aneura pinguis* and *Campylium stellatum*. These areas of ground water outflow occur in an intricate mosaic with heathy vegetation rich in *Schoenus nigricans*. They are difficult to place in a particular NVC community and have affinities to both M10 and M14.

M13 *Schoenus nigricans–Juncus subnodulosus* mire

M13b *Schoenus nigricans–Juncus subnodulosus* mire, *Briza media–Pinguicula vulgaris* sub-community

M13c *Schoenus nigricans–Juncus subnodulosus* mire, *Caltha palustris–Galium uliginosum* sub-community

Several small stands of M13 occur close to the valley bottom, on the north-eastern side of Jugger Howe Beck. The most extensive area of this habitat is associated with a spring mound (Quadrat 21), and *Epipactis palustris* occurs in this area. The other patches of M13 are less species-rich, and are smaller in extent. The stands associated with Q21 and Q22 are dominated by *Juncus subnodulosus* and *Schoenus nigricans*, while the stands sampled by Q19 and Q20, and the stand marked by TN11 are smaller outliers of M13 on sloping ground to the north-west and south-east respectively.

On the large spring mound (Q21), nearest to Jugger Howe Beck, the *Schoenus–Juncus* sward is dense and even with much dead litter over a patchy bryophyte layer with *Aneura pinguis*, *Campylium stellatum*, *Fissidens adianthoides*, *Scorpidium cossonii* and *Palustriella commutata*. Herbs include frequent, sometimes abundant, *Epipactis palustris*, with *Anagallis tenella, Equisetum palustre, Succisa pratensis* and *Valeriana dioica* occasional to frequent throughout, and scattered *Dactylorhiza* spp. (including probable *D. incarnata* and *D. traunsteineri* but not in flower at time of survey; identification will need to be confirmed). Some small soakways adjacent to the mound support abundant brown mosses (mainly *Palustriella commutata* and *Scorpidium cossonii*) with *Briza media*, *Eriophorum latifolium*, *Pedicularis palustris* and *Pinguicula vulgaris*. This stand has a MATCH coefficient of 44.5% for M13c.

The adjacent vegetation (Q22) is an area dominated by *Schoenus nigricans* with abundant *Molinia caerulea*, together forming a stand characterised by large, tall tussocks. Between the tussocks the substratum is very wet. Much of this area is rather species poor and impoverished with only a short list of associates, including *Cirsium palustre, Succisa pratensis* and *Valeriana dioica*; however there are occasional patches with scattered brown mosses and characteristic wetland plants including *Menyanthes trifoliata*. This stand is considered to be a species-poor form of M13.

Q20 sampled vegetation that occupies a sloping seepage-fed 'bench' to the north-west of the spring mound, below a line of *Alnus glutinosa* that is situated at the base of the steep, dry, heather- and bracken-covered valleyside. *Schoenus nigricans* is abundant, although *Juncus subnodulosus* is replaced by *Juncus acutiflorus*. Accompanying these is a wide variety of bryophytes and herbs, including *Briza media, Carex flacca, C. hostiana, Cirsium palustre, Ctenidium molluscum, Erica tetralix, Equisetum arvense, Hydrocotyle vulgaris, Molinia caerulea, Pinguicula vulgaris, Succisa pratensis, Triglochin palustris* and *Valeriana dioica*.

Q19 marks a very small patch of base-rich fen (M13) that has developed alongside the valley bottom path.

Transition Mire and Quaking Bog (EC Annex 1 habitat)

M14 *Schoenus nigricans–Narthecium ossifragum* mire

Seven stands of M14 vegetation were surveyed, of varying sizes (see Quadrats 1, 4, 6-10, 13, 14, 23,25-27) . Many were fairly large (from roughly 10x20 m to 40x100 m in extent), although several

areas were only a few square metres in extent. Most of the stands of M14 were found on the gently sloping valley floor, and were associated with springs and seepages emerging at or close to the break of slope near the valley bottom.

In general, areas of distinct seepage and water flow tracks support the most diverse vegetation: whilst being generally characterised by a mixture of *Juncus subnodulosus Schoenus nigricans, Erica tetralix, Myrica gale* and *Narthecium ossifragum*, there is also a rich range of bryophytes, including typically base-loving species such as *Aneura pinguis, Campylium stellatum, Ctenidium molluscum, Fissidens adianthoides, Riccardia multifida* and *Sphagnum teres*, and less base-demanding species such as *Sphagnum capillifolium, Sphagnum inundatum, Sphagnum magellanicum, Sphagnum palustre, Sphagnum papillosum* and *Sphagnum subnitens*. Other plants found in and alongside the soakways include a variety of small sedges and rushes (*Carex demissa, C. dioica, C. echinata, C. flacca, C. hostiana, C. lepidocarpa, C. nigra, C. panicea, C. rostrata, Eleocharis multicaulis, E. quinqueflora, Eriophorum angustifolium* and *Juncus bulbosus*), and occasional forbs such as *Anagallis tenella, Drosera rotundifolia, Pinguicula vulgaris, Potamogeton polygonifolius, Succisa pratensis* and *Triglochin palustre.*

Less vigorously irrigated parts of these stands are generally less diverse, with a more heathy appearance, although occasional plants from the mix described above can usually be found scattered through the vegetation. Impoverishment is particularly noticeable in drier poorly grazed parts, where there is often a dense thatch of rushes covering the ground.

In a few places *Schoenus nigricans* was present within a species-poor matrix of *Calluna vulgaris, Erica tetralix, Juncus acutiflorus, Molinia caerulea, Myrica gale* and *Narthecium ossifragum*, but this is considered to be a form of wet heath (M15) because it lacks any of the base-rich 'indicators' that are found in the M14 stands.

The stands represented by Q23, 24, and 25 were surveyed in 2011 and represent an mosaic of vegetation that extends along the gentle slopes of the valley side to the south-east and north-west of the main spring mound. These stands are predominantly areas of hollows and soakways, divided by mounds of heathy vegetation with abundant *Sphagnum* spp. When sampled separately, the heathy areas (e.g. Q24), characterised by *Erica tetralix, Molinia caerulea*, *Narthecium ossifragum*, *Sphagnum papillosum* and *Sphagnum magellanicum* with patchy *Schoenus nigricans*, correspond to M21 *Erica tetralix–Sphagnum papillosum* mire vegetation. However, these mounds and ridges are often closely juxtaposed with vegetation characterised by mixtures of *Anagallis tenella, Carex dioica, Drosera rotundifolia, Eleocharis multicaulis, Eleocharis quinqueflora, Eriophorum angustifolium, Pinguicula vulgaris, Potamogeton polygonifolius, Schoenus nigricans*, and bryophytes including *Aneura pinguis, Campylium stellatum, Scorpidium cossonii, Scorpidium revolvens, Sphagnum inundatum*. The club moss *Selaginella selaginoides* also occurs in this vegetation. Taken together, this type of vegetation represents an extensive example of M14 mire vegetation.

Rare species

Epipactis palustris occurs in a large spring-mound adjacent to the north side of the beck (in the area represented by Quadrat 21). Several spikes were seen in 2011 and 2014 .

9.2.3 Wetland Substrata & Water Supply

The spring mound area represented by Quadrat 21 appears to be the most base-rich (pH 7.25; EC 597 μS cm^{-1}), over deep black peat to more than 120 cm depth in the centre of the spring mound. The remaining stands of both M13 and M14 are associated with moderately base-rich springs and seepages (pH 5.5–6.6; EC 110–400 μS cm^{-1}) on peat from 60 cm to more than 120 cm depth, over sandy clay. In places upslope of the main seepages there are base-rich ochreous (iron-rich) springs (pH 6.3–6.9; EC 120–200 μS cm^{-1}) over a skeletal substratum of rocks and fine silt / sand..

The Alkaline Fen and Transition Mire stands all appear to be strongly groundwater fed.

Possible WETMECs: 10a Permanent seepage slopes, Localised strong seepage; 10b Permanent seepage slopes, Diffuse seepage; 17a Groundwater flushed slopes.

9.2.4 Site Management

The vegetation is part of an extensive moorland management unit that appears to be very lightly grazed by sheep and deer. There were no obvious signs of grazing during the survey, although a few sheep were seen. The vegetation in most of the spring and seepage areas was rather rank, with a dense thatch of *Schoenus nigricans* and *Juncus subnodulosus* litter, and there is some birch and rowan colonisation on the surrounding heathy areas, indicating low grazing pressure in the general area. In many cases the footpath runs through or close to the seepage areas, and in some it appears that trampling by pedestrian traffic is helping to maintain open conditions (on a small scale), with increased diversity of diminuitive species in these areas.

The current level of grazing may not be adequate to sustain the wetland interest, particularly the M13 and M14 areas, and associated invertebrate interest (SAC species: *Vertigo geyeri* – a snail (Abrehart, 2010)).

This important wetland area is currently subsumed into a large heathland unit of the North York Moors SSSI (mainly unit 91, whilst one of the M10 areas is within unit 179). It should be regarded as a separate site unit, so that the wetland interest can be assessed as a main interest feature.

Figure 3. Jugger Howe Beck – Northern Section.

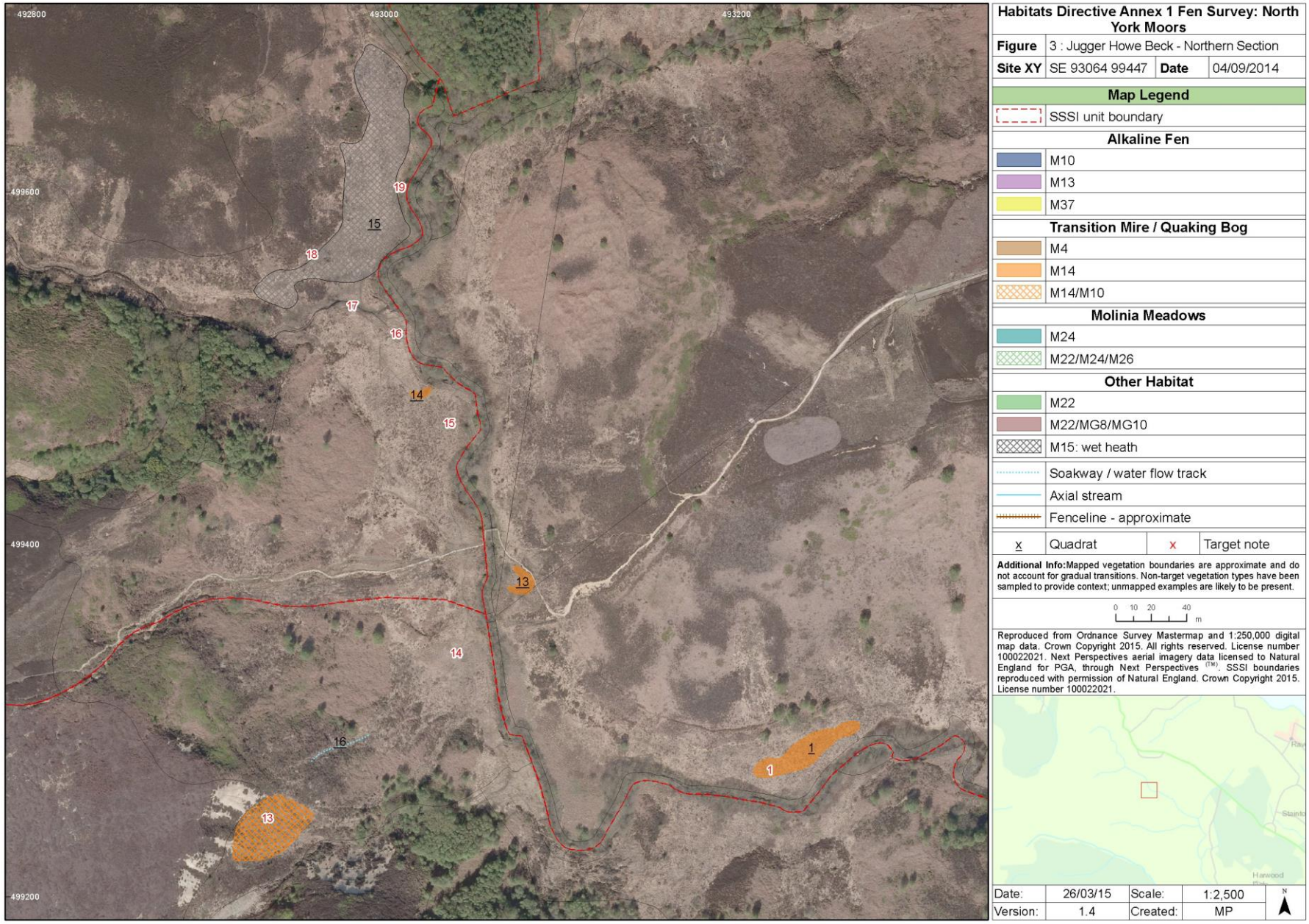
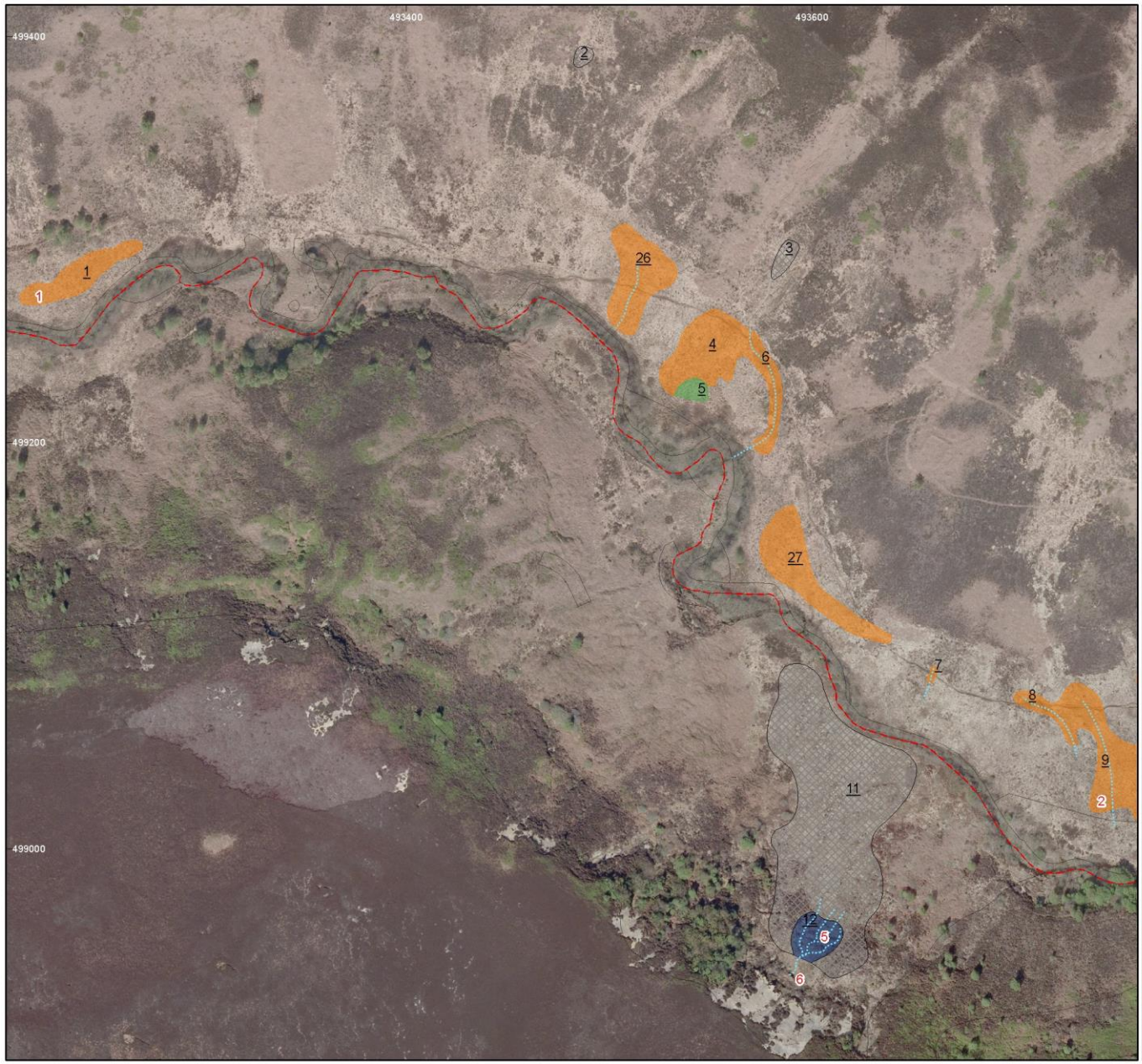


Figure 4. Jugger Howe Beck – Central Section.



Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	4 : Jugger Howe Beck - Central Section		
Site XY	SE 93482 99156	**Date**	04/09/2014

Map Legend	
	SSSI unit boundary
Alkaline Fen	
	M10
	M13
	M37
Transition Mire / Quaking Bog	
	M4
	M14
	M14/M10
Molinia Meadows	
	M24
	M22/M24/M26
Other Habitat	
	M22
	M22/MG8/MG10
	M15: wet heath
	Soakway / water flow track
	Axial stream
	Fenceline - approximate
x Quadrat	x Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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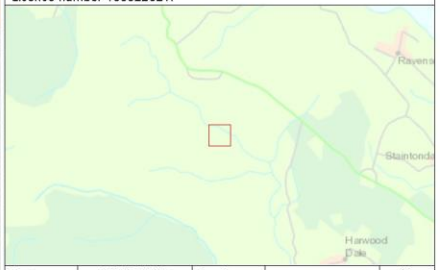
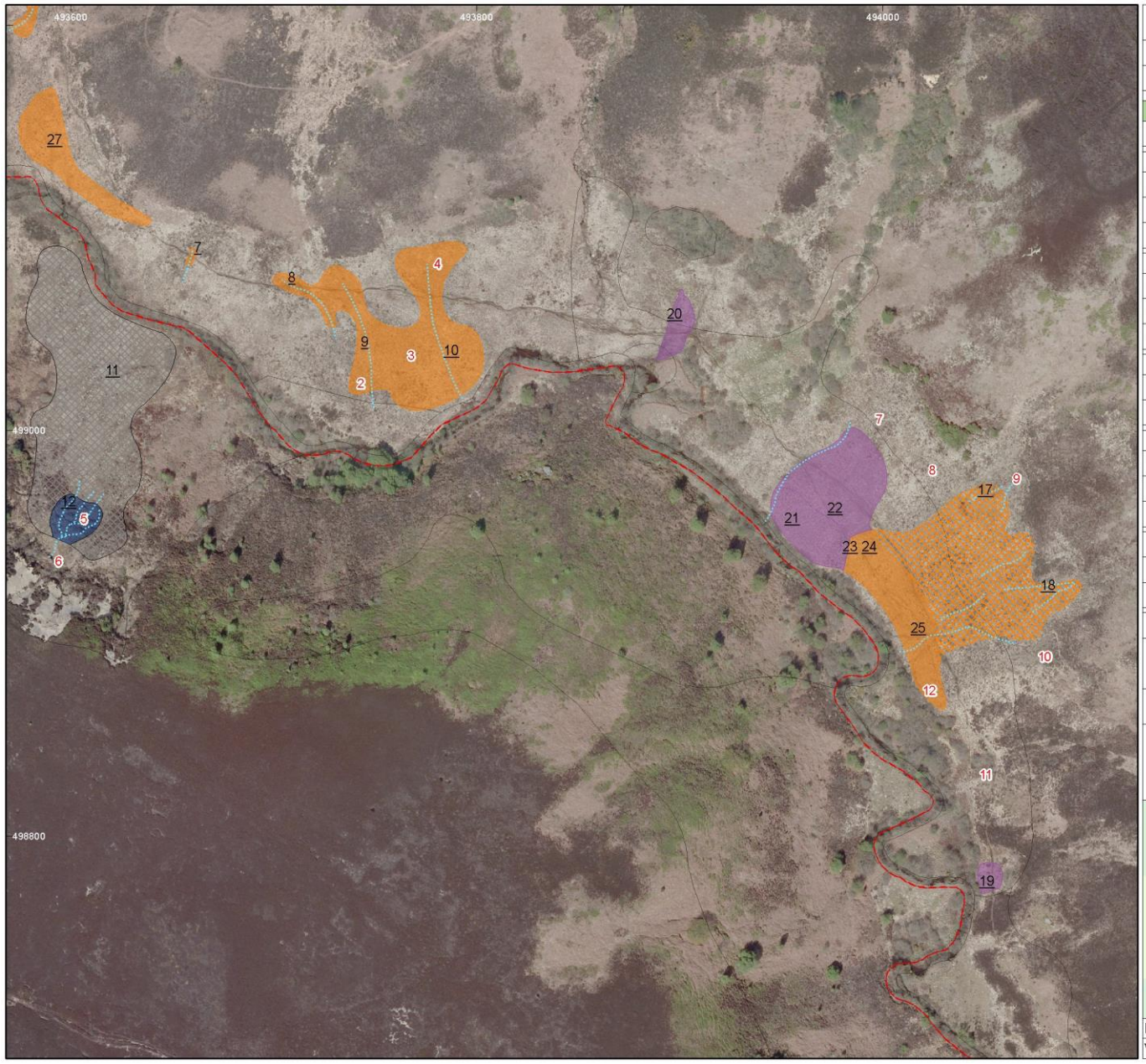


Date:	26/03/15	Scale:	1:2,500	N
Version:	1.4	Created:	MP	

Figure 5. Jugger Howe Beck – Southern Section.



Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	5 : Jugger Howe Beck - Southern Section		
Site XY	SE 93847 98950	**Date**	04/09/2014

Map Legend	
	SSSI unit boundary
Alkaline Fen	
	M10
	M13
	M37
Transition Mire / Quaking Bog	
	M4
	M14
	M14/M10
Molinia Meadows	
	M24
	M22/M24/M26
Other Habitat	
	M22
	M22/MG8/MG10
	M15: wet heath
	Soakway / water flow track
	Axial stream
	Fenceline - approximate
x Quadrat	x Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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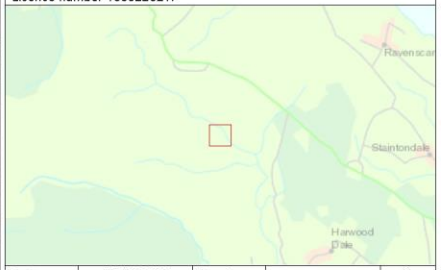


Date:	26/03/15	Scale:	1:2,500	N
Version:	1.4	Created:	MP	

Quadrat ID	Jugger Howe Beck: Quadrat Description	Photo ref
Q1	Situated on a gentle slope just above the alder-lined beck, beneath the footpath where it passes through a small patch of scrub. The valley bottom in this area supports tall, ungrazed wet heath of *Calluna vulgaris, Erica tetralix, Molinia caerulea* and *Myrica gale*. Here the stand includes abundant *Juncus subnodulosus* and *Schoenus nigricans,* mixed with occasional small sedges (*Carex echinata, C. flacca, C. hostiana, C. rostrata*), bryophytes (*Aneura pinguis, Calliergonella cuspidata, Campylium stellatum, Ctenidium molluscum, Fissidens adianthoides, Pseudoscleropodium purum, Riccardia multifida, Sphagnum inundatum, S. capillifolium, S. palustre*) and a few other plants such as *Centaurea nigra, Cirsium palustre, Succisa pratensis, Viola palustris*. [M14 but affinities to M13 and M15]	DSC01155
Q2	Fairly high upslope, on steep slopes of mixed dry heath, wet heath and bracken, there are two clumps of *Schoenus nigricans* in a small stand of wet heath dominated by *Juncus acutiflorus,* growing with abundant *Carex panicea, Erica tetralix* and *Molinia caerulea*, with a few other scattered plants including *Carex echinata, C. flacca, Drosera rotundifolia, Festuca rubra, Hypericum pulchrum, Sphagnum palustre, Succisa pratensis* and *Viola palustris.* [M15a]	DSC01162
Q3	A steeply sloping stand of wet heath part way up the valley side, supporting frequent *Schoenus nigricans* within *Calluna vulgaris, Erica tetralix, Juncus acutiflorus, Molinia caerulea, Myrica gale* and *Narthecium ossifragum*. [M15]	DSC01165
Q4	Downslope of the stand of Q3, at the break of slope in the valley bottom, is an area of flushed wet heath-like vegetation dominated by a mixture of *Juncus subnodulosus, Molinia caerulea, Myrica gale* and *Schoenus nigricans*, with smaller quantities of *Calluna vulgaris, Erica tetralix,* and *Sphagnum capillifolium.* Other species are present at very low cover scattered through the stand, including a mixture of base-loving and less base-tolerant bryophytes: *Campylium stellatum, Riccardia multifida, Sphagnum magellanicum, S. subnitens, S. palustre.* [M14, but strong affinity to M15a]	DSC01168
Q5	At the base of the slope close to the beck is a small 'sump' area, very wet underfoot, with dense *Juncus subnodulosus,* abundant *Myrica gale,* frequent *Calliergonella cuspidata, Cirsium palustre, Galium uliginosum, Hydrocotyle vulgaris* and *Valeriana dioica*, plus *Sphagnum fallax and S. palustre,* and rarely *Aneura pinguis and Potentilla erecta*. [Has some affinity to M22a]	
Q6	At the upper edge of the stand of Q4 & Q5, close to the break of slope, and running parallel to the path for some distance, is a very wet and very diverse water track, that trails downslope to the beck. *Juncus subnodulosus* is dominant, but also abundant are *Calluna vulgaris, Myrica gale, Narthecium ossifragum, Potamogeton polygonifolius, Schoenus nigricans, Sphagnum magellanicum, Sphagnum palustre, Sphagnum subnitens* and *Sphagnum teres.* Other species scattered at low cover through the stand include *Anagallis tenella, Aneura pinguis, Campylium stellatum, Drosera rotundifolia, Eleocharis multicaulis, E. quinqueflora, Juncus bulbosus, Sphagnum inundatum* and *Sphagnum papillosum.* [M14]	DSC01172
Q7	A small, narrow soakway crosses the path (c. 1x8m long) with a mixture of *Erica tetralix, Juncus acutiflorus, Molinia caerulea, Narthecium ossifragum, Potamogeton polygonifolius, Schoenus nigricans,* mingled with smaller quantities of *Aneura pinguis, Campylium stellatum, Calluna vulgaris, Carex panicea, Drosera rotundifolia, Eriophorum angustifolium, Riccardia multifida,* and *Sphagnum magellanicum*. [M14]	DSC01178
Q8	Situated at the upper (north-western) end of a soakway close to the path marked by the presence of tussocks of *Schoenus nigricans,* with abundant *Myrica gale, Narthecium ossifragum,* and *Potamogeton polygonifolius,* frequent *Campylium stellatum* and *Eriophorum angustifolium,* and a scattering of other plants, including a range of small sedges and rushes (*Carex echinata, C. hostiana, C. panicea, Eleocharis quinqueflora, Juncus bulbosus*), bryophytes (*Aneura pinguis, Scorpidium cossonnii, Riccardia multifida, Sphagnum denticulatum, S. capillifolium, S. palustre.*), and few other flowering plants, e.g. *Drosera rotundifolia, Hydrocotyle vulgaris, Pinguicula vulgaris, Succisa pratensis,* and *Triglochin palustre.* [M14]	DSC01180
Q9	Soakways lead gently downslope onto the broad valley floor, much of which is occupied by quite species-poor wet heath. In this area the vegetation is enhanced by the presence of many of the species listed for Q8, with *Myrica gale* and *Schoenus nigricans* co-dominant, and also occasional *Aulacomnium palustre, Calliergonella cuspidata, Ctendicium molluscum, Cirsium palustre,* and *Potentilla erecta*. Here there is also a small stand (4x4m) of *Menyanthes trifoliata* embedded within the vegetation, marking a somewhat wetter area of ground associated with one of the soakways. [M14, but also affinity to M13a, M25 and M15a]	
Q10	A short distance to the east of Q9 the vegetation becomes dominated by dense, rank *Juncus subnodulosus,* with much *Calluna vulgaris, Myrica gale, Erica tetralix, Carex panicea* and *Sphagnum palustre*, and only rarely tussocks of *Schoenus nigricans*. The ground is less obviously wet, although the dense rush litter forms a mat obscuring the ground in many places. A small indistinct soakway runs through the eastern half of this	DSC01184

Quadrat ID	Jugger Howe Beck: Quadrat Description	Photo ref
	area, associated with a slightly more diverse flora, including occasional *Agrostis stolonifera, Campylium stellatum, Calliergonella cuspidata, Drosera rotundifolia, Empetrum nigrum, Narthecium ossifragum, Sphagnum capillifolium, S. magellanicum, Sphagnum teres,* and *Succisa pratensis.* Heavier grazing would be beneficial here to open up the sward. [M14 but also affinity to M15a, M13a and M21b]	
Q11	An area of quite steeply sloping wet heath on the south-west side of the beck, extending from a vigorous spring and seepage area near the top of the slope (beneath a steep shaley scarp) down to the beck. The vegetation is dominated by *Molinia caerulea* and *Myrica gale,* with much *Calluna vulgaris, Erica tetralix,* and *Narthecium ossifragum*. Other scattered species include *Juncus acutiflorus, J. conglomeratus, Potentilla erecta, Carex echinata, Equisetum palustre, Sphagnum capillifolium* and *Succsisa pratensis.* [M15b]	DSC01185
Q12	A small soakway on a steep slope, supporting scattered *Pinguicula vulgaris* embedded within wet heath vegetation. Further upslope the soakways and water tracks become broader, wetter, with more bare ground, and supporting larger stands of low-growing, base-rich fen. These areas are characterised by abundant *Pinguicula vulgaris,* small sedges and rushes such as *Carex echinata, C. flacca, C. panicea, Juncus bulbosus,* and base-loving bryophytes such as *Aneura pinguis, Campylium stellatum, Ctenidium molluscum, Fissidens adianthoides, Riccardia multifida, Scorpidium cossonnii*). [M10a]	DSC01188 & 90
Q13	A small stand situated between the footpath and the north-eastern side of the stream. Ochreous pools with *Potamogeton polygonifolius* are flanked by sedge- and bryophyte-rich vegetation with *Schoenus nigricans, Eriophorum angustifolium* and *Eleocharis multicaulis*. The mosses *Calliergonella cuspidata, Sphagnum denticulatum, S. fallax, S. palustre* and *S. subnitens* are all frequent but there are also some patches of bryophytes indicative of more base-rich conditions (*Campylium stellatum, Scorpidium revolvens*) in some water flow tracks.[M14]	P1050400-1
Q14	This is a narrow water-flow track close to the south-western side of the stream with a mixture of species typical of base-rich and base-poor conditions. Scattered tussocks of *Schoenus nigricans* mark out the flow track but much of the vegetation is low growing with a well developed bryophyte layer. [M14]	P1050405-6
Q15	The valley bottom on the western side of the stream is occupied by visually uniform wet heath vegetation co-dominated by *Molinia caerulea* and dwarf shrubs.[M15]	P1050407-8
Q16	This quadrat represents patches of sparse vegetation developed over skeletal substrata on steep slopes fed by ochreous springs and seepages which emerge higher up the slope. Similar vegetation is found in the area mapped as TN13. [M10 / M14]	P1050417-19
Q17	Strongly ochreous springs emerge from the slopes upslope (to the north) of the M13 and M14 vegetation that occurs nearer to the valley bottom and the stream. The springs give rise to a network of water-flow channels. Sparse vegetation with *Juncus bulbosus, Carex demissa, Carex panicea, Pinguicula vulgaris, Anagallis tenella, Aneura pinguis* and *Campylium stellatum*. [M10 / M14]	P1050425
Q18	Part of the network of ochreous springs and water flow tracks with *Pinguicula vulgaris, Juncus bulbosus, Potamogeton polygonifolius* with *Campylium stellatum* within heathy vegetation with *Schoenus nigricans*. pH 5.9-6.1 EC180-210 µS cm^{-1} [M10 / M14]	P1050428
Q19	This is a very small patch of vegetation with M13 species which occurs either side of the informal footpath along the valley bottom. [M13]	P1050429
Q20	Small stand, rich in sedges with tussocks of *Schoenus nigricans*. Also sampled in 2011 (133007) [M13]	P1050421
Q21	*Epipactis palustris* area of large, elongated spring mound with Schoenus nigricans and Juncus subnodulosus. *Anagallis tenella*, *Pinguicula vulgaris*, and bryophytes indicative of base-rich conditions (e.g. *Scorpidium cossinii, Campylium stellatum*) occur in water flow tracks.Also sampled in 2011 (133001) [M13]	
Q22	Species-poor tussocky *Schoenus nigricans* with *Molinia caerulea* and tall herbs. Sampled in 2011 (133002) [affinity to M13]	
Q23	Mixed mire Sampled in 2011(133003) [M14]	
Q24	Mixed mire Sampled in 2011(133004) [M21]	
Q25	Mixed mire Sampled in 2011(133005) [M14]	
Q26	A wet hollow at the break of slope above the path supports abundant *Juncus subnodulosus* and *Schoenus nigricans*, with frequent *Carex panicea, Molinia caerulea, Myrica gale, Pinguicula vulgaris* and *Sphagnum subnitens*. Other scattered plants include *Anagallis tenella, Aneura pinguis, Campylium stellatum, Carex hostiana, Ctenidium molluscum, Drosera rotundifolia, Fissidens adianthoides, Potamogeton polygonifolius, Succisa pratensis.* A small soakway leads from the hollow downslope through a belt of similar vegetation down to the beck, which also includes *Carex demissa, Scorpidium cossonnii, S. scorpioides, Selaginella selaginoides* and *Sphagnum magellanicum*. [M14] Sampled in 2011.	
Q27	A seepage area just below the path dominated by *Juncus subnodulosus* with abundant	

Quadrat ID	Jugger Howe Beck: Quadrat Description	Photo ref
	Erica tetralix, Schoenus nigricans and *Sphagnum papillosum.* Scattered through the stand are a range of both base-loving and acid-loving bryophytes (*Aneura pinguis, Campylium stellatum, Ctenidium molluscum, Scorpidium cossonnii, S. scorpioides, Sphagnum capillifolium, S. fallax, S. magellanicum, S. subnitens*). Other plants at low cover include *Drosera rotundifolia, Equistum palustre, Menyanthes trifoliata, Pedicularis palustris,* and *Succisa pratensis.* [M14] Sampled in 2011.	

Target note	Jugger Howe Beck: Target Note Description	Photo ref
TN1	*Schoenus nigricans* extends a short distance to the west and to the east into the adjoining wet heath, but no other species of the M14 stand accompany it.	
TN2	A small patch of *Menyanthes trifoliata* (4x4m) is embedded within the *Myrica and Schoenus*-dominated M14 soakway.	
TN3	*Juncus subnodulosus* is only present to the south and east of this line, where it is dominant, ungrazed, and forms a dense species-poor thatch.	
TN4	Similar vegetation to that sampled by Q8 on a shallow 'terrace' above a short slope that leads down to the path and then into the main, derelict, *Juncus subnodulosus* M14 area.	
TN5	A series of vigorously flowing water tracks leading from a small terrace, cut through wet heath vegetation, and supporting strips and patches of M10 on locally quite bare, skeletal soils. Roughly 10% of the mapped stand supports M10a in a matrix of wet heath. Due to time constraints, the vegetation sampled by Q12 was less typical of M10 than the vegetation observed further upslope.	
TN6	An iron-rich 'tomato soup' spring issues from the base of a short steep cliff and area of shale-rich exposure and leads down onto a narrow terraces, before splitting and dropping down through the M10 stand. Vegetation at the spring is dominated by *Juncus acutiflorus* and *Aneura pinguis*; water pH 7.0, 70 µS cm^{-1}.	DSC01189
TN7	Sloping ground and 'shelf' / terrace above the main seepage and springs with abundant *Schoenus nigricans. Molinia caerulea, Erica tetralix, Calluna vulgaris, Juncus acutiflorus, Narthecium ossifragum, Myrica gale, Carex hostiana, C. panicea* and *Equisetum palustre* are all frequent. The vegetation in this area has the character of 'wet heath', but dwarf shrubs disappear downslope. pH 6.8; EC 310 µS cm^{-1}	P1050422
TN8	*Schoenus* tussocks with *Erica tetralix, Sphagnum spp., Narthecium ossifragum* on hillslope. pH6.5 EC 200 µS cm^{-1}	P1050423
TN9	As TN7 and TN8, no free water.	P1050425
TN10	Sedge-rich area within wet heath vegetation on the eastern edge of the shelf above the main area of springs and seepages. *Carex rostrata, C. echinata, Eriophorum angustifolium, Juncus acutiflorus, Molinia caerulea* with *Sphagnum fallax, S. palustre*.	P1050428
TN11	*Schoenus nigricans* patch adjacent to 'path' with *Carex hostiana, Eleocharis multicaulis* and *Triglochin palustre*.	
TN12	As TN11.	
TN13	Areas of ochreous springs and seepages on steep, stepped, slopes with exposed rocks and mineral substratum (pale fine sand and silt). *Carex dioica* is often abundant in a sparse sward that occupies the springs and water flow tracks. *Carex echinata, C. demissa* are also frequent with *Narthecium ossifragum. Sphagnum denticulatum* is frequent with scattered *Aneura pinguis* and *Campylium stellatum. Carex pulicaris* and *Molinia caerulea* become more frequent in vegetaion fringing the springs and flow tracks. pH 5.3- 5.8 EC 150-180 µS cm^{-1}. Further up the valley (to the west) the vegetation is dominated by *Molinia caerulea* with scattered dwarf shrubs.	
TN14	Extensive flushed areas on SW side of the stream with *Molinia caerulea, Carex rostrata, Carex echinata, Narthecium ossifragum, Myrica gale, Sphagnum palustre, Erica tetralix*	P1050416
TN15	Scattered *Schoenus nigricans* tussocks with *Carex hostiana, C. pulicaris, Succisa pratensis* and *Valeriana dioica*. Bryophytes rather sparse - some scattered *Ctenidium molluscum* and patches of *Sphagnum subnitens*. Patches of *Hydrocotyle vulgaris* and *Achillea ptarmica* with *Juncus acutiflorus, Molinia caerulea* near the stream.	P1050415
TN16	Hollow with *Potamogeton polygonifolius*, *Juncus bulbosus* and *Sphagnum* spp. above the stream.	
TN17	Stream with sedge-rich wetland areas adjacent with abundant *Eleocharis multicaulis*, *Eriophorum angustifolium, Potamogeton polygonifolius* and *Sphagnum denticulatum*. pH5.2 EC 85 µS cm^{-1}	P1050412-414
TN18	Seepage and pool at the base of a heathy, bracken-covered slope. *Carex panicea, Juncus bulbosus, Juncus acutiflorus, Narthecium ossifragum* over *Sphagnum magallanicum, S. denticulatum, S.fallax, Aulacomnium palustre*. pH 5.5 EC 147 µS $cm^{-1.}$	
TN19	Area of *Juncus acutiflorus, Ranunculus repens, Succisa pratensis* and *Valeriana dioica* fringing the stream. The stream itself is lined with mature *Alnus glutinosa*.	

North York Moors Fen Survey 2014							
Site	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe
Quadrat number	Q1	Q2	Q3	Q4	Q5	Q6	Q7
BAP habitat	LF	WH	WH	LF	LF	LF	LF
Annex 1 habitat	TMQB 7140			TMQB 7140		TMQB 7140	TMQB 7140
Likely NVC type	M14	M15a	M15	M14	affinity M22a	M14	M14
Surveyor	PE	PE	PE	PE	PE	PE	PE
Date	04/09/2014	04/09/2014	04/09/2014	04/09/2014	04/09/2014	04/09/2014	04/09/2014
Easting	493229	493486	493591	493542	493545	493572	493655
Northing	499272	49392	499299	499242	499224	499243	499087
pH	6.6			6.3	6.4	6.1	6
EC (µS cm-1)	250			110	160	120	120
Quadrat size (m2)	4x4m	4x4m	4x4m	4x4m	4x4m	2x2m	1x4m
Photo ref	DSC01155	DSC01162	DSC01165	DSC01168		DSC01172	DSC01178
No. of species	28	16	9	20	13	27	15
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Anagallis tenella						1	
Aneura pinguis	1				1	1	1
Calliergonella cuspidata	2				4		
Calluna vulgaris	5		5	4		5	2
Campylium stellatum	1			1		1	1
Carex echinata	1	1		1		1	
Carex flacca	1	1					
Carex hostiana	1						
Carex panicea		5				1	1
Carex rostrata	1						
Centaurea nigra	1						
Cirsium palustre	1				4		
Ctenidium molluscum	1						
Drosera rotundifolia		1		1		2	2
Eleocharis multicaulis						2	
Eleocharis quinqueflora						1	
Empetrum nigrum nigrum			1				
Equisetum palustre	1			1		1	
Erica tetralix	5	5	5	4		4	4
Eriophorum angustifolium			1			1	3
Festuca ovina		1					
Festuca rubra					3		
Fissidens adianthoides	1						
Galium uliginosum					4		
Hydrocotyle vulgaris					4		
Hypericum pulchrum		1					
Juncus acutiflorus	1	8	4	1	2		5
Juncus bulbosus						1	
Juncus conglomeratus	1	2					
Juncus subnodulosus	7			8	9	8	
Molinia caerulea	4	5	4	5		3	4
Myrica gale	5		5	6	5	5	
Narthecium ossifragum			4	2		5	5
Potamogeton polygonifolius						5	5
Potentilla erecta	1	1		1	1		
Pseudoscleropodium purum	1	1					
Riccardia multifida	1			1			1
Scapania sp.				1			
Schoenus nigricans	7	4	5	5		5	4
Sphagnum capillifolium	1			4		3	
Sphagnum fallax					4	2	
Sphagnum inundatum	1					1	2
Sphagnum magellanicum				1		5	1
Sphagnum palustre	1	1		1	4	5	
Sphagnum papillosum						1	
Sphagnum subnitens				1		4	
Sphagnum teres						4	
Succisa pratensis	1	1		1			
Valeriana dioica					4		
Viola palustris	1	1					

North York Moors Fen Survey 2014							
Site	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe
Quadrat number	Q8	Q9	Q10	Q11	Q12	Q13	Q14
BAP habitat	LF	LF	LF	WH	LF	LF	LF
Annex 1 habitat	TMQB 7140	TMQB 7140			AF 7230	TMQB 7140	TMQB 7140
Likely NVC type	M14	M14	M14	M15	M10a	M21 M14	M21 M14
Surveyor	PE	PE	PE	PE	PE	RT	RT
Date	04/09/2014	04/09/2014	04/09/2014	04/09/2014	04/09/2014	4 Sep 2014	4 Sep 2014
Easting	493708	493744	493787	493620	493609	493078	493018
Northing	499073	499041	499037	499027	498992	499376	499482
pH	6.3		6.5		6.6	5.9	5.5
EC (µS cm-1)	170		140		150	230	190
Quadrat size (m2)	2x2m	2x2m	4x4m	4x4m	1x4m	2x2	1x4
Photo ref	DSC01180		DSC01184	DSC01185	DSC01188 & 90	P1050400-1	P1050405-6
No. of species	27	22	21	16	19	29	19
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Equisetum palustre	1	1	1	1	1	2	3
Erica tetralix	1	4	4	4	5	0	3
Agrostis stolonifera			1	1			
Anagallis tenella	1						
Aneura pinguis	1				1		
Angelica sylvestris						1	
Aulacomnium palustre		2		1			
Blechnum spicant				1			
Calliergon cordifolium						0	
Calliergon stramineum						0	
Calliergonella cuspidata		1	1			3	2
Calluna vulgaris		4	5	4			1
Campylium stellatum	3	1	1		2		
Carex echinata	1	4		1	4	0	2
Carex hostiana	1	4					
Carex nigra							1
Carex panicea	2	3	4			0	3
Carex rostrata						3	5
Cirsium palustre		2				2	
Ctenidium molluscum		1			2		
Dactylorhiza sp.			1	1			
Drosera rotundifolia	2		3		2	2	2
Eleocharis multicaulis						1	
Eleocharis quinqueflora	1						
Empetrum nigrum nigrum			1				
Eriophorum angustifolium	3				5	0	2
Festuca rubra					4		
Galium palustre						1	
Holcus lanatus						1	
Hydrocotyle vulgaris	1					0	
Juncus acutiflorus	1	4		1	5	1	1
Juncus bulbosus	1				2		4
Juncus conglomeratus				2			
Juncus subnodulosus			9			7	
Menyanthes trifoliata		2					
Molinia caerulea	2	4		7	5	4	3
Myrica gale	8	7	5	7		2	5
Narthecium ossifragum	5		1	4	5	5	4
Pellia sp						0	
Pinguicula vulgaris	1				2		
Potamogeton polygonifolius	5					3	4
Potentilla erecta		1	1	2			
Riccardia multifida	1	1			1		
Schoenus nigricans	5	7	1			5	4
Scorpidium cossonii	2				1		
Scorpidium revolvens						4	3
Sphagnum capillifolium	1		1	1			
Sphagnum denticulatum	1					3	
Sphagnum fallax						3	
Sphagnum inundatum					1		
Sphagnum magellanicum			1			1	
Sphagnum palustre	1	2	4			3	
Sphagnum papillosum							3
Sphagnum subnitens		2			2		
Sphagnum teres			2				
Succisa pratensis	1	2	1	1	1		
Triglochin palustre	1	1					
Valeriana dioica			1				

North York Moors Fen Survey 2014							
Site	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe
Quadrat number	Q15	Q16	Q17	Q18	Q19	Q20	Q21
BAP habitat	WH	LF	LF	LF	LF	LF	LF
Annex 1 habitat		TMQB 7140	TMQB 7140	TMQB 7140	AF 7230	AF 7230	AF 7230
Likely NVC type	M15	M10 / M14	M10 / M14	M10 / M14	M13 M10	M13	M13
Surveyor	RT	RT	RT	RT	RT	RT	RT
Date	4 Sep 2014	4 Sep 2014	4 Sep 2014	4 Sep 2014	4 Sep 2014	04/09/2014	04/09/2014
Easting	492994	492978	494050	494081	494051	493897	493955
Northing	499579	499286	498968	498921	498775	499055	498954
pH	no free water	5.6	no free water	6.04	no free water		
EC (µS cm-1)		140		175			
Quadrat size (m2)	2x2	1.5x3	1x4	2x2	2x2		
Photo ref	P1050407-8	P1050417-19	P1050425	P1050428	P1050429	P1050421	
No. of species	19	16	15	17	23	23	21
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis canina	0						
Agrostis stolonifera				0		1	1
Anagallis tenella	0			0	1		
Aneura pinguis		2	0	3	1		1
Blechnum spicant		1					
Calliergonella cuspidata					3	2	
Calluna vulgaris	3	0				1	
Campylium stellatum				3	1		1
Carex dioica	0		0	1	2		
Carex echinata	4	3					
Carex flacca						3	1
Carex hostiana					3	2	
Carex lepidocarpa						3	
Carex nigra	1						
Carex panicea		1	0		4		2
Cirsium palustre					2	1	2
Ctenidium molluscum							2
Dactylorhiza sp.							1
Drosera rotundifolia	1	3	0	3			
Eleocharis multicaulis		3					
Epipactis palustris							3
Equisetum arvense						1	
Equisetum palustre	1				3		2
Erica tetralix	5	5	0	5		2	
Eriophorum angustifolium		2					
Festuca rubra				1			
Fissidens adianthoides							2
Galium uliginosum						1	1
Holcus lanatus					2	1	
Hydrocotyle vulgaris						5	
Juncus acutiflorus	0	0	0		3	4	
Juncus articulatus					2		
Juncus bulbosus	3		0	0			
Juncus conglomeratus	0				1		
Juncus subnodulosus					0		6
Leucobryum glaucum				1			
Mentha aquatica						1	
Menyanthes trifoliata	0						
Molinia caerulea	5	3	0	4	7	4	5
Myrica gale	7		0	0	7	4	
Narthecium ossifragum	6	6	0	4			
Palustriella commutata					2		
Palustriella falcata							3
Pedicularis palustris						1	
Pedicularis sylvatica		1					
Pellia endiviifolia						1	
Pinguicula vulgaris				3	1		1
Potentilla erecta	1	0	0	1	1		
Riccardia multifida							1
Schoenus nigricans			0	5	5	6	5
Scorpidium revolvens					2		2
Selaginella selaginoides			0	2			
Sphagnum capillifolium	1						
Sphagnum denticulatum		0					
Sphagnum fallax			0				
Sphagnum palustre	3						
Sphagnum subnitens			0			2	
Succisa pratensis		0			3	3	3
Triglochin palustre					0	1	
Valeriana dioica						3	2

North York Moors Fen Survey 2014						
Site	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe	Jugger Howe
Quadrat number	Q22	Q23	Q24	Q25	Q26	Q27
BAP habitat	LF	LF	LF	LF	LF	LF
Annex 1 habitat	AF 7230	TMQB 7140		TMQB 7140	TMQB 7140	TMQB 7140
Likely NVC type	M13	M14	M21	M14	M14	M14
Surveyor	RT	RT	RT	RT	PE	PE
Date	04/09/2014	15/09/2011	15/09/2011	15/09/2011	15/09/2011	15/09/2011
Easting	493976	493988	493988	494017	493512	493596
Northing	498959	498940	498940	498900	499275	499130
pH		5.9		6.3	5.8	5.9
EC (µS cm-1)		159		210	180	245
Quadrat size (m2)		1x4m	2x2m	2x2m	2x2m	2x2m
Photo ref						
No. of species	7					
Speciess name	**Domin**	**Domin score (Quadrat)**	**Domin score (Quadrat)**	**Domin score (Quadrat)**	**Domin score (Quadrat)**	**Domin score (Quadrat)**
Anagallis tenella				1	1	
Aneura pinguis		3		3	2	0
Calluna vulgaris			4	1		1
Campylium stellatum		1		4	2	3
Carex demissa		3			0	
Carex dioica				1		
Carex echinata		1	0	1		
Carex hostiana					2	
Carex lepidocarpa				2		
Carex panicea		3		2	3	
Carex rostrata		3		3		
Cirsium palustre	2					
Ctenidium molluscum				2	1	0
Drosera rotundifolia		3	0	3	2	3
Eleocharis multicaulis				0		
Equisetum palustre		2	2		1	2
Erica tetralix	1	1	4	3	2	4
Eriophorum angustifolium		1		1		
Fissidens adianthoides					1	
Galium uliginosum	1					
Juncus acutiflorus		3	4	1	0	
Juncus bulbosus				1		
Juncus subnodulosus	6				8	8
Menyanthes trifoliata						2
Molinia caerulea	8	2	5	3	3	
Myrica gale		3	4	2	3	3
Narthecium ossifragum		2		4		
Pedicularis palustris						0
Pinguicula vulgaris		2		2	3	0
Potamogeton polygonifolius		4		4	1	
Potentilla erecta			0		1	
Schoenus nigricans	6	3	4	5	5	4
Scorpidium cossonii				1	0	0
Scorpidium revolvens		4		4		
Scorpidium scorpioides					0	0
Selaginella selaginoides				1	0	
Sphagnum capillifolium			4			3
Sphagnum denticulatum					0	
Sphagnum fallax						3
Sphagnum inundatum		1				
Sphagnum magellanicum				3	0	3
Sphagnum papillosum			5	2		4
Sphagnum subnitens					3	3
Succisa pratensis	2	1	3	3	2	0

9.3 ROSEKIRK DALE

[Troutsdale and Rosekirk Dale SSSI, Units 3 and 4]

Vegetation types, quadrat locations and selected target notes are shown in Figure 6 (following this account); target notes, quadrat descriptions and quadrat records are provided in tabulated form at the end of this account. MATCH analyses for individual quadrats and constancy tables are shown in Annexes 2 and 3 respectively. The general site location is shown in Figure 1.

9.3.1 Site Description

Rosekirk Dale is a south-east trending, narrow, steep-sided valley that joins Troutsdale at approximately SE 903 876, within Dalby Forest. A multitude of springs is found in the lower reaches of both valleys at approximately 150-160 m aOD, and these areas comprise Troutsdale and Rosekirk Dale Fens SSSI; their combined flow exits in an eastward direction, past Keeper's Cottage and Hern Head House. The area of springs in Rosekirkdale is situated in unit 3 of the SSSI, while unit 4 also supports a small number of springs, whose flow joins with that of unit 3. Units 1 and 2 are situated in Troutsdale (see Section 9.4), separated from Rosekirkdale fens by a tract of semi-improved pasture. The valley sides are cloaked with mature conifer plantations: Broad Head and Hern Head to the north, and Whydale Forest to the south. In contrast with the fens of Troutsdale, which have been in active grazing management for some time, Rosekirk Dale fens have been derelict for many years, and they have only recently been brought back into active grazing management. Consequently, broad patches of scrub are a feature of the site, growing across many of the wetland areas, although significant scrub clearance has recently been undertaken. Units 3 and 4 currently support substantial areas of Alkaline Fen irrigated by vigorous springs that are strongly tufa-forming, and there is also a small patch of Petrifying Spring habitat. Some of the former springs and seepages have been ditched and planted with conifers, and there is also a hydraulic ram in active use.

9.3.2 Target Vegetation

<u>Alkaline Fen (EC Annex 1 habitat)</u>

M13a *Schoenus nigricans–Juncus subnodulosus* mire,
_____ *Briza media–Pinguicula vulgaris* sub-community

M13b *Schoenus nigricans–Juncus subnodulosus* mire,
_____ *Briza media–Pinguicula vulgaris* sub-community

M37 *Cratoneuron commutatum–Festuca rubra* spring

The predominant type of Alkaline Fen habitat in the Rosekirk Dale fens is M13a (see Quadrats 2, 3, 7, 8 and 9), and the combined data for all stands indicate a fairly strong affinity to M24a. M13a is typically a rather impoverished form of M13, and M24 often develops from M13 as a consequence of drying (Wheeler, Shaw and Tanner, 2009). Whilst most stands seen at Rosekirk Dale are not dry, they are relatively impoverished, which may be related to the previously derelict state of the site; however some of the more diverse stands have strong affinities to M13b (i.e. Quadrats 5 and 10).

Typically, the stands of M13a seen here are very wet, and bare ground forms a conspicuous proportion of the overall surface cover, with much tufa present, sometimes as conspicuous ridges. Scattered scrub of *Fraxinus excelsior* and *Betula pubescens* is present in some stands, over abundant (and locally dominant) *Schoenus nigricans, Juncus subnodulosus* and *Molinia caerulea*, with several sedge, rush and grass species at varying cover, including *Carex flacca, C. lepidocarpa, C. nigra, C. panicea, Juncus acutiflorus, J. articulatus, J. bulbosus, J. inflexus,* and *Agrostis stolonifera*. There is also a sprinkling of bryophytes, including *Bryum pseudotriquetrum*, *Calliergonella cuspidata, Ctenidium molluscum, Palustriella commutata* (which is locally abundant), and *Scorpidium scorpioides*. Mingled with these are a range of forbs, mainly *Eupatorium cannabinum,* but also with scattered *Angelica*

sylvestris, Centaurea nigra, Cirsium palustre, Filipendula ulmaria, Mentha aquatica, Prunella vulgaris, and *Succisa pratensis.* The horse-tail *Equisetum arvense* is also locally frequent.

The two stands with greater affinity to M13b support most of the species present in the M13a stands, but also include, at low cover, species such as *Calluna vulgaris* and *Campanula rotundifolia* (on tussock tops), *Chara* sp. (in wet runnels), *Danthonia decumbens, Fissidens adianthoides, Hypericum pulchrum, Leontodon hispidus, Parnassia palustris,* and *Pinguicula vulgaris.* It will be important to monitor changes in species-richness of all stands in future, since the clearance of scrub and re-instatement of grazing should provide opportunities for the spread of characteristic M13 species throughout these stands.

Closely associated with the M13 Alkaline Fen vegetation were two small patches of M37 in spring-head locations (see Target Notes 1 and 9), both dominated by *Palustriella commutata* and partially obscured by scrub. Others may well be present in other springs that are currently covered by dense scrub in the northern part of the site, and also in the eastern part under conifer plantation.

Other notable vegetation types

M22a *Juncus subnodulosus–Cirsium palustre* fen-meadow, typical sub-community

M22b *Juncus subnodulosus–Cirsium palustre* fen-meadow, *Briza media–Trifolium* spp sub-community

Two very wet stands of M22 fen meadow were mapped at Rosekirk Dale. The first (see Quadrats 1 and 4) partly encircles an area of M13 vegetation; it is partly scrubbed over, although some of it has recently been cleared of scrub. The vegetation is relatively species-poor and probably represents M22a: it is characterised by abundant *Juncus subnodulosus, Eupatorium cannabinum, Valeriana dioica,* and the moss *Palustriella commutata* (cover of these is less beneath scrub), with a few other species at low cover, including occasional sedges and grasses (*Carex laevigata, C. nigra, Molinia caerulea, Poa trivialis*), several forbs (*Angelica sylvestris, Cirsium palustre, Epilobium parviflorum, Filipendula ulmaria, Geum rivale, Mentha aquatica, Triglochin palustre*), and a scattering of bryophytes (*Calliergonella cuspidata, Pellia endiviifolia, Plagiomnium ellipticum,* and *Plagiomnium undulatum*).

The second stand (Quadrat 6) is larger and more diverse, with very little scrub remaining following clearance. The vegetation is more diverse than the other stand, with additional species including *Anagallis tenella, Cardamine pratensis, Carex flacca, C. panicea, C. lepidocarpa, Centaurea nigra, Galium uliginosum, Hypericum tetrapterum, Juncus articulatus, Lysimachia nemorum, Ranunculus flammula,* and *Succisa pratensis*. This area has more affinity to the M22b sub-community. It will be interesting to see how these two areas develop in future in response to scrub clearance and grazing management.

Petrifying Spring (EC Annex 1 habitat)

A large tufa mound roughly 7x7 m in area is situated immediately adjacent to the axial stream, where water from a hydraulic ram housing and the adjacent vigorous water track (both supporting M13 vegetation) drops down steeply into the stream, shaded by overhanging trees. No vegetation was observed on the tufa, but the ground was treacherously wet and access difficult. This feature clearly corresponds to the Annex 1 Petrifying spring habitat.

9.3.3 Wetland Substrata & Water Supply

The substratum generally comprises a thin layer of very wet peaty soil with tufa (up to 30 cm deep in places), over stony mineral ground.

The fens are irrigated by vigorous springs that are base-rich and strongly calcareous, and tufa deposition was abundant in all spring-fed areas; in some cases large lumps and ridges of tufa were

found, and a small tufa mound was also located close to the axial stream.The pH and EC of the water sampled from springs and water tracks ranged from pH 7.2-8.1, 350-440 µS cm^{-1}.

Possible WETMECs: 10a Permanent seepage slopes, Localised strong seepage; 10b Permanent seepage slopes, Diffuse seepage; 11 Intermittent and part-drained seepage; 17a Groundwater flushed slopes.

9.3.4 Site Management

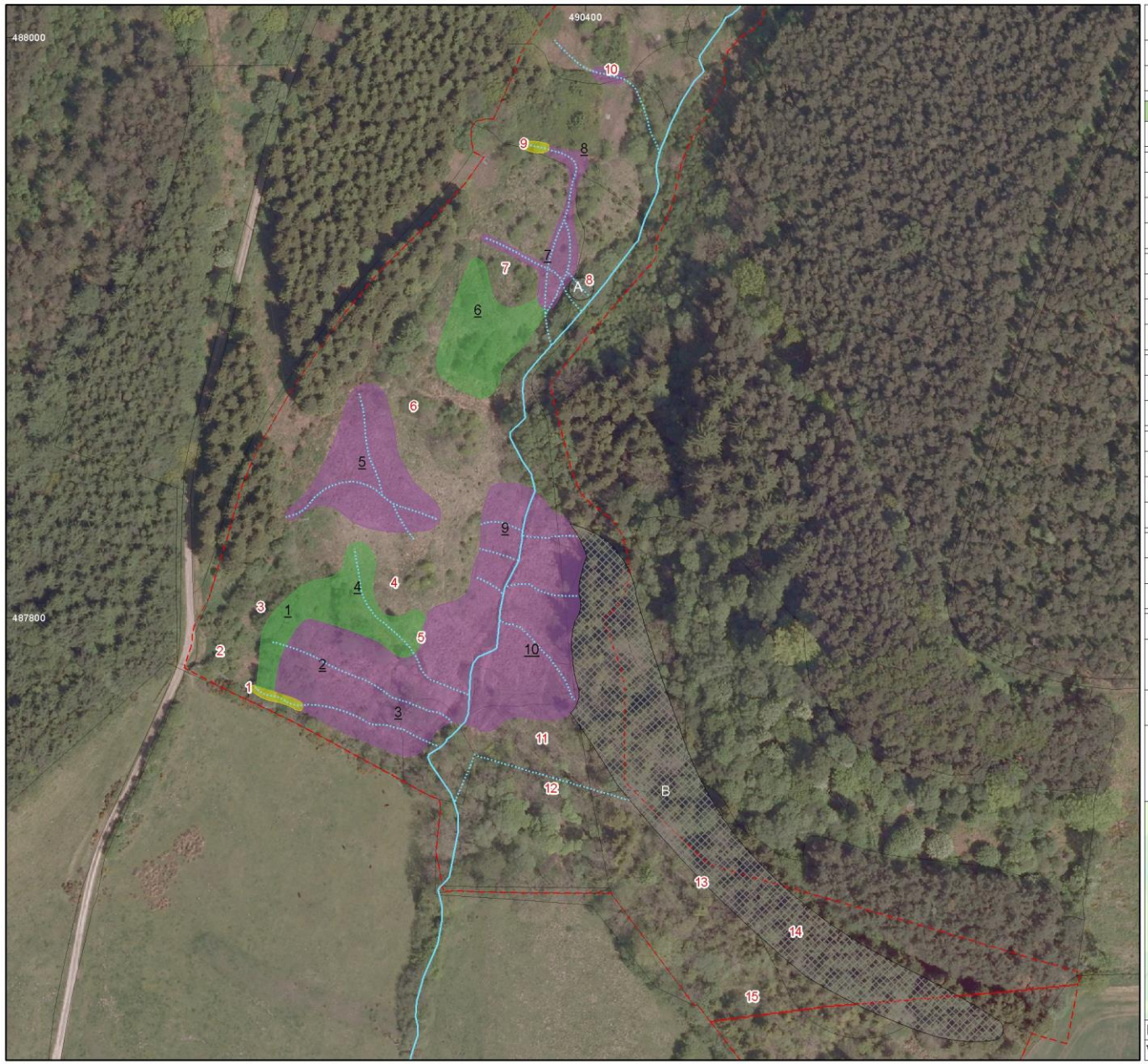
The Rosekirk Dale section of the SSSI has recently been entered into HLS; much scrub has been cleared from the southern end of the site in 2012, and cattle grazing began in 2013 (currently four Dexters). Since then the landowner has noted a large increase in cover of *Eupatorium cannabinum* on drier ground in particular. Grazing and scrub clearance has resulted in the opening up of previously rank and impoverished stands of wetland vegetation, which should allow the spread of characteristic wetland species, and result in an improvement in diversity. In addition, an active hydraulic ram is present within one of the springs toward the northern end of unit 3; whilst this may well have reduced the area of Alkaline Fen vegetation during its construction, this habitat is still present in association with the ram.

Further scrub clearance is recommended, as some patches of scrub remain in several of the M13 stands at the southern end of the site, although it is recognised that these areas are very wet and steep, and consequently brush removal may be difficult there. Scrub clearance at the northern end of the site may also help to open up additional small springs and areas of flushed ground that are currently dominated by *Prunus* and *Eupatorium*. It may also be valuable to experimentally cut and remove *Eupatorium cannabinum* from some areas, to see if its dominance can be reduced, and to encourage cattle to graze in these areas. It has clearly been beneficial to graze back hard the previously rank vegetation, but ideally future grazing pressure should be reduced somewhat so as not to cause too much poaching and erosion on the saturated ground; hopefully, the intensity of grazing will decrease in future years as more areas are opened up to cattle grazing.

There may be some value in removing a small pile of brash on the west side of the axial stream that appears to be diverting the flow of springwater away from an area of M13 vegetation (see TN5), with the aim of rewetting an area of ground that is currently quite dry, but has clearly been much wetter in the past.

On the east side of the axial stream, a line of springs and seepages have been drained by a series of forestry ditches, some quite deep, and mature conifer plantation now occupies this area, in association with dense *Eupatorium* in glades. The springwater is of high pH (up to pH7.9) and supports abundant *Palustriella commutata* with tufa formation. This area could be suitable for restoration if the conifers could be removed and the ditches infilled, to allow calcareous springwater to flush across the slopes once more.

Figure 6. Rosekirk Dale fen.



Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	6 : Rosekirkdale		
Site XY	SE 90396 87829	**Date**	05/09/2014

Map Legend	
	SSSI unit boundary
Alkaline Fen	
	M10
	M13
	M37
Transition Mire / Quaking Bog	
	M4
	M14
	M14/M10
Molinia Meadows	
	M24
	M22/M24/M26
Other Habitat	
	M22
	M22/MG8/MG10
	A = petrifying spring, B = afforested springs
	Soakway / water flow track
	Axial stream
	Fenceline - approximate
x Quadrat	x Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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Date:	26/03/15	Scale:	1:1,750	N
Version:	1.4	Created:	MP	

Quadrat ID	Rosekirk Dale: Quadrat Description	Photo ref
Q1	Partly cleared scrubby seepage near the top of the slope, with scattered *Ajuga reptans, Equisetum arvense, Eupatorium cannabinum, Geum rivale, Juncus subnodulosus, Mentha aquatica, Valeriana dioica.* [affinities to M22a]	DSC01193
Q2	Very wet slope with large ridges of tufa and bare peat (c. 30cm deep), recent partial scrub clearance of *Fraxinus excelsior* and *Betula pubescens.* Cattle grazed. Consider further scrub clearance here. Diverse, with most species at low cover, including: *Bryum pseudotriquetrum*, *Carex panicea & C. lepidocarpa, Palustriella commutata, Equisetum arvense, Eupatorium cannabinum, Juncus subnodulosus, Molinia, Schoenus & Scorpidium scorpioides.* [M13a]	DSC01194 & 5
Q3	Steeper lower slopes, very wet, very disturbed by recent scrub clearance, previously quite heavily shaded (some scrub remains). Vegetation very sparse, much bare wet ground with much tufa, signs of cattle browsing. No *Schoenus*, but abundant sedges (*Carex nigra, C. flacca, C. panicea, C. lepidocarpa*), *Equisetum arvense, Eupatorium cannabinum, Juncus inflexus, J. subnodulosus, J. articulatus, Mentha, Molinia, Tussilago farfara, Valeriana dioica*. [M13a]	DSC01196
Q4	Flushed ground in and adjacent to an area of partly cleared scrub (with a small peaty spring mound at its head) supports abundant *Juncus subnodulosus* and *Palustriella commutata,* with scattered *Ajuga reptans, Angelica, Calliergonella cuspidata, Carex nigra, C. panicea, Equisetum arvense, Eupatorium cannabinum, Filipendula ulmaria, Molinia, Triglochin palustre* and *Valeriana dioica.* [M22a]	DSC01198 & 1202
Q5	Open area of *Schoenus* vegetation (last seen in 2011 when it was very dense and ungrazed, but with no scrub). Now very open as a result of recent grazing; tussocks have been grazed down, and the intervening ground is quite bare and very wet. Fed by two springs and more general seepages, large lumps of tufa abundant. Quite diverse, but most species at very low cover: *Bryum pseudotriquetrum*, *Carex panicea & C. lepidocarpa, Equisetum arvense, Eupatorium cannabinum, Juncus articulatus, J. subnodulosus, Molinia, Palustriella commutata, Parnassia palustris, Prunella vulgaris, Potentilla erecta Schoenus & Succisa pratensis.* [M13b]	DSC01203 & 4
Q6	Very wet ground that has also been subject to much recent scrub clearance (*Salix cinerea & Betula pubescens*). *Juncus subnodulosus* is abundant, mingled with lower cover of a range of other species such as *Ajuga reptans, Anagallis tenella, Calliergonella cuspidata, Carex flacca, C. panicea, C. lepidocarpa, Centaurea nigra, Epilobium parviflorum, Equisetum arvense, Eupatorium cannabinum, Filipendula ulmaria, Galium uliginosum, Isolepis setacea, Mentha aquatica, Molinia, Palustriella commutata, Succisa* and *Valeriana dioica.* [M22b]	DSC01207
Q7	The lower end of the hydraulic ram: spring water spreads out here and the ground around the ram housing is extremely wet, with abundant *Palustriella commutata* and much tufa. Other species are sparse and the ground is very poached, but with scattered plants of *Carex panicea, C. lepidocarpa, Equisetum arvense, Eupatorium cannabinum, Festuca arundinacea, Juncus inflexus, J. subnodulosus,* M*olinia, and Schoenus nigricans*. From here water flows downslope, some flowing obliquely to the south, and also directly toward the main stream, past a large tufa mound. The ground in this area is also very open, wet and poached. [M13a]	DSC01208 & 9
Q8	A small, heavily poached and grazed stand of *Schoenus nigricans* is situated on the sharp bend of the water track leading from the *Palustriella* spring head (TN9). Not very diverse, most species present at low cover: *Agrostis stolonifera*, *Bryum pseudotriquetrum*, *Calliergonella cuspidata, Carex flacca, C. lepidocarpa, Centaurea nigra, Ctenidium molluscum, Equisetum arvense, Eupatorium cannabinum, Juncus subnodulosus, Mentha aquatica, Molinia, Palustriella commutata.* [M13a]	DSC01212
Q9	The western part of a large sloping stand of *Schoenus*-dominated vegetation that is bisected by the axial stream. This section is situated beneath a steep 3m tall rocky bluff of dry scrub, grassland and *Eupatorium cannabinum*. Water from the upper springs (see Q5) dissipates into the ground above the bluff, and may be the source of water emerging at the base of the bluff, to irrigate this stand. Heavily grazed and poached this year, but formerly (2011) very rank and ungrazed; will probably benefit from lighter grazing in future. [M13a]	DSC01213

Quadrat ID	Rosekirk Dale: Quadrat Description	Photo ref
Q10	Eastern side of the large sloping M13 stand, with several small streams flowing through it into the axial stream. Newly erected stock fencing borders the eastern edge of this stand, excluding a narrow fringe (3-6 m broad) of dry *Schoenus & Molinia* vegetation, which is partly overshadowed by the conifer plantation, and shows signs of becoming scrubbed up. The farmer explained that the fence can't have too many bends in it because it's difficult to tension, hence this bit will not be able to be grazed. This *Schoenus* stand is slightly more diverse than the western section, although most species other than *Juncus subnodulosus, Molinia,* and *Schoenus* are at low cover: *Angelica*, *Bryum pseudotriquetrum*, *Calliergonella cuspidata, Campylium stellatum, Carex panicea, Centaurea nigra, Ctenidium molluscum, Equisetum arvense, Eupatorium cannabinum, Fissidens adianthoides, Mentha aquatica, Palustriella commutata, Potentilla erecta.* Also patches of *Calluna* and *Vaccinium myrtillus* on *Schoenus* tussocks.	DSC01214 & 15

Target note	Rosekirk Dale: Target Note Description	Photo ref
TN1	Small spring with much *Palustriella commutata*, beneath a canopy of *Salix* scrub. [M37 spring]	DSC01192
TN2	Dry open scrub of *Sambucus nigra, Crataegus monogyna & Sorbus aucuparia* over *Pteridium aquilinum & Holcus lanatus* at upper end of slope (southern corner of unit).	
TN3	Dry scrub grades downslope into wet willow scrub close to the start of the seepage area. *Salix cinerea, Angelica, Ajuga reptans, Eupatorium cannabinum, Filipendula, Lysimachia nemorum, Mentha aquatica & Ranunculus repens.*	
TN4	Dry ground, recently cleared *Crataegus monogyna* scrub, now much *Eupatorium cannabinum.*	DSC01197
TN5	Here water from the wet M22 soakway appears to be diverted southwards away from a patch of dry *Schoenus* vegetation by a mixture of rooted scrub and piled up brash from scrub clearance. The slope immediately beneath is quite dry, although there is much tufa present in the soil. Perhaps the brash could be removed to allow springwater to flow down through the *Schoenus* vegetation?	DSC01200 & 1
TN6	This area has seen much scrub clearance, with some scattered scrub of *Crataegus Fraxinus, Salix* and *Quercus* remaining, also some *Ulex europaeus* and *Pteridium* on drier ground near the top of the slope. The dominant species now is *Eupatorium cannabinum*.	DSC01205 & 6
TN7	Much of the drier ground between springs, flushes and water flow tracks is dominated by a mixture of dense *Eupatorium cannabinum*, *Crataegus monogyna* and *Prunus spinosa*, with occasional *Fraxinus*.	
TN8	A large tufa mound c. 7x7 m in area is situated immediately adjacent to the stream, where water from the hydraulic ram housing and water track drops down steeply into the stream, shaded by overhanging trees.	
TN9	A spring head (2x8 m) beneath *Salix cinerea* and *Prunus spinosa* scrub, dominated by *Palustriella commutata,* and occasional *Juncus inflexus* and *J. subnodulosus.* [M37]	DSC01211
TN10	Little or no scrub clearance has occurred in this area; clearance of scrub could be beneficial here. Within the *Prunus* scrub and *Eupatorium* stands is a small clearing around a small stream leading from a spring beneath the scrub. The lower end of this area is moderately diverse, with similar vegetation to that surrounding the hydraulic ram area. [M13]	
TN11	South of the large M13 stand in the south of the site, woodland has been partly cleared (mainly *Fraxinus,* also some *Sorbus aucuparia, Salix cinerea, Corylus and Crataegus*). Vegetation now dominated by *Eupatorium cannabinum*, with *Calliergonella cuspidata, Carex panicea, Centaurea nigra* and *Tussilago farfara*.	DSC01216 & 17
TN12	A deep ditch has been cut through this area, draining a calcareous spring in the conifer plantation. The stream in the ditch bottom has much tufa and *Palustriella commutata*, the water is pH7.9, 310 µS cm $^{-1}$. Could consider damming or infilling the ditch to allow springwater to flood across the adjoining land.	
TN13	Beneath mature conifers and some *Fraxinus*, frequent forestry grips drain a series of small springs, with much *Palustriella commutata*. Small clearings support dense *Eupatorium cannabinum*. Consider clearing remaining conifers and damming grips.	
TN14	This is the upslop limit of a series of grips marking the upper edge of a seepage line (beneath dense conifers), at the base of a sudden break of slope, with dry ground upslope. Spring water is pH7.5, 340 µS cm $^{-1}$. Consider clearing remaining conifers and damming grips.	
TN15	A large clearing within dense conifer plantation, dominated by tall *Eupatorium cannabinum*	

North York Moors Fen Survey 2014					
Site	Rosekirk Dale	Rosekirk Dale	Rosekirk Dale	Rosekirk Dale	Rosekirk Dale
Quadrat number	Q1	Q2	Q3	Q4	Q5
BAP habitat	LF	LF	LF	LF	LF
Annex 1 habitat	AF 7230	AF 7230	AF 7230		AF 7230
Likely NVC type	aff M22a	M13a	M13a	M22a	M13b
Surveyor	PE	PE	PE	PE	PE
Date	05/09/2014	05/09/2014	05/09/2014	05/09/2014	05/09/2014
Easting	490294	490309	490322	490322	490323
Northing	487789	487782	487758	487798	487844
pH	7.2				7.5
EC (µS cm-1)	440				440
Quadrat size (m2)	1x4m	4x4m	4x4m	2x2m	4x4m
Photo ref	DSC01192 & 3	DSC01194 & 5	DSC01196	DSC01198 & 1202	DSC01203 & 4
No. of species	15	28	18	17	24
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis stolonifera		1	1		
Ajuga reptans	4			1	
Angelica sylvestris		1		1	
Bare soil		6	5		7
Bryum pseudotriquetrum		1			1
Calliergonella cuspidata	2	2	3	3	2
Campanula rotundifolia					1
Carex flacca			3		4
Carex laevigata	3				
Carex lepidocarpa		3	2		1
Carex nigra			4	1	
Carex panicea		4	3		3
Centaurea nigra					2
Chara sp					1
Cirsium palustre		1		1	2
Ctenidium molluscum		2			1
Danthonia decumbens					1
Epilobium parviflorum	3			1	
Equisetum arvense	4	3	2	4	3
Eupatorium cannabinum	5	4	5	5	3
Festuca ovina		1			
Filipendula ulmaria		1	2	3	
Fissidens adianthoides		1			
Fraxinus excelsior		5			
Geum rivale	3				
Isolepis setacea	1				
Juncus acutiflorus		1			
Juncus articulatus			3		1
Juncus bulbosus		1			
Juncus inflexus	1		4		
Juncus subnodulosus	2	8	5	8	4
Mentha aquatica	4	1	2		
Molinia caerulea		4	4	2	5
Palustriella commutata	8	4	5	6	5
Parnassia palustris					1
Pellia endiviifolia	1				
Pinguicula vulgaris					1
Plagiomnium ellipticum				1	
Plagiomnium undulatum				1	
Poa trivialis	2				
Potentilla erecta		1			2
Prunella vulgaris		1			1
Pseudoscleropodium purum		1			
Schoenus nigricans		4			8
Scorpidium scorpioides		1			
Succisa pratensis		1			4
Triglochin palustre				1	
Tussilago farfara			4	3	
Valeriana dioica	5		3	4	
Viola seedling/sp		1			

North York Moors Fen Survey 2014					
Site	Rosekirk Dale	Rosekirk Dale	Rosekirk Dale	Rosekirk Dale	Rosekirk Dale
Quadrat number	Q6	Q7	Q8	Q9	Q10
BAP habitat	LF	LF	LF	LF	LF
Annex 1 habitat		AF 7230	AF 7230	AF 7230	AF 7230
Likely NVC type	M22b	M13a	M13a	M13a	M13b
Surveyor	PE	PE	PE	PE	PE
Date	05/09/2014	05/09/2014	05/09/2014	05/09/2014	05/09/2014
Easting	490351	490382	490399	490369	490379
Northing	487895	487924	487960	487825	487800
pH		7.7		8.1	
EC (µS cm-1)		440		350	
Quadrat size (m2)	2x2m	2x2m	4x4m	2x2m	2x2m
Photo ref	DSC01207	DSC01208	DSC01212	DSC01213	DSC01214 & 15
No. of species	26	11	15	18	25
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis stolonifera			2		1
Ajuga reptans	2				
Anagallis tenella	1				
Angelica sylvestris				1	2
Bare soil		7	8	6	
Bryum pseudotriquetrum			1	1	1
Calliergonella cuspidata	4		1	3	
Calluna vulgaris					1
Campylium stellatum				1	1
Cardamine pratensis	1				
Carex flacca	2		4		3
Carex lepidocarpa	1	4	3		2
Carex panicea	2	4		4	
Centaurea nigra	1		1	3	1
Chara sp					1
Cirsium palustre				3	3
Ctenidium molluscum			1	4	2
Epilobium parviflorum	1				
Equisetum arvense	4	4	1	2	1
Eupatorium cannabinum	4	4	1	4	4
Festuca arundinacea		3			
Filipendula ulmaria	3				
Fissidens adianthoides				1	1
Galium uliginosum	2				
Holcus lanatus	2				
Hypericum pulchrum					1
Hypericum tetrapterum	1				
Isolepis setacea	1				
Juncus articulatus	1				
Juncus inflexus	1	3			
Juncus subnodulosus	8	4	5	4	6
Leontodon hispidus					3
Lolium perenne				1	
Lysimachia nemorum	1				
Mentha aquatica	4		2		
Molinia caerulea		4	3	5	5
Palustriella commutata	4	5	5	5	5
Pinguicula vulgaris					1
Potentilla erecta				1	3
Ranunculus flammula	1				
Ranunculus repens	1				1
Schoenus nigricans		1	5	7	5
Succisa pratensis	1				3
Valeriana dioica	4				
Viola seedling/sp					1

9.4 TROUTSDALE

[Troutsdale and Rosekirk Dale SSSI, Units 1 and 2]

Vegetation types, quadrat locations and selected target notes are shown in Figure 7 and Figure 8 (following this account); target notes, quadrat descriptions and quadrat records are provided in tabulated form at the end of this account. MATCH analyses for individual quadrats and constancy tables are shown in Annexes 2 and 3 respectively.The general site location is shown in Figure 1.

9.4.1 Site Description

The wetland vegetation at Troutsdale occurs on sloping ground on both sides of Troutsdale Beck, which forms an axial stream lined with trees and scrub (mainly alder, willow and hawthorn). Wetland vegetation is best developed in SSSI unit 2 on the southern side of the stream, where there is an extensive patchwork of fen meadow, dissected by strong springs and seepages with many transitions and variations between vegetation types. In other parts of the site patches of rush pasture, fen meadow and wet grassland intergrade, with the most species-rich vegetation occuring in areas closest to springs and water flow tracks. To the north-west, much scrub has recently been cleared in unit 1, and this may lead to the restoration of some species-rich damp grasslands and fen meadow vegetation there in the future.

Unit 1 is the westernmost part of the SSSI, and is separated from unit 2, and from the adjoining conifer forest, by stock-proof fences. Several strong springs emerge in this unit, feeding small, deeply incised, stony-based streams which feed into both sides of the beck. These springs and streams support *Cratoneuron filicinum, Palustriella commutata, Pellia endiviifolia* and *Berula erecta*. Some fen meadow vegetation is present alongside these streams with *Juncus acutiflorus, J. articulatus, J. effusus* and a variety of sedges and grasses forming a variable sward with a wide range of associated species including *Ajuga reptans, Cardamine pratensis, Galium uliginosum, Mentha aquatica, Ranunculus flammula, Succisa pratensis* and *Valeriana dioica*. In many areas the vegetation is rather coarse and species-poor. Scrub has been cleared recently and the vegetation is still recovering. Semi-improved grassland and deciduous woodland occupies the slopes above the SSSI to the west.

Unit 2 of the SSSI is part of a larger grazing unit which includes large areas of semi-improved pasture to the north of the beck. Strong springs emerge higher up this slope (see TN20), outside the SSSI, and feed into Troutsdale Beck downslope to the south.

Several stands of M13 vegetation (representing Annex 1 habtiat Alkaline Fen) are present in unit 2, occupying soakways and water-flow tracks fed by strong springs on the south side of Troutsdale Beck. Low ridges adjacent to some runnels often support rather heathy vegetation with dwarf shrubs but the most extensive type of vegetation here is species-rich fen meadow dominated by mixtures of rushes (*Juncus acutiflorus* and *J. subnodulosus*) and *Molinia caerulea*, with a range of associated species. This vegetation represents Annex 1 habitat Molinia Meadows.

The area outside unit 2 of the SSSI (but contiguous with it) to the west supports rather rank, damp, and possibly semi-improved, grassland. Here, and at the edges of the SSSI, the vegetation is coarser, lacking the diversity of vegetation within the adjacent SSSI. Extensive strong springs found at the edge of the SSSI are dominated by tufa-encrusted *Palustriella commutata* vegetation (M37), but they grade into coarse *Juncus effusus*- (M23) and *Juncus subnodulosus*-dominated stands, rather than the species-rich *Schoenus nigricans*-dominated vegetation found nearby. There is also much willow scrub, some of which has been cleared in the past.

9.4.2 Target Vegetation

Alkaline Fen (EC Annex 1 habitat)

M13b *Schoenus nigricans–Juncus subnodulosus* mire
_____ *Briza media–Pinguicula vulgaris* sub-community

Schoenus nigricans is a prominent component of the species-rich vegetation (Quadrats 1, 2, 10), forming tussocks with *Molinia caerulea*. Between the tussocks there is a patchy cover of tufa-encrusted bryophytes including *Aneura pinguis, Bryum pseudotriquetrum, Campylium stellatum, Fissidens adianthoides, Palustriella commutata, Plagiomnium elatum, Riccardia multifida* and *Scorpidium cossonii*. *Chara* sp. and *Pinguicula vulgaris* also occur in the runnels. Many associates are scattered through the very open vegetation including sedges *Carex dioica, C. flacca, C. panicea, C. pulicaris, C. viridula* subsp. *brachyrrhyncha*; grasses e.g. *Briza media, Festuca rubra*; and herbs *Anagallis tenella, Dactylorhiza spp., Parnassia palustris, Pedicularis palustris, Succisa pratensis. Epipactis palustris* is locally abundant in the area around Q10.

Quadrat 4 is located further west, in a shallow ditch or runnel near the boundary of SSSI unit 1. The vegetation here is rather less rich than that found in Stands 1 & 2 but still supports a suite of species characteristic of M13 vegetation. *Schoenus nigricans* and *Pinguicula vulgaris* are both absent here, and there is rather more *Juncus subnodulosus.* The bryophyte *Philonotis calcarea* occurs in this stand - this un-common species is strongly associated with species-rich calcareous fens (M10 and M13).

Molinia Meadows (EC Annex 1 habitat)

M24 *Molinia caerulea–Cirsium dissectum* fen-meadow;

affininites to M26 *Molinia caerulea–Crepis paludosa* fen-meadow

An extensive area representing M24 Molinia Meadows vegetation occurs in the south-easternmost part of unit 2 (Q8). This is a distinct stand of vegetation on the slopes rising to the south of the valley bottom, irrigated by springs issuing from higher upslope. Trails of *Schoenus nigricans* occur throughout the stand and appear to mark out old drainage channels (TN2). The vegetation consists of a species-rich sward of sedges, grasses and rushes including scattered tussocks of *Schoenus nigricans*, low tussocks of *Molinia caerulea*, a sparse cover of *Juncus acutiflorus* and *J. subnodulosus* and a mixture of sedges including *Carex echinata, C. flacca, C. hostiana, C. lepidocarpa, C. panicea, C. pulicaris*. *Succisa pratensis* and *Valeriana dioica* are the most frequent herbs with *Cirsium palustre, Galium uliginosum, Mentha aquatica* and *Potentilla erecta* locally prominent. Bryophytes are sparse. Towards the west, this stand grades into networks of water flow tracks which support M13 vegetation. Some of these flow tracks appear to represent remnants of old ditches.

Further west, similar vegetation occurs in a complex mosiac inter-grading with more rush dominated vegetation (M22) and into base-rich fen (M13) around areas of ground water outflow. Within this area there are some distinctive patches of damp, diverse fen vegetation (Quadrat 9, TN3) situated on sloping ground. These distinctive stands have stong affinities to the fen meadow communities M24 and M26. They are characteristically dominated by *Juncus acutiflorus* (locally with *J. subnodulosus*) and *Molinia caerulea*, with a diverse mix of associates, including *Centaurea nigra, Cirsium palustre, Succisa pratensis, Carex hostiana, C. panicea, C. flacca, Dactylorhiza* sp., *Hydocotyle vulgaris, Lotus pedunculatus, Potentilla erecta, Stachys officinalis* and *Valeriana dioica*. Bryophytes are patchy, with *Calliergonella cuspidata* most frequent, and occasionally *Climacium dendroides.* Similar vegetation also occurs in small patches on the northern side of Troutsdale Beck (TN18).

Other notable vegetation types

M22 *Juncus subnodulosus–Cirsium palustre* fen-meadow

Rushy fen meadow occurs in un-shaded habitats in various locations near calcareous springs and water-flow tracks (Q3, Q11, Q12, TN5, TN8, TN9) and in patches along the slopes on the northern edge of unit 2 north of Troutsdale Beck (Q6, Q7, TN19) grading into wet grassland. The sward is

generally tall and is made up of a mixture of rushes, sedges and grasses (*Juncus acutiflorus, J. subnodulosus, Carex hosticana, C. nigra, C. panicea, Anthoxanthum odoratum, Briza media, Holcus lanatus, Molinia caerulea*) accompained by a wide range of additional species, typically including *Cirsium palustre, Equisetum palustre, Galium uliginosum, Mentha aquatica, Lotus pedunculatus, Succisa pratensis* and *Valeriana dioica*. South of Troutsdale Beck Springs and water-flow tracks are often marked out within extensive stands of this vegetation by trails of *Schoenus nigricans*, with golden-brown mosses occurring beneath the rushy sward. These areas sometimes grade into M13 vegetation around the areas of strongest ground water outflow. This vegetation shows much local variation and many areas, particularly where Molinia caerulea becomes prominent, have strong affinities with M24.

Stands of rather coarse rushy vegetation with affinities to M22 are associated with shaded *Palustriella commutata* spring-heads and water-flow tracks throughout the non-SSSI area adjacent to unit 2 and in unit 1 of the SSSI, further north-west (Q3,Q14, Q15, TN 11, TN12).

Rare species

Epipactis palustris is found locally in unit 2, mainly within base-rich fen vegetation (M13) around TN6 and TN7. More than 50 spikes were seen in 2014.

9.4.3 Wetland Substrata & Water Supply

The substratum was not looked at in detail, only where exposed near to springs and seepages, and in water-flow tracks and small streams. In those areas it appears to comprise a thin layer of peaty soil, over stony mineral ground.

The wetland vegetation at Troutsdale is irrigated by base-rich ground-water (ranging from pH 7.3–7.9; EC 520–690 µS cm^{-1}, with marl and tufa deposition.

Possible WETMECs: 10b Permanent seepage slopes, diffuse seepage; 11 Intermittent and part-drained seepage; 17a Groundwater flushed slopes.

9.4.4 Site Management

Unit 1 appears to be lightly grazed. Scrub has been removed from several areas alongside Troutsdale Beck. The recovery of the wetland vegetation in these areas should be monitored.

Unit 2 of the SSSI, and adjacent non-SSSI land, is grazed by a small herd of cattle. Some willow scrub has been removed from the non-SSSI area south of the stream.

Figure 7. Troutsdale – Northern section.

Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	7 : Troutsdale - Northern Section		
Site XY	SE 89859 87781	**Date**	05/09/2014

Map Legend	
	SSSI unit boundary
Alkaline Fen	
	M10
	M13
	M37
Transition Mire / Quaking Bog	
	M4
	M14
	M14/M10
Molinia Meadows	
	M24
	M22/M24/M26
Other Habitat	
	M22
	M22/MG8/MG10
	MG9: Wet grassland
	Soakway / water flow track
	Axial stream
	Fenceline - approximate
x	Quadrat
x	Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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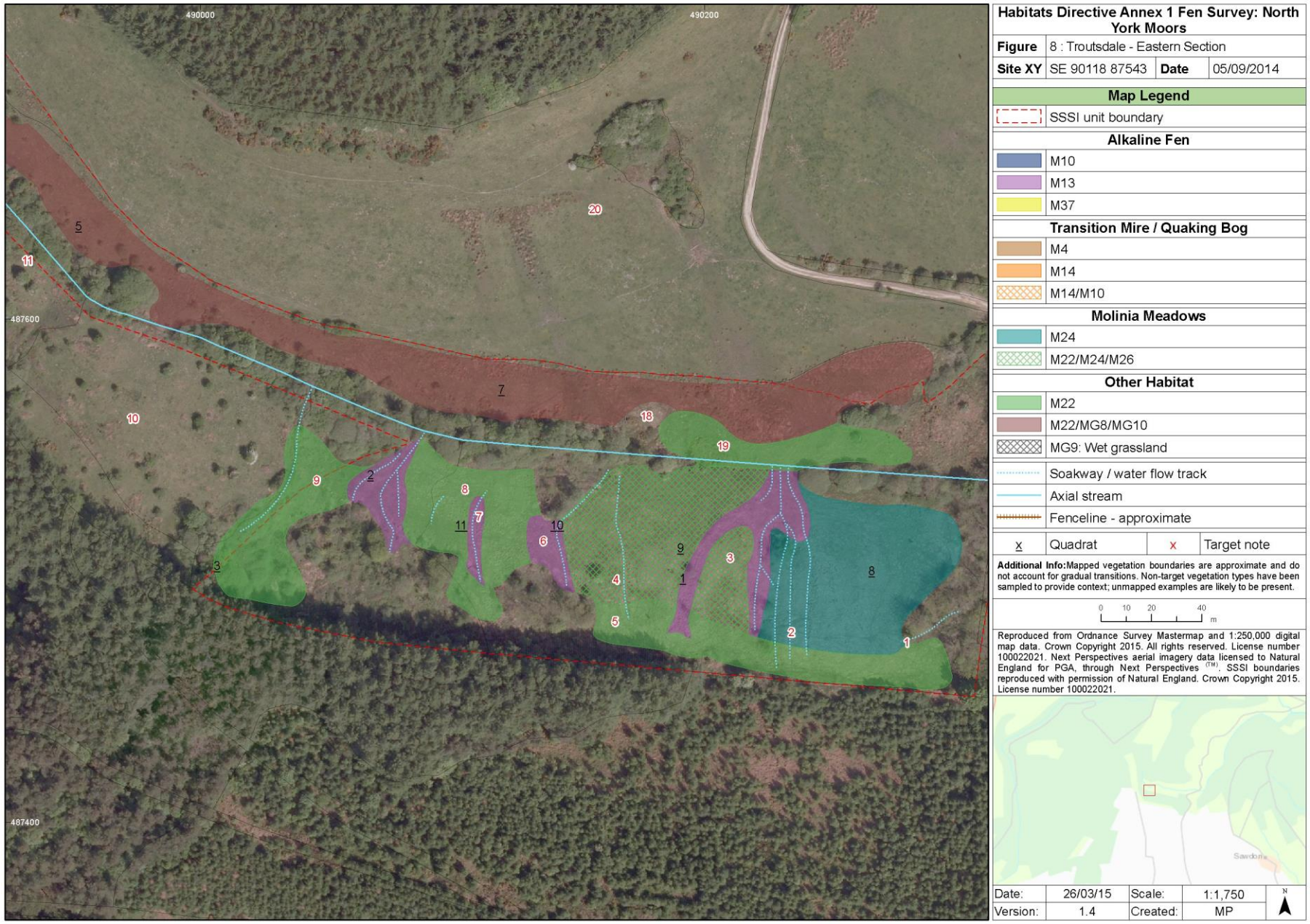
Date:	26/03/15	Scale:	1:1,750	N
Version:	1.4	Created:	MP	

Figure 8. Troutsdale – Eastern section.



Quadrat ID	Troutsdale: Quadrat Description	Photo ref
Q1	Species-rich fen associated with water flow track (unit 2). *Schoenus nigricans* is a prominent component forming tussocks with *Molinia caerulea*. Between the tussocks there is a patchy cover of tufa-encrusted bryophytes including *Aneura pinguis, Bryum pseudotriquetrum, Campylium stellatum, Fissidens adianthoides, Palustriella commutata, Plagiomnium elatum, Riccardia multifida* and *Scorpidium cossonii*. *Chara* sp. and *Pinguicula vulgaris* also occur in the runnels. Many associates are scattered through the very open vegetation including sedges *Carex dioica, C. flacca, C. panicea, C. pulicaris, C. lepidocarpa*; grasses e.g. *Briza media, Festuca rubra*; and herbs *Anagallis tenella, Dactylorhiza spp., Parnassia palustris, Pedicularis palustris, Succisa pratensis. Juncus subnodulosus* forms a patchy, open sward here and the vegetation grades into rush dominated fen meadow away from the areas of groundwater outflow. Also sampled in 2011.	P1050463
Q2	Species-rich fen vegetation associated with water flow track and adjacent areas. Similar to Q1. Also sampled in 2011.	P1050469
Q3	Shaded vegetation adjacent to water-flow track (Sampled in 2011). *Juncus subnodulosus* and *Holcus lanatus* form a coarse sward over abundant *Palustriella commutata* with some patches of *Calliergonella cuspidata*. *Equisetum arvense* and *E. palustre* are both abundant and a very prominent component of the vegetation. *Angelica sylvestris, Carex flacca, C. panicea, Cirsium palustre* and *Mentha aquatica* are scattered throughout. Localised patches of *Rananuculus repens* and *Urtica dioica* give the stand a rather rank and weedy character, and may indicate nutrient enrichment. [M22]	
Q4	Species-rich fen vegetation associated with water flow track, located further west than Q1, 2 and 10, in a shallow ditch / runnel near the boundary of SSSI unit 1. The vegetation here is rather less rich than that found in stands of M13 further east but still supports a suite of species characteristic of M13 vegetation. *Schoenus nigricans* and *Pinguicula vulgaris* are both absent here, and there is rather more *Juncus subnodulosus.* The bryophyte *Philonotis calcarea* occurs in this stand - this un-common species is strongly associated with species-rich calcareous fens (M10 and M13). (Also sampled in 2011). [M13]	P1050439
Q5	Mosaic of fen meadow and wet grassland on slopes north east of the axial stream. This quadrat represents the grassier variant of vegetation within the mosaic of wet grassland and fen meadow found on the slopes flanking the northern banks of Troutsdale Beck. *Holcus lanatus* and a variety of rushes (*Juncus acutiflorus, J. effusus, J. inflexus*) are abundant with a diverse range of associated species scattered throughout the stand at low cover. [affinities to MG8 / MG10 / M22].	P1050455
Q6	Fen meadow on slopes north east of the axial stream. Vegetation with a mixed sward of *Juncus acutiflorus* and *J. subnodulosus* with abundant *Carex hostiana*, *C. panicea, Festcua rubra, Holcus lanatus* and *Molinia caerulea* accompanied by a range of additional species including abundant *Succisa pratensis* and *Valeriana dioica*. [M22b / M24]	P1050456
Q7	Fen meadow on slopes north east of the axial stream [M22]. Rather coarse, tall vegetation dominated by *Juncus acutiflorus* and *J. subnodulosus*.	P1050457
Q8	Fen meadow with trails of *Schoenus nigricans*. Extensive area of sedge-rich vegetation in the eastern-most part of unit 2. [M24]	P1050461
Q9	Species rich vegetation with a sward made up of *Molinia caerulea, Juncus acutiflorus* and a variety of sedges and grasses including *Briza media, Carex echinta, C. flacca, C. hostiana, C. panicea and C. pulicaris*. Diverse variety of herbs including *Succisa pratensis* and *Stachys officinalis*. [M24 with affinities to M26]	P1050466-7
Q10	Species-rich fen vegetation with locally abundant *Epipactis palustris* occupying slightly drier ground between spring fed water-flow tracks. Similar vegetation to Q1 & 2 but with sparser bryophytes. [M13]	P1050470
Q11	Rather coarse rush pasture with *Molinia* tussocks and a variety of herbs. Indistinct water flow tracks occur within the vegetation marked out by trails of Schoenus nigricans. These areas are floristically richer with brown mosses and more sedges making the composition of the vegetation transitional to M13. [M22 / M24]	P1050471
Q12	Diverse rush pasture adjacent to spring and associated water flow tracks represented by Q4 [M22]	P1050440
Q13	Species-poor rushy wet grassland at the edge of a hollow on the western edge of Troutsdale Beck with *Deschampsia cespitosa, Holcus lanatus, Juncus acutiflorus* and *J. effusus*. Associated species are rather scattered but include locally frequent *Valeriana dioica* [MG9]	P1050449
Q14	Rush pasture in hollow at edge of stream, adjacent to Q13. More diverse vegetation than Q13 closer to area of weak groundwater outflow (TN15). [affinities to M22]	P1050450
Q15	Developing vegetation with rushes, sedges and bryophytes in area where scrub has been removed, adjacent to stream. [affinity to M22 and M23]	P1050453

Quadrat ID	Troutsdale: Quadrat Description	Photo ref
Q16	Developing damp grassland / fen meadow vegetation with rushes, sedges and herbs including frequent *Succisa pratensis* and occasional *Valeriana dioica* in area where scrub has been removed. [affinity to M22 / M26].	P1050454

Target note	Troutsdale: Target Note Description	Photo ref
TN1	Spring / seepage at top of slope with *Palustriella commutata*, feeds into boundary ditch. pH 6.65 EC 490 µS cm^{-1}	
TN2	*Schoenus nigricans* trails appear to mark old ditch lines. Seepages at top with *Palustriella commutata, Triglochin palustre, Schoenus nigricans*. pH 6.9 EC 550 µS cm^{-1}	P1050462
TN3	*Stachys officinalis* and *Hydrocotlye vulgaris* occur here within very variable fen meadow vegetation with abundant *Juncus acutiflorus, Juncus subnodulosus* and *Molinia caerulea* locally abundant, and accompanied by a wide variety of additional species. [M22/M24/M26]	
TN4	Somewhat drier bank next to water flow track with *Schoenus nigricans*. Abundant *Succisa pratensis*, with *Molinia caerulea, Juncus acutiflorus* and sedges including *Carex hostiana* and *C. pulicaris*. *Primula veris* and *Stachys officinalis* occasional. Scattered patches of *Vaccinium myrtilis* and *Calluna vulgaris* [Molinia Meadows habitat]	P1050465-6
TN5	*Viola palustris* on the edge of rather coarse vegetation dominated by rushes. [M22]	P1050464
TN6	*Epipactis palustris* occurs here on slightly raised ground between water flow tracks. More than 50 spikes seen in 2014.	
TN7	*Epipactis palustris* occurs here with scattered *Parnassia palustris*	
TN8	Adder seen here in rushy vegetation with abundant *Molinia caerulea*. Indistinct water-flow tracks with *Schoenus nigricans, Palustriella commutata, Carex lepidocarpa* and *Anagallis tenella* occur throughout this stand. [M22, transitional to M13 and M24 in some areas]	
TN9	Spring and water-flow track with *Carex lepidocarpa* and *Palustriella commutata* within rather coarse M22 vegetation with tall *Juncus subnodulosus* and locally abundant *Molinia caerulea.*	P1050432
TN10	Non-SSSI area with species-poor neutral grassland and patchy scrub.	
TN11	Spring and water-flow track with *Palustriella commutata*. Small patch of M22 on western side co-dominated by *Juncus acutiflorus* and *J. subnodulosus* with *Galium uliginosum*, *Filipendula ulmaria, Valeriana dioica* [M22]	
TN12	Rather coarse damp grassland with tall herbs. *Juncus effusus, Deschampsia cespitosa* and *Filipendula ulmaria* are abundant with frequent *Juncus actutiflous, Juncus inflexus, Urtica dioica, Lychnis flos-cuculi, Holcus lanatus, Lotus uliginosus, Equisetum arvense, Trifolium repens* and *Ranunculus repens* [MG10 / M22]	P1050436
TN13	Pump house adjacent to stream with *Berula erecta, Ajuga reptans, Palustriella commutata, Pellia endivifolia* and *Conocephalum conicum.*	
TN14	Squashy seepage mound adjacent to stream. Shaded, species-poor vegetation with abundant *Ranunculus repens, Juncus acutiflorus, Holcus lanatus with scattered Valeriana dioica, Ajuga reptans Lysimachia nemorum*. pH 7.1 EC 530 µS cm^{-1}	P1050447
TN15	Spring and water flow track with *Palustriella commutata, Plagiomnium elatum. Valeriana dioica, Mentha aquatica* are abundant with *Juncus articulatus, Carex nigra* and *Equisetum palustre*. No marl encrustation here. pH 7.3 EC 480 µS cm^{-1}	
TN16	Spring and water flow track with *Palustriella commutata, Chrysosplenium oppositifolium, Valeriana dioica, Equisetum arvense, Mentha aquatica, Veronica beccabunga*. pH 7.3 EC 380 µS cm^{-1}	P1050452
TN17	Stream emerging from spring within the forestry plantation. *Berula erecta, Palustriella commutata, Pellia endivifolia , Chrysosplenium oppositifolium, Ajuga reptans, Filipendula ulmaria* all frequent.	
TN18	Hillock with species-rich neutral grassland with *Briza media, Carex hostiana* and *Molinia caerulea* [M24/M26]	
TN19	Rushy vegetation adjacent to axial stream. *Juncus acutiflorus, J subnodulosus* abundant with vegetation similar to Q7. *Pedicularis palustris, Caltha palustris, Climacium dendroides, Cratoneuron filicinum* and *Plagiomnium ellipticum. Carex rostrata* also occurs in some wet areas.	P1050458; 460
TN20	Area of springs and rushy seepage areas / soakways within pasture north of SSSI unit 2.	

North York Moors Fen Survey 2014						
Site	Troutsdale U2	Troutsdale U2	Troutsdale U2	Troutsdale U2	Troutsdale U2	Troutsdale U2
Quadrat number	Q1	Q2	Q3	Q4	Q5	Q6
BAP habitat	LF	LF	LF	LF	LF / PMGRP	LF / PMGRP
Annex 1 habitat	AF 7230	AF 7230		AF 7230		
Likely NVC type	M13	M13	M22	M13	MG8 M22	M22
Surveyor	RT	RT	RT	RT	RT	RT
Date	5 Sep 2014	5 Sep 2014	5 Sep 2014	5 Sep 2014	5 Sep 2014	5 Sep 2014
Easting	490191	490067	490005	489878	489951	489919
Northing	487495	487536	487490	487692	487635	487669
pH	7.3	7.23		7.63	no free water	no free water
EC (µS cm-1)	523	590		469		
Quadrat size (m2)	2x2	2x2	2x2	1x4	2x2	2x2
Photo ref	P1050463	P1050469		P1050439	P1050455	P1050456
No. of species	34	33	21	25	26	32
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis capillaris						3
Agrostis stolonifera			1	1	3	
Anagallis tenella	1	1		1		
Aneura pinguis	1	1				
Anthoxanthum odoratum					3	2
Brachythecium rutabulum						3
Briza media	1	1				
Bryum pseudotriquetrum		1		1		
Calliergonella cuspidata		1	2	1	3	3
Campylium stellatum	4	2		1		
Cardamine pratensis			1			1
Carex flacca	3	1	1			
Carex hirta					3	2
Carex hostiana	1			1		4
Carex lepidocarpa	1	2		3		
Carex panicea	3	3	2	3	2	4
Carex pulicaris	1					
Centaurea nigra					3	3
Chara sp	1	2				
Cirsium palustre	1	1	3	1	4	2
Ctenidium molluscum	3	4				
Dactylorhiza sp.	1	1				
Dryopteris carthusiana			1			
Equisetum arvense			4			
Equisetum palustre	1	1	4			2
Festuca arundinacea					0	
Festuca rubra	1	1	2		3	3
Filipendula ulmaria					3	3
Fissidens adianthoides	1	1				
Galium uliginosum	1	1		1		2
Glyceria declinata			1			
Holcus lanatus			4	1	6	3
Hydrocotyle vulgaris		1				
Juncus acutiflorus					5	3
Juncus articulatus	1	2	2	2	1	1
Juncus effusus					4	
Juncus inflexus					4	1
Juncus subnodulosus	4	5	3	5		3
Lolium perenne						1
Lotus pedunculatus				1		3
Mentha aquatica		2	3	1		
Molinia caerulea	4	3		1		5
Palustriella commutata	4	4	4	4		
Palustriella falcata	1					
Parnassia palustris	1					
Pedicularis palustris	1	2		3		
Philonotis calcarea				1		
Pinguicula vulgaris	1	1		1		
Plagiomnium elatum	1	1		1		
Plagiomnium undulatum						1
Plantago lanceolata					3	
Potentilla anserina					0	
Potentilla erecta	1	1				
Prunella vulgaris					3	
Pseudoscleropodium purum			3			
Pulicaria dysenterica					0	1
Ranunculus flammula				1	2	3
Ranunculus repens			2		5	3
Riccardia multifida	1	1				
Rumex acetosa					3	1
Salix cinerea			8			
Schoenus nigricans	6	6				
Scorpidium cossonii	3	1				
Scorzoneroides autumnalis					1	0
Silene flos-cuculi	1	1				
Stellaria graminea			1			
Succisa pratensis	2	1		1	3	4
Taraxacum seedlings					1	
Trifolium pratense						3
Trifolium repens					4	2
Triglochin palustre	1	1		1		
Valeriana dioica	2		2	2		4

North York Moors Fen Survey 2014					
Site	Troutsdale U2	Troutsdale U2	Troutsdale U2	Troutsdale U2	Troutsdale U2
Quadrat number	Q7	Q8	Q9	Q10	Q11
BAP habitat	LF / PMGRP	LF / PMGRP	LF / PMGRP	LF / PMGRP	LF / PMGRP
Annex 1 habitat		MM 6410	MM 6410	AF 7230	AF 7230
Likely NVC type	M22	M24	M24	M13	M22
Surveyor	RT	RT	RT	RT	RT
Date	5 Sep 2014	5 Sep 2014	5 Sep 2014	5 Sep 2014	5 Sep 2014
Easting	490119	490266	490190	490139	490103
Northing	487570	487498	487507	487516	487516
pH	no free water	no free water	no free water	7.01	
EC (µS cm-1)				481	
Quadrat size (m2)	2x2	2x2	2x2	2x2	2x2
Photo ref	P1050457	P1050461	P1050466-7	P1050470	P1050471
No. of species	32	32	31	33	17
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Achillea ptarmica		0			
Agrostis stolonifera	0				
Ajuga reptans			1		1
Anagallis tenella				1	
Angelica sylvestris	0	3	0	2	
Anthoxanthum odoratum				2	
Brachythecium rutabulum	1				
Briza media	0		1	2	
Bryum pseudotriquetrum				1	
Calliergonella cuspidata	3	3	4		4
Campylium stellatum				3	
Cardamine pratensis	1				
Carex echinata		0	1		
Carex flacca		4	3	4	
Carex hirta	2				
Carex hostiana		5	4		
Carex lepidocarpa		0		3	
Carex panicea	0	5	4	4	3
Carex pulicaris		1	2	2	
Centaurea nigra	2	2	2		
Chara sp				0	
Cirsium palustre	3	1	3	2	3
Ctenidium molluscum	0			3	
Dactylorhiza fuchsii	0		2	1	1
Dactylorhiza sp.		1			
Epipactis palustris				3	
Equisetum arvense	1	2			
Equisetum palustre		0		1	
Festuca arundinacea	3				
Festuca rubra	4	1	2	3	3
Filipendula ulmaria	5	0			0
Fissidens adianthoides		0		1	
Galium palustre			0		
Galium uliginosum	3	0	1	1	2
Holcus lanatus	3	2	3	2	2
Hydrocotyle vulgaris	0		0		3
Juncus acutiflorus	5	3	5		
Juncus conglomeratus		0			
Juncus subnodulosus	0	4		6	9
Lolium perenne	2				
Lotus corniculatus				1	
Lotus pedunculatus	3	0	1		
Mentha aquatica	1	2			
Molinia caerulea	2	5	5	3	3
Parnassia palustris				1	0
Pedicularis palustris				2	
Phragmites australis				2	4
Plagiomnium ellipticum				1	
Plagiomnium rostratum	1		1		
Plagiomnium undulatum		3		3	
Plantago lanceolata			2		
Potentilla erecta	0	2	3	2	1
Primula veris			0		
Prunella vulgaris		0			
Pseudoscleropodium purum		2	2	2	
Ranunculus acris			2		
Ranunculus flammula	0				
Ranunculus repens	3				
Schoenus nigricans		0		3	0
Silene flos-cuculi	3				
Stachys officinalis			0		
Succisa pratensis	3	3	3	3	2
Taraxacum seedlings			1		
Triglochin palustre				1	
Valeriana dioica	4	4	4		
Viola palustris			0		

North York Moors Fen Survey 2014					
Site	Troutsdale U2	Troutsdale U1	Troutsdale U1	Troutsdale U1	Troutsdale U1
Quadrat number	Q12	Q13	Q14	Q15	Q16
BAP habitat	LF / PMGRP	LF / PMGRP	LF / PMGRP	LF / PMGRP	LF / PMGRP
Annex 1 habitat				MM 6410	MM 6410
Likely NVC type	M22	MG9	affinity to M22	aff M22 M23	aff M22 / M26
Surveyor	RT	RT	RT	RT	RT
Date	5 Sep 2014	5 Sep 2014	5 Sep 2014	5 Sep 2014	5 Sep 2014
Easting	489875	489827	489843	489867	489831
Northing	487705	487902	487906	487943	487835
pH	no free water	no free water	no free water	no free water	no free water
EC (µS cm-1)					
Quadrat size (m2)	2x2	2x2	2x2	2x2	2x2
Photo ref	P1050440	P1050449	P1050450	P1050453	P1050454
No. of species	27	15	32	24	29
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Angelica sylvestris			1		4
Anthoxanthum odoratum			0		
Brachythecium rutabulum			0	3	3
Calliergonella cuspidata	3		3	5	
Cardamine pratensis	2			3	1
Carex echinata					1
Carex flacca	0				0
Carex hirta			1		
Carex lepidocarpa	0				
Carex leporina				2	
Carex nigra			3	0	2
Carex panicea	0				
Centaurea nigra			0		2
Cerastium fontanum		1	1		
Cirsium palustre	3	3	3	3	4
Climacium dendroides				0	
Cratoneuron filicinum			0		
Dactylorhiza fuchsii	1			1	
Deschampsia cespitosa		0	0		0
Epilobium palustre	2				
Epilobium parviflorum			0		0
Equisetum arvense	2		0		
Equisetum palustre				4	6
Festuca rubra	3	1	0	3	2
Filipendula ulmaria	6	0	0	3	7
Fraxinus excelsior				1	
Galium uliginosum	3		3		0
Holcus lanatus	4	8	4	4	3
Hydrocotyle vulgaris					1
Hypericum tetrapterum	0		1		
Juncus acutiflorus	2	5	7		6
Juncus articulatus				4	0
Juncus conglomeratus	1		0	1	0
Juncus effusus	0	5	1	5	0
Juncus subnodulosus	6				
Lathyrus pratensis	2	2	2		2
Lotus pedunculatus	4		2		3
Mentha aquatica			0	4	
Molinia caerulea					1
Pellia endiviifolia			0		
Plagiomnium undulatum	2		0	3	3
Pseudoscleropodium purum	2				
Ranunculus flammula			1	1	
Ranunculus repens	3	3	1	3	
Rhytidiadelphus squarrosus				2	
Rumex acetosa	1	3	3		
Rumex obtusifolius		0			
Salix cinerea		1		2	0
Scrophularia auriculata			0		
Silene flos-cuculi	2	0	3		0
Succisa pratensis	3				0
Thuidium tamariscinum					3
Valeriana dioica	4	4	2	5	0
Veronica beccabunga				0	

9.5 SAND DALE

[Eller's Wood and Sand Dale SSSI and SAC, Unit 2]

Vegetation types, quadrat locations and selected target notes are shown in Figure 9 and Figure 10 (following this account); target notes, quadrat descriptions and quadrat records are provided in tabulated form at the end of this account. MATCH analyses for individual quadrats and constancy tables are shown in Annexes 2 and 3 respectively.The general site location is shown in Figure 1.

9.5.1 Site Description

Sand Dale is the southernmost main side valley on the eastern side of Thornton Dale, and extends east-north-eastwards to the plateau at the heart of Dalby Forest. The valley sides rise steeply on both sides of the stream axis, to form the fairly narrow ridge of White Cliff Rigg to the north, and Wilton Heights and Stonygate Moor to the south. Wetland interest in Sand Dale is represented by a series of small springs and seepages which occur on both sides of the valley along its lowermost slopes for about 1 km from its confluence with Thornton Dale, generally becoming less prominent and less consistently wet up-valley. Consistent with this trend, the 'best' seepage area is at the confluence with Thornton Dale, located below Ellerburn Banks; this area is sometimes known as Ellerburn Fen, and was previously surveyed in 1990 (Fojt, 1990). However, botanically diverse wetland vegetation extends further eastwards for several hundred metres along the base of Sand Dale, both within and outside the SSSI boundary. Species-rich fen on the north side of the valley floor, north of the SSSI boundary, is described separately in Section 9.6.

9.5.2 Target Vegetation

Alkaline Fen (EC Annex 1 habitat)

M13b *Schoenus nigricans–Juncus subnodulosus* mire,
_____ *Briza media–Pinguicula vulgaris* sub-community

Significant areas of this unit are irrigated by springs and seepages issuing from the southern edge of the site, beneath a steep, wooded slope. These wet areas support very diverse base-rich fen vegetation that is clearly attributable to M13b (Quadrats 1, 2, 8-12, 19, 22)), present in narrow strips alongside many of the streams and surrounding some of the more open springs, and in broader stands downslope on the flatter valley bottom, where the streams tend to coallesce.

The vegetation of these areas is characteristically open and low-growing, supporting a rich and colourful suite of flowering forbs, small sedges, rushes, grasses, and base-loving bryophytes. Typically, *Juncus subnodulosus* and *Schoenus nigricans* are abundant, and the range of sedges, rushes and grasses includes *Carex dioica, C. flacca, C. lepidocarpa, C. hostiana, C. panicea, Eriophorum latifolium, Juncus articulatus, Briza media, Festuca rubra* and *Molinia caerulea*. Bryophytes form a patchily abundant layer beneath the taller plants, including species such as *Bryum pseudotriquetrum, Calliergonella cuspidata, Campylium stellatum, Cratoneuron filicinum, Ctenidium molluscum, Fissidens adianthoides, Palustriella commutata,* and *Scorpidium cossonnii.* Flowering forbs include *Anagallis tenella, Cirsium palustre,* the orchids *Dactylorhiza fuchsii* and *Dactylorhiza traunsteineri, Drosera rotundifolia, Linum catharticum, Parnassia palustris, Pedicularis palustris, Pinguicula vulgaris, Succisa pratensis* and *Valeriana dioica.* In some places, water tracks on flat ground support patches of charaphytes, and the clubmoss *Selaginella selaginoides* is also locally frequent.

M10 *Carex dioica–Pinguicula vulgaris* mire

A very small poached seepage area immediately upslope of the larger M24 stand supports a low-growing sparse sward of M10 vegetation, with abundant *Eleocharis quinqueflora,* frequent small sedges (*Carex flacca, C. lepidocarpa, Eriophorum angustifolium*) and scattered small herbs including

Anagallis tenella, Triglochin palustre and *Valeriana dioica*. Bryophytes are locally abundant, particularly *Campylium stellatum* and *Scorpidium revolvens.*

M37 *Cratoneuron commutatum–Festuca rubra* spring

Many of the small stream channels in the area of fen east of the track support abundant *Palustriella commutata* growing on the stones of channel beds, and forming large mats at some of the open springheads, merging with the surrounding M13 fen vegetation.

Molinia Meadows (EC Annex 1 habitat)

M24 Molinia caerulea - Cirsium dissectum fen meadow

Two stands representing M24 Molinia Meadows vegetation were recorded in the eastern part of SSSI unit 2 (Quadrats 17 and 21). Quadrat 17 is located in a distinct stand of vegetation on the slopes rising to the south of the valley bottom, irrigated by upslope seepages. This stand supports a good population of *Cirsium dissectum* growing amongst a low sward rich in grasses, rushes, sedges and herbs. Quadrat 21 occurs further west in the valley bottom, and is associated with the main area of M13 vegetation in this part of the SSSI. Another narrow strip of fen meadow vegetation (Quadrat 20) is situated immediately south of the M13; this has strongest affinity to M24, but also has affinity to M26b.

Affinities to:

M22 *Juncus subnodulosus–Cirsium palustre* fen-meadow,

M24 *Molinia caerulea–Cirsium dissectum* fen-meadow, and

M26 *Molinia caerulea–Crepis paludosa* mire

Elsewhere three patches of damp, diverse rush-dominated vegetation were sampled (Quadrats 4, 13 and 14). Two of these are situated on slightly upstanding ground fringing M13 vegetation, while the other is located close to the upslope fringe of the seepage area. These areas all have mixed affinities to the fen meadow communities M22, M24 and M26. They are characteristically dominated by *Juncus subnodulosus,* locally with *J. acutiflorus* and *Molinia*, with a diverse mix of taller flowering forbs, including *Achillea ptarmica, Centaurea nigra, Cirsium palustre, Silene flos-cuculi, Sanguisorba officinalis,* and *Succisa pratensis*, overtopping smaller species such as *Carex panicea, C. flacca, Dactylorhiza* sp., *Hypericum pulchrum, Leontodon hispidus, Lotus pedunculatus, Parnassia palustris, Potentilla erecta, Stachys officinalis* and *Valeriana dioica*. Bryophytes are sparse, typically with *Calliergonella cuspidata,* and occasionally *Climacium dendroides.*

A larger example on the southern slopes (Quadrat s14 & 15), is cut across by the stock-proof fence, on the valley side near the upper edge of the seepage line. The vegetation to the west of the fence appears quite rank and little grazed, perhaps because of its relatively inaccessible location. At the eastern end of SSSI unit 2 the M13 and M24 stands grade upslope (southwards) into a narrow strip of similar vegetation with mixed affinities, dominated by mixtures of sedges, rushes and grasses (TN19.

Other notable vegetation types

M22b *Juncus subnodulosus–Cirsium palustre* fen-meadow,
Briza media–Trifolium spp sub-community

A small patch of fen in the far west of the site, close to the pool, supports M22b vegetation (Quadrat 3). It is situated close to the M13 fen, separated from that by an upstanding hummock with bracken. The vegetation is coarser and less diverse than the main fen area, with much *Angelica sylvestris, Briza media, Calliergonella cuspidata, Carex panicea, C. lepidocarpa, Cirsium palustre, Festuca rubra, Holcus lanatus, Juncus articulatus, J. subnodulosus, Lotus pedunculatus, Mentha aquatica, Pedicularis palustris, Succisa pratensis* and *Valeriana dioica.* The terrestrialising western margin of

the pool itself also supports vegetation with affinities to M22 (Quadrat 5): it is dominated by *Juncus subnodulosus* and *Calliergonella cuspidata*, with few other species (*Equisetum palustre, Holcus lanatus, Mentha, Pedicularis palustris* and *Valeriana dioica*).

Much of the valley bottom in the eastern compartment of SSSI unit 2 also supports M22 vegetation (Qudrats 18 & 23).

Rare species

The Nationally Scarce orchid *Dactylorhiza traunsteineri* is found throughout the M13 fen areas, mingled with the more common *Dactylorhiza fuchsii*.

9.5.3 Wetland Substrata & Water Supply

The wetland substratum generally comprises a thin layer of very wet peaty soil, over stony mineral ground which is exposed in places near to springs and seepages.

The fen areas are irrigated by vigorous springs that are strongly calcareous, and some deposition of tufa was noted, particularly at some of the spring-heads. Water movement in the fen area west of the track appears less vigorous, but it is not clear whether this is because the construction of the track has influenced water flow, or whether this area was naturally irrigated by more diffuse seepages. Occluded culverts beneath the track may allow water flow beneath, though this is far from certain. Various structures associated with water extraction are present, including a small brick building, a manhole cover, and exposed pipework in the streams, though it is not clear whether these are currently in use.

The pH and EC of the water sampled from springs and seepages supporting M13 vegetation ranged from pH 7.1-7.9, 420-700 µS cm^{-1}.

Possible WETMECs: 10a Permanent seepage slopes, Localised strong seepage; 10b Permanent seepage slopes, diffuse seepage; 11 Intermittent and part-drained seepage; 17a Groundwater flushed slopes.

9.5.4 Site Management

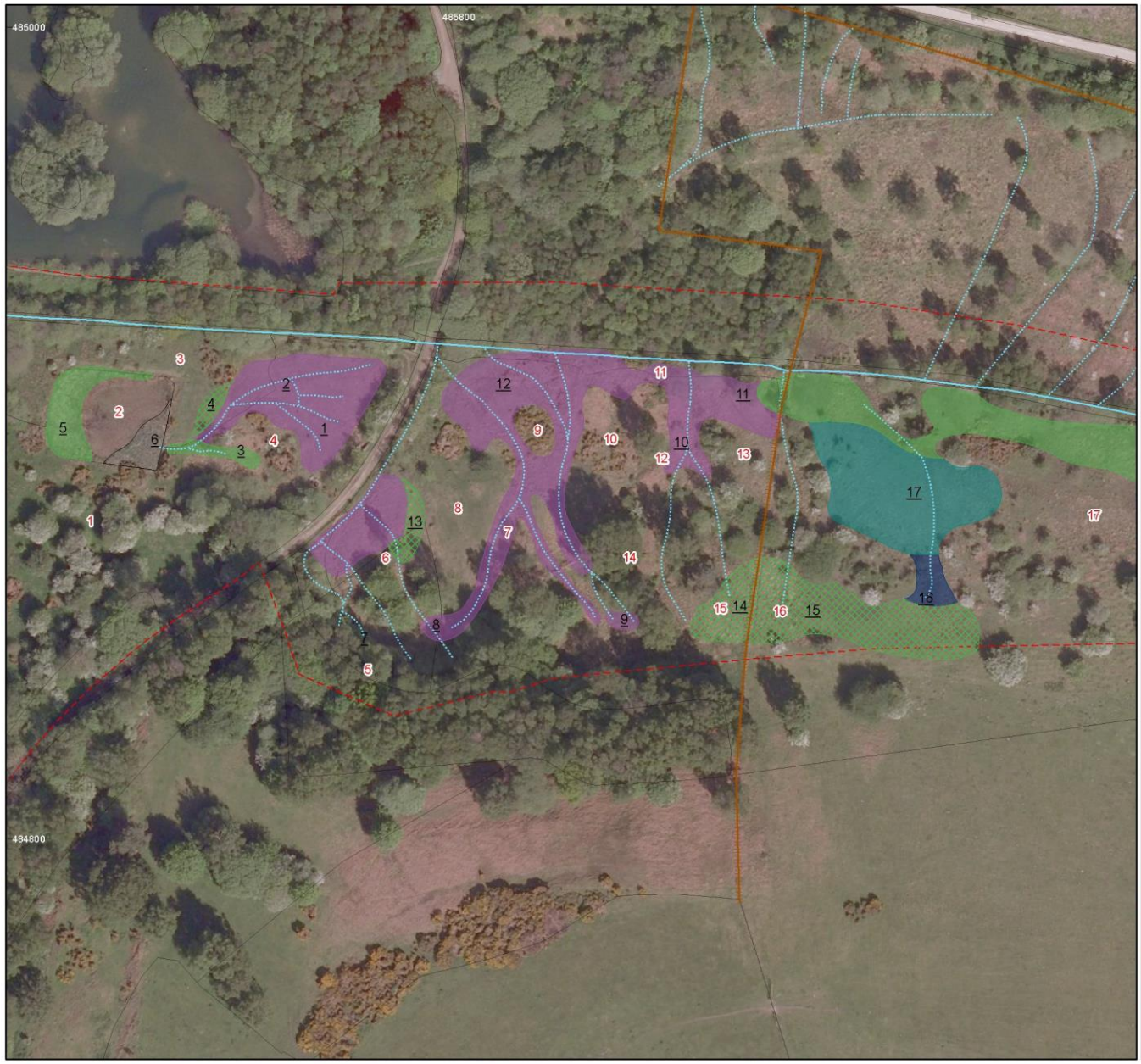
The eastern part of Unit 2 is separated from the west by a stockproof fence. The western side is currently grazed by a small herd of hardy cattle, which in most parts appear to be keeping the vegetation at an appropriate height, although the south-eastern part of this area is quite rank, and would benefit from increased grazing intensity.

There was evidence of recent clearance of gorse and willow scrub near the valley bottom, and some remaining willow scrub was marked, apparently for future clearance. Further scrub control in the south-eastern part of the western section of the unit (e.g. TN 14) might encourage cattle access to this area.

Although water extraction features are present on site, they do not appear to be having a significant effect on water flow from the various springs, as these were all observed to be flowing vigorously during the summer season, and there was no evidence of dried areas of former fen.

The whole of the compartment north of Sand Dale Beck (see Section 9.6 of this report) should be incorporated into the existing Eller's Wood and Sand Dale SSSI and SAC.

Figure 9. Sand Dale – Western Section.



Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	9 : Sand Dale - Western Section		
Site XY	SE 85828 84876	**Date**	03/09/2014

Map Legend	
	SSSI unit boundary
Alkaline Fen	
	M10
	M13
	M37
Transition Mire / Quaking Bog	
	M4
	M14
	M14/M10
Molinia Meadows	
	M24
	M22/M24/M26
Other Habitat	
	M22
	M22/MG8/MG10
	S9: swamp
	Soakway / water flow track
	Axial stream
	Fenceline - approximate
x Quadrat	x Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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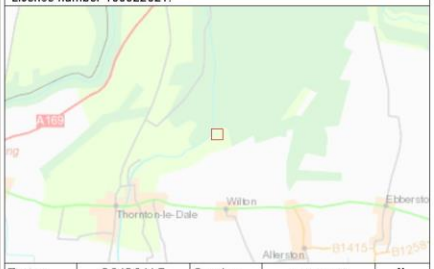
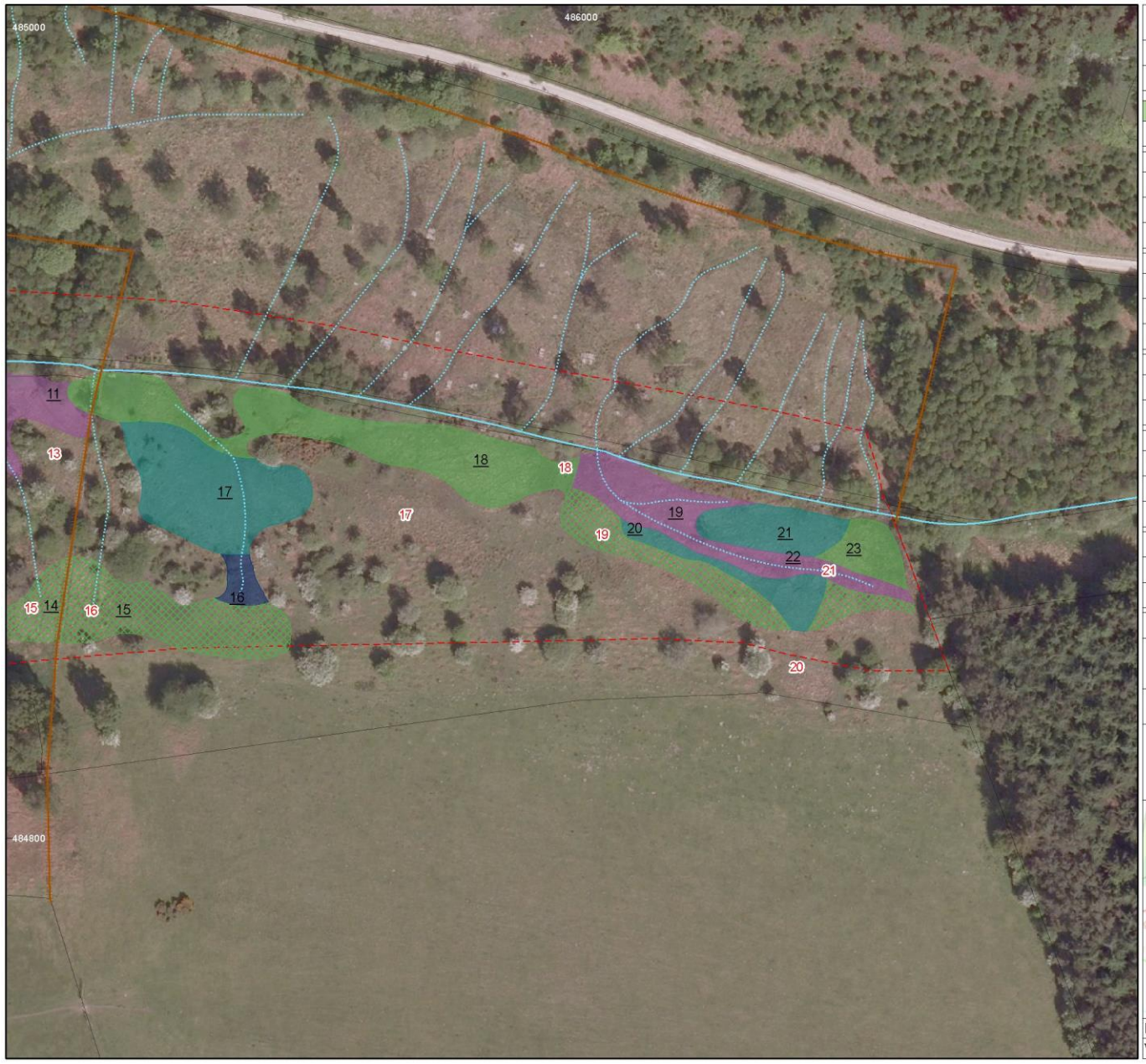


Date:	26/03/15	Scale:	1:1,250	N
Version:	1.4	Created:	MP	

Figure 10. Sand Dale – Eastern Section.



Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	10 : Sand Dale - Eastern Section		
Site XY	SE 86028 84876	**Date**	03/09/2014

Map Legend	
	SSSI unit boundary
Alkaline Fen	
	M10
	M13
	M37
Transition Mire / Quaking Bog	
	M4
	M14
	M14/M10
Molinia Meadows	
	M24
	M22/M24/M26
Other Habitat	
	M22
	M22/MG8/MG10
	N/A
	Soakway / water flow track
	Axial stream
	Fenceline - approximate
x Quadrat	x Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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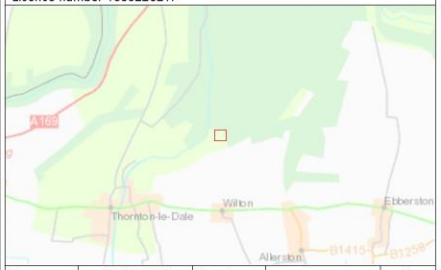

Date:	26/03/15	Scale:	1:1,250	N
Version:	1.4	Created:	MP	

Quadrat ID	Sand Dale (West): Quadrat Description	Photo ref
Q1	Wet base-rich fen with water tracks, some of which appear to come from occluded culverts beneath the track to the east – it is not clear whether these allow the passage of springwater from the fen to the south-east, or whether seepages arise beneath the track itself. The larger water tracks support charaphytes. The fen vegetation is very diverse, with a mixture of species including abundant *Juncus subnodulosus* and *Schoenus nigricans,* and a range of sedges, rushes and grasses including *Carex dioica, C. flacca, C. lepidocarpa, C. hostiana, C. panicea, Eriophorum latifolium, Juncus articulatus, Briza media, Festuca rubra*. Various bryophytes are present beneath the open sward, e.g. *Bryum pseudotriquetrum, Calliergonella cuspidata, Campylium stellatum, Ctenidium molluscum, Scorpidium cossonnii,* and *Fissidens adianthoides*, and there is a colourful mix of flowering forbs, including *Anagallis tenella, Cirsium palustre,* the orchids *Dactylorhiza fuchsii* and *Dactylorhiza traunsteineri, Drosera rotundifolia, Linum catharticum, Parnassia palustris, Pinguicula vulgaris, Succisa pratensis* and *Valeriana dioica.* [M13b]	DSC01131
Q2	As Q1, situated in the lower (western) part of the fen area, between two water tracks. The water tracks gather together beneath a low bank that forms part of the dam around a small pool, and drain into the south-eastern corner of the pool. The axial valley stream flows along the northern boundary of the SSSI. The fen area shows some light poaching by cattle, is very wet in summer, and shows no sign of scrub invasion. [M13b]	DSC01132 & 3
Q3	A narrow spur of fen vegetation follows a small soakway, separated from the main fen by an upstanding hummock with bracken. The fen vegetation is less diverse than the main fen, with much *Angelica sylvestris, Briza media, Calliergonella cuspidata, Carex panicea, C. lepidocarpa, Cirsium palustre, Festuca rubra, Holcus lanatus, Juncus articulatus, J. subnodulosus, Lotus pedunculatus, Mentha aquatica, Pedicularis palustris, Succisa pratensis* and *Valeriana dioica.* [M22b]	DSC01134
Q4	A drier rush-dominated stand on the top of the low bank encircling the pool, adjacent to the M13 fen but raised above it by about 30-40 cm. Dominated by *Juncus subnodulosus,* supporting a range of species including *Briza media, Calliergonella cuspidata, Carex panicea, C. flacca, Climacium dendroides, Euphrasia* sp., *Leontodon hispidus, Linum catharticum, Lotus pedunculatus, Molinia caerulea, Parnassia palustris, Potentilla erecta, Rhytidiadelphus squarrosus, Succisa pratensis, Trifolium pratense* and *Valeriana dioica.* [Has affinities to M22, M24 and M26]	DSC01136
Q5	The pool is gradually becoming terrestrialised: much of the shallows on the western side have become overgrown by *Juncus subnodulosus* and *Calliergonella cuspidata,* with a few other species: *Equisetum palustre, Holcus lanatus, Mentha, Pedicularis palustris* and *Valeriana dioica.* [Has affinity to M22].	DSC01135
Q6	The south-western corner of the pool is deeper and supports a treacherously unstable mat of *Carex rostrata,* mingled with *Galium palustre, Hippuris vulgaris, Mentha, Pedicularis palustris* and *Juncus subnodulosus*. [S9].	DSC01135
Q7	A large peaty spring mound beneath a dense canopy of *Betula pendula* and *Salix cinerea*. The mound itself is dominated by mats of *Palustriella commutata, Mentha aquatic, Tussilago farfara* and *Valeriana dioica,* with lesser amounds of *Ajuga reptans, Angelica sylvestris, Cardamine pratensis, Chrysosplenium oppositifolium, Plagiomnium undulatum* and *Poa trivialis.* [Poor fit to any community]	DSC01137
Q8	A small stand of base-rich fen on very wet peaty ground adjacent to a small spring. Immediately south is a belt of *Salix* scrub also associated with a shallow peaty spring mound. The small streams leading from these springs drop downslope between upstanding areas of dry ground with *Corylus* and *Crataegus* scrub, through the M13 of the lower slopes, eventually to coalesce and converge with the axial stream in the valley bottom. [M13b]	DSC01138 & 40
Q9	A large open spring-head from which emerges two small incised streams. Adjacent is another small spring separated by a narrow ridge of drier ground. The spring vegetation is dominated by *Palustriella commutata,* but it is very diverse, with a similar range of species as that seen in the western fen area (Q1 and 2). [M13b]	DSC01141 & 42
Q10	A small incised stream 'gully' situated where two small streams converge before dropping down to the valley floor. The streams uphill of this point flow through scrub of *Corylus* and *Salix*, beneath taller trees of *Betula pendula* and *Pinus sylvestris*, with patchy *Pteridium*, and support no fen vegetation. Below this point the ground is unshaded and there is a broad stand of base-rich, wet, fen vegetation, dominated by *Juncus subnodulosus,* but with similarly wide range of sedges, bryophytes, orchids and other forbs as seen elsewhere on this site. [M13b]	DSC01143 & 44

Quadrat ID	Sand Dale (West): Quadrat Description	Photo ref
Q11	The valley bottom, to the west of a stock-proof fence. Dense *Salix* scrub marks the main axial stream, but some scrub clearance has taken place, and marks were visible on some of the remaining bushes indicating that they were targeted for clearance. The vegetation here is similar to, and contiguous with that sampled by Q10, although less dominated by rushes, and with more grasses and sedges, and fewer bryophytes. [M13b, but with affinity to M24]	DSC01145 & 46
Q12	Sampled in the lower part of the main area of base-rich fen close to the valley bottom. Much *Juncus subnodulosus* and *Schoenus nigricans,* mixed with various sedges and grasses (*Carex flacca, C. lepidocarpa, C. hostiana, C. panicea, Briza media* and *Molinia caerulea*), and a range of bryophytes are present at quite high cover (*Calliergonella cuspidata, Campylium stellatum, Cratoneuron filicinum, Ctenidium molluscum, Fissidens adianthoides*, *Palustriella commutata, Pseudoscleropodium purum, Scorpidium cossonnii* and the clubmoss *Selaginella selaginoides*). As with the western area of fen, there is a colourful mix of flowering forbs, including the orchids *Dactylorhiza fuchsii* and *Dactylorhiza traunsteineri, Euphrasia* sp.*, Parnassia palustris, Pedicularis palustris, Pinguicula vulgaris, Potentilla erecta, Succisa pratensis* and *Veronica beccabunga.* [M13b]	DSC01147 & 48
Q13	Flanking one of the M13 areas is a strip of slightly raised, drier fen, that grades eastwards into damp grassland. The fen meadow strip is similar in nature to Q4, supporting much *Juncus subnodulosus* and *Molinia*, with a range of small sedges and other grasses at lower cover, and few base-loving bryophytes. Instead there is a diverse mix of taller flowering forbs, including *Achillea ptarmica, Centaurea nigra, Cirsium palustre, Silene flos-cuculi, Sanguisorba officinalis,* and *Succisa pratensis*, overtopping smaller species such as *Dactylorhiza* sp., *Hypericum pulchrum, Leontodon hispidus, Lotus pedunculatus, Parnassia palustris, Stachys officinalis* and *Valeriana dioica*. [Affinities to M22, M24 and M26]	DSC01149 & 50
Q14	Part of a more extensive stand cut across by the stock-proof fence, on the valley side near the upper edge of the seepage line. The vegetation appears quite rank and little grazed, perhaps because of its relatively inaccessible location. It is dominated by *Juncus subnodulosus, J. acutiflorus, Holcus lanatus* and *Lotus pedunculatus*, but it does display some similarities to the vegetation of Q4 and Q13, supporting a wide range of species at low cover. [Affinities to M22, M24 and M26]	DSC01151

Quadrat ID	Sand Dale (East): Quadrat Description	Photo ref
Q15	Eastern part of a more extensive stand cut across by the stock-proof fence, on the valley side near the upper edge of the seepage line. Dominated by *Juncus subnodulosus, J. acutiflorus, Holcus lanatus* and *Lotus pedunculatus*, with a wide range of additional species at low cover, particularly near the spring at TN16. [Affinities to M22, M24 and M26]	P1050349-350
Q16	Small spring and seepage area leading to water-flow track.Low growing, sparse sward with abundant *Eleocharis quinqueflora,* frequent *Carex flacca, C. lepidocarpa, Eriophorum angustifolium* and scattered small herbs including *Anagallis tenella, Triglochin palustre* and *Valeriana dioica*. The ground is quite poached, but bryophytes are locally abundant particularly *Campylium stellatum, Scorpidium revolvens*, with *Aneura pinguis, Ctenidium molluscum* and *Palustriella commutata* at low cover. [M10]	P1050353
Q17	North facing slope supporting low growing fen meadow with an open sward rich in sedges (*Carex flacca, C. hostiana, C. panicea*) and grasses (*Anthoxanthum odoratum*, *Briza media, Festuca rubra, Molinia caerulea*) with locally abundant *Cirsium dissectum*. Damper patches, particluarly associated with indistinct water-flow tracks leading from Q16, support *Anagallis tenella* and bryophytes (*Campylium stellatum, Ctenidium molluscum*). [M24]	P1050354
Q18	Rushy fen meadow. Mixtures of *Juncus acutiflorus* and *J. subnodulosus* with locally abundant *Molinia caerula* and wide range of associates including *Angelica sylvestris, Briza media, Calliergonella cuspidata, Carex hostiana, C.panicea, C. lepidocarpa, Cirsium palustre, Festuca rubra, Galium uliginosum, Holcus lanatus, Hydrocotlye vulgaris, Lotus pedunculatus, Mentha aquatica, Succisa pratensis* and *Valeriana dioica.* [M22]	P1050347; P105356-358
Q19	Species-rich fen in broad vegetated water-flow track close to the valley bottom. Much *Schoenus nigricans,* mixed with various sedges, grasses and rushes (*Carex dioica, C. flacca, C. lepidocarpa, C. hostiana, C. panicea, C. pulicaris, Briza media, Molinia caerulea, Juncus articulatus* and *J. subnodulosus*), and a range of bryophytes are	P1050359-61

Quadrat ID	Sand Dale (East): Quadrat Description	Photo ref
	present at quite high cover (*Calliergonella cuspidata, Campylium stellatum, Cratoneuron filicinum, Ctenidium molluscum, Fissidens adianthoides*, *Palustriella commutata, Pseudoscleropodium purum, Scorpidium cossonnii* and the clubmoss *Selaginella selaginoides*). As with the western area of base-rich fen, there is a colourful mix of flowering forbs, including the orchids *Dactylorhiza fuchsii* and *Dactylorhiza traunsteineri, Euphrasia* sp.*, Parnassia palustris, Pedicularis palustris, Pinguicula vulgaris, Potentilla erecta, Succisa pratensis* and *Veronica beccabunga.* [M13b]	
Q20	Fen meadow on slopes (to the south) above the base-rich fen in the valley bottom. Mixed sward of rushes, sedges and grasses and supporting a range of species including *Briza media, Calliergonella cuspidata, Carex panicea, C. flacca, C. echinata, C. hostiana, Campylium stellatum, Euphrasia* sp., *Juncus acutiflorus, J. articulatus, J. subnodulosus, Molinia caerulea, Potentilla erecta, Succisa pratensis* and *Valeriana dioica.* [Affinities to M24 and M26]	P1050363
Q21	Sedge-rich, rushy vegetation with *Molinia caerulea* in valley bottom, between the M13 soakway and the stream, but on firm, slightly higher ground. The sward is low growing and rich in a range of sedges, grasses and herbs. It is very similar to Q17, but lacks *Cirsium dissectum*. *Anagallis tenella* and *Triglochin palustre* are locally disctinctive, occuring in very open patches. Bryophytes are generally rather sparse. [M24]	P1050374
Q22	Sedge and bryophyte rich vegetation in valley bottom. Low growing vegetation occupying a soakway between the steep slopes to the south and the valley bottom. Sedges and rushes (*Carex dioica, C.flacca, C.echinata, C. nigra, C. panicea, C. lepidocarpa*) make up a patchy sward forming low tussocks between which damper hollows support a range of bryophytes (*Callliergonella cuspidata, Campylium stellatum, Plagiomnium ellipticum, Scorpidium cossonii*) and herbs. *Hydrocotyle vulgaris* and *Pedicularis palustris* are conspicuous in this stand. [M13]	P1050375-77
Q23	Rather rank vegetation at the eastern end of the site in the valley bottom adjacent to the stream. Dominated by tall *Juncus subnodulosus* which had 'lodged' at the time of survey. *Hydrocotlye vulgaris* is abundant beneath the rushy sward. A range of other species are scattered throughout at low cover. [M22a]	P1050378

Target note	Sand Dale (West): Target Note Description	Photo ref
TN1	Open scrub of *Crataegus monogyna* over a mixture of *Pteridium aquilinum, Urtica dioica* and *Deschampsia cespitosa*.	
TN2	The centre of the pool is predominantly open with much floating *Potamogeton* sp.	
TN3	The slightly raised area surrounding the pool supports damp calcareous grassland.	
TN4	Two upstanding mounds support dense *Pteridium aquilinum.*	
TN5	The upper limit of the spring line is densely wooded with *Salix cinerea* scrub, grading upslope (to the south) into dry *Corylus avellana* and *Betula pendula* woodland, where a short but steep slope leads up from the springs.	
TN6	An old brick structure may be part of an old water extraction mechanism, perhaps an old pumphouse; it is not clear whether this is still operational.	DSC01148
TN7	A manhole cover is situated on the side of a small stream. Presumably this is associated with the pumphouse. There are also occasional pieces of pipework exposed in some of the streams.	
TN8	Drier ground between streams supports damp grassland.	
TN9	Upstanding hummocks supporting *Ulex* sp., recently cut down.	
TN10	Upstanding ground between streams supports dense *Pteridium aquilinum* and partly cleared *Ulex.*	
TN11	Partly cleared willow scrub, with some trunks marked, presumably for future clearance.	
TN12	A small stand (2x2m) of abundant *Trifolium medium.*	
TN13	Dry ground supporting dense *Pteridium aquilinum* amongst scattered *Crataegus monogyna* scrub.	
TN14	Mature scrub forms an almost closed canopy; whilst this is mainly on dry ground, it does shade some of the streams. Clearance combined with grazing might allow more diverse fen vegetation to spread along some of the shaded streams.	
TN15	A small patch of *Palustriella commutata* marks a spring-head that is otherwise overgrown by rank rush vegetation.	

Target note	Sand Dale (East): Target Note Description	Photo ref
TN16	Spring with *Palustriella commutata* at head of ditch surrounded by rushy fen meadow vegetation [M22/M24/M26]. pH 7.3 EC 460 µS cm^{-1}	
TN17	Mosaic of damp grassland and sedge-rich fen meadow (see TN 19) on slopes to the south of the valley bottom fen. The damp grassland is relatively species poor with *Deschampsia cespitosa, Holcus lanatus, Lolium perenne, Carex hirta and Cirsium palustre*.	P1050355
TN18	Poached area in narrow, level / sump area between sloping ground and the valley bottom stream. *Veronica beccabunga* and *Mentha aquatica* are abundant here.	
TN19	Slope dominated by mixture of rushes (*Juncus acutiflorus* and *J. subnodulosus*), sedges and grasses, locally species-rich, similar to Q15. No free water. In cattle hoof prints, water is 20 cms below ground level. [M22 / M24 / M26]	
TN20	Intermittent seepage. Damp vegetation on steep slope with *Anagallis tenella, Carex hostiana, C. flacca, Juncus articulatus, J. acutiflorus, Molinia caerulea, Parnassia palustris, Valeriana dioica.*[M24 / M26]	P1050368 -69
TN21	From this point eastwards the M13 vegetation grades into much ranker rush dominated vegetation with *Mentha aquatica* and *Hydrocotyle vulgaris*. M13 stand narrows and becomes associated with the base of the slope to the south.	P1050376

North York Moors Fen Survey 2014						
Site	Sand Dale W	Sand Dale W	Sand Dale W	Sand Dale W	Sand Dale W	Sand Dale W
Quadrat number	Q1	Q2	Q3	Q4	Q5	Q6
BAP habitat	LF	LF	LF	LF	LF	LF
Annex 1 habitat	AF 7230	AF 7230		MM 6410		
Likely NVC type	M13b	M13b	M22b	M22 / M24 / M26	aff M22	S9
Surveyor	PE	PE	PE	PE	PE	PE
Date	03/09/2014	03/09/2014	03/09/2014	03/09/2014	03/09/2014	03/09/2014
Easting	485763	485749	485742	485736	485700	485723
Northing	484899	484912	484904	484908	484903	484892
pH	7.2	7.1				
EC (µS cm-1)	700	490				
Quadrat size (m2)	2x2m	2x2m	2x2m	2x2m	4x4m	4x4m
Photo ref	DSC01131	DSC01132 & 33	DSC01134	DSC01136	DSC01135	DSC01135
No. of species	39	37	28	19	7	6
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis stolonifera			3			
Anagallis tenella	3	2				
Aneura pinguis	1					
Angelica sylvestris	1		4			
Briza media	3	2	4	4		
Bryum pseudotriquetrum	1	1				
Calliergonella cuspidata	1	2	5	4	4	
Campylium stellatum	3	4				
Carex dioica		2				
Carex echinata		1				
Carex flacca	4	4		3		
Carex hostiana	4	3				
Carex lepidocarpa	4	4	5			
Carex panicea	4	4	5	3		
Carex rostrata						9
Chara sp		1				
Cirsium palustre	1		4			
Climacium dendroides				1		
Ctenidium molluscum	5	3				
Dactylorhiza fuchsii	2	1	1			
Dactylorhiza traunsteineri	2	1				
Drosera rotundifolia	1					
Eleocharis quinqueflora		2				
Equisetum palustre			2		3	
Eriophorum angustifolium		3	2			
Eriophorum latifolium	3	4				
Euphrasia officinalis agg	2	1		1		
Festuca ovina	1					
Festuca rubra	1	2	4			
Fissidens adianthoides	1	1				
Galium palustre						3
Galium uliginosum			3			
Hippuris vulgaris						1
Holcus lanatus			4		3	
Juncus articulatus	2	2	4			
Juncus subnodulosus	5	2	4	8	9	4
Leontodon hispidus	1			5		
Linum catharticum	2			4		
Lotus pedunculatus		1	5	4		
Mentha aquatica			4		3	5
Molinia caerulea	2	2		3		
Parnassia palustris	4	4	1	3		
Pedicularis palustris	4	4	5		3	2
Pinguicula vulgaris	2	2				
Plagiomnium ellipticum			1			
Plantago lanceolata				2		
Polygala vulgaris	1					
Potentilla erecta	2	1		1		
Ranunculus acris				1		
Ranunculus flammula			3			
Ranunculus repens			2			
Rhytidiadelphus squarrosus			1	4		
Riccardia multifida	1					
Schoenus nigricans	5	5				
Scorpidium cossonii	4	4	1			
Selaginella selaginoides	1	1				
Succisa pratensis	4	4	4	4		
Trifolium pratense	1	2		4		
Trifolium repens	1	2	2			
Triglochin palustre		2	1			
Valeriana dioica	2	2	4	2	3	

North York Moors Fen Survey 2014						
Site	Sand Dale W	Sand Dale W	Sand Dale W	Sand Dale W	Sand Dale W	Sand Dale W
Quadrat number	Q7	Q8	Q9	Q10	Q11	Q12
BAP habitat	LF	LF	LF	LF	LF	LF
Annex 1 habitat		AF 7230	AF 7230	AF 7230	AF 7230	AF 7230
Likely NVC type	?	M13b	M13b	M13b	M13b (aff M24)	M13b
Surveyor	PE	PE	PE	PE	PE	PE
Date	03/09/2014	03/09/2014	03/09/2014	03/09/2014	03/09/2014	03/09/2014
Easting	485776	485788	485831	485854	485867	485810
Northing	484843	484846	484855	484891	484904	484905
pH	7.8	7.9	7.7			
EC (µS cm-1)	430	420	420			
Quadrat size (m2)	4x4m	2x2m	2x2m	2x2m	2x2m	2x2m
Photo ref	DSC01137	DSC01138 & 40	DSC01141 & 42	DSC01143 & 44	DSC01145 & 46	DSC01147 & 48
No. of species	13	26	30	25	28	28
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Achillea ptarmica					1	
Ajuga reptans	3					
Anagallis tenella					1	
Aneura pinguis			1			
Angelica sylvestris	2	1		4		
Anthoxanthum odoratum					4	
Betula pendula	8					
Briza media		2	3	4		1
Bryum pseudotriquetrum			2	2		
Calliergonella cuspidata		1		4	5	2
Calluna vulgaris			1	3		
Campylium stellatum		2	2	2		3
Cardamine pratensis	3					
Carex echinata					4	
Carex flacca			4		4	4
Carex hostiana					4	4
Carex lepidocarpa		4	4	4		4
Carex panicea		5	5	4	4	4
Carex pulicaris			2		4	
Centaurea nigra			2			
Chiloscyphus sp				1		
Chrysosplenium oppositifolium	2					
Cirsium palustre		1		2	4	
Cratoneuron filicinum						1
Ctenidium molluscum		4	4	4		3
Dactylorhiza fuchsii			1	1	1	1
Dactylorhiza traunsteineri			1	1	1	1
Drosera rotundifolia			1			
Equisetum arvense	1	2	3		2	
Equisetum palustre			3		2	2
Euphrasia officinalis agg						1
Festuca ovina		1	2			
Festuca rubra					2	
Fissidens adianthoides		2	2	2		1
Holcus lanatus		1	4	3	5	
Juncus acutiflorus					5	
Juncus articulatus		3	4	4		
Juncus subnodulosus		4	4	8	5	6
Leontodon hispidus		3				
Lotus pedunculatus					4	
Luzula multiflora			1		1	
Mentha aquatica	5					
Molinia caerulea		3	4	4	4	4
Palustriella commutata	6	7	8	5		4
Parnassia palustris						3
Pedicularis palustris					4	1
Pellia endiviifolia		1		1		
Phragmites australis						3
Pinguicula vulgaris		3	3			2
Plagiomnium ellipticum		1			1	
Plagiomnium undulatum	4			1		
Poa trivialis	4					
Potentilla erecta		1	1		2	1
Pseudoscleropodium purum						1
Ranunculus flammula					1	
Rhytidiadelphus squarrosus					2	
Salix cinerea	8					
Schoenus nigricans		5	4	2		7
Scorpidium cossonii						3
Selaginella selaginoides		1	1			1
Succisa pratensis		2	4	3	4	4
Taraxacum seedlings		1				
Tussilago farfara	6			4		
Valeriana dioica	5	4	3	3	4	
Veronica beccabunga						1

North York Moors Fen Survey 2014						
Site	Sand Dale W	Sand Dale W	Sand Dale E	Sand Dale E	Sand Dale E	Sand Dale E
Quadrat number	Q13	Q14	Q15	Q16	Q17	Q18
BAP habitat	LF	LF	LF	LF	LF	LF
Annex 1 habitat	MM 6410	MM 6410	MM 6410	AF 7230	AF 7230	MM 6410
Likely NVC type	M22 / M24 / M26	M22 / M24 / M26	M22 / M24 / M26	M10	M13 / M24	M22
Surveyor	PE	PE	RT	RT	RT	RT
Date	03/09/2014	03/09/2014	3 Sep 2014	3 Sep 2014	3 Sep 2014	3 Sep 2014
Easting	485793	485861	485887	485915	485912	485975
Northing	484874	484856	484855	484858	484884	484892
pH			no free water	6.58	no free water	no free water
EC (µS cm-1)						
Quadrat size (m2)	2x2m	2x2m	2x2	1x4	2x2	2x2
Photo ref	DSC01149 & 50	DSC01151		P1050353	P1050354	
No. of species	31	22	41	17	28	31
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Achillea ptarmica	1		3			2
Agrostis canina		4	3		3	3
Ajuga reptans			1			
Anagallis tenella				1	1	
Aneura pinguis				1		
Angelica sylvestris		2	0			0
Anthoxanthum odoratum		3	3		3	2
Briza media	3		0	1	2	
Calliergonella cuspidata	5		3		1	3
Campylium stellatum				4		
Cardamine pratensis			2			
Carex echinata			0			
Carex flacca	2		0	2	4	
Carex hostiana	3		0		4	3
Carex lepidocarpa				3		
Carex panicea	3		1		2	4
Carex pulicaris			1			
Centaurea nigra	1	3	0			0
Cirsium dissectum					5	0
Cirsium palustre	3	4	3		0	3
Ctenidium molluscum				2	2	
Cynosurus cristatus					2	
Dactylorhiza fuchsii	1		1		2	2
Dactylorhiza hybrids						0
Danthonia decumbens	1					
Deschampsia cespitosa			2			3
Eleocharis quinqueflora				6		
Epilobium obscurum			1			
Equisetum palustre		3	3	2		
Eriophorum angustifolium				2		
Eupatorium cannabinum			0			
Euphrasia officinalis agg					3	
Festuca arundinacea			1			0
Festuca rubra	4	3	1			2
Fissidens adianthoides				3		
Galium uliginosum		3	3			3
Holcus lanatus	4	5	3		2	4
Hydrocotyle vulgaris						4
Hylocomium splendens	1					
Hypericum pulchrum	1					
Juncus acutiflorus		6	8		4	7
Juncus articulatus			3	3	2	0
Juncus conglomeratus		2	0			1
Juncus effusus	2					
Juncus subnodulosus	7	7				4
Leontodon hispidus	2					
Lotus pedunculatus	3	5	3			3
Mentha aquatica						0
Molinia caerulea	5	4	4	1	3	2
Nardus stricta					1	
Palustriella falcata				2		
Parnassia palustris	2					
Pedicularis palustris			0		2	
Plagiomnium undulatum	1	1	3			
Plantago lanceolata	2					
Poa trivialis	2					
Potentilla erecta	2	2	2			
Prunella vulgaris			2		0	1
Pseudoscleropodium purum		1	2			
Ranunculus flammula					0	0
Ranunculus repens			3		1	3
Rhinanthus minor			1			
Rhytidiadelphus squarrosus	4	3				
Rumex acetosa			2			
Sanguisorba officinalis	4					
Scorpidium cossonii				4		
Silene flos-cuculi	1					
Stachys officinalis	4	4	0			
Succisa pratensis	4	4	4		4	0
Trifolium pratense	3		1		2	
Trifolium repens					1	
Triglochin palustre				4	0	0
Valeriana dioica	2	4	3	1	2	4
Vicia cracca		1				

North York Moors Fen Survey 2014					
Site	Sand Dale E	Sand Dale E	Sand Dale E	Sand Dale E	Sand Dale E
Quadrat number	Q19	Q20	Q21	Q22	Q23
BAP habitat	LF	LF	LF	LF	LF
Annex 1 habitat	AF 7230	MM 6410	AF 7230	AF 7230	
Likely NVC type	M13	M22 / M24 / M26	M24	M13	M22a
Surveyor	RT	RT	RT	RT	RT
Date	3 Sep 2014	3 Sep 2014	3 Sep 2014	3 Sep 2014	3 Sep 2014
Easting	486023	486013	486050	486052	486067
Northing	484879	484875	484874	484868	484870
pH	6.86	no free water	no free water	6.76	no free water
EC (µS cm-1)	690			581	
Quadrat size (m2)	2x2	2x2	2x2	2x2	2x2
Photo ref	P1050359-61		P1050374	P1050375-77	
No. of species	31	27	38	26	18
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Achillea ptarmica		1	1		
Agrostis stolonifera	1			3	2
Anagallis tenella	3		1	3	
Angelica sylvestris			1		0
Anthoxanthum odoratum		3	3		
Briza media	2	2	3		
Bryum pseudotriquetrum		1			
Calliergonella cuspidata	3	3	3	5	3
Campylium stellatum	4	4		4	
Cardamine pratensis				1	1
Carex dioica	2			2	
Carex echinata		3	0	2	
Carex flacca	5	2	5		0
Carex hostiana	5	5	5	2	
Carex lepidocarpa	5			4	
Carex nigra				2	
Carex panicea			2	3	
Carex pulicaris	0	0	1		
Centaurea nigra		0	1		
Cirsium palustre		1	2		3
Dactylorhiza fuchsii			0		
Danthonia decumbens		1	1		
Deschampsia cespitosa			0		
Epilobium parviflorum					0
Equisetum palustre	2	1	1	2	3
Eupatorium cannabinum	1				
Euphrasia officinalis agg	2	3	3		
Festuca arundinacea		1	1		
Festuca rubra	2	2	2	4	
Filipendula ulmaria			3		
Fissidens adianthoides	1				
Galium palustre					1
Galium uliginosum	1		2	1	3
Holcus lanatus	3		2		3
Hydrocotyle vulgaris	1			6	7
Juncus acutiflorus		5	4	1	0
Juncus articulatus	2	3	3	2	
Juncus conglomeratus					0
Juncus subnodulosus	2	0	2	2	9
Lotus pedunculatus					2
Mentha aquatica	1			3	5
Molinia caerulea	5	5	4		
Palustriella commutata	3				
Pedicularis palustris	3		1	4	
Pinguicula vulgaris	2				
Plagiomnium ellipticum			0	2	
Plantago lanceolata			2		
Potentilla erecta		1	1		
Prunella vulgaris		1	1		
Ranunculus flammula	1	1	1	2	
Ranunculus repens			1		
Schoenus nigricans	5				
Scorpidium cossonii	5			3	
Succisa pratensis	3	5	3	1	
Trifolium pratense			3		
Triglochin palustre	3	1	4	3	
Valeriana dioica	3	4	2	2	1

9.6 SAND DALE NON-SSSI

[north-east of Unit 2 of Eller's Wood and Sand Dale SSSI and SAC]

Vegetation types, quadrat locations and selected target notes are shown in Figure 11 and Figure 12 (following this account); target notes, quadrat descriptions and quadrat records are provided in tabulated form at the end of this account. MATCH analyses for individual quadrats and constancy tables are shown in Annexes 2 and 3 respectively.The general site location is shown in Figure 1.

9.6.1 Site Description

The focus of this survey was an area of seepages and flushes immediately to the north of the axial stream that forms the northern boundary of the SSSI. This area was under conifer plantation until fairly recently. Consequently, the mire vegetation has been greatly influenced by dense shading, and is really only present along a series of narrow soakways and water tracks that flow downslope from seepages and springs just below the northern limit of this land parcel, which is bounded by a fence and forestry track. These water flow tracks are very linear and in some places quite deep, and it is possible that they have been artificially deepened as part of the forestry operation.

9.6.2 Target Vegetation

Alkaline Fen (EC Annex 1 habitat)

M13 *Schoenus nigricans–Juncus subnodulosus* mire

The remnant mire vegetation that flanks the flow tracks is quite diverse, supporting a wide range of bryophytes (*Calliergonella cuspidata, Campylium stellatum, Fissidens adianthoides, Palustriella commutatum, Plagiomnium elatum* and *P. affine*), sedges (*Carex echinata, C. flacca, C. pulicaris, C. viridula* subsp. *brachyrrhyncha* and *C. viridula* subsp. *oedocarpa*), rushes (*Juncus subnodulosus, J. bulbosus* and *J. articulatus*), grasses (e.g. *Festuca rubra*), and forbs such as *Anagallis tenella, Angelica sylvestris, Dactylorhiza* sp., *Filipendula ulmaria, Galium uliginosum, Hypericum pulchrum, Pinguicula vulgaris, Triglochin palustris,* and *Valeriana dioica.*

In addition, *Schoenus nigricans* and *Pedicularis palustris* were also noted in 2014. In 2011, the two samples that were recorded (Quadrats 1 and 2) showed weak affinities with M13, M22, M37 and M10. By contrast in 2014 the base-rich fen habitat was more extensive (Quadrats 3-7), occuring in areas adjacent to the water-flow tracks as well as within them. Samples were species-rich and supported many characteristic M13 species, inlcuding *Schoenus nigricans*. The compartment is still highly modified and supports a mosaic of different vegetation types which are often difficult to assign it to a particular NVC community, however the greatest affinity of all the sampled areas with M13 *Schoenus nigricans–Juncus subnodulosus* mire. Therefore it is considered to be a recovering form of this community. The site should continue to be monitored in future years in order to assess its on-going recovery.

Rare species

Dactylorhiza traunstenerii occurs in the adjacent SSSI. It is likely that the M13 vegetation in the non SSSI area may also support *Dactylorhiza traunsteneri*. This species flowers early in the growing season (early June) so visits should be made at that time to check occurrence. *Epipactis palustris* has previously been recorded in the western part of unit 2 of the SSSI. Conditions may also be suitable for this species in other M13 areas. Any monitoring assessments of the site should include a search for this species.

9.6.3 Wetland Substrata & Water Supply

The substratum was not observed in detail, but where exposed it generally comprises a thin peaty layer over a stony basal substratum.

Base-rich groundwater outflow (pH 7.8; EC 510 µS cm^{-1}) occurs here on rising soligenous slopes, probably sourced from the higher limestone and sandstone strata that overly a mudstone aquitard. The latter forms the valley-bottom in this location, and impeded drainage from this may help to maintain wetter conditions in the SSSI on the southern side of the axial stream.

Possible WETMECs: 10b Permanent seepage slopes, diffuse seepage; 11 Intermittent and part-drained seepage; 17a Groundwater flushed slopes.

9.6.4 Site Management

The area examined during this survey is open to grazing by cattle that currently graze the SSSI land on the southern side of the stream, which forms the eastern section of SSSI unit 2, east of a fence-line. That area is at present not separated from improved pasture on the slopes above (to the south of) the wetland areas.

The combination of scrub management and cattle grazing of this area during the last few years has led to a remarkable recovery of M13 vegetation in this compartment since the previous survey (in 2011). At that time 'recovering' M13 vegetation was largely confined to the areas in and immediately adjacent to the incised spring-fed water flow tracks . The water-flow tracks here appear to have been partly ditched in the past, and sections of logs have been used to create partial dams which are likely to have encouraged the spread of base-rich spring water onto adjacent areas, creating more opportunities for the recovery of M13 vegetation on this part of the site. Now the M13 vegetation has spread into areas between the flow-tracks and has been colonised by *Schoenus nigricans* in some areas. The vegetation is still recovering and developing, and the overall compartment is a complex mosaic of vegetation types, but there is no doubt that the management regime is encouraging the spread of M13 vegetation, and therefore Annex1 Alkaline Fen habitat, in this compartment.

The current management of this area , and the adjacent part of unit 2 of the SSSI should be continued and future monitoring should be tailored to map the extent of M13 vegetation, and the extent of distinctive Alkaline Fen species present.

This area should be incorporated into the existing Eller's Wood and Sand Dale SSSI and SAC.

Figure 11. Sand Dale non-SSSI.

Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	11 : Sand Dale non-SSSI		
Site XY	SE 85962 84935	**Date**	03/09/2014

Map Legend	
	SSSI unit boundary
Alkaline Fen	
	M10
	M13
	M37
Transition Mire / Quaking Bog	
	M4
	M14
	M14/M10
Molinia Meadows	
	M24
	M22/M24/M26
Other Habitat	
	M22
	M22/MG8/MG10
	N/A
	Soakway / water flow track
	Axial stream
	Fenceline - approximate
x Quadrat	x Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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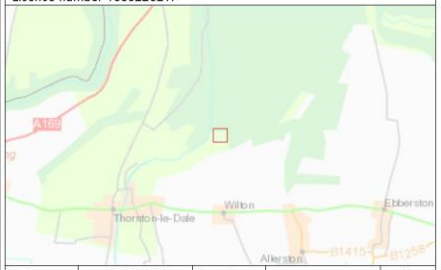

Date:	26/03/15	Scale:	1:1,500	N
Version:	1.4	Created:	MP	

Figure 12 Sand Dale non-SSSI – Woodland Section

Habitats Directive Annex 1 Fen Survey: North York Moors			
Figure	12 : Sand Dale non-SSSI - Woodland Section		
Site XY	SE 86581 85024	**Date**	03/09/2014

Map Legend
SSSI unit boundary
Alkaline Fen
M10
M13
M37
Transition Mire / Quaking Bog
M4
M14
M14/M10
Molinia Meadows
M24
M22/M24/M26
Other Habitat
M22
M22/MG8/MG10
N/A
Soakway / water flow track
Axial stream
Fenceline - approximate

x	Quadrat	x	Target note

Additional Info: Mapped vegetation boundaries are approximate and do not account for gradual transitions. Non-target vegetation types have been sampled to provide context; unmapped examples are likely to be present.

0 10 20 40 m

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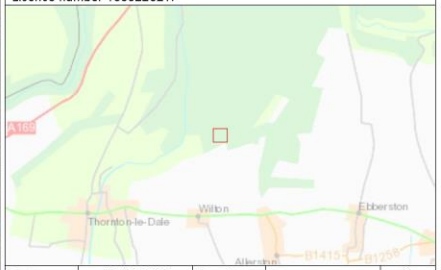

Date:	26/03/15	Scale:	1:1,500	N
Version:	1.4	Created:	MP	

Quadrat ID	Sand Dale – non-SSSI: Quadrat Description	Photo ref
Q1	Species-rich fen vegetation with abundant *Palustriella commutata* associated with spring at head of water flow track. *Carex flacca, C. lepidocarpa, Juncus articulatus* and *Anagallis tenella* frequent throughout. (Also sampled in 2011) [M13 / M37]	P1050394
Q2	Species-rich fen vegetation associated with water flow track and adjacent areas. Similar vegetation to Q1 with a more diverse range of associated species including *Carex pulicaris, Molinia caerulea, Pinguicula vulgaris* and *Pedicularis palustris*.(Also sampled in 2011) [M13]	P1050386
Q3	At the bottom of the eastern-most water flow track, an area of base-rich fen has developed within and adjacent to the stony water-flow track with mixtures of sedges, *Anagallis tenella, Triglochin palustris* and golden-brown mosses [M13]	P105383-4
Q4	Head of water-flow track with bryophyte and sedge-rich vegetation around spring / seepage zone. Similar to Q3 with mixture of sedges, *Molinia caerulea, Triglochin palustris* and *Juncus subnodulosus* over ground layer of *Palustriella commutata*. [M13]	
Q5	Area adjacent to the head of a network of water-flow tracks. Diverse, open sward with a mixture of sedges, rushes and grasses, low herbs and rather sparse bryophyte layer. Small tufts of *Schoenus nigricans* are present nearby. [M13]	P1050391
Q6	Species-rich vegetation between water-flow tracks. Open sward of varying height with small tussocks of *Schoenus nigricans* and sparse *Juncus subnodulosus* over short sedges and grasses and a ground layer with a variety of bryophtes and scattered *Pinguicula vulgaris*. [M13]	P1050392-3
Q7	Low-growing vegetation developed around a spring-fed water flow track. Mixed sward consists of scattered low tussocks of *Schoenus nigricans* and *Molinia caerulea* with rushes and sedges over patches of brown mosses (mainly *Palustriella commutata*, with *Fissidens adianthoides, Campylium stellatum* and *Ctenidium molluscum*). This stand is embedded within a more extensive area of species-rich vegetation dominated by *Juncus subnodulosus*. Similar vegetation occurs throughout the stand around lines of water flow from springs issuing upslope to the north. [M13]	P1060303

Target note	Sand Dale – non-SSSI: Target Note Description	Photo ref
TN1	Rank wet grassland / tall herb / rush pasture immediately east of the SSSI. With *Angelica sylvestris, Eupatorium cannabinum, Dechampsia cespitosa, Galium uliginosum, Juncus acutiflorus*, scattered *Juncus subnodulosus, Lotus pedunculatus, Stachys officinalis, Succisa pratensis*.	P1050379
TN2	Water flow track with *Palustriella commutata* and tufa deposition under dense canopy of trees.	P1050380
TN3	Rank vegetation in valley bottom with much *Holcus lanatus*.	
TN4	Pipe encrusted with *Palustriella commutata* feeding spring water into pond. It is not clear exactly where the water is coming from!	P1060309
TN5	Patch of *Carex rostrata* adjacent to pond	P1060308
TN6	Spring / seepage in valley bottom with *Brachythecium rivulare, Climacium dendroides, Juncus subnodulosus, Juncus acutiforus.*	
TN7	Tall herb vegetation in valley bottom with *Filipendula ulmaria, Juncus effusus, J. subnodulosus*	
TN8	Series of springs issuing near the northern edge of the non SSSI compartment. Dominated by *Cratoneuron filicinium* and *Palustriella commutata* with *Calliergonella cuspidata, Fissidens adianthoides* and *Pellia endivifolia*.	
TN9	Springs, seepages and pools beneath trees to the west of the non SSSI compartment, in an area that is not open to grazing. May be important habitat for invertebrates.	

North York Moors Fen Survey 2014							
Site	Sand Dale non-SSSI		Sand Dale non-SSSI		Sand Dale non-SSSI		Sand Dale non-SSSI
Quadrat number	Q1	Q2	Q3	Q4	Q5	Q6	Q7
BAP habitat	LF	LF	LF	LF	LF	LF	LF
Annex 1 habitat	AF 7230	AF 7230	AF 7230	AF 7230	AF 7230	AF 7230	AF 7230
Likely NVC type	M13 M37	M13	M13	M13	M13	M13	M13
Surveyor	RT	RT	RT	RT	RT	RT	
Date	03/09/2014	03/09/2014	03/09/2014	03/09/2014	03/09/2014	3 Sep 2014	03/09/2014
Easting	486027	486064	486060	486059	486041	486026	485884
Northing	484940	484912	484897	484925	484943	484932	484986
pH				7.2		no free water	
EC (µS cm-1)				440			
Quadrat size (m2)	2x2	2x2	2x2	2x2	2x2	2x2	2x2
Photo ref	P1050394	P1050386	P1050383-4		P1050391	P1050392-3	P1060303
No. of species	11	21	22	21	23	30	29
Speciess name	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Agrostis stolonifera			1		2		
Anagallis tenella	3	1	1		1		
Angelica sylvestris			2	2	4	2	
Betula seedling/sp			3	3	1		0
Briza media						2	1
Calliergonella cuspidata		2	5	2	3	4	4
Campylium stellatum		2				2	2
Cardamine pratensis							1
Carex echinata					1		
Carex flacca	5	5	5	5	4	4	3
Carex hostiana						4	3
Carex lepidocarpa	2	2	4	2	1	0	2
Carex panicea			3	3	3	3	4
Carex pulicaris		2	3	1	3	2	0
Centaurea nigra						1	
Cirsium palustre	1	1	3	3			2
Ctenidium molluscum	1	1			2	3	3
Dactylorhiza fuchsii	1		1		1	2	
Dactylorhiza sp.							0
Deschampsia cespitosa			3		1	0	
Epilobium parviflorum	1	1		1	1		
Equisetum palustre			2	2		2	1
Eupatorium cannabinum			1		2	2	2
Festuca rubra	1	1		3			1
Filipendula ulmaria			2				0
Fissidens adianthoides		1		1			2
Holcus lanatus				4	1		1
Hypericum pulchrum			1				
Juncus acutiflorus						3	
Juncus articulatus	3	2	5	3	2	3	3
Juncus conglomeratus				1	2	1	
Juncus inflexus			2	3			
Juncus subnodulosus	1	1		2		3	3
Linum catharticum							1
Listera ovata						0	
Luzula multiflora					1		
Mentha aquatica						1	
Molinia caerulea		3	5	5	3	4	4
Palustriella commutata	7	8	4	6			4
Palustriella falcata						0	
Pedicularis palustris		1					
Pellia endiviifolia		1					2
Pinguicula vulgaris		1				1	2
Potentilla erecta						1	
Ranunculus flammula		1	2		1		
Rhinanthus minor						0	
Riccardia multifida		1					
Schoenus nigricans						2	4
Scorzoneroides autumnalis					1		
Succisa pratensis						4	4
Triglochin palustre			3	5	1	1	
Valeriana dioica		1				4	4
Viburnum opulus				1			

10. ANNEX 2: MATCH OUTPUTS

Matching of data with diagnoses for:
All vegetation

The matching procedures have produced the following results for
sample Q1 FEN BOG

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M10	43.6	3 subcommunities.	M10a	46.4
M21	32.4	2 subcommunities.	M10	43.6
M14	31.4	0 subcommunities.	M15a	39.2
M11	30.3	2 subcommunities.	M11b	35.6
M15	27.3	4 subcommunities.	M21b	33.7
M 9	26.8	2 subcommunities.	M10b	33.0
M29	25.7	0 subcommunities.	M 9a	32.9
M17	23.5	3 subcommunities.	M21	32.4
M 6	22.9	4 subcommunities.	M21a	32.1
M12	21.9	0 subcommunities.	M14	31.4

The matching procedures have produced the following results for
sample Q2

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M10	47.6	3 subcommunities.	M10a	54.9
M11	41.6	2 subcommunities.	M10	47.6
M14	40.5	0 subcommunities.	M15a	42.7
M15	30.6	4 subcommunities.	M11	41.6
H 5	30.0	2 subcommunities.	M11b	41.2
M21	29.0	2 subcommunities.	M14	40.5
M29	26.1	0 subcommunities.	M11a	39.0
M13	26.1	3 subcommunities.	M10b	37.2
M 9	24.5	2 subcommunities.	M15	30.6
M25	22.8	3 subcommunities.	M 9a	30.5

The matching procedures have produced the following results for
sample Q3

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	45.7	0 subcommunities.	M14	45.7
M10	42.2	3 subcommunities.	M10a	44.9
M21	39.9	2 subcommunities.	M10	42.2
M15	33.4	4 subcommunities.	M15a	42.1
M11	31.9	2 subcommunities.	M21a	41.5
M29	30.7	0 subcommunities.	M21	39.9
M17	27.8	3 subcommunities.	M21b	38.9
M 9	26.4	2 subcommunities.	M15	33.4
M 2	24.6	2 subcommunities.	M11b	32.8
M16	24.4	4 subcommunities.	M 9a	32.1

The matching procedures have produced the following results for sample Q4

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	50.4	0 subcommunities.	M14	50.4
M21	45.4	2 subcommunities.	M21	45.4
M15	35.5	4 subcommunities.	M21a	45.2
M10	33.1	3 subcommunities.	M21b	43.3
M29	32.3	0 subcommunities.	M15a	42.6
M17	30.1	3 subcommunities.	M16c	36.8
M 2	28.7	2 subcommunities.	M10a	35.7
M16	28.0	4 subcommunities.	M15	35.5
M 1	27.3	0 subcommunities.	M 2a	33.8
M11	26.7	2 subcommunities.	M17a	33.4

The matching procedures have produced the following results for sample Q5

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	37.1	0 subcommunities.	M14	37.1
M21	34.6	2 subcommunities.	M21	34.6
M29	30.2	0 subcommunities.	M21a	34.1
M10	28.9	3 subcommunities.	M10a	32.8
M 1	28.0	0 subcommunities.	M 9a	32.0
M 2	27.6	2 subcommunities.	M15a	31.3
M11	27.0	2 subcommunities.	M11b	30.5
M15	26.7	4 subcommunities.	M21b	30.5
M 9	26.3	2 subcommunities.	M29	30.2
M17	22.1	3 subcommunities.	M 2a	29.2

The matching procedures have produced the following results for sample Q6

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M 6	35.8	4 subcommunities.	M 6a	38.2
M 4	35.8	0 subcommunities.	M 6b	37.1
M29	34.1	0 subcommunities.	M 6	35.8
M35	32.7	0 subcommunities.	M 4	35.8
M 9	31.3	2 subcommunities.	M29	34.1
M 5	30.0	0 subcommunities.	M35	32.7
M 7	28.6	2 subcommunities.	M 9	31.3
M25	27.6	3 subcommunities.	M 6d	30.2
M21	27.2	2 subcommunities.	M 5	30.0
M 8	23.9	0 subcommunities.	M21b	30.0

The matching procedures have produced the following results for sample Q7

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M 4	35.4	0 subcommunities.	M21b	36.2
W 4	31.9	3 subcommunities.	M 4	35.4
M21	29.9	2 subcommunities.	W 4c	34.4
M 2	28.9	2 subcommunities.	M 2b	33.8
M 6	24.9	4 subcommunities.	W 4	31.9
M25	22.7	3 subcommunities.	M21	29.9
S 9	22.5	2 subcommunities.	M 2	28.9
M 5	21.5	0 subcommunities.	M 6d	28.1
M15	21.1	4 subcommunities.	M25a	27.0
W 2	16.4	2 subcommunities.	M 6a	25.1

The matching procedures have produced the following results for sample Q8

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M 2	48.0	2 subcommunities.	M 2b	52.9
M 4	45.5	0 subcommunities.	M21b	50.3
M21	44.0	2 subcommunities.	M 2	48.0
M 6	36.7	4 subcommunities.	M 4	45.5
M 3	32.8	0 subcommunities.	M21	44.0
W 4	32.1	3 subcommunities.	W 4c	42.0
M15	29.5	4 subcommunities.	M 6a	39.8
M 5	29.1	0 subcommunities.	M25a	39.3
M18	27.5	2 subcommunities.	M 6	36.7
M25	24.0	3 subcommunities.	M 6d	33.2

The matching procedures have produced the following results for sample Q9

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M21	36.7	2 subcommunities.	M21a	37.3
M14	33.6	0 subcommunities.	M21	36.7
M15	29.4	4 subcommunities.	M21b	35.2
M 1	26.9	0 subcommunities.	M14	33.6
M 2	26.2	2 subcommunities.	M15a	31.4
M29	24.9	0 subcommunities.	M 2a	30.5
M16	24.4	4 subcommunities.	M16c	30.3
M10	24.2	3 subcommunities.	M15	29.4
M 9	23.9	2 subcommunities.	M10a	27.9
M11	22.5	2 subcommunities.	M 1	26.9

The matching procedures have produced the following results for sample Q10

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M 1	35.4	0 subcommunities.	S 4c	44.5
M29	28.9	0 subcommunities.	M 1	35.4
S 4	28.8	4 subcommunities.	M 2a	31.7
M21	27.7	2 subcommunities.	S 9b	30.5
M 9	27.5	2 subcommunities.	M21a	29.6
M 2	27.5	2 subcommunities.	M29	28.9
S 9	27.1	2 subcommunities.	S 4	28.8
S27	24.9	2 subcommunities.	M 9a	28.3
M14	24.1	0 subcommunities.	M21	27.7
M 4	22.7	0 subcommunities.	M 9	27.5

The matching procedures have produced the following results for sample Q11

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M11	27.8	2 subcommunities.	M11b	29.5
M10	22.9	3 subcommunities.	M 9a	29.2
M 9	22.4	2 subcommunities.	M10a	28.2
M29	21.7	0 subcommunities.	M11	27.8
S 9	19.9	2 subcommunities.	M10	22.9
M 8	17.7	0 subcommunities.	M 9	22.4
M 4	17.5	0 subcommunities.	M11a	22.2
M14	15.6	0 subcommunities.	M29	21.7
M 1	15.2	0 subcommunities.	M10c	20.0
M21	14.6	2 subcommunities.	S 9	19.9

The matching procedures have produced the following results for sample Q12

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	31.3	0 subcommunities.	M14	31.3
M10	24.1	3 subcommunities.	S 2b	27.5
M15	21.2	4 subcommunities.	M 9a	25.0
M11	20.8	2 subcommunities.	M10	24.1
M 1	19.9	0 subcommunities.	M10a	24.0
M 9	19.1	2 subcommunities.	M15a	22.0
S 2	18.8	2 subcommunities.	M15	21.2
H 5	16.8	2 subcommunities.	M11	20.8
M21	16.6	2 subcommunities.	M11b	20.0
M29	15.9	0 subcommunities.	M 1	19.9

The matching procedures have produced the following results for sample Q13

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M10	31.7	3 subcommunities.	M10a	37.7
M11	31.4	2 subcommunities.	M10	31.7
M29	24.5	0 subcommunities.	M11b	31.6
M 9	24.2	2 subcommunities.	M11	31.4
M 8	23.1	0 subcommunities.	M 9a	31.1
M14	22.9	0 subcommunities.	M11a	29.5
M15	19.4	4 subcommunities.	M15a	27.1
M12	18.6	0 subcommunities.	M10c	25.0
M38	18.5	0 subcommunities.	M29	24.5
M37	17.3	0 subcommunities.	M 9	24.2

The matching procedures have produced the following results for sample Q14

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	41.9	0 subcommunities.	M14	41.9
M21	41.4	2 subcommunities.	M21b	41.7
M29	36.1	0 subcommunities.	M21a	41.5
M15	35.2	4 subcommunities.	M21	41.4
M 1	33.5	0 subcommunities.	M15a	38.1
M 9	30.9	2 subcommunities.	M29	36.1
M10	29.9	3 subcommunities.	M10a	35.4
M11	29.3	2 subcommunities.	M15	35.2
M 2	29.1	2 subcommunities.	M 1	33.5
M17	28.2	3 subcommunities.	M 2a	33.0

The matching procedures have produced the following results for sample JUGGER HOWE Q1

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	37.2	3 subcommunities.	M15a	38.6
H 5	35.3	2 subcommunities.	M13b	37.4
M25	35.2	3 subcommunities.	M13	37.2
M24	33.9	3 subcommunities.	M13c	36.5
M15	33.6	4 subcommunities.	M13a	36.1
M14	32.3	0 subcommunities.	H 5	35.3
M26	32.1	2 subcommunities.	M25	35.2
M10	30.0	3 subcommunities.	M24	33.9
M 9	26.7	2 subcommunities.	H 5a	33.9
M 8	25.1	0 subcommunities.	M15	33.6

The matching procedures have produced the following results for sample Q2

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
H 5	44.4	2 subcommunities.	H 5	44.4
M25	40.9	3 subcommunities.	M15a	43.8
M15	37.6	4 subcommunities.	M 6d	43.4
M 6	33.1	4 subcommunities.	H 5a	42.7
M14	32.1	0 subcommunities.	M25	40.9
M24	30.4	3 subcommunities.	H 5b	40.3
M21	30.1	2 subcommunities.	M25b	37.9
M26	29.2	2 subcommunities.	M25a	37.7
H 4	28.1	4 subcommunities.	M15	37.6
M17	25.9	3 subcommunities.	M15b	37.4

The matching procedures have produced the following results for sample Q3

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M21	50.1	2 subcommunities.	M21b	52.6
M14	44.1	0 subcommunities.	M21	50.1
M15	43.0	4 subcommunities.	M21a	48.1
M17	42.4	3 subcommunities.	M17a	44.9
M16	40.5	4 subcommunities.	M16a	44.8
M 2	38.0	2 subcommunities.	M25a	44.3
M18	37.9	2 subcommunities.	M14	44.1
M25	32.9	3 subcommunities.	M15b	43.8
H 3	32.2	3 subcommunities.	M15	43.0
H 4	31.0	4 subcommunities.	M17	42.4

The matching procedures have produced the following results for sample Q4

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	47.3	0 subcommunities.	M15a	50.4
M15	45.2	4 subcommunities.	M17a	48.8
M21	43.1	2 subcommunities.	M14	47.3
M17	42.4	3 subcommunities.	M15b	45.9
M25	38.3	3 subcommunities.	M15	45.2
H 5	36.3	2 subcommunities.	M21b	43.4
M16	31.6	4 subcommunities.	M21	43.1
M18	29.4	2 subcommunities.	M17	42.4
M 6	28.8	4 subcommunities.	M21a	40.4
M13	27.6	3 subcommunities.	M 6d	39.2

The matching procedures have produced the following results for sample Q5

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M25	28.6	3 subcommunities.	M13a	34.5
M22	28.1	4 subcommunities.	M 6d	34.1
M24	27.7	3 subcommunities.	W 4b	32.8
M13	25.3	3 subcommunities.	M22a	31.0
W 4	23.0	3 subcommunities.	M24a	29.7
M 6	22.6	4 subcommunities.	M25	28.6
M 4	21.8	0 subcommunities.	M22	28.1
M26	21.7	2 subcommunities.	M24	27.7
S 1	21.1	0 subcommunities.	M25c	27.4
M15	19.7	4 subcommunities.	M25a	26.8

The matching procedures have produced the following results for sample Q6

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	49.6	0 subcommunities.	M15a	51.3
M21	48.0	2 subcommunities.	M14	49.6
M15	41.2	4 subcommunities.	M21	48.0
M17	39.3	3 subcommunities.	M21b	47.1
M18	34.6	2 subcommunities.	M17a	44.7
M29	31.5	0 subcommunities.	M21a	44.2
M 6	28.7	4 subcommunities.	M15b	42.8
M 2	28.6	2 subcommunities.	M15	41.2
M16	28.0	4 subcommunities.	M17	39.3
M10	27.6	3 subcommunities.	M18a	38.0

The matching procedures have produced the following results for sample Q7

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	52.3	0 subcommunities.	M14	52.3
M21	48.1	2 subcommunities.	M21	48.1
M15	38.0	4 subcommunities.	M21b	47.9
M17	36.8	3 subcommunities.	M21a	46.9
H 5	35.5	2 subcommunities.	M15a	42.4
M16	34.2	4 subcommunities.	M17a	38.9
M18	32.1	2 subcommunities.	M18a	38.2
M 2	31.8	2 subcommunities.	M15b	38.0
M29	28.1	0 subcommunities.	M15	38.0
M25	25.5	3 subcommunities.	M16a	37.2

The matching procedures have produced the following results for sample Q8

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	47.8	0 subcommunities.	M15a	48.6
M10	38.8	3 subcommunities.	M14	47.8
M21	37.3	2 subcommunities.	M10a	44.2
M29	37.0	0 subcommunities.	M10	38.8
M15	36.0	4 subcommunities.	H 5b	38.6
H 5	34.2	2 subcommunities.	M15b	38.1
M17	30.1	3 subcommunities.	M21b	37.7
M13	29.4	3 subcommunities.	M21	37.3
M 6	27.4	4 subcommunities.	M29	37.0
M25	27.3	3 subcommunities.	M17a	36.5

The matching procedures have produced the following results for sample Q9

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M25	40.7	3 subcommunities.	M15a	44.2
M14	39.4	0 subcommunities.	M25	40.7
M15	39.0	4 subcommunities.	M13a	40.3
H 5	37.6	2 subcommunities.	M14	39.4
M13	36.0	3 subcommunities.	M25a	39.2
M10	34.4	3 subcommunities.	M15	39.0
M24	33.9	3 subcommunities.	M10a	37.7
M26	32.5	2 subcommunities.	H 5	37.6
M 9	31.1	2 subcommunities.	M15b	37.1
M21	29.3	2 subcommunities.	H 5a	36.8

The matching procedures have produced the following results for sample Q10

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M15	37.2	4 subcommunities.	M15a	42.1
M14	34.2	0 subcommunities.	M13a	38.8
M17	34.1	3 subcommunities.	M17a	38.0
M21	32.7	2 subcommunities.	M15	37.2
M13	31.5	3 subcommunities.	M15b	37.1
M24	30.3	3 subcommunities.	M14	34.2
M25	30.0	3 subcommunities.	M21b	34.1
M18	28.8	2 subcommunities.	M17	34.1
H 5	27.0	2 subcommunities.	M24a	32.9
M16	24.9	4 subcommunities.	M21	32.7

The matching procedures have produced the following results for sample Q11

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M15	45.4	4 subcommunities.	M15b	45.9
M25	43.1	3 subcommunities.	M15	45.4
M17	38.3	3 subcommunities.	M15c	44.7
M21	38.3	2 subcommunities.	M21b	44.5
M16	35.0	4 subcommunities.	M25a	44.4
H 4	28.7	4 subcommunities.	M25	43.1
M18	28.4	2 subcommunities.	M15a	42.8
M14	28.4	0 subcommunities.	M17a	41.9
M24	27.3	3 subcommunities.	M16b	41.0
M 6	27.1	4 subcommunities.	M 6d	39.3

The matching procedures have produced the following results for sample Q12

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	42.5	0 subcommunities.	M15a	44.8
M21	38.7	2 subcommunities.	M14	42.5
M10	35.9	3 subcommunities.	M10a	40.8
M15	34.2	4 subcommunities.	M21	38.7
M17	29.7	3 subcommunities.	M21b	37.6
H 5	27.4	2 subcommunities.	M10	35.9
M11	26.2	2 subcommunities.	M21a	35.9
M 6	26.0	4 subcommunities.	M15b	34.4
M25	25.8	3 subcommunities.	M15	34.2
M29	25.7	0 subcommunities.	H 5b	33.4

The matching procedures have produced the following results for sample Q13

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M21	38.3	2 subcommunities.	M21b	39.0
M14	35.1	0 subcommunities.	M21	38.3
M 9	34.3	2 subcommunities.	M15a	37.9
M29	33.6	0 subcommunities.	M21a	37.2
M25	32.5	3 subcommunities.	M14	35.1
M 6	31.5	4 subcommunities.	M 6d	34.7
M13	30.4	3 subcommunities.	M13a	34.5
M24	29.5	3 subcommunities.	M 9	34.3
M15	28.7	4 subcommunities.	M29	33.6
M 5	26.7	0 subcommunities.	M15b	32.7

The matching procedures have produced the following results for sample Q14

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M21	50.8	2 subcommunities.	M21b	53.1
M15	41.7	4 subcommunities.	M21	50.8
M14	41.4	0 subcommunities.	M21a	49.3
M17	40.3	3 subcommunities.	M15a	47.6
M29	35.5	0 subcommunities.	M17a	44.4
M 6	33.4	4 subcommunities.	M15b	43.4
M16	33.0	4 subcommunities.	M15	41.7
M 9	32.6	2 subcommunities.	M14	41.4
M25	31.9	3 subcommunities.	M17	40.3
M18	31.7	2 subcommunities.	M25a	38.4

The matching procedures have produced the following results for sample Q15

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M15	48.4	4 subcommunities.	M15a	48.9
M17	40.3	3 subcommunities.	M15	48.4
M21	39.9	2 subcommunities.	M15b	48.0
M25	37.2	3 subcommunities.	M 6d	46.0
M14	37.1	0 subcommunities.	M17a	46.0
M 6	35.7	4 subcommunities.	M21b	42.7
M29	30.6	0 subcommunities.	M15c	40.9
M16	30.4	4 subcommunities.	M17	40.3
M18	25.9	2 subcommunities.	M21	39.9
H 4	25.7	4 subcommunities.	M25a	38.8

The matching procedures have produced the following results for sample Q16

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M21	54.3	2 subcommunities.	M21b	56.3
M14	47.9	0 subcommunities.	M21	54.3
M15	46.6	4 subcommunities.	M15a	50.7
M16	42.0	4 subcommunities.	M21a	49.9
M17	41.5	3 subcommunities.	M15b	48.5
M25	39.1	3 subcommunities.	M14	47.9
M29	35.0	0 subcommunities.	M25a	47.8
M 6	34.7	4 subcommunities.	M16b	47.3
H 5	31.7	2 subcommunities.	M15	46.6
H 4	31.5	4 subcommunities.	M17a	46.2

The matching procedures have produced the following results for sample Q17

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	50.7	0 subcommunities.	M15a	51.5
M21	45.9	2 subcommunities.	M14	50.7
M15	44.0	4 subcommunities.	M21b	47.9
M17	35.8	3 subcommunities.	M21	45.9
M25	34.3	3 subcommunities.	M15b	44.1
M 6	32.6	4 subcommunities.	M15	44.0
M10	30.6	3 subcommunities.	M 6d	42.0
H 5	29.7	2 subcommunities.	M21a	40.2
M16	29.1	4 subcommunities.	M25a	39.8
M29	23.9	0 subcommunities.	M17a	39.1

The matching procedures have produced the following results for sample Q18

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M14	47.7	0 subcommunities.	M14	47.7
M15	39.5	4 subcommunities.	M15a	44.1
M10	33.9	3 subcommunities.	M10a	41.7
M21	33.9	2 subcommunities.	M15	39.5
H 5	32.6	2 subcommunities.	M15b	36.2
M17	30.2	3 subcommunities.	M10	33.9
M11	28.6	2 subcommunities.	M21b	33.9
M25	26.5	3 subcommunities.	M21	33.9
M13	26.2	3 subcommunities.	M17a	33.4
M16	24.2	4 subcommunities.	H 5	32.6

The matching procedures have produced the following results for sample Q19

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M10	45.8	3 subcommunities.	M13b	47.8
M13	43.8	3 subcommunities.	M10	45.8
M24	37.5	3 subcommunities.	M10a	44.9
M11	34.6	2 subcommunities.	M13	43.8
M26	33.6	2 subcommunities.	M13a	43.4
M25	33.1	3 subcommunities.	M10b	43.3
H 5	31.9	2 subcommunities.	M13c	41.1
M14	31.3	0 subcommunities.	M11b	38.6
M 9	30.1	2 subcommunities.	M24	37.5
M22	28.7	4 subcommunities.	M24a	36.6

The matching procedures have produced the following results for sample Q20

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	39.7	3 subcommunities.	M13a	43.2
M24	36.0	3 subcommunities.	M13b	40.2
M25	33.0	3 subcommunities.	M13	39.7
M22	30.1	4 subcommunities.	M24	36.0
M 9	29.5	2 subcommunities.	M13c	35.3
SD15	28.8	4 subcommunities.	M24b	34.6
H 5	27.7	2 subcommunities.	M24a	33.7
SD14	27.1	4 subcommunities.	M25	33.0
M15	25.8	4 subcommunities.	M24c	31.4
M14	25.4	0 subcommunities.	M25c	30.9

The matching procedures have produced the following results for sample Q21

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	40.8	3 subcommunities.	M13c	44.3
M10	37.9	3 subcommunities.	M13	40.8
M11	31.0	2 subcommunities.	M13b	39.6
H 5	30.3	2 subcommunities.	M10b	38.7
M24	29.7	3 subcommunities.	M13a	38.3
M 9	29.4	2 subcommunities.	M10a	38.0
M26	28.5	2 subcommunities.	M10	37.9
M22	27.3	4 subcommunities.	M24a	37.6
M14	25.4	0 subcommunities.	M11b	34.2
SD14	22.5	4 subcommunities.	M26a	34.0

The matching procedures have produced the following results for sample Q22

Community code	co-efficient	
H 5	32.9	2 subcommunities.
M25	30.3	3 subcommunities.
M24	29.2	3 subcommunities.
H 3	26.0	3 subcommunities.
M14	25.7	0 subcommunities.
M13	24.4	3 subcommunities.
M16	22.8	4 subcommunities.
M21	22.5	2 subcommunities.
H 4	22.4	4 subcommunities.
M15	21.8	4 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M13a	33.2
H 5	32.9
M24a	32.2
M25c	30.6
M25	30.3
M25a	30.0
M24	29.2
H 5b	29.2
H 3a	29.1
H 5a	29.0

The matching procedures have produced the following results for sample Q23

Community code	co-efficient	
M14	43.8	0 subcommunities.
M21	40.5	2 subcommunities.
M10	40.3	3 subcommunities.
M15	37.5	4 subcommunities.
M11	35.2	2 subcommunities.
M 9	33.2	2 subcommunities.
H 5	30.9	2 subcommunities.
M29	30.7	0 subcommunities.
M17	30.6	3 subcommunities.
M25	28.9	3 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M15a	52.2
M10a	45.9
M14	43.8
M21b	42.4
M21	40.5
M10	40.3
M 9a	39.5
M21a	38.8
M15b	37.5
M15	37.5

The matching procedures have produced the following results for sample Q24

Community code	co-efficient	
M21	49.1	2 subcommunities.
M15	48.2	4 subcommunities.
M25	45.1	3 subcommunities.
M17	44.7	3 subcommunities.
M14	38.1	0 subcommunities.
M16	37.3	4 subcommunities.
H 5	35.4	2 subcommunities.
M18	32.7	2 subcommunities.
H 4	32.6	4 subcommunities.
M 6	30.4	4 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M21b	51.4
M17a	51.0
M21	49.1
M15	48.2
M15b	47.2
M16b	47.2
M25a	46.7
M15a	45.6
M25	45.1
M17	44.7

The matching procedures have produced the following results for sample Q25

Community code	co-efficient	
M14	46.3	0 subcommunities.
M21	42.9	2 subcommunities.
M10	39.5	3 subcommunities.
M15	36.9	4 subcommunities.
M11	33.4	2 subcommunities.
M17	33.1	3 subcommunities.
M29	32.4	0 subcommunities.
H 5	30.5	2 subcommunities.
M13	28.9	3 subcommunities.
M18	28.0	2 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M15a	49.2
M14	46.3
M10a	45.7
M21	42.9
M21a	42.5
M21b	41.9
M10	39.5
H 5b	37.0
M15	36.9
M17a	36.4

The matching procedures have produced the following results for sample Q26

Community code	co-efficient	
M14	47.9	0 subcommunities.
M10	41.8	3 subcommunities.
H 5	38.8	2 subcommunities.
M13	35.9	3 subcommunities.
M11	32.5	2 subcommunities.
M15	32.0	4 subcommunities.
M21	30.4	2 subcommunities.
M24	29.6	3 subcommunities.
M25	28.4	3 subcommunities.
M29	26.0	0 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M14	47.9
M10a	47.5
M15a	42.5
M10	41.8
H 5	38.8
M13b	37.9
H 5b	37.5
H 5a	37.0
M10b	36.2
M13	35.9

The matching procedures have produced the following results for sample Q27

Community code	co-efficient	
M14	38.3	0 subcommunities.
M21	35.2	2 subcommunities.
M15	32.2	4 subcommunities.
M17	30.2	3 subcommunities.
M18	28.6	2 subcommunities.
M10	27.8	3 subcommunities.
M13	26.5	3 subcommunities.
M 2	25.1	2 subcommunities.
M 9	23.2	2 subcommunities.
H 5	22.9	2 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M15a	39.1
M14	38.3
M21	35.2
M17a	33.0
M15	32.2
M10a	32.1
M21b	31.6
M21a	31.6
M18a	31.4
M17	30.2

The matching procedures have produced the following results for sample ROSEKIRK DALE Q1

Community code	co-efficient	
M22	25.7	4 subcommunities.
W 3	23.8	0 subcommunities.
S25	20.7	3 subcommunities.
S24	19.5	7 subcommunities.
SD15	19.2	4 subcommunities.
M13	18.9	3 subcommunities.
S 1	16.6	0 subcommunities.
M27	16.3	3 subcommunities.
W 5	16.1	3 subcommunities.
SD14	16.0	4 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M22a	27.0
M22	25.7
S25c	25.0
W 3	23.8
M22b	22.8
M22d	22.0
M22c	20.9
S25	20.7
SD15a	20.7
M13c	19.9

The matching procedures have produced the following results for sample Q2

Community code	co-efficient	
M13	40.7	3 subcommunities.
M24	37.3	3 subcommunities.
M25	32.4	3 subcommunities.
M26	32.0	2 subcommunities.
M22	31.6	4 subcommunities.
M10	31.2	3 subcommunities.
M 9	29.6	2 subcommunities.
H 5	28.8	2 subcommunities.
S24	25.3	7 subcommunities.
M11	24.9	2 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M13c	42.7
M13a	42.2
M24a	41.3
M13	40.7
M13b	39.6
M25c	38.3
M24	37.3
M10b	36.6
M24b	33.8
M25	32.4

The matching procedures have produced the following results for sample Q3

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	34.9	3 subcommunities.	M13a	40.8
M22	34.3	4 subcommunities.	M24a	35.4
SD15	33.4	4 subcommunities.	M13	34.9
M26	30.2	2 subcommunities.	M22b	34.7
M 9	29.5	2 subcommunities.	M22a	34.7
SD17	27.8	4 subcommunities.	M22	34.3
M24	27.7	3 subcommunities.	M13c	33.9
SD14	26.9	4 subcommunities.	M13b	33.8
S24	24.2	7 subcommunities.	SD15	33.4
M27	23.1	3 subcommunities.	SD15c	33.2

The matching procedures have produced the following results for sample Q4

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	30.5	4 subcommunities.	M22a	32.3
M26	26.9	2 subcommunities.	M24a	32.2
M13	26.5	3 subcommunities.	M22	30.5
W 3	25.5	0 subcommunities.	M13c	29.0
S25	25.1	3 subcommunities.	M26a	28.8
M27	24.7	3 subcommunities.	M13a	28.3
M24	24.0	3 subcommunities.	M22b	28.3
M 9	23.8	2 subcommunities.	S24c	28.0
SD15	22.8	4 subcommunities.	M26	26.9
S24	22.4	7 subcommunities.	M13	26.5

The matching procedures have produced the following results for sample Q5

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	41.6	3 subcommunities.	M13b	45.6
M10	33.2	3 subcommunities.	M13	41.6
M24	32.6	3 subcommunities.	M13a	40.3
M11	29.2	2 subcommunities.	M13c	39.1
M26	29.2	2 subcommunities.	M10b	38.0
M25	28.1	3 subcommunities.	M24a	36.0
M22	25.3	4 subcommunities.	M10a	34.0
H 5	24.7	2 subcommunities.	M10	33.2
M 9	24.5	2 subcommunities.	M24	32.6
SD15	22.9	4 subcommunities.	M24b	31.1

The matching procedures have produced the following results for sample Q6

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	39.3	4 subcommunities.	M22b	42.1
M13	36.8	3 subcommunities.	M22	39.3
M24	31.3	3 subcommunities.	M22a	38.7
SD15	29.6	4 subcommunities.	M13b	37.7
M 9	25.8	2 subcommunities.	M13	36.8
M26	25.3	2 subcommunities.	M13c	36.5
SD14	24.8	4 subcommunities.	M13a	35.7
W 3	24.8	0 subcommunities.	M22d	34.8
M27	24.6	3 subcommunities.	M24b	32.9
SD17	24.4	4 subcommunities.	M24a	32.6

The matching procedures have produced the following results for sample Q7

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	24.5	3 subcommunities.	M13a	32.5
H 5	19.0	2 subcommunities.	M24a	25.1
M24	18.6	3 subcommunities.	M13	24.5
M25	18.5	3 subcommunities.	M13c	24.3
M14	18.2	0 subcommunities.	M13b	22.7
M22	17.2	4 subcommunities.	S24f	19.4
M37	16.3	0 subcommunities.	S25c	19.1
M11	14.7	2 subcommunities.	H 5	19.0
S25	14.0	3 subcommunities.	M24	18.6
S24	14.0	7 subcommunities.	M25	18.5

The matching procedures have produced the following results for sample Q8

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	33.8	3 subcommunities.	M13a	36.9
SD15	29.3	4 subcommunities.	M13b	34.1
SD14	25.0	4 subcommunities.	M13	33.8
M24	23.9	3 subcommunities.	M13c	32.9
M37	23.3	0 subcommunities.	M24a	32.6
M22	23.2	4 subcommunities.	SD15c	31.6
M 9	22.3	2 subcommunities.	SD15	29.3
S24	21.9	7 subcommunities.	SD15d	28.3
M25	21.2	3 subcommunities.	S24f	28.0
S25	20.1	3 subcommunities.	SD15b	27.2

The matching procedures have produced the following results for sample Q9

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	39.5	3 subcommunities.	M13c	41.9
M24	32.6	3 subcommunities.	M24a	41.8
M25	29.0	3 subcommunities.	M13a	40.6
M10	28.5	3 subcommunities.	M13b	39.6
H 5	27.8	2 subcommunities.	M13	39.5
M26	27.7	2 subcommunities.	M25c	34.9
M11	26.8	2 subcommunities.	M24	32.6
M22	25.4	4 subcommunities.	M26a	31.6
M 9	24.6	2 subcommunities.	S24c	30.8
S24	23.1	7 subcommunities.	M10b	30.1

The matching procedures have produced the following results for sample Q10

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	38.0	3 subcommunities.	M13b	43.1
H 5	30.0	2 subcommunities.	M13c	38.4
M25	29.0	3 subcommunities.	M13	38.0
M10	28.9	3 subcommunities.	M13a	35.9
M24	28.1	3 subcommunities.	M24a	35.3
M11	26.2	2 subcommunities.	M10b	34.1
M26	23.5	2 subcommunities.	M25c	31.8
M 9	22.1	2 subcommunities.	M10a	30.2
M22	22.0	4 subcommunities.	H 5	30.0
SD14	20.4	4 subcommunities.	M11b	29.3

The matching procedures have produced the following results for sample SAND DALE (WEST) Q1

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	49.0	3 subcommunities.	M13b	58.5
M10	42.8	3 subcommunities.	M10b	51.6
H 5	33.2	2 subcommunities.	M13	49.0
M24	32.1	3 subcommunities.	M13c	46.7
M26	32.0	2 subcommunities.	M10	42.8
M11	31.9	2 subcommunities.	M10a	42.6
U15	29.3	0 subcommunities.	M13a	34.1
M22	28.3	4 subcommunities.	M11b	33.7
M38	27.1	0 subcommunities.	M24b	33.5
M 9	26.3	2 subcommunities.	H 5	33.2

The matching procedures have produced the following results for sample Q2

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M10	47.6	3 subcommunities.	M13b	54.8
M13	46.3	3 subcommunities.	M10b	52.5
M11	33.0	2 subcommunities.	M10	47.6
M24	30.1	3 subcommunities.	M10a	47.0
M 9	29.5	2 subcommunities.	M13	46.3
M26	28.9	2 subcommunities.	M13c	44.1
M22	28.4	4 subcommunities.	M11b	37.5
M38	26.8	0 subcommunities.	M13a	33.9
H 5	26.5	2 subcommunities.	M11	33.0
U15	23.8	0 subcommunities.	M22b	32.8

The matching procedures have produced the following results for sample Q3

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	46.5	4 subcommunities.	M22b	50.9
M13	40.5	3 subcommunities.	M22	46.5
M24	36.8	3 subcommunities.	M13b	45.5
M 9	36.0	2 subcommunities.	M22a	44.0
SD17	32.6	4 subcommunities.	M13	40.5
M26	31.9	2 subcommunities.	M22d	39.5
SD15	31.2	4 subcommunities.	M24b	39.3
M23	29.8	2 subcommunities.	M13c	39.3
MG 8	28.8	0 subcommunities.	M 9b	38.6
M10	27.4	3 subcommunities.	M13a	37.6

The matching procedures have produced the following results for sample Q4

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	37.6	3 subcommunities.	M26b	39.2
M26	36.3	2 subcommunities.	M24	37.6
M13	34.2	3 subcommunities.	M13a	36.6
M22	31.2	4 subcommunities.	M13b	36.5
M25	29.7	3 subcommunities.	M24a	36.3
CG 2	27.6	4 subcommunities.	M26	36.3
CG 9	25.5	5 subcommunities.	M24b	35.3
CG 8	24.1	3 subcommunities.	M13	34.2
SD15	23.5	4 subcommunities.	M22b	33.6
CG10	23.0	3 subcommunities.	M26a	31.8

The matching procedures have produced the following results for sample Q5

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	30.6	4 subcommunities.	M22a	34.4
SD15	26.5	4 subcommunities.	SD15a	32.4
S25	25.2	3 subcommunities.	S25c	31.8
S 1	23.6	0 subcommunities.	M22	30.6
M13	23.4	3 subcommunities.	SD15d	28.6
M 9	22.9	2 subcommunities.	M13a	28.4
S 2	22.6	2 subcommunities.	M22c	27.9
SD17	22.4	4 subcommunities.	SD15	26.5
M24	21.6	3 subcommunities.	M24a	26.2
W 3	21.3	0 subcommunities.	M22d	25.6

The matching procedures have produced the following results for sample Q6

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
S 9	33.9	2 subcommunities.	S 9	33.9
S 2	28.6	2 subcommunities.	S12b	32.3
S11	27.4	3 subcommunities.	S25c	32.0
S25	27.3	3 subcommunities.	S 9a	32.0
S27	26.1	2 subcommunities.	S12d	30.9
M 9	21.1	2 subcommunities.	S 4b	29.7
S12	20.6	4 subcommunities.	S 2	28.6
S 4	20.2	4 subcommunities.	S11	27.4
S24	18.9	7 subcommunities.	S 2b	27.4
W 1	18.8	0 subcommunities.	S25	27.3

The matching procedures have produced the following results for sample Q7

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
W 3	27.3	0 subcommunities.	W 5c	29.7
M37	23.0	0 subcommunities.	W 3	27.3
W 5	22.5	3 subcommunities.	M37	23.0
W 1	21.6	0 subcommunities.	W 5	22.5
W 7	20.5	3 subcommunities.	W 7b	21.7
M22	18.8	4 subcommunities.	W 5a	21.6
M27	18.0	3 subcommunities.	W 1	21.6
OV26	17.3	5 subcommunities.	W 7a	20.7
W 6	16.9	4 subcommunities.	W 7	20.5
M 9	16.0	2 subcommunities.	M 9b	19.7

The matching procedures have produced the following results for sample Q8

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	43.8	3 subcommunities.	M13b	47.5
M10	37.6	3 subcommunities.	M10b	44.5
M26	36.2	2 subcommunities.	M13	43.8
M24	33.8	3 subcommunities.	M13c	42.4
M11	31.3	2 subcommunities.	M13a	40.6
M22	30.1	4 subcommunities.	M10a	39.3
H 5	28.6	2 subcommunities.	M10	37.6
M25	27.4	3 subcommunities.	M26	36.2
M 9	26.4	2 subcommunities.	M26b	35.8
M38	25.3	0 subcommunities.	M26a	35.2

The matching procedures have produced the following results for sample Q9

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M10	45.8	3 subcommunities.	M13b	52.8
M13	45.2	3 subcommunities.	M10b	49.4
M11	38.5	2 subcommunities.	M10	45.8
M26	35.2	2 subcommunities.	M13	45.2
M24	33.2	3 subcommunities.	M10a	44.6
H 5	32.8	2 subcommunities.	M13c	42.4
M38	28.4	0 subcommunities.	M11b	40.4
U15	27.4	0 subcommunities.	M11	38.5
M22	25.6	4 subcommunities.	M13a	36.2
M25	25.4	3 subcommunities.	M24b	35.8

The matching procedures have produced the following results for sample Q10

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	43.3	3 subcommunities.	M13b	47.0
M26	33.2	2 subcommunities.	M13	43.3
M24	31.9	3 subcommunities.	M13c	42.4
M10	31.4	3 subcommunities.	M10b	37.9
M22	31.3	4 subcommunities.	M13a	37.9
M11	28.7	2 subcommunities.	M26	33.2
M 9	28.5	2 subcommunities.	M24b	32.7
M25	23.9	3 subcommunities.	M26b	32.3
H 5	22.6	2 subcommunities.	M26a	32.1
M38	22.2	0 subcommunities.	M24	31.9

The matching procedures have produced the following results for sample Q11

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	43.6	3 subcommunities.	M13b	45.6
M13	43.1	3 subcommunities.	M24	43.6
M26	40.5	2 subcommunities.	M13	43.1
M25	37.3	3 subcommunities.	M24b	43.0
M22	36.6	4 subcommunities.	M13a	42.8
M10	30.4	3 subcommunities.	M26b	42.6
M23	29.5	2 subcommunities.	M26	40.5
M 9	27.6	2 subcommunities.	M25b	39.3
H 5	26.6	2 subcommunities.	M24c	37.6
M 6	25.7	4 subcommunities.	M23a	37.5

The matching procedures have produced the following results for sample Q12

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	46.0	3 subcommunities.	M13b	53.2
M10	39.5	3 subcommunities.	M10b	46.2
M24	30.3	3 subcommunities.	M13	46.0
M26	29.2	2 subcommunities.	M13c	45.9
M11	28.6	2 subcommunities.	M10a	41.0
H 5	28.2	2 subcommunities.	M10	39.5
M 9	26.5	2 subcommunities.	M13a	39.3
M22	26.4	4 subcommunities.	M24a	33.8
M38	23.5	0 subcommunities.	M11b	33.1
U15	22.9	0 subcommunities.	M24	30.3

The matching procedures have produced the following results for sample Q13

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	39.6	3 subcommunities.	M22b	43.6
M22	38.0	4 subcommunities.	M26b	42.5
M26	38.0	2 subcommunities.	M13b	41.7
M13	36.4	3 subcommunities.	M24b	40.3
M25	30.2	3 subcommunities.	M24	39.6
MG 8	29.3	0 subcommunities.	M22	38.0
M23	26.9	2 subcommunities.	M26	38.0
MG 5	26.5	3 subcommunities.	M13	36.4
MG 4	24.7	0 subcommunities.	MG 5c	36.3
MG 9	24.6	2 subcommunities.	M22a	35.2

The matching procedures have produced the following results for sample Q14

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	48.0	3 subcommunities.	M24	48.0
M26	42.1	2 subcommunities.	M24b	46.0
M25	41.0	3 subcommunities.	M24a	44.8
M22	38.9	4 subcommunities.	M26b	44.4
M13	35.1	3 subcommunities.	M25c	43.8
M23	31.5	2 subcommunities.	M26	42.1
M27	27.4	3 subcommunities.	M25b	41.9
U 4	23.8	5 subcommunities.	M13a	41.3
M 6	22.5	4 subcommunities.	M22a	41.3
W 4	22.0	3 subcommunities.	M25	41.0

The matching procedures have produced the following results for sample SAND DALE (EAST)Q15

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	47.6	3 subcommunities.	M26b	51.5
M26	47.0	2 subcommunities.	M22b	49.8
M22	41.2	4 subcommunities.	M24b	48.8
M13	39.4	3 subcommunities.	M24	47.6
M25	33.2	3 subcommunities.	M26	47.0
M23	31.0	2 subcommunities.	M13b	43.3
MG 8	30.9	0 subcommunities.	M22	41.2
M10	30.3	3 subcommunities.	M13	39.4
MG 4	27.4	0 subcommunities.	M24a	39.2
M 9	27.0	2 subcommunities.	M22a	38.9

The matching procedures have produced the following results for sample Q16

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M10	36.4	3 subcommunities.	M10b	36.4
M11	28.1	2 subcommunities.	M10	36.4
M13	25.6	3 subcommunities.	M10a	33.7
M26	24.3	2 subcommunities.	M11b	32.6
M14	23.8	0 subcommunities.	M13b	28.4
M 9	23.7	2 subcommunities.	M11	28.1
SD14	22.7	4 subcommunities.	M13c	27.4
H 5	22.1	2 subcommunities.	M 9a	25.6
M38	18.6	0 subcommunities.	M13	25.6
SD13	16.2	2 subcommunities.	H 5b	24.7

The matching procedures have produced the following results for sample Q17

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	36.3	3 subcommunities.	M13b	42.2
M24	35.8	3 subcommunities.	M22b	40.9
M26	34.8	2 subcommunities.	M10b	39.1
M10	33.4	3 subcommunities.	M26b	36.6
MG 8	32.4	0 subcommunities.	M13	36.3
M22	31.3	4 subcommunities.	M24	35.8
M23	28.0	2 subcommunities.	M24b	35.7
SD17	26.9	4 subcommunities.	M26	34.8
M38	26.4	0 subcommunities.	M10	33.4
M25	26.0	3 subcommunities.	M13a	32.4

The matching procedures have produced the following results for sample Q18

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	49.8	3 subcommunities.	M24	49.8
M22	40.4	4 subcommunities.	M24b	48.9
M26	37.6	2 subcommunities.	M22b	47.6
M23	37.2	2 subcommunities.	M24c	44.0
M13	36.7	3 subcommunities.	M24a	42.3
M25	32.8	3 subcommunities.	M23a	41.7
SD15	30.0	4 subcommunities.	M22	40.4
MG 9	27.9	2 subcommunities.	M26b	40.0
MG 8	27.6	0 subcommunities.	M13b	38.5
M 9	26.7	2 subcommunities.	M13a	38.5

The matching procedures have produced the following results for sample Q19

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	47.6	3 subcommunities.	M13b	54.4
M10	40.0	3 subcommunities.	M13	47.6
SD14	36.6	4 subcommunities.	M13c	45.6
M24	36.3	3 subcommunities.	M10b	44.7
M22	36.1	4 subcommunities.	M10	40.0
M 9	32.1	2 subcommunities.	M13a	39.3
SD15	32.1	4 subcommunities.	M22b	38.0
M26	30.3	2 subcommunities.	M24b	37.8
M11	29.1	2 subcommunities.	M24a	37.8
H 5	28.9	2 subcommunities.	SD14	36.6

The matching procedures have produced the following results for sample Q20

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M26	43.3	2 subcommunities.	M26b	45.4
M24	40.5	3 subcommunities.	M13b	45.3
M13	39.9	3 subcommunities.	M26	43.3
M10	39.4	3 subcommunities.	M10b	43.1
M22	32.6	4 subcommunities.	M24	40.5
M25	32.1	3 subcommunities.	M24b	40.2
M38	29.6	0 subcommunities.	M13	39.9
SD14	28.7	4 subcommunities.	M10	39.4
M11	28.1	2 subcommunities.	M22b	38.3
M 9	27.6	2 subcommunities.	M13a	37.7

The matching procedures have produced the following results for sample Q21

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	46.4	3 subcommunities.	M13b	51.8
M26	46.1	2 subcommunities.	M22b	51.0
M13	44.1	3 subcommunities.	M26b	49.7
M22	41.3	4 subcommunities.	M24b	48.8
M10	35.2	3 subcommunities.	M24	46.4
M25	31.2	3 subcommunities.	M26	46.1
MG 8	30.5	0 subcommunities.	M13	44.1
M 9	28.3	2 subcommunities.	M22	41.3
MG 4	28.1	0 subcommunities.	M10b	41.2
MG 9	28.0	2 subcommunities.	M24a	39.9

The matching procedures have produced the following results for sample Q22

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	38.6	3 subcommunities.	M13b	38.9
M 9	38.1	2 subcommunities.	M13	38.6
M22	36.5	4 subcommunities.	M13a	38.5
M10	34.7	3 subcommunities.	M 9	38.1
M24	34.3	3 subcommunities.	M22b	37.9
SD14	33.8	4 subcommunities.	SD17d	37.7
SD15	31.8	4 subcommunities.	M13c	37.4
SD17	31.6	4 subcommunities.	M 9b	36.6
M26	31.6	2 subcommunities.	M22	36.5
M38	26.0	0 subcommunities.	M22a	36.2

The matching procedures have produced the following results for sample Q23

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	47.1	4 subcommunities.	M22a	50.0
SD15	42.1	4 subcommunities.	M22	47.1
M24	39.5	3 subcommunities.	SD15a	43.4
M23	38.4	2 subcommunities.	M22b	43.3
W 3	35.0	0 subcommunities.	SD15	42.1
M 9	33.3	2 subcommunities.	M23a	42.0
M13	33.3	3 subcommunities.	SD15b	41.7
SD14	32.8	4 subcommunities.	M22c	41.7
SD17	32.4	4 subcommunities.	SD15c	41.7
S27	31.4	2 subcommunities.	M13a	40.5

The matching procedures have produced the following results for sample SAND DALE (NORTH - NON SSSI)Q1

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M37	24.6	0 subcommunities.	M13b	28.1
M13	23.1	3 subcommunities.	M37	24.6
M22	21.0	4 subcommunities.	M13	23.1
SD16	17.1	4 subcommunities.	M13a	21.8
M11	16.8	2 subcommunities.	M22a	21.7
M10	16.1	3 subcommunities.	M22b	21.4
SD14	15.7	4 subcommunities.	M22	21.0
M38	15.5	0 subcommunities.	M10b	20.9
CG 6	15.4	2 subcommunities.	M13c	20.5
M26	14.0	2 subcommunities.	M10c	19.7

The matching procedures have produced the following results for sample Q2

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	39.4	3 subcommunities.	M13b	43.3
M10	31.8	3 subcommunities.	M13	39.4
M11	30.8	2 subcommunities.	M13c	38.1
M26	27.1	2 subcommunities.	M10b	38.0
H 5	26.2	2 subcommunities.	M11b	32.9
SD14	25.6	4 subcommunities.	M10a	32.5
M22	25.5	4 subcommunities.	M10	31.8
M 9	25.1	2 subcommunities.	M13a	31.3
M38	23.6	0 subcommunities.	M11	30.8
U15	22.4	0 subcommunities.	M11a	27.5

The matching procedures have produced the following results for sample Q3

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	36.5	3 subcommunities.	M13b	42.7
M22	33.0	4 subcommunities.	M13	36.5
M26	32.0	2 subcommunities.	M22b	36.5
SD15	29.0	4 subcommunities.	M13c	35.5
M24	28.8	3 subcommunities.	M10b	35.1
M10	28.6	3 subcommunities.	M26a	34.1
M 9	28.0	2 subcommunities.	M22	33.0
M11	26.1	2 subcommunities.	M13a	32.6
M25	25.3	3 subcommunities.	M26	32.0
SD14	24.7	4 subcommunities.	M22a	31.4

The matching procedures have produced the following results for sample Q4

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	34.7	4 subcommunities.	M13b	37.2
M13	34.5	3 subcommunities.	M13a	36.6
M26	32.7	2 subcommunities.	M22b	36.4
M24	28.9	3 subcommunities.	M22a	36.1
M10	27.7	3 subcommunities.	M22	34.7
M11	25.9	2 subcommunities.	M13	34.5
SD15	25.4	4 subcommunities.	M26b	33.9
M37	24.1	0 subcommunities.	M10b	32.9
M38	23.0	0 subcommunities.	M26	32.7
M25	22.9	3 subcommunities.	SD15d	31.3

The matching procedures have produced the following results for sample Q5

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	32.6	3 subcommunities.	M13b	37.9
M26	29.8	2 subcommunities.	M10b	34.8
M10	29.5	3 subcommunities.	M13	32.6
M24	28.2	3 subcommunities.	M22b	31.3
SD14	26.9	4 subcommunities.	M26	29.8
M22	26.7	4 subcommunities.	M10	29.5
M11	26.4	2 subcommunities.	M26b	29.1
SD15	26.4	4 subcommunities.	M13a	28.9
M25	24.9	3 subcommunities.	M24b	28.8
SD17	23.3	4 subcommunities.	SD14b	28.4

The matching procedures have produced the following results for sample Q6

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	44.2	3 subcommunities.	M13b	50.4
M26	43.0	2 subcommunities.	M24a	45.0
M24	42.9	3 subcommunities.	M13	44.2
M10	39.3	3 subcommunities.	M26	43.0
M22	33.2	4 subcommunities.	M24	42.9
H 5	31.2	2 subcommunities.	M13c	42.8
M 9	29.1	2 subcommunities.	M24b	42.5
M11	28.2	2 subcommunities.	M26b	41.9
M25	28.0	3 subcommunities.	M10b	41.6
SD14	25.3	4 subcommunities.	M13a	39.7

The matching procedures have produced the following results for sample Q7

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	50.9	3 subcommunities.	M13b	53.9
M10	41.9	3 subcommunities.	M13	50.9
M26	40.5	2 subcommunities.	M10b	50.0
M24	39.4	3 subcommunities.	M13c	47.4
M22	37.6	4 subcommunities.	M13a	45.8
M11	34.1	2 subcommunities.	M10a	42.0
M 9	31.1	2 subcommunities.	M10	41.9
M38	29.6	0 subcommunities.	M24b	40.7
H 5	29.0	2 subcommunities.	M26	40.5
SD14	25.7	4 subcommunities.	M24a	40.3

The matching procedures have produced the following results for sample TROUTSDALE Q1

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	47.4	3 subcommunities.	M13b	53.2
M10	42.8	3 subcommunities.	M10b	49.3
H 5	33.5	2 subcommunities.	M13c	48.5
M26	33.3	2 subcommunities.	M13	47.4
M24	32.4	3 subcommunities.	M10	42.8
M11	31.2	2 subcommunities.	M10a	41.5
M22	28.5	4 subcommunities.	M13a	35.6
M 9	28.4	2 subcommunities.	M11b	34.6
M38	27.9	0 subcommunities.	M24b	33.6
M14	22.9	0 subcommunities.	H 5	33.5

The matching procedures have produced the following results for sample Q2

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	50.4	3 subcommunities.	M13b	53.4
M10	40.3	3 subcommunities.	M13c	53.3
M22	34.9	4 subcommunities.	M13	50.4
M24	33.0	3 subcommunities.	M10b	45.9
M 9	32.4	2 subcommunities.	M13a	41.7
M11	31.8	2 subcommunities.	M10	40.3
M26	30.7	2 subcommunities.	M10a	38.6
H 5	29.4	2 subcommunities.	M22b	36.9
M38	28.8	0 subcommunities.	M22	34.9
SD14	27.8	4 subcommunities.	M22a	34.4

The matching procedures have produced the following results for sample Q3

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	38.7	4 subcommunities.	M22b	40.9
SD17	33.1	4 subcommunities.	M22a	40.4
M13	31.8	3 subcommunities.	M22	38.7
SD15	31.6	4 subcommunities.	M13a	36.5
M24	29.7	3 subcommunities.	SD17a	35.3
M26	29.4	2 subcommunities.	SD17b	34.2
SD14	29.3	4 subcommunities.	SD17	33.1
MG 8	29.1	0 subcommunities.	M22c	32.9
M 9	28.8	2 subcommunities.	SD15c	32.9
MG10	28.7	3 subcommunities.	M 9b	32.1

The matching procedures have produced the following results for sample Q4

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	47.2	3 subcommunities.	M13b	50.5
M24	38.2	3 subcommunities.	M13c	47.2
M22	37.9	4 subcommunities.	M13	47.2
M 9	37.8	2 subcommunities.	M10b	41.5
M10	36.3	3 subcommunities.	M24a	41.3
M11	28.7	2 subcommunities.	M13a	40.1
SD14	28.3	4 subcommunities.	M22b	39.0
M26	27.8	2 subcommunities.	M24	38.2
SD15	26.9	4 subcommunities.	M22a	38.0
M23	26.5	2 subcommunities.	M22	37.9

The matching procedures have produced the following results for sample Q5

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
MG 8	45.7	0 subcommunities.	M22b	47.7
MG 4	44.0	0 subcommunities.	MG 8	45.7
MG10	40.0	3 subcommunities.	MG 4	44.0
SD17	39.5	4 subcommunities.	SD17a	42.5
MG 9	39.3	2 subcommunities.	MG 5c	41.1
M23	37.7	2 subcommunities.	MG10	40.0
MG 5	36.5	3 subcommunities.	M23a	39.6
M22	35.9	4 subcommunities.	SD17	39.5
M24	34.4	3 subcommunities.	MG 9a	39.4
MG12	32.6	2 subcommunities.	MG 9	39.3

The matching procedures have produced the following results for sample Q6

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	47.4	4 subcommunities.	M22b	54.3
M24	44.9	3 subcommunities.	M22	47.4
MG 8	42.1	0 subcommunities.	M24b	45.6
MG 4	39.7	0 subcommunities.	M24	44.9
M26	38.3	2 subcommunities.	M22a	44.1
M13	36.8	3 subcommunities.	MG 8	42.1
MG 5	33.6	3 subcommunities.	M26b	40.6
M23	33.1	2 subcommunities.	M24a	40.6
MG 9	31.7	2 subcommunities.	MG 4	39.7
M25	31.1	3 subcommunities.	M13a	38.4

The matching procedures have produced the following results for sample Q7

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	51.4	4 subcommunities.	M22b	55.3
M24	48.4	3 subcommunities.	M22	51.4
M13	44.0	3 subcommunities.	M22a	48.6
M26	37.0	2 subcommunities.	M24b	48.6
M23	35.0	2 subcommunities.	M24	48.4
M25	34.0	3 subcommunities.	M22d	48.3
SD15	33.3	4 subcommunities.	M24a	46.0
W 3	33.1	0 subcommunities.	M13a	44.7
M 9	32.5	2 subcommunities.	M13	44.0
M27	31.9	3 subcommunities.	M13c	43.9

The matching procedures have produced the following results for sample Q8

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	50.8	3 subcommunities.	M24	50.8
M26	46.8	2 subcommunities.	M24b	50.0
M13	44.2	3 subcommunities.	M26b	48.7
M22	41.4	4 subcommunities.	M24a	47.8
M25	35.5	3 subcommunities.	M26	46.8
M 9	29.7	2 subcommunities.	M13a	45.0
M10	28.9	3 subcommunities.	M13	44.2
H 5	28.3	2 subcommunities.	M13b	43.8
M23	27.9	2 subcommunities.	M13c	43.3
SD15	27.7	4 subcommunities.	M22b	42.9

The matching procedures have produced the following results for sample Q9

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	48.0	3 subcommunities.	M24	48.0
M26	44.8	2 subcommunities.	M24b	46.9
M13	39.2	3 subcommunities.	M26b	46.3
M22	38.7	4 subcommunities.	M26	44.8
M25	35.8	3 subcommunities.	M22b	43.5
M23	32.2	2 subcommunities.	M13b	41.4
M 9	28.0	2 subcommunities.	M24c	41.2
M10	27.8	3 subcommunities.	M13a	39.3
MG 8	27.7	0 subcommunities.	M13	39.2
SD15	27.6	4 subcommunities.	M26a	38.9

The matching procedures have produced the following results for sample Q10

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M13	48.2	3 subcommunities.	M13b	53.0
M24	37.8	3 subcommunities.	M13	48.2
M26	37.1	2 subcommunities.	M13c	48.1
M10	35.9	3 subcommunities.	M10b	40.4
M22	33.4	4 subcommunities.	M13a	40.1
H 5	31.6	2 subcommunities.	M24b	39.3
M 9	27.1	2 subcommunities.	M24	37.8
SD14	26.7	4 subcommunities.	M26	37.1
M25	26.5	3 subcommunities.	M26b	36.9
M11	24.5	2 subcommunities.	M10	35.9

The matching procedures have produced the following results for sample Q11

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M24	43.2	3 subcommunities.	M13a	51.0
M13	42.5	3 subcommunities.	M24a	45.6
M22	41.8	4 subcommunities.	M24	43.2
M25	35.4	3 subcommunities.	M24b	42.6
M26	31.8	2 subcommunities.	M13	42.5
SD15	28.6	4 subcommunities.	M22	41.8
M 9	27.4	2 subcommunities.	M22a	41.8
M27	27.3	3 subcommunities.	M13c	40.9
S24	26.8	7 subcommunities.	M13b	40.3
S 4	25.9	4 subcommunities.	M22d	39.0

The matching procedures have produced the following results for sample Q12

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	46.1	4 subcommunities.	M22b	46.7
M24	39.1	3 subcommunities.	M22	46.1
M26	36.1	2 subcommunities.	M22a	45.7
M23	34.3	2 subcommunities.	M26b	40.0
M13	33.4	3 subcommunities.	M24	39.1
M27	33.0	3 subcommunities.	M24b	39.1
M28	30.4	3 subcommunities.	M22c	38.5
MG 8	30.1	0 subcommunities.	M13a	37.4
MG10	27.4	3 subcommunities.	M28a	37.0
M25	27.1	3 subcommunities.	M23a	36.5

The matching procedures have produced the following results for sample Q13

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
MG 9	39.0	2 subcommunities.	MG 9	39.0
MG10	36.0	3 subcommunities.	M28a	37.1
M23	33.6	2 subcommunities.	M27c	36.5
M27	32.0	3 subcommunities.	MG10	36.0
MG 8	32.0	0 subcommunities.	MG 9a	35.8
M28	31.7	3 subcommunities.	MG10a	35.7
M22	30.1	4 subcommunities.	M23a	35.2
MG 4	29.4	0 subcommunities.	M22b	33.8
W 1	27.5	0 subcommunities.	M23	33.6
M26	27.1	2 subcommunities.	M22a	33.0

The matching procedures have produced the following results for sample Q14

Community code	co-efficient		Matches against sub-communities. Community code	co-efficient
M22	44.3	4 subcommunities.	M22b	50.4
M24	36.8	3 subcommunities.	M22a	44.7
M23	36.3	2 subcommunities.	M22	44.3
M27	34.8	3 subcommunities.	M23a	38.9
M26	34.5	2 subcommunities.	M26b	38.7
MG 9	32.3	2 subcommunities.	M24b	38.4
MG 8	31.4	0 subcommunities.	M24	36.8
MG 4	29.6	0 subcommunities.	M28a	36.4
M28	28.8	3 subcommunities.	M23	36.3
SD17	28.2	4 subcommunities.	M27c	36.3

The matching procedures have produced the following results for sample Q15

Community code	co-efficient	
W 3	37.1	0 subcommunities.
M22	36.9	4 subcommunities.
M23	34.7	2 subcommunities.
SD17	33.2	4 subcommunities.
M26	32.4	2 subcommunities.
M27	30.7	3 subcommunities.
W 1	29.2	0 subcommunities.
M 9	27.8	2 subcommunities.
W 5	26.8	3 subcommunities.
M24	26.6	3 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M22b	39.5
W 3	37.1
M22	36.9
M26b	35.7
M22a	35.7
M23b	34.9
M23	34.7
M23a	34.0
M27c	33.5
SD17	33.2

The matching procedures have produced the following results for sample Q16

Community code	co-efficient	
M26	46.5	2 subcommunities.
M22	44.1	4 subcommunities.
M24	42.5	3 subcommunities.
M23	35.8	2 subcommunities.
M27	34.0	3 subcommunities.
M25	33.3	3 subcommunities.
M13	32.5	3 subcommunities.
W 3	31.9	0 subcommunities.
M 9	30.2	2 subcommunities.
SD15	28.6	4 subcommunities.

Matches against sub-communities.

Community code	co-efficient
M26b	49.8
M22b	47.2
M26	46.5
M22a	44.5
M22	44.1
M24b	43.6
M24	42.5
M23a	37.7
M25c	37.6
M26a	37.4

11. ANNEX 3: CONSTANCY TABLES

11.1 FEN BOG SAC M14

```
The matching procedures have produced the following results for
Q9 - Q14                                                              0

The N.V.C. communities most closely matching the test data are:

 1.    M14     coefficient =  41.6,   0 subcommunities.
 2.    M15     coefficient =  39.0,   4 subcommunities.
 3.    M 1     coefficient =  38.4,   0 subcommunities.
 4.    M29     coefficient =  38.2,   0 subcommunities.
 5.    M11     coefficient =  37.9,   2 subcommunities.
 6.    M10     coefficient =  35.0,   3 subcommunities.
 7.    M21     coefficient =  34.1,   2 subcommunities.
 8.    M 2     coefficient =  32.9,   2 subcommunities.
 9.    M 9     coefficient =  32.2,   2 subcommunities.
10.    M 6     coefficient =  29.2,   4 subcommunities.

Table of test data matched against diagnosis of  M14 , coefficient =  41.6
Schoenus nigricans-Narthecium ossifragum mire


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


1207 Schoenus nigricans                          .  (  V)*     0  ( 8)
 876 Molinia caerulea                           II  (  V)*     3  ( 8)
 542 Erica tetralix                            III  (  V)*     3  ( 6)
 901 Narthecium ossifragum                       I  (  V)*     1  ( 5)
1973 Sphagnum subnitens                          .  ( IV)*     0  ( 5)
 163 Anagallis tenella                           .  ( IV)*     0  ( 3)
1571 Campylium stellatum                      III  ( IV)      5  ( 5)
2256 Aneura pinguis                           III  ( IV)      1  ( 4)
1947 Scorpidium scorpioides                    II  ( IV)*     5  ( 5)
2700 Sphagnum auriculatum var auriculatum        .  ( IV)*     0  ( 4)
2695 Hypnum jutlandicum                          .  (III)*     0  ( 3)
2164 Kurzia pauciflora                           .  (III)*     0  ( 2)
 494 Drosera rotundifolia                      III  (III)      1  ( 2)
 719 Juncus acutiflorus                          .  ( II)*     0  ( 4)
2814 Calypogeia sp                               .  ( II)*     0  ( 2)
 278 Calluna vulgaris                            .  ( II)*     0  ( 4)
1972 Sphagnum papillosum                         .  ( II)*     0  ( 4)
 546 Eriophorum angustifolium                   II  ( II)      2  ( 3)
 339 Carex panicea                              II  ( II)      1  ( 2)
 508 Eleocharis multicaulis                      .  ( II)*     0  ( 3)
 493 Drosera intermedia                          .  ( II)*     0  ( 2)
2254 Riccardia multifida                         .  ( II)*     0  ( 2)
 969 Pinguicula lusitanica                       .  ( II)*     0  ( 3)
1046 Potentilla erecta                           .  ( II)*     0  ( 2)
1971 Sphagnum palustre                           .  ( II)*     0  ( 4)
1109 Rhynchospora alba                        III  ( II)      5  ( 2)*
 893 Myrica gale                              III  ( II)      5  ( 4)*
 994 Polygala serpyllifolia                      .  (  I)      0  ( 2)
2218 Odontoschisma sphagni                       .  (  I)      0  ( 2)
1658 Drepanocladus revolvens                  III  (  I)*     5  ( 2)*
1984 Sphagnum tenellum                           .  (  I)      0  ( 1)
1364 Ulex gallii                                 .  (  I)      0  ( 1)
 726 Juncus bulbosus                          III  (  I)*     5  ( 1)*
```

```
1600 Ctenidium molluscum                          .  (  I)      0 ( 1)
2620 Pinus sylvestris (g)                         .  (  I)      0 ( 2)
 947 Pedicularis sylvatica                        .  (  I)      0 ( 1)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M14 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 312 Carex viridula ssp oedocarpa                 II   1
 862 Menyanthes trifoliata                       III   5
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	7.0	0	10
M14	17.0	15	19

****

The N.V.C subcommunities most closely matching the test data are:

1. M10a coefficient = 45.1
2. M14 coefficient = 41.6
3. M15 coefficient = 39.0
4. M 1 coefficient = 38.4
5. M15a coefficient = 38.3
6. M29 coefficient = 38.2
7. M11 coefficient = 37.9
8. M 2a coefficient = 35.3
9. M11b coefficient = 35.2
10. M10 coefficient = 35.0

Table of test data matched against diagnosis of M10a, coefficient = 45.1
Carex dioica-Pinguicula vulgaris mire: C. demissa-Juncus bulbosus subcommunity.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                                II (  V)*     1 ( 5)
 970 Pinguicula vulgaris                           . (  V)*     0 ( 5)
 315 Carex dioica                                  I (III)*     1 ( 6)
2256 Aneura pinguis                               III (III)     1 ( 5)
1658 Drepanocladus revolvens                      III (III)     5 ( 9)
 722 Juncus articulatus                             I (III)*    1 ( 5)
 329 Carex viridula ssp brachyrrhyncha              . ( II)*    0 ( 6)
1546 Bryum pseudotriquetrum                         . ( II)*    0 ( 5)
1571 Campylium stellatum                          III (  V)*    5 ( 7)
1235 Selaginella selaginoides                       . (III)*    0 ( 5)
 325 Carex hostiana                                 . ( IV)*    0 ( 7)
1600 Ctenidium molluscum                            . (III)*    0 ( 9)
 347 Carex pulicaris                                . (III)*    0 ( 6)
 546 Eriophorum angustifolium                      II (III)     2 ( 7)
1046 Potentilla erecta                              . (III)*    0 ( 5)
1305 Succisa pratensis                              . (III)*    0 ( 6)
 876 Molinia caerulea                              II (III)     3 ( 7)
 333 Carex nigra                                    . (III)*    0 ( 7)
1683 Fissidens adianthoides                         . ( II)*    0 ( 5)
 171 Anthoxanthum odoratum                          . ( II)*    0 ( 7)
1649 Ditrichum flexicaule                           .  (  I)    0 ( 3)
1322 Thalictrum alpinum                             .  (  I)    0 ( 5)
1761 Hylocomium splendens                           .  (  I)    0 ( 7)
1973 Sphagnum subnitens                             .  (  I)    0 ( 3)
1081 Ranunculus acris                               .  (  I)    0 ( 4)
```

```
2982 Taraxacum seedling/sp                    .  (  I)      0 ( 3)
 574 Festuca ovina                            I  ( II)      1 ( 5)
 786 Linum catharticum                        .  (  I)      0 ( 3)
1054 Primula farinosa                         .  (  I)      0 ( 5)
1596 Cratoneuron commutatum                   .  (  I)      0 ( 5)
 122 Agrostis stolonifera                     .  (  I)      0 ( 1)
1333 Thymus polytrichus                       .  (  I)      0 ( 1)
 539 Equisetum variegatum                     .  (  I)      0 ( 3)
 721 Juncus alpinoarticulatus                 .  (  I)      0 ( 5)
 510 Eleocharis quinqueflora                  I  (III)*     5 ( 7)
 312 Carex viridula ssp oedocarpa            II  (III)      1 ( 9)
 726 Juncus bulbosus                        III  (III)      5 ( 6)
 542 Erica tetralix                         III  (III)      3 ( 7)
1947 Scorpidium scorpioides                  II  (III)      5 ( 8)
 319 Carex echinata                           .  ( II)*     0 ( 7)
 901 Narthecium ossifragum                    I  ( II)      1 ( 5)
 494 Drosera rotundifolia                   III  ( II)      1 ( 5)
1195 Saxifraga aizoides                       .  ( II)*     0 ( 5)
1207 Schoenus nigricans                       .  ( II)*     0 ( 5)
1012 Persicaria vivipara                      .  (  I)      0 ( 4)
 736 Juncus squarrosus                        .  (  I)      0 ( 5)
1210 Trichophorum cespitosum                  .  (  I)      0 ( 5)
 947 Pedicularis sylvatica                    .  (  I)      0 ( 3)
 492 Drosera longifolia                       .  (  I)      0 ( 5)
1507 Blindia acuta                            .  (  I)      0 ( 3)
 893 Myrica gale                            III  (  I)*     5 ( 5)
 969 Pinguicula lusitanica                    .  (  I)      0 ( 5)
1523 Breutelia chrysocoma                     .  (  I)      0 ( 3)
1354 Triglochin palustre                      .  ( II)*     0 ( 4)
 323 Carex flacca                             .  ( II)*     0 ( 6)
 251 Briza media                              .  (  I)      0 ( 6)
1932 Racomitrium lanuginosum                  .  (  I)      0 ( 4)
1059 Prunella vulgaris                        .  (  I)      0 ( 6)
 946 Pedicularis palustris                    .  (  I)      0 ( 3)
 535 Equisetum palustre                       I  ( II)      1 ( 5)
 547 Eriophorum latifolium                    .  ( II)*     0 ( 8)
 768 Leontodon autumnalis                     .  (  I)      0 ( 5)
1336 Tofieldia pusilla                        .  (  I)      0 ( 3)
1445 Calliergon cuspidatum                    .  (  I)      0 ( 8)
2222 Pellia endiviifolia                      .  (  I)      0 ( 5)
 944 Parnassia palustris                      .  (  I)      0 ( 3)
 583 Filipendula ulmaria                      .  (  I)      0 ( 5)
1089 Ranunculus flammula                      .  (  I)      0 ( 4)
 418 Cirsium palustre                         .  (  I)      0 ( 3)
 295 Cardamine pratensis                      .  (  I)      0 ( 1)
 975 Plantago maritima                        .  (  I)      0 ( 5)
 309 Carex capillaris                         .  (  I)      0 ( 3)
 739 Juncus triglumis                         .  (  I)      0 ( 2)
 568 Euphrasia officinalis agg                .  ( II)*     0 ( 5)
 900 Nardus stricta                           .  (  I)      0 ( 7)
 576 Festuca rubra                            .  (  I)      0 ( 5)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M10a The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 862 Menyanthes trifoliata                   III   5
1109 Rhynchospora alba                       III   5
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	7.0	0	10
M10a	23.0	11	49

11.2 JUGGER HOWE BECK M13

The matching procedures have produced the following results for
Q9, Q10, Q19-Q23, Q25

The N.V.C. communities most closely matching the test data are:

```
 1.    M13     coefficient =  51.5,   3 subcommunities.
 2.    M25     coefficient =  48.5,   3 subcommunities.
 3.    M10     coefficient =  48.3,   3 subcommunities.
 4.    M 9     coefficient =  45.2,   2 subcommunities.
 5.    M24     coefficient =  44.9,   3 subcommunities.
 6.    M15     coefficient =  41.3,   4 subcommunities.
 7.    M14     coefficient =  37.9,   0 subcommunities.
 8.    M26     coefficient =  37.4,   2 subcommunities.
 9.    H 5     coefficient =  35.9,   2 subcommunities.
10.    M11     coefficient =  35.9,   2 subcommunities.
```

Table of test data matched against diagnosis of M13 , coefficient = 51.5
Schoenus nigricans-Juncus subnodulosus mire.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                          IV (  V)      5 ( 5)
2732 Juncus subnodulosus                     I (  V)*     1 ( 7)
1207 Schoenus nigricans                     II (  V)*     5 ( 8)
 876 Molinia caerulea                       II (  V)*    10 ( 7)*
1445 Calliergon cuspidatum                  IV (  V)      3 ( 5)
1305 Succisa pratensis                       V ( IV)      3 ( 4)
1046 Potentilla erecta                     III ( IV)      1 ( 4)
1571 Campylium stellatum                    IV ( IV)      1 ( 4)
 167 Angelica sylvestris                     . (III)*     0 ( 3)
 418 Cirsium palustre                       IV (III)      2 ( 3)
 855 Mentha aquatica                         I (III)*     1 ( 3)
 531 Epipactis palustris                     I (III)*     3 ( 3)
 961 Phragmites australis                    . (III)*     0 ( 7)
 163 Anagallis tenella                      II (III)      1 ( 4)
 535 Equisetum palustre                     IV (III)      3 ( 3)
 946 Pedicularis palustris                   I (III)*     1 ( 3)
1658 Drepanocladus revolvens                II ( II)      2 ( 5)
1683 Fissidens adianthoides                 I ( II)       2 ( 4)
1546 Bryum pseudotriquetrum                 . ( II)*      0 ( 3)
2256 Aneura pinguis                         II ( II)      1 ( 3)
1973 Sphagnum subnitens                     II ( II)      2 ( 4)
2222 Pellia endiviifolia                    I ( II)       1 ( 3)
1600 Ctenidium molluscum                    II ( II)      2 ( 6)
 547 Eriophorum latifolium                  . ( II)*      0 ( 4)
 171 Anthoxanthum odoratum                  . (III)*      0 ( 3)
 680 Holcus lanatus                         II (III)      2 ( 3)
 576 Festuca rubra                          . ( II)*      0 ( 4)
 719 Juncus acutiflorus                    III (  I)*     5 ( 4)*
 120 Agrostis canina                        . (  I)       0 ( 3)
 323 Carex flacca                           II (III)      3 ( 4)
 251 Briza media                            . ( II)*      0 ( 4)
 466 Dactylorhiza fuchsii                   . ( II)*      0 ( 3)
1596 Cratoneuron commutatum                 I ( II)       2 ( 4)
 371 Centaurea nigra                        . ( II)*      0 ( 3)
 649 Gymnadenia conopsea                    . ( II)*      0 ( 4)
 944 Parnassia palustris                    . ( II)*      0 ( 3)
 970 Pinguicula vulgaris                    II ( II)      1 ( 4)
```

325	Carex hostiana	III	(II)	5	(4)*
1244	Serratula tinctoria	.	(II)*	0	(3)
347	Carex pulicaris	.	(II)*	0	(3)
722	Juncus articulatus	I	(II)	2	(4)
995	Polygala vulgaris	.	(II)*	0	(3)
122	Agrostis stolonifera	II	(II)	1	(4)
911	Oenanthe lachenalii	.	(II)*	0	(3)
1089	Ranunculus flammula	.	(II)*	0	(3)
809	Luzula multiflora	.	(II)*	0	(3)
1249	Danthonia decumbens	.	(II)*	0	(3)
470	Dactylorhiza purpurella	.	(II)*	0	(3)
786	Linum catharticum	.	(II)*	0	(3)
1349	Trifolium pratense	.	(I)	0	(3)
893	Myrica gale	II	(I)	10	(4)*
278	Calluna vulgaris	II	(I)	5	(3)*
1354	Triglochin palustre	III	(I)*	1	(3)
1235	Selaginella selaginoides	.	(I)	0	(3)
702	Hypericum pulchrum	.	(I)	0	(3)
975	Plantago maritima	.	(I)	0	(4)
919	Ophrys insectifera	.	(I)	0	(3)
1214	Isolepis setacea	.	(I)	0	(3)
558	Eupatorium cannabinum	.	(III)*	0	(4)
1380	Valeriana dioica	II	(III)	3	(3)
583	Filipendula ulmaria	.	(III)*	0	(3)
612	Galium uliginosum	II	(II)	1	(3)
279	Caltha palustris	.	(II)*	0	(3)
813	Lychnis flos-cuculi	.	(II)*	0	(3)
1914	Pseudoscleropodium purum	.	(II)*	0	(4)
467	Dactylorhiza incarnata	.	(II)*	0	(4)
469	Dactylorhiza praetermissa	.	(II)*	0	(3)
1804	Plagiomnium elatum	.	(II)*	0	(3)
1411	Vicia cracca	.	(II)*	0	(3)
862	Menyanthes trifoliata	I	(I)	2	(4)
546	Eriophorum angustifolium	.	(I)	0	(3)
1795	Plagiomnium rostratum	.	(I)	0	(3)
320	Carex elata	.	(I)	0	(4)
1801	Rhizomnium punctatum	.	(I)	0	(3)
313	Carex diandra	.	(I)	0	(4)
2257	Riccardia chamedryfolia	.	(I)	0	(3)
1845	Philonotis calcarea	.	(I)	0	(3)
2254	Riccardia multifida	II	(I)	1	(3)
352	Carex rostrata	.	(I)	0	(4)
1025	Potamogeton coloratus	.	(I)	0	(3)
1370	Utricularia intermedia	.	(I)	0	(3)
1371	Utricularia minor	.	(I)	0	(3)
1372	Utricularia australis	.	(I)	0	(3)
1373	Utricularia vulgaris	.	(I)	0	(3)
329	Carex viridula ssp brachyrrhyncha	I	(III)*	3	(4)
690	Hydrocotyle vulgaris	I	(III)*	2	(5)
802	Lotus pedunculatus	.	(III)*	0	(3)
333	Carex nigra	.	(II)*	0	(4)
542	Erica tetralix	III	(II)	10	(3)*
2167	Lophocolea bidentata	.	(II)*	0	(3)
295	Cardamine pratensis	.	(II)*	0	(3)
420	Cladium mariscus	.	(II)*	0	(7)
1081	Ranunculus acris	.	(II)*	0	(3)
831	Lythrum salicaria	.	(II)*	0	(3)
1598	Cratoneuron filicinum	.	(I)	0	(4)
2714	Cirsium dissectum	.	(I)	0	(3)
525	Epilobium palustre	.	(I)	0	(3)
533	Equisetum fluviatile	.	(I)	0	(4)
770	Leontodon saxatilis	.	(I)	0	(3)
1482	Aulacomnium palustre	I	(I)	2	(4)
609	Galium palustre	.	(I)	0	(3)
1381	Valeriana officinalis	.	(I)	0	(3)
1519	Brachythecium rutabulum	.	(I)	0	(3)
568	Euphrasia officinalis agg	.	(I)	0	(3)
758	Lathyrus pratensis	.	(I)	0	(3)

```
1350 Trifolium repens                              .  (  I)      0  ( 3)
2982 Taraxacum seedling/sp                         .  (  I)      0  ( 3)
 510 Eleocharis quinqueflora                       .  (  I)      0  ( 3)
 315 Carex dioica                                  I  (  I)      2  ( 3)
 703 Hypericum tetrapterum                         .  (  I)      0  ( 3)
 471 Dactylorhiza traunsteineri                    .  (  I)      0  ( 3)
 494 Drosera rotundifolia                          I  (  I)      3  ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 319 Carex echinata                                II   5
1971 Sphagnum palustre                             II   5
3192 Dactylorhiza sp.                              II   1
4340 Cratoneuron commutatum falcatum               II   3
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	15.1	0	23
M13	27.0	7	65

****

The N.V.C subcommunities most closely matching the test data are:

1. M13a coefficient = 52.3
2. M13 coefficient = 51.5
3. M10a coefficient = 50.9
4. M25 coefficient = 48.5
5. M10 coefficient = 48.3
6. M13b coefficient = 47.6
7. M13c coefficient = 46.3
8. M 9a coefficient = 45.6
9. M 9 coefficient = 45.2
10. M24 coefficient = 44.9

Table of test data matched against diagnosis of M13a, coefficient = 52.3
Schoenus nigricans-Juncus subnodulosus mire: Festuca rubra-J. acutiflorus subc.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                                IV (  V)      5  ( 4)*
2732 Juncus subnodulosus                           I  ( IV)*     1  ( 4)
1207 Schoenus nigricans                           II  ( IV)*     5  ( 4)*
 876 Molinia caerulea                             II  ( IV)*    10  ( 4)*
1445 Calliergon cuspidatum                        IV  ( IV)      3  ( 4)
1305 Succisa pratensis                             V  ( IV)      3  ( 3)
1046 Potentilla erecta                           III  ( IV)      1  ( 3)
1571 Campylium stellatum                          IV  (III)      1  ( 3)
 167 Angelica sylvestris                           .  ( II)*     0  ( 3)
 418 Cirsium palustre                             IV  ( II)*     2  ( 3)
 855 Mentha aquatica                               I  ( II)      1  ( 3)
 531 Epipactis palustris                           I  (  I)      3  ( 3)
 961 Phragmites australis                          .  ( II)*     0  ( 3)
 535 Equisetum palustre                           IV  ( II)*     3  ( 3)
 946 Pedicularis palustris                         I  (  I)      1  ( 3)
1658 Drepanocladus revolvens                      II  (  I)      2  ( 1)*
1973 Sphagnum subnitens                           II  (  I)      2  ( 3)
 171 Anthoxanthum odoratum                         .  (III)*     0  ( 3)
 680 Holcus lanatus                               II  (III)      2  ( 3)
```

```
 576 Festuca rubra                              . (III)*     0 ( 4)
 719 Juncus acutiflorus                       III ( II)      5 ( 4)*
 120 Agrostis canina                            . ( II)*     0 ( 3)
 323 Carex flacca                              II (III)      3 ( 4)
1596 Cratoneuron commutatum                     I (  I)      2 ( 3)
 371 Centaurea nigra                            . (  I)      0 ( 3)
 122 Agrostis stolonifera                      II ( II)      1 ( 4)
 911 Oenanthe lachenalii                        . (  I)      0 ( 1)
1089 Ranunculus flammula                        . (  I)      0 ( 3)
 809 Luzula multiflora                          . (  I)      0 ( 2)
1249 Danthonia decumbens                        . (  I)      0 ( 3)
 893 Myrica gale                               II ( II)     10 ( 4)*
 558 Eupatorium cannabinum                      . ( II)*     0 ( 3)
1380 Valeriana dioica                          II ( II)      3 ( 3)
 583 Filipendula ulmaria                        . ( II)*     0 ( 3)
 612 Galium uliginosum                         II (  I)      1 ( 3)
 279 Caltha palustris                           . (  I)      0 ( 1)
 813 Lychnis flos-cuculi                        . (  I)      0 ( 2)
1914 Pseudoscleropodium purum                   . (  I)      0 ( 3)
 862 Menyanthes trifoliata                      I (  I)      2 ( 3)
 329 Carex viridula ssp brachyrrhyncha          I (III)*     3 ( 3)
 690 Hydrocotyle vulgaris                       I (III)*     2 ( 3)
 802 Lotus pedunculatus                         . ( II)*     0 ( 3)
 333 Carex nigra                                . ( II)*     0 ( 3)
 542 Erica tetralix                           III ( II)     10 ( 3)*
2167 Lophocolea bidentata                       . ( II)*     0 ( 3)
 295 Cardamine pratensis                        . ( II)*     0 ( 2)
 420 Cladium mariscus                           . ( II)*     0 ( 4)
1081 Ranunculus acris                           . ( II)*     0 ( 3)
 831 Lythrum salicaria                          . (  I)      0 ( 1)
1598 Cratoneuron filicinum                      . (  I)      0 ( 3)
2714 Cirsium dissectum                          . (  I)      0 ( 3)
 525 Epilobium palustre                         . (  I)      0 ( 3)
 533 Equisetum fluviatile                       . (  I)      0 ( 4)
 770 Leontodon saxatilis                        . (  I)      0 ( 1)
1482 Aulacomnium palustre                       I (  I)      2 ( 4)
 609 Galium palustre                            . (  I)      0 ( 2)
1381 Valeriana officinalis                      . (  I)      0 ( 3)
1519 Brachythecium rutabulum                    . (  I)      0 ( 3)
 758 Lathyrus pratensis                         . (  I)      0 ( 2)
1350 Trifolium repens                           . (  I)      0 ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13a The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 163 Anagallis tenella                          II   1
 278 Calluna vulgaris                           II   5
 319 Carex echinata                             II   5
 325 Carex hostiana                            III   5
 970 Pinguicula vulgaris                        II   1
1354 Triglochin palustre                       III   1
1600 Ctenidium molluscum                        II   2
1971 Sphagnum palustre                          II   5
2254 Riccardia multifida                        II   1
2256 Aneura pinguis                             II   1
3192 Dactylorhiza sp.                           II   1
4340 Cratoneuron commutatum falcatum            II   3
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	15.1	0	23
M13a	14.0	7	27

11.3 JUGGER HOWE BECK M14

The matching procedures have produced the following results for
Q1, Q4, Q6-Q8, Q13, Q14, Q16-Q18, Q24, Q26

The N.V.C. communities most closely matching the test data are:

```
 1.    M14     coefficient =  54.8,   0 subcommunities.
 2.    M15     coefficient =  54.7,   4 subcommunities.
 3.    M25     coefficient =  49.1,   3 subcommunities.
 4.    M21     coefficient =  48.2,   2 subcommunities.
 5.    M 6     coefficient =  47.0,   4 subcommunities.
 6.    M29     coefficient =  44.0,   0 subcommunities.
 7.    M10     coefficient =  43.2,   3 subcommunities.
 8.    M 9     coefficient =  40.1,   2 subcommunities.
 9.    M13     coefficient =  39.6,   3 subcommunities.
10.    M17     coefficient =  39.4,   3 subcommunities.
```

Table of test data matched against diagnosis of M14 , coefficient = 54.8
Schoenus nigricans-Narthecium ossifragum mire

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

1207	Schoenus nigricans	III (V)*	10 (8)*
876	Molinia caerulea	V (V)	10 (8)*
542	Erica tetralix	V (V)	10 (6)*
901	Narthecium ossifragum	IV (V)	10 (5)*
1973	Sphagnum subnitens	II (IV)*	5 (5)
163	Anagallis tenella	II (IV)*	1 (3)
1571	Campylium stellatum	III (IV)	3 (5)
2256	Aneura pinguis	IV (IV)	3 (4)
1947	Scorpidium scorpioides	. (IV)*	0 (5)
2700	Sphagnum auriculatum var auriculatum	II (IV)*	3 (4)
2695	Hypnum jutlandicum	. (III)*	0 (3)
2164	Kurzia pauciflora	. (III)*	0 (2)
494	Drosera rotundifolia	V (III)*	3 (2)*
719	Juncus acutiflorus	IV (II)*	1 (4)
2814	Calypogeia sp	. (II)*	0 (2)
278	Calluna vulgaris	II (II)	5 (4)*
1972	Sphagnum papillosum	I (II)	3 (4)
546	Eriophorum angustifolium	III (II)	3 (3)
339	Carex panicea	IV (II)*	3 (2)*
508	Eleocharis multicaulis	II (II)	3 (3)
493	Drosera intermedia	. (II)*	0 (2)
2254	Riccardia multifida	II (II)	1 (2)
969	Pinguicula lusitanica	. (II)*	0 (3)
1046	Potentilla erecta	III (II)	1 (2)
1971	Sphagnum palustre	II (II)	3 (4)
1109	Rhynchospora alba	. (II)*	0 (2)
893	Myrica gale	II (II)	5 (4)*
994	Polygala serpyllifolia	. (I)	0 (2)
2218	Odontoschisma sphagni	. (I)	0 (2)
1658	Drepanocladus revolvens	I (I)	4 (2)*
1984	Sphagnum tenellum	. (I)	0 (1)
1364	Ulex gallii	. (I)	0 (1)
726	Juncus bulbosus	III (I)*	4 (1)*
1600	Ctenidium molluscum	I (I)	1 (1)
2620	Pinus sylvestris (g)	. (I)	0 (2)
947	Pedicularis sylvatica	I (I)	1 (1)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M14 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

319	Carex echinata	IV	3
352	Carex rostrata	II	5
535	Equisetum palustre	III	3
1037	Potamogeton polygonifolius	III	10
1305	Succisa pratensis	II	1
1445	Calliergon cuspidatum	II	3
1960	Sphagnum capillifolium	II	5
1969	Sphagnum magellanicum	II	1
1976	Sphagnum recurvum	II	3
2972	Sphagnum auriculatum var inundatum	II	2

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	17.6	0	29
M14	17.0	15	19

****

Table of test data matched against diagnosis of M15 , coefficient = 54.7
Scirpus cespitosus-Erica tetralix wet heath.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

876	Molinia caerulea	V (V)	10 (9)*
1046	Potentilla erecta	III (V)*	1 (6)
542	Erica tetralix	V (V)	10 (6)*
278	Calluna vulgaris	II (IV)*	5 (9)
1210	Trichophorum cespitosum	. (IV)*	0 (8)
901	Narthecium ossifragum	IV (III)	10 (6)*
546	Eriophorum angustifolium	III (III)	3 (6)
893	Myrica gale	II (III)	5 (8)
1971	Sphagnum palustre	II (II)	3 (8)
339	Carex panicea	IV (II)*	3 (4)
319	Carex echinata	IV (II)*	3 (4)
494	Drosera rotundifolia	V (II)*	3 (4)
970	Pinguicula vulgaris	I (I)	3 (4)
1976	Sphagnum recurvum	II (I)	3 (8)
1523	Breutelia chrysocoma	. (I)	0 (4)
1305	Succisa pratensis	II (I)	1 (4)
347	Carex pulicaris	. (I)	0 (4)
1235	Selaginella selaginoides	I (I)	2 (3)
726	Juncus bulbosus	III (I)*	4 (4)
333	Carex nigra	I (I)	1 (6)
1427	Viola palustris	I (I)	1 (3)
1572	Campylopus atrovirens	. (I)	0 (4)
568	Euphrasia officinalis agg	. (I)	0 (3)
1207	Schoenus nigricans	III (I)*	10 (6)*
2972	Sphagnum auriculatum var inundatum	II (I)	2 (4)
312	Carex viridula ssp oedocarpa	. (I)	0 (4)
492	Drosera longifolia	. (I)	0 (4)
1658	Drepanocladus revolvens	I (I)	4 (4)
2256	Aneura pinguis	IV (I)*	3 (3)
1571	Campylium stellatum	III (I)*	3 (4)
1947	Scorpidium scorpioides	. (I)	0 (3)
2237	Pleurozia purpurea	. (I)	0 (3)
468	Dactylorhiza maculata ericetorum	. (I)	0 (3)
315	Carex dioica	I (I)	1 (3)

862	Menyanthes trifoliata	.	(I)	0 (4)
1972	Sphagnum papillosum	I	(II)	3 (9)
719	Juncus acutiflorus	IV	(I)*	1 (4)
2218	Odontoschisma sphagni	.	(I)	0 (3)
2700	Sphagnum auriculatum var auriculatum	II	(I)	3 (4)
548	Eriophorum vaginatum	.	(I)	0 (4)
1574	Campylopus paradoxus	.	(I)	0 (3)
541	Erica cinerea	.	(II)*	0 (6)
1766	Hypnum cupressiforme	.	(II)*	0 (8)
1932	Racomitrium lanuginosum	.	(I)	0 (6)
2366	Cladonia portentosa	.	(I)	0 (4)
2391	Cladonia uncialis	.	(I)	0 (3)
1375	Vaccinium myrtillus	.	(II)*	0 (6)
900	Nardus stricta	.	(II)*	0 (6)
736	Juncus squarrosus	.	(II)*	0 (4)
1638	Dicranum scoparium	.	(II)*	0 (4)
2695	Hypnum jutlandicum	.	(II)*	0 (9)
478	Deschampsia flexuosa	.	(I)	0 (4)
1872	Pleurozium schreberi	.	(I)	0 (6)
1868	Plagiothecium undulatum	.	(I)	0 (4)
610	Galium saxatile	.	(I)	0 (4)
171	Anthoxanthum odoratum	.	(I)	0 (4)
1891	Polytrichum commune	.	(I)	0 (4)
574	Festuca ovina	.	(I)	0 (6)
809	Luzula multiflora	.	(I)	0 (3)
344	Carex pilulifera	.	(I)	0 (4)
1939	Rhytidiadelphus loreus	.	(I)	0 (4)
2346	Cladonia chlorophaea	.	(I)	0 (4)
994	Polygala serpyllifolia	.	(III)*	0 (4)
1960	Sphagnum capillifolium	II	(III)	5 (6)
1973	Sphagnum subnitens	II	(II)	5 (6)
120	Agrostis canina	.	(II)*	0 (6)
1761	Hylocomium splendens	.	(I)	0 (4)
1482	Aulacomnium palustre	.	(I)	0 (4)
578	Festuca vivipara	.	(I)	0 (4)
2113	Diplophyllum albicans	.	(I)	0 (4)
947	Pedicularis sylvatica	I	(I)	1 (4)
515	Empetrum nigrum nigrum	.	(I)	0 (4)
242	Blechnum spicant	I	(I)	1 (4)
308	Carex binervis	.	(I)	0 (3)
821	Huperzia selago	.	(I)	0 (3)
729	Juncus conglomeratus	I	(I)	1 (4)
1940	Rhytidiadelphus squarrosus	.	(I)	0 (4)
576	Festuca rubra	I	(I)	1 (4)
1961	Sphagnum compactum	.	(I)	0 (6)
722	Juncus articulatus	.	(I)	0 (4)
1249	Danthonia decumbens	.	(I)	0 (4)
730	Juncus effusus	.	(I)	0 (4)
2080	Calypogeia muelleriana	.	(I)	0 (3)
1786	Leucobryum glaucum	I	(I)	1 (4)
1066	Pteridium aquilinum	.	(I)	0 (4)
122	Agrostis stolonifera	I	(I)	1 (4)
123	Agrostis capillaris	.	(I)	0 (4)
2079	Calypogeia fissa	.	(I)	0 (3)
1984	Sphagnum tenellum	.	(I)	0 (4)
2340	Cladonia arbuscula	.	(I)	0 (4)
946	Pedicularis palustris	.	(I)	0 (3)
702	Hypericum pulchrum	.	(I)	0 (3)
1354	Triglochin palustre	I	(I)	1 (2)
1340	Trientalis europaea	.	(I)	0 (4)
2180	Lophozia ventricosa	.	(I)	0 (3)
1884	Pohlia nutans	.	(I)	0 (3)
2347	Cladonia coccifera	.	(I)	0 (3)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M15 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 163 Anagallis tenella                          II   1
 352 Carex rostrata                             II   5
 508 Eleocharis multicaulis                     II   3
 535 Equisetum palustre                        III   3
1037 Potamogeton polygonifolius                III  10
1445 Calliergon cuspidatum                      II   3
1969 Sphagnum magellanicum                      II   1
2254 Riccardia multifida                        II   1

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    17.6       0       29
   M15        18.0       6       57

*******************************************************************************


The N.V.C subcommunities most closely matching the test data are:
 1.    M15a    coefficient =  57.3
 2.    M14     coefficient =  54.8
 3.    M15     coefficient =  54.7
 4.    M15b    coefficient =  53.9
 5.    M25a    coefficient =  50.6
 6.    M25     coefficient =  49.1
 7.    M21b    coefficient =  48.4
 8.    M21     coefficient =  48.2
 9.    M10a    coefficient =  48.0
10.    M 6d    coefficient =  47.5

Table of test data matched against diagnosis of  M15a, coefficient =  57.3
Scirpus cespitosus-Erica tetralix wet heath: Carex panicea subcommunity.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 876 Molinia caerulea                            V (  V)     10 ( 8)*
1046 Potentilla erecta                         III (  V)*     1 ( 4)
 542 Erica tetralix                              V (  V)     10 ( 4)*
 278 Calluna vulgaris                           II ( IV)*     5 ( 4)*
1210 Trichophorum cespitosum                     . (III)*     0 ( 8)
 901 Narthecium ossifragum                      IV (  V)     10 ( 4)*
 546 Eriophorum angustifolium                  III ( IV)      3 ( 4)
 893 Myrica gale                                II ( IV)*     5 ( 8)
1971 Sphagnum palustre                          II ( IV)*     3 ( 6)
 339 Carex panicea                              IV (  V)      3 ( 4)
 319 Carex echinata                             IV (  V)      3 ( 4)
 494 Drosera rotundifolia                        V ( IV)      3 ( 4)
 970 Pinguicula vulgaris                         I ( IV)*     3 ( 4)
1976 Sphagnum recurvum                          II (III)      3 ( 8)
1523 Breutelia chrysocoma                        . (III)*     0 ( 4)
1305 Succisa pratensis                          II (III)      1 ( 3)
 347 Carex pulicaris                             . (III)*     0 ( 4)
1235 Selaginella selaginoides                    I (III)*     2 ( 3)
 726 Juncus bulbosus                           III ( II)      4 ( 4)
 333 Carex nigra                                 I ( II)      1 ( 6)
1427 Viola palustris                             I ( II)      1 ( 3)
1572 Campylopus atrovirens                       . ( II)*     0 ( 4)
 568 Euphrasia officinalis agg                   . ( II)*     0 ( 3)
1207 Schoenus nigricans                        III ( II)     10 ( 6)*
2972 Sphagnum auriculatum var inundatum         II ( II)      2 ( 4)
 312 Carex viridula ssp oedocarpa                . ( II)*     0 ( 4)
 492 Drosera longifolia                          . ( II)*     0 ( 2)
```

1658	Drepanocladus revolvens	I	(II)	4	(3)*
2256	Aneura pinguis	IV	(II)*	3	(3)
1571	Campylium stellatum	III	(II)	3	(4)
1947	Scorpidium scorpioides	.	(II)*	0	(3)
2237	Pleurozia purpurea	.	(II)*	0	(3)
468	Dactylorhiza maculata ericetorum	.	(II)*	0	(3)
315	Carex dioica	I	(I)	1	(3)
862	Menyanthes trifoliata	.	(I)	0	(4)
1972	Sphagnum papillosum	I	(I)	3	(4)
719	Juncus acutiflorus	IV	(I)*	1	(1)
2218	Odontoschisma sphagni	.	(I)	0	(1)
2700	Sphagnum auriculatum var auriculatum	II	(I)	3	(1)*
541	Erica cinerea	.	(I)	0	(1)
1766	Hypnum cupressiforme	.	(I)	0	(4)
1932	Racomitrium lanuginosum	.	(I)	0	(3)
2366	Cladonia portentosa	.	(I)	0	(1)
2391	Cladonia uncialis	.	(I)	0	(1)
900	Nardus stricta	.	(II)*	0	(4)
736	Juncus squarrosus	.	(I)	0	(1)
1638	Dicranum scoparium	.	(I)	0	(1)
2695	Hypnum jutlandicum	.	(I)	0	(1)
478	Deschampsia flexuosa	.	(I)	0	(3)
1872	Pleurozium schreberi	.	(I)	0	(4)
1868	Plagiothecium undulatum	.	(I)	0	(1)
610	Galium saxatile	.	(I)	0	(1)
171	Anthoxanthum odoratum	.	(I)	0	(1)
1891	Polytrichum commune	.	(I)	0	(1)
574	Festuca ovina	.	(I)	0	(6)
809	Luzula multiflora	.	(I)	0	(1)
994	Polygala serpyllifolia	.	(III)*	0	(4)
1960	Sphagnum capillifolium	II	(III)	5	(4)*
1973	Sphagnum subnitens	II	(III)	5	(4)*
120	Agrostis canina	.	(I)	0	(1)
1761	Hylocomium splendens	.	(I)	0	(4)
1482	Aulacomnium palustre	.	(I)	0	(2)
578	Festuca vivipara	.	(I)	0	(4)
2113	Diplophyllum albicans	.	(I)	0	(1)
947	Pedicularis sylvatica	I	(I)	1	(3)
515	Empetrum nigrum nigrum	.	(I)	0	(1)
242	Blechnum spicant	I	(I)	1	(1)
308	Carex binervis	.	(I)	0	(1)
821	Huperzia selago	.	(I)	0	(1)
729	Juncus conglomeratus	I	(I)	1	(4)
1940	Rhytidiadelphus squarrosus	.	(I)	0	(3)
576	Festuca rubra	I	(I)	1	(4)
1961	Sphagnum compactum	.	(I)	0	(3)
722	Juncus articulatus	.	(I)	0	(4)
1249	Danthonia decumbens	.	(I)	0	(4)
730	Juncus effusus	.	(I)	0	(4)
2080	Calypogeia muelleriana	.	(I)	0	(1)
946	Pedicularis palustris	.	(I)	0	(3)
702	Hypericum pulchrum	.	(I)	0	(3)
1354	Triglochin palustre	I	(I)	1	(2)
1340	Trientalis europaea	.	(I)	0	(4)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M15a The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

163	Anagallis tenella	II	1
352	Carex rostrata	II	5
508	Eleocharis multicaulis	II	3
535	Equisetum palustre	III	3
1037	Potamogeton polygonifolius	III	10
1445	Calliergon cuspidatum	II	3
1969	Sphagnum magellanicum	II	1

2254 Riccardia multifida II 1

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	17.6	0	29
M15a	27.0	10	45

11.4 ROSEKIRK DALE M13

The matching procedures have produced the following results for
Q2, Q3, Q5, Q7-Q10

The N.V.C. communities most closely matching the test data are:

```
 1.    M13     coefficient =  48.0,   3 subcommunities.
 2.    M24     coefficient =  42.7,   3 subcommunities.
 3.    M10     coefficient =  41.1,   3 subcommunities.
 4.    M25     coefficient =  40.9,   3 subcommunities.
 5.    M 9     coefficient =  39.2,   2 subcommunities.
 6.    M11     coefficient =  37.5,   2 subcommunities.
 7.    M26     coefficient =  37.5,   2 subcommunities.
 8.   SD15     coefficient =  37.4,   4 subcommunities.
 9.    M22     coefficient =  36.6,   4 subcommunities.
10.   SD14     coefficient =  31.3,   4 subcommunities.
```

Table of test data matched against diagnosis of M13 , coefficient = 48.0
Schoenus nigricans-Juncus subnodulosus mire.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                          IV (  V)      7 ( 5)*
2732 Juncus subnodulosus                   III (  V)*    10 ( 7)*
1207 Schoenus nigricans                     II (  V)*     5 ( 8)
 876 Molinia caerulea                        V (  V)     10 ( 7)*
1445 Calliergon cuspidatum                  IV (  V)      3 ( 5)
1305 Succisa pratensis                      II ( IV)*     4 ( 4)
1046 Potentilla erecta                     III ( IV)      3 ( 4)
1571 Campylium stellatum                    II ( IV)*     1 ( 4)
 167 Angelica sylvestris                    II (III)      2 ( 3)
 418 Cirsium palustre                      III (III)      3 ( 3)
 855 Mentha aquatica                        II (III)      2 ( 3)
 531 Epipactis palustris                     . (III)*     0 ( 3)
 961 Phragmites australis                    . (III)*     0 ( 7)
 163 Anagallis tenella                       . (III)*     0 ( 4)
 535 Equisetum palustre                      . (III)*     0 ( 3)
 946 Pedicularis palustris                   . (III)*     0 ( 3)
1658 Drepanocladus revolvens                 . ( II)*     0 ( 5)
1683 Fissidens adianthoides                 II ( II)      1 ( 4)
1546 Bryum pseudotriquetrum                 IV ( II)*     1 ( 3)
2256 Aneura pinguis                          . ( II)*     0 ( 3)
1973 Sphagnum subnitens                      . ( II)*     0 ( 4)
2222 Pellia endiviifolia                     . ( II)*     0 ( 3)
1600 Ctenidium molluscum                    IV ( II)*     5 ( 6)
 547 Eriophorum latifolium                   . ( II)*     0 ( 4)
 171 Anthoxanthum odoratum                   . (III)*     0 ( 3)
 680 Holcus lanatus                          . (III)*     0 ( 3)
 576 Festuca rubra                           . ( II)*     0 ( 4)
 719 Juncus acutiflorus                      I (  I)      1 ( 4)
 120 Agrostis canina                         . (  I)      0 ( 3)
 323 Carex flacca                          III (III)      5 ( 4)*
 251 Briza media                             . ( II)*     0 ( 4)
 466 Dactylorhiza fuchsii                    . ( II)*     0 ( 3)
1596 Cratoneuron commutatum                 II ( II)     10 ( 4)*
 371 Centaurea nigra                       III ( II)      3 ( 3)
 649 Gymnadenia conopsea                     . ( II)*     0 ( 4)
 944 Parnassia palustris                     I ( II)      1 ( 3)
 970 Pinguicula vulgaris                    II ( II)      1 ( 4)
```

325	Carex hostiana	.	(II)*	0 (4)
1244	Serratula tinctoria	.	(II)*	0 (3)
347	Carex pulicaris	.	(II)*	0 (3)
722	Juncus articulatus	II	(II)	3 (4)
995	Polygala vulgaris	.	(II)*	0 (3)
122	Agrostis stolonifera	III	(II)	2 (4)
911	Oenanthe lachenalii	.	(II)*	0 (3)
1089	Ranunculus flammula	.	(II)*	0 (3)
809	Luzula multiflora	.	(II)*	0 (3)
1249	Danthonia decumbens	I	(II)	1 (3)
470	Dactylorhiza purpurella	.	(II)*	0 (3)
786	Linum catharticum	.	(II)*	0 (3)
1349	Trifolium pratense	.	(I)	0 (3)
893	Myrica gale	.	(I)	0 (4)
278	Calluna vulgaris	I	(I)	1 (3)
1354	Triglochin palustre	.	(I)	0 (3)
1235	Selaginella selaginoides	.	(I)	0 (3)
702	Hypericum pulchrum	I	(I)	1 (3)
975	Plantago maritima	.	(I)	0 (4)
919	Ophrys insectifera	.	(I)	0 (3)
1214	Isolepis setacea	.	(I)	0 (3)
558	Eupatorium cannabinum	IV	(III)	5 (4)*
1380	Valeriana dioica	I	(III)*	3 (3)
583	Filipendula ulmaria	II	(III)	2 (3)
612	Galium uliginosum	.	(II)*	0 (3)
279	Caltha palustris	.	(II)*	0 (3)
813	Lychnis flos-cuculi	.	(II)*	0 (3)
1914	Pseudoscleropodium purum	I	(II)	1 (4)
467	Dactylorhiza incarnata	.	(II)*	0 (4)
469	Dactylorhiza praetermissa	.	(II)*	0 (3)
1804	Plagiomnium elatum	.	(II)*	0 (3)
1411	Vicia cracca	.	(II)*	0 (3)
862	Menyanthes trifoliata	.	(I)	0 (4)
546	Eriophorum angustifolium	.	(I)	0 (3)
1795	Plagiomnium rostratum	.	(I)	0 (3)
320	Carex elata	.	(I)	0 (4)
1801	Rhizomnium punctatum	.	(I)	0 (3)
313	Carex diandra	.	(I)	0 (4)
2257	Riccardia chamedryfolia	.	(I)	0 (3)
1845	Philonotis calcarea	.	(I)	0 (3)
2254	Riccardia multifida	.	(I)	0 (3)
352	Carex rostrata	.	(I)	0 (4)
1025	Potamogeton coloratus	.	(I)	0 (3)
1370	Utricularia intermedia	.	(I)	0 (3)
1371	Utricularia minor	.	(I)	0 (3)
1372	Utricularia australis	.	(I)	0 (3)
1373	Utricularia vulgaris	.	(I)	0 (3)
329	Carex viridula ssp brachyrrhyncha	IV	(III)	4 (4)
690	Hydrocotyle vulgaris	.	(III)*	0 (5)
802	Lotus pedunculatus	.	(III)*	0 (3)
333	Carex nigra	I	(II)	4 (4)
542	Erica tetralix	.	(II)*	0 (3)
2167	Lophocolea bidentata	.	(II)*	0 (3)
295	Cardamine pratensis	.	(II)*	0 (3)
420	Cladium mariscus	.	(II)*	0 (7)
1081	Ranunculus acris	.	(II)*	0 (3)
831	Lythrum salicaria	.	(II)*	0 (3)
1598	Cratoneuron filicinum	.	(I)	0 (4)
2714	Cirsium dissectum	.	(I)	0 (3)
525	Epilobium palustre	.	(I)	0 (3)
533	Equisetum fluviatile	.	(I)	0 (4)
770	Leontodon saxatilis	.	(I)	0 (3)
1482	Aulacomnium palustre	.	(I)	0 (4)
609	Galium palustre	.	(I)	0 (3)
1381	Valeriana officinalis	.	(I)	0 (3)
1519	Brachythecium rutabulum	.	(I)	0 (3)
568	Euphrasia officinalis agg	.	(I)	0 (3)
758	Lathyrus pratensis	.	(I)	0 (3)

```
1350 Trifolium repens                              .  (  I)      0  ( 3)
2982 Taraxacum seedling/sp                         .  (  I)      0  ( 3)
 510 Eleocharis quinqueflora                       .  (  I)      0  ( 3)
 315 Carex dioica                                  .  (  I)      0  ( 3)
 703 Hypericum tetrapterum                         .  (  I)      0  ( 3)
 471 Dactylorhiza traunsteineri                    .  (  I)      0  ( 3)
 494 Drosera rotundifolia                          .  (  I)      0  ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 532 Equisetum arvense                              V   4
 733 Juncus inflexus                               II  10
1059 Prunella vulgaris                             II   1
2730 Chara sp                                      II   1
2999 Viola seedling/sp                             II   1
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	15.1	0	26
M13	27.0	7	65

****

The N.V.C subcommunities most closely matching the test data are:

```
 1.    M13a    coefficient =  51.0
 2.    M13     coefficient =  48.0
 3.    M24a    coefficient =  45.9
 4.    M10b    coefficient =  42.9
 5.    M13b    coefficient =  42.9
 6.    M24     coefficient =  42.7
 7.    M13c    coefficient =  42.4
 8.    M10     coefficient =  41.1
 9.    M25     coefficient =  40.9
10.    M10a    coefficient =  40.3
```

Table of test data matched against diagnosis of M13a, coefficient = 51.0
Schoenus nigricans-Juncus subnodulosus mire: Festuca rubra-J. acutiflorus subc.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                                 IV (  V)      7  ( 4)*
2732 Juncus subnodulosus                          III ( IV)     10  ( 4)*
1207 Schoenus nigricans                            II ( IV)*     5  ( 4)*
 876 Molinia caerulea                               V ( IV)     10  ( 4)*
1445 Calliergon cuspidatum                         IV ( IV)      3  ( 4)
1305 Succisa pratensis                             II ( IV)*     4  ( 3)*
1046 Potentilla erecta                            III ( IV)      3  ( 3)
1571 Campylium stellatum                           II (III)      1  ( 3)
 167 Angelica sylvestris                           II ( II)      2  ( 3)
 418 Cirsium palustre                             III ( II)      3  ( 3)
 855 Mentha aquatica                               II ( II)      2  ( 3)
 531 Epipactis palustris                            .  (  I)      0  ( 3)
 961 Phragmites australis                           .  ( II)*     0  ( 3)
 535 Equisetum palustre                             .  ( II)*     0  ( 3)
 946 Pedicularis palustris                          .  (  I)      0  ( 3)
1658 Drepanocladus revolvens                        .  (  I)      0  ( 1)
1973 Sphagnum subnitens                             .  (  I)      0  ( 3)
 171 Anthoxanthum odoratum                          .  (III)*     0  ( 3)
```

```
 680 Holcus lanatus                              . (III)*     0 ( 3)
 576 Festuca rubra                               . (III)*     0 ( 4)
 719 Juncus acutiflorus                          I ( II)      1 ( 4)
 120 Agrostis canina                             . ( II)*     0 ( 3)
 323 Carex flacca                              III (III)      5 ( 4)*
1596 Cratoneuron commutatum                     II (  I)     10 ( 3)*
 371 Centaurea nigra                           III (  I)*     3 ( 3)
 122 Agrostis stolonifera                      III ( II)      2 ( 4)
 911 Oenanthe lachenalii                         . (  I)      0 ( 1)
1089 Ranunculus flammula                         . (  I)      0 ( 3)
 809 Luzula multiflora                           . (  I)      0 ( 2)
1249 Danthonia decumbens                         I (  I)      1 ( 3)
 893 Myrica gale                                 . ( II)*     0 ( 4)
 558 Eupatorium cannabinum                      IV ( II)*     5 ( 3)*
1380 Valeriana dioica                            I ( II)      3 ( 3)
 583 Filipendula ulmaria                        II ( II)      2 ( 3)
 612 Galium uliginosum                           . (  I)      0 ( 3)
 279 Caltha palustris                            . (  I)      0 ( 1)
 813 Lychnis flos-cuculi                         . (  I)      0 ( 2)
1914 Pseudoscleropodium purum                    I (  I)      1 ( 3)
 862 Menyanthes trifoliata                       . (  I)      0 ( 3)
 329 Carex viridula ssp brachyrrhyncha          IV (III)      4 ( 3)*
 690 Hydrocotyle vulgaris                        . (III)*     0 ( 3)
 802 Lotus pedunculatus                          . ( II)*     0 ( 3)
 333 Carex nigra                                 I ( II)      4 ( 3)*
 542 Erica tetralix                              . ( II)*     0 ( 3)
2167 Lophocolea bidentata                        . ( II)*     0 ( 3)
 295 Cardamine pratensis                         . ( II)*     0 ( 2)
 420 Cladium mariscus                            . ( II)*     0 ( 4)
1081 Ranunculus acris                            . ( II)*     0 ( 3)
 831 Lythrum salicaria                           . (  I)      0 ( 1)
1598 Cratoneuron filicinum                       . (  I)      0 ( 3)
2714 Cirsium dissectum                           . (  I)      0 ( 3)
 525 Epilobium palustre                          . (  I)      0 ( 3)
 533 Equisetum fluviatile                        . (  I)      0 ( 4)
 770 Leontodon saxatilis                         . (  I)      0 ( 1)
1482 Aulacomnium palustre                        . (  I)      0 ( 4)
 609 Galium palustre                             . (  I)      0 ( 2)
1381 Valeriana officinalis                       . (  I)      0 ( 3)
1519 Brachythecium rutabulum                     . (  I)      0 ( 3)
 758 Lathyrus pratensis                          . (  I)      0 ( 2)
1350 Trifolium repens                            . (  I)      0 ( 3)

The following species found in the test data at a constancy of II or more are
not recorded in the N.V.C. diagnostic table for the unit  M13a The data for
each species are presented as follows: species code, name, constancy,
maximum quantitative value.


 532 Equisetum arvense                           V   4
 722 Juncus articulatus                         II   3
 733 Juncus inflexus                            II  10
 970 Pinguicula vulgaris                        II   1
1059 Prunella vulgaris                          II   1
1546 Bryum pseudotriquetrum                     IV   1
1600 Ctenidium molluscum                        IV   5
1683 Fissidens adianthoides                     II   1
2730 Chara sp                                   II   1
2999 Viola seedling/sp                          II   1

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    15.1       0       26
   M13a       14.0       7       27

*******************************************************************************

Table of test data matched against diagnosis of  M24a, coefficient =  45.9
```

Molinia caerulea-Cirsium dissectum fen-meadow: Eupatorium cannabinum subc.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

876	Molinia caerulea	V (V)	10 (6)*
1046	Potentilla erecta	III (V)*	3 (3)
1305	Succisa pratensis	II (IV)*	4 (6)
2714	Cirsium dissectum	. (IV)*	0 (3)
802	Lotus pedunculatus	. (IV)*	0 (3)
339	Carex panicea	IV (III)	7 (3)*
612	Galium uliginosum	. (IV)*	0 (5)
1380	Valeriana dioica	I (IV)*	3 (3)
371	Centaurea nigra	III (III)	3 (3)
2732	Juncus subnodulosus	III (IV)	10 (5)*
535	Equisetum palustre	. (III)*	0 (3)
1411	Vicia cracca	. (III)*	0 (3)
583	Filipendula ulmaria	II (III)	2 (3)
786	Linum catharticum	. (II)*	0 (3)
649	Gymnadenia conopsea	. (II)*	0 (3)
558	Eupatorium cannabinum	IV (V)	5 (3)*
961	Phragmites australis	. (V)*	0 (5)
1571	Campylium stellatum	II (III)	1 (2)
420	Cladium mariscus	. (III)*	0 (6)
831	Lythrum salicaria	. (II)*	0 (3)
467	Dactylorhiza incarnata	. (II)*	0 (2)
680	Holcus lanatus	. (I)	0 (2)
171	Anthoxanthum odoratum	. (I)	0 (1)
690	Hydrocotyle vulgaris	. (I)	0 (3)
251	Briza media	. (I)	0 (1)
1139	Rumex acetosa	. (I)	0 (1)
531	Epipactis palustris	. (I)	0 (1)
1050	Potentilla reptans	. (I)	0 (1)
703	Hypericum tetrapterum	. (I)	0 (1)
415	Cirsium arvense	. (I)	0 (1)
719	Juncus acutiflorus	I (I)	1 (7)
418	Cirsium palustre	III (III)	3 (4)
167	Angelica sylvestris	II (III)	2 (2)
1445	Calliergon cuspidatum	IV (III)	3 (2)*
855	Mentha aquatica	II (III)	2 (4)
325	Carex hostiana	. (III)*	0 (3)
122	Agrostis stolonifera	III (III)	2 (3)
1519	Brachythecium rutabulum	. (III)*	0 (3)
1059	Prunella vulgaris	II (II)	1 (3)
477	Deschampsia cespitosa cespitosa	. (II)*	0 (4)
1207	Schoenus nigricans	II (II)	5 (5)
973	Plantago lanceolata	. (I)	0 (1)
758	Lathyrus pratensis	. (I)	0 (3)
1069	Pulicaria dysenterica	. (I)	0 (1)
1136	Rubus fruticosus agg.	. (I)	0 (1)
1169	Salix cinerea (s)	. (I)	0 (3)
2602	Alnus glutinosa (s)	. (I)	0 (1)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M24a The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

323	Carex flacca	III	5
329	Carex viridula ssp brachyrrhyncha	IV	4
532	Equisetum arvense	V	4
722	Juncus articulatus	II	3
733	Juncus inflexus	II	10

```
 970 Pinguicula vulgaris                          II   1
1546 Bryum pseudotriquetrum                       IV   1
1596 Cratoneuron commutatum                       II  10
1600 Ctenidium molluscum                          IV   5
1683 Fissidens adianthoides                       II   1
2730 Chara sp                                     II   1
2999 Viola seedling/sp                            II   1

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    15.1       0       26
   M24a       21.0      15       32
```

11.5 TROUTSDALE M13

The matching procedures have produced the following results for
Q1, Q2, Q4, Q10,

The N.V.C. communities most closely matching the test data are:

```
 1.    M13     coefficient =  65.6,   3 subcommunities.
 2.    M24     coefficient =  48.8,   3 subcommunities.
 3.    M10     coefficient =  46.9,   3 subcommunities.
 4.    M22     coefficient =  45.6,   4 subcommunities.
 5.    M 9     coefficient =  43.6,   2 subcommunities.
 6.    M26     coefficient =  41.8,   2 subcommunities.
 7.    M11     coefficient =  36.5,   2 subcommunities.
 8.    H 5     coefficient =  35.6,   2 subcommunities.
 9.   SD14     coefficient =  33.7,   4 subcommunities.
10.    M25     coefficient =  33.5,   3 subcommunities.
```

Table of test data matched against diagnosis of M13 , coefficient = 65.6
Schoenus nigricans-Juncus subnodulosus mire.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                          V (  V)      4 ( 5)
2732 Juncus subnodulosus                    V (  V)      9 ( 7)*
1207 Schoenus nigricans                    IV (  V)      6 ( 8)
 876 Molinia caerulea                       V (  V)      4 ( 7)
1445 Calliergon cuspidatum                III (  V)*     4 ( 5)
1305 Succisa pratensis                     V ( IV)      3 ( 4)
1046 Potentilla erecta                     IV ( IV)      2 ( 4)
1571 Campylium stellatum                   IV ( IV)      4 ( 4)
 167 Angelica sylvestris                    I (III)*     2 ( 3)
 418 Cirsium palustre                       V (III)*     3 ( 3)
 855 Mentha aquatica                       II (III)      2 ( 3)
 531 Epipactis palustris                    I (III)*     3 ( 3)
 961 Phragmites australis                  II (III)      4 ( 7)
 163 Anagallis tenella                     IV (III)      1 ( 4)
 535 Equisetum palustre                   III (III)      1 ( 3)
 946 Pedicularis palustris                 IV (III)      3 ( 3)
1658 Drepanocladus revolvens                . ( II)*     0 ( 5)
1683 Fissidens adianthoides               III ( II)      1 ( 4)
1546 Bryum pseudotriquetrum               III ( II)      1 ( 3)
2256 Aneura pinguis                        II ( II)      1 ( 3)
1973 Sphagnum subnitens                     . ( II)*     0 ( 4)
2222 Pellia endiviifolia                    . ( II)*     0 ( 3)
1600 Ctenidium molluscum                  III ( II)      4 ( 6)
 547 Eriophorum latifolium                  . ( II)*     0 ( 4)
 171 Anthoxanthum odoratum                  I (III)*     2 ( 3)
 680 Holcus lanatus                       III (III)      2 ( 3)
 576 Festuca rubra                         IV ( II)*     3 ( 4)
 719 Juncus acutiflorus                     . (  I)      0 ( 4)
 120 Agrostis canina                        . (  I)      0 ( 3)
 323 Carex flacca                         III (III)      4 ( 4)
 251 Briza media                          III ( II)      2 ( 4)
 466 Dactylorhiza fuchsii                  II ( II)      1 ( 3)
1596 Cratoneuron commutatum               III ( II)      4 ( 4)
 371 Centaurea nigra                        . ( II)*     0 ( 3)
 649 Gymnadenia conopsea                    . ( II)*     0 ( 4)
 944 Parnassia palustris                  III ( II)      1 ( 3)
 970 Pinguicula vulgaris                  III ( II)      1 ( 4)
```

325	Carex hostiana	II	(II)	1 (4)
1244	Serratula tinctoria	.	(II)*	0 (3)
347	Carex pulicaris	II	(II)	2 (3)
722	Juncus articulatus	III	(II)	2 (4)
995	Polygala vulgaris	.	(II)*	0 (3)
122	Agrostis stolonifera	I	(II)	1 (4)
911	Oenanthe lachenalii	.	(II)*	0 (3)
1089	Ranunculus flammula	I	(II)	1 (3)
809	Luzula multiflora	.	(II)*	0 (3)
1249	Danthonia decumbens	.	(II)*	0 (3)
470	Dactylorhiza purpurella	.	(II)*	0 (3)
786	Linum catharticum	.	(II)*	0 (3)
1349	Trifolium pratense	.	(I)	0 (3)
893	Myrica gale	.	(I)	0 (4)
278	Calluna vulgaris	.	(I)	0 (3)
1354	Triglochin palustre	IV	(I)*	1 (3)
1235	Selaginella selaginoides	.	(I)	0 (3)
702	Hypericum pulchrum	.	(I)	0 (3)
975	Plantago maritima	.	(I)	0 (4)
919	Ophrys insectifera	.	(I)	0 (3)
1214	Isolepis setacea	.	(I)	0 (3)
558	Eupatorium cannabinum	.	(III)*	0 (4)
1380	Valeriana dioica	II	(III)	2 (3)
583	Filipendula ulmaria	I	(III)*	1 (3)
612	Galium uliginosum	V	(II)*	2 (3)
279	Caltha palustris	.	(II)*	0 (3)
813	Lychnis flos-cuculi	II	(II)	1 (3)
1914	Pseudoscleropodium purum	I	(II)	2 (4)
467	Dactylorhiza incarnata	.	(II)*	0 (4)
469	Dactylorhiza praetermissa	.	(II)*	0 (3)
1804	Plagiomnium elatum	III	(II)	1 (3)
1411	Vicia cracca	.	(II)*	0 (3)
862	Menyanthes trifoliata	.	(I)	0 (4)
546	Eriophorum angustifolium	.	(I)	0 (3)
1795	Plagiomnium rostratum	.	(I)	0 (3)
320	Carex elata	.	(I)	0 (4)
1801	Rhizomnium punctatum	.	(I)	0 (3)
313	Carex diandra	.	(I)	0 (4)
2257	Riccardia chamedryfolia	.	(I)	0 (3)
1845	Philonotis calcarea	I	(I)	1 (3)
2254	Riccardia multifida	II	(I)	1 (3)
352	Carex rostrata	.	(I)	0 (4)
1025	Potamogeton coloratus	.	(I)	0 (3)
1370	Utricularia intermedia	.	(I)	0 (3)
1371	Utricularia minor	.	(I)	0 (3)
1372	Utricularia australis	.	(I)	0 (3)
1373	Utricularia vulgaris	.	(I)	0 (3)
329	Carex viridula ssp brachyrrhyncha	III	(III)	3 (4)
690	Hydrocotyle vulgaris	II	(III)	3 (5)
802	Lotus pedunculatus	I	(III)*	1 (3)
333	Carex nigra	.	(II)*	0 (4)
542	Erica tetralix	.	(II)*	0 (3)
2167	Lophocolea bidentata	.	(II)*	0 (3)
295	Cardamine pratensis	.	(II)*	0 (3)
420	Cladium mariscus	.	(II)*	0 (7)
1081	Ranunculus acris	.	(II)*	0 (3)
831	Lythrum salicaria	.	(II)*	0 (3)
1598	Cratoneuron filicinum	.	(I)	0 (4)
2714	Cirsium dissectum	.	(I)	0 (3)
525	Epilobium palustre	.	(I)	0 (3)
533	Equisetum fluviatile	.	(I)	0 (4)
770	Leontodon saxatilis	.	(I)	0 (3)
1482	Aulacomnium palustre	.	(I)	0 (4)
609	Galium palustre	.	(I)	0 (3)
1381	Valeriana officinalis	.	(I)	0 (3)
1519	Brachythecium rutabulum	.	(I)	0 (3)
568	Euphrasia officinalis agg	.	(I)	0 (3)
758	Lathyrus pratensis	.	(I)	0 (3)

```
1350 Trifolium repens                                . (  I)      0 ( 3)
2982 Taraxacum seedling/sp                           . (  I)      0 ( 3)
 510 Eleocharis quinqueflora                         . (  I)      0 ( 3)
 315 Carex dioica                                    . (  I)      0 ( 3)
 703 Hypericum tetrapterum                           . (  I)      0 ( 3)
 471 Dactylorhiza traunsteineri                      . (  I)      0 ( 3)
 494 Drosera rotundifolia                            . (  I)      0 ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
2730 Chara sp                                      III   2
3192 Dactylorhiza sp.                               II   1
3266 Drepanocladus revolvens var. intermedius       II   3
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	23.7	0	34
M13	27.0	7	65

****

The N.V.C subcommunities most closely matching the test data are:

1. M13 coefficient = 65.6
2. M13c coefficient = 61.9
3. M13b coefficient = 61.5
4. M13a coefficient = 56.1
5. M10b coefficient = 52.1
6. M24 coefficient = 48.8
7. M24b coefficient = 48.0
8. M10 coefficient = 46.9
9. M22a coefficient = 45.9
10. M22 coefficient = 45.6

Table of test data matched against diagnosis of M13c, coefficient = 61.9
Schoenus nigricans-Juncus subnodulosus mire: Caltha-Galium uliginosum subc.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                                   V (  V)      4 ( 4)
2732 Juncus subnodulosus                             V (  V)      9 ( 7)*
1207 Schoenus nigricans                             IV (  V)      6 ( 8)
 876 Molinia caerulea                                V (  V)      4 ( 7)
1445 Calliergon cuspidatum                         III (  V)*     4 ( 5)
1305 Succisa pratensis                               V ( IV)      3 ( 3)
1046 Potentilla erecta                              IV ( IV)      2 ( 4)
1571 Campylium stellatum                            IV (  V)      4 ( 4)
 167 Angelica sylvestris                             I ( IV)*     2 ( 3)
 418 Cirsium palustre                                V ( IV)      3 ( 3)
 855 Mentha aquatica                                II ( IV)*     2 ( 3)
 531 Epipactis palustris                             I ( IV)*     3 ( 3)
 961 Phragmites australis                           II ( IV)*     4 ( 7)
 163 Anagallis tenella                              IV ( IV)      1 ( 4)
 535 Equisetum palustre                            III ( IV)      1 ( 3)
 946 Pedicularis palustris                          IV (III)      3 ( 3)
1658 Drepanocladus revolvens                         . (III)*     0 ( 5)
1683 Fissidens adianthoides                        III (III)      1 ( 4)
1546 Bryum pseudotriquetrum                        III (III)      1 ( 3)
2256 Aneura pinguis                                 II (III)      1 ( 3)
```

1973	Sphagnum subnitens	.	(II)*	0 (3)
2222	Pellia endiviifolia	.	(II)*	0 (3)
1600	Ctenidium molluscum	III	(II)	4 (4)
547	Eriophorum latifolium	.	(II)*	0 (4)
171	Anthoxanthum odoratum	I	(I)	2 (3)
680	Holcus lanatus	III	(I)*	2 (3)
576	Festuca rubra	IV	(I)*	3 (3)
323	Carex flacca	III	(II)	4 (4)
251	Briza media	III	(II)	2 (3)
466	Dactylorhiza fuchsii	II	(II)	1 (3)
1596	Cratoneuron commutatum	III	(II)	4 (4)
371	Centaurea nigra	.	(II)*	0 (3)
649	Gymnadenia conopsea	.	(II)*	0 (4)
944	Parnassia palustris	III	(II)	1 (3)
970	Pinguicula vulgaris	III	(II)	1 (4)
325	Carex hostiana	II	(I)	1 (3)
1244	Serratula tinctoria	.	(I)	0 (3)
347	Carex pulicaris	II	(I)	2 (3)
722	Juncus articulatus	III	(I)*	2 (3)
122	Agrostis stolonifera	I	(I)	1 (3)
911	Oenanthe lachenalii	.	(II)*	0 (3)
1089	Ranunculus flammula	I	(II)	1 (3)
809	Luzula multiflora	.	(I)	0 (3)
470	Dactylorhiza purpurella	.	(I)	0 (3)
786	Linum catharticum	.	(I)	0 (1)
278	Calluna vulgaris	.	(I)	0 (1)
1354	Triglochin palustre	IV	(I)*	1 (3)
1235	Selaginella selaginoides	.	(I)	0 (3)
558	Eupatorium cannabinum	.	(V)*	0 (4)
1380	Valeriana dioica	II	(IV)*	2 (3)
583	Filipendula ulmaria	I	(IV)*	1 (3)
612	Galium uliginosum	V	(IV)	2 (3)
279	Caltha palustris	.	(IV)*	0 (3)
813	Lychnis flos-cuculi	II	(III)	1 (3)
1914	Pseudoscleropodium purum	I	(III)*	2 (4)
467	Dactylorhiza incarnata	.	(III)*	0 (4)
469	Dactylorhiza praetermissa	.	(III)*	0 (3)
1804	Plagiomnium elatum	III	(III)	1 (3)
1411	Vicia cracca	.	(III)*	0 (3)
862	Menyanthes trifoliata	.	(II)*	0 (4)
546	Eriophorum angustifolium	.	(II)*	0 (3)
1795	Plagiomnium rostratum	.	(II)*	0 (3)
320	Carex elata	.	(II)*	0 (4)
1801	Rhizomnium punctatum	.	(II)*	0 (3)
313	Carex diandra	.	(II)*	0 (4)
2257	Riccardia chamedryfolia	.	(II)*	0 (3)
1845	Philonotis calcarea	I	(II)	1 (3)
2254	Riccardia multifida	II	(II)	1 (3)
352	Carex rostrata	.	(I)	0 (4)
1025	Potamogeton coloratus	.	(I)	0 (3)
1370	Utricularia intermedia	.	(I)	0 (3)
1371	Utricularia minor	.	(I)	0 (3)
1372	Utricularia australis	.	(I)	0 (3)
1373	Utricularia vulgaris	.	(I)	0 (3)
329	Carex viridula ssp brachyrrhyncha	III	(III)	3 (4)
690	Hydrocotyle vulgaris	II	(III)	3 (5)
802	Lotus pedunculatus	I	(III)*	1 (3)
333	Carex nigra	.	(II)*	0 (4)
542	Erica tetralix	.	(I)	0 (3)
2167	Lophocolea bidentata	.	(II)*	0 (3)
295	Cardamine pratensis	.	(II)*	0 (3)
420	Cladium mariscus	.	(II)*	0 (7)
1081	Ranunculus acris	.	(I)	0 (3)
831	Lythrum salicaria	.	(II)*	0 (3)
1598	Cratoneuron filicinum	.	(II)*	0 (4)
2714	Cirsium dissectum	.	(II)*	0 (3)
525	Epilobium palustre	.	(II)*	0 (3)
533	Equisetum fluviatile	.	(II)*	0 (3)

```
 770 Leontodon saxatilis                          .  (  I)      0 ( 3)
1482 Aulacomnium palustre                         .  (  I)      0 ( 3)
 609 Galium palustre                              .  (  I)      0 ( 3)
1381 Valeriana officinalis                        .  (  I)      0 ( 3)
1519 Brachythecium rutabulum                      .  (  I)      0 ( 3)
 568 Euphrasia officinalis agg                    .  (  I)      0 ( 1)
 758 Lathyrus pratensis                           .  (  I)      0 ( 3)
2982 Taraxacum seedling/sp                        .  (  I)      0 ( 1)
 510 Eleocharis quinqueflora                      .  (  I)      0 ( 3)
 315 Carex dioica                                 .  (  I)      0 ( 3)
 703 Hypericum tetrapterum                        .  (  I)      0 ( 3)
 471 Dactylorhiza traunsteineri                   .  (  I)      0 ( 3)
 494 Drosera rotundifolia                         .  (  I)      0 ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13c The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
2730 Chara sp                                    III   2
3192 Dactylorhiza sp.                             II   1
3266 Drepanocladus revolvens var. intermedius     II   3
```

The following numbers of species per sample were recorded:

```
             Mean     Min      Max
 Test data   23.7       0       34
   M13c      44.0      30       65
```

****

Table of test data matched against diagnosis of M13b, coefficient = 61.5
Schoenus nigricans-Juncus subnodulosus mire: Briza media-Pinguicula vulgaris sub

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
1207 Schoenus nigricans                          IV (  V)      6 ( 7)
 876 Molinia caerulea                             V (  V)      4 ( 7)
1445 Calliergon cuspidatum                      III (  V)*     4 ( 3)*
1305 Succisa pratensis                           V (  V)      3 ( 4)
 339 Carex panicea                               V (  V)      4 ( 5)
2732 Juncus subnodulosus                         V (  V)      9 ( 7)*
1046 Potentilla erecta                          IV (  V)      2 ( 3)
1571 Campylium stellatum                        IV (  V)      4 ( 4)
 167 Angelica sylvestris                         I ( IV)*     2 ( 3)
 418 Cirsium palustre                            V ( IV)      3 ( 3)
 855 Mentha aquatica                            II ( IV)*     2 ( 3)
 531 Epipactis palustris                         I (III)*     3 ( 3)
 961 Phragmites australis                       II (III)      4 ( 3)*
 163 Anagallis tenella                          IV (  V)      1 ( 3)
 535 Equisetum palustre                        III (III)      1 ( 3)
 946 Pedicularis palustris                      IV ( IV)      3 ( 3)
1658 Drepanocladus revolvens                     . (III)*     0 ( 4)
1683 Fissidens adianthoides                    III (III)      1 ( 3)
1546 Bryum pseudotriquetrum                    III ( II)      1 ( 3)
2256 Aneura pinguis                             II ( II)      1 ( 3)
1973 Sphagnum subnitens                          . ( II)*     0 ( 4)
2222 Pellia endiviifolia                         . ( II)*     0 ( 3)
1600 Ctenidium molluscum                       III ( II)      4 ( 6)
 547 Eriophorum latifolium                       . ( II)*     0 ( 4)
 171 Anthoxanthum odoratum                       I (III)*     2 ( 3)
 680 Holcus lanatus                            III (III)      2 ( 3)
 576 Festuca rubra                              IV ( II)*     3 ( 3)
```

323	Carex flacca	III (IV)	4 (3)*
251	Briza media	III (V)*	2 (4)
466	Dactylorhiza fuchsii	II (V)*	1 (3)
1596	Cratoneuron commutatum	III (IV)	4 (4)
371	Centaurea nigra	. (IV)*	0 (3)
649	Gymnadenia conopsea	. (IV)*	0 (3)
944	Parnassia palustris	III (IV)	1 (3)
970	Pinguicula vulgaris	III (IV)	1 (4)
325	Carex hostiana	II (IV)*	1 (4)
1244	Serratula tinctoria	. (IV)*	0 (3)
347	Carex pulicaris	II (IV)*	2 (3)
722	Juncus articulatus	III (IV)	2 (4)
995	Polygala vulgaris	. (IV)*	0 (3)
122	Agrostis stolonifera	I (III)*	1 (3)
911	Oenanthe lachenalii	. (III)*	0 (3)
1089	Ranunculus flammula	I (III)*	1 (3)
809	Luzula multiflora	. (III)*	0 (3)
1249	Danthonia decumbens	. (III)*	0 (3)
470	Dactylorhiza purpurella	. (III)*	0 (3)
786	Linum catharticum	. (III)*	0 (3)
1349	Trifolium pratense	. (III)*	0 (3)
893	Myrica gale	. (II)*	0 (4)
278	Calluna vulgaris	. (II)*	0 (3)
1354	Triglochin palustre	IV (II)*	1 (3)
1235	Selaginella selaginoides	. (II)*	0 (3)
702	Hypericum pulchrum	. (II)*	0 (3)
975	Plantago maritima	. (II)*	0 (4)
919	Ophrys insectifera	. (II)*	0 (3)
1214	Isolepis setacea	. (I)	0 (3)
558	Eupatorium cannabinum	. (III)*	0 (3)
1380	Valeriana dioica	II (II)	2 (3)
583	Filipendula ulmaria	I (II)	1 (3)
612	Galium uliginosum	V (II)*	2 (3)
279	Caltha palustris	. (I)	0 (3)
813	Lychnis flos-cuculi	II (I)	1 (1)
1914	Pseudoscleropodium purum	I (I)	2 (3)
467	Dactylorhiza incarnata	. (II)*	0 (3)
469	Dactylorhiza praetermissa	. (I)	0 (1)
1804	Plagiomnium elatum	III (I)*	1 (1)
1411	Vicia cracca	. (I)	0 (3)
862	Menyanthes trifoliata	. (I)	0 (1)
546	Eriophorum angustifolium	. (I)	0 (3)
1795	Plagiomnium rostratum	. (I)	0 (1)
320	Carex elata	. (I)	0 (1)
329	Carex viridula ssp brachyrrhyncha	III (IV)	3 (4)
690	Hydrocotyle vulgaris	II (II)	3 (3)
802	Lotus pedunculatus	I (III)*	1 (3)
333	Carex nigra	. (II)*	0 (3)
542	Erica tetralix	. (II)*	0 (3)
2167	Lophocolea bidentata	. (I)	0 (3)
295	Cardamine pratensis	. (I)	0 (1)
420	Cladium mariscus	. (I)	0 (4)
1081	Ranunculus acris	. (II)*	0 (3)
831	Lythrum salicaria	. (II)*	0 (3)
1598	Cratoneuron filicinum	. (II)*	0 (3)
2714	Cirsium dissectum	. (I)	0 (3)
525	Epilobium palustre	. (I)	0 (3)
533	Equisetum fluviatile	. (I)	0 (1)
770	Leontodon saxatilis	. (I)	0 (3)
1482	Aulacomnium palustre	. (I)	0 (3)
609	Galium palustre	. (I)	0 (1)
1381	Valeriana officinalis	. (I)	0 (1)
1519	Brachythecium rutabulum	. (I)	0 (1)
568	Euphrasia officinalis agg	. (II)*	0 (3)
1350	Trifolium repens	. (I)	0 (3)
2982	Taraxacum seedling/sp	. (I)	0 (3)
510	Eleocharis quinqueflora	. (I)	0 (3)
315	Carex dioica	. (I)	0 (1)

```
 703 Hypericum tetrapterum                          .  (  I)      0 ( 3)
 471 Dactylorhiza traunsteineri                     .  (  I)      0 ( 3)
 494 Drosera rotundifolia                           .  (  I)      0 ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
2254 Riccardia multifida                          II   1
2730 Chara sp                                    III   2
3192 Dactylorhiza sp.                             II   1
3266 Drepanocladus revolvens var. intermedius     II   3
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	23.7	0	34
M13b	45.0	26	57

****

Table of test data matched against diagnosis of M13a, coefficient = 56.1
Schoenus nigricans-Juncus subnodulosus mire: Festuca rubra-J. acutiflorus subc.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                                  V (  V)      4 ( 4)
2732 Juncus subnodulosus                            V ( IV)      9 ( 4)*
1207 Schoenus nigricans                            IV ( IV)      6 ( 4)*
 876 Molinia caerulea                               V ( IV)      4 ( 4)
1445 Calliergon cuspidatum                        III ( IV)      4 ( 4)
1305 Succisa pratensis                             V ( IV)      3 ( 3)
1046 Potentilla erecta                            IV ( IV)      2 ( 3)
1571 Campylium stellatum                          IV (III)      4 ( 3)*
 167 Angelica sylvestris                           I ( II)      2 ( 3)
 418 Cirsium palustre                              V ( II)*     3 ( 3)
 855 Mentha aquatica                              II ( II)      2 ( 3)
 531 Epipactis palustris                           I (  I)      3 ( 3)
 961 Phragmites australis                         II ( II)      4 ( 3)*
 535 Equisetum palustre                          III ( II)      1 ( 3)
 946 Pedicularis palustris                        IV (  I)*     3 ( 3)
1658 Drepanocladus revolvens                       .  (  I)      0 ( 1)
1973 Sphagnum subnitens                            .  (  I)      0 ( 3)
 171 Anthoxanthum odoratum                         I (III)*     2 ( 3)
 680 Holcus lanatus                              III (III)      2 ( 3)
 576 Festuca rubra                                IV (III)      3 ( 4)
 719 Juncus acutiflorus                             .  ( II)*     0 ( 4)
 120 Agrostis canina                                .  ( II)*     0 ( 3)
 323 Carex flacca                                III (III)      4 ( 4)
1596 Cratoneuron commutatum                      III (  I)*     4 ( 3)*
 371 Centaurea nigra                                .  (  I)      0 ( 3)
 122 Agrostis stolonifera                           I ( II)      1 ( 4)
 911 Oenanthe lachenalii                            .  (  I)      0 ( 1)
1089 Ranunculus flammula                            I (  I)      1 ( 3)
 809 Luzula multiflora                              .  (  I)      0 ( 2)
1249 Danthonia decumbens                            .  (  I)      0 ( 3)
 893 Myrica gale                                    .  ( II)*     0 ( 4)
 558 Eupatorium cannabinum                          .  ( II)*     0 ( 3)
1380 Valeriana dioica                              II ( II)      2 ( 3)
 583 Filipendula ulmaria                           I ( II)      1 ( 3)
 612 Galium uliginosum                             V (  I)*     2 ( 3)
 279 Caltha palustris                               .  (  I)      0 ( 1)
```

813	Lychnis flos-cuculi	II (I)	1 (2)
1914	Pseudoscleropodium purum	I (I)	2 (3)
862	Menyanthes trifoliata	. (I)	0 (3)
329	Carex viridula ssp brachyrrhyncha	III (III)	3 (3)
690	Hydrocotyle vulgaris	II (III)	3 (3)
802	Lotus pedunculatus	I (II)	1 (3)
333	Carex nigra	. (II)*	0 (3)
542	Erica tetralix	. (II)*	0 (3)
2167	Lophocolea bidentata	. (II)*	0 (3)
295	Cardamine pratensis	. (II)*	0 (2)
420	Cladium mariscus	. (II)*	0 (4)
1081	Ranunculus acris	. (II)*	0 (3)
831	Lythrum salicaria	. (I)	0 (1)
1598	Cratoneuron filicinum	. (I)	0 (3)
2714	Cirsium dissectum	. (I)	0 (3)
525	Epilobium palustre	. (I)	0 (3)
533	Equisetum fluviatile	. (I)	0 (4)
770	Leontodon saxatilis	. (I)	0 (1)
1482	Aulacomnium palustre	. (I)	0 (4)
609	Galium palustre	. (I)	0 (2)
1381	Valeriana officinalis	. (I)	0 (3)
1519	Brachythecium rutabulum	. (I)	0 (3)
758	Lathyrus pratensis	. (I)	0 (2)
1350	Trifolium repens	. (I)	0 (3)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13a The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

163	Anagallis tenella	IV	1
251	Briza media	III	2
325	Carex hostiana	II	1
347	Carex pulicaris	II	2
466	Dactylorhiza fuchsii	II	1
722	Juncus articulatus	III	2
944	Parnassia palustris	III	1
970	Pinguicula vulgaris	III	1
1354	Triglochin palustre	IV	1
1546	Bryum pseudotriquetrum	III	1
1600	Ctenidium molluscum	III	4
1683	Fissidens adianthoides	III	1
1804	Plagiomnium elatum	III	1
2254	Riccardia multifida	II	1
2256	Aneura pinguis	II	1
2730	Chara sp	III	2
3192	Dactylorhiza sp.	II	1
3266	Drepanocladus revolvens var. intermedius	II	3

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	23.7	0	34
M13a	14.0	7	27

11.6 TROUTSDALE M22

The matching procedures have produced the following results for
Q3, Q5-Q7, Q12, Q14, Q16

The N.V.C. communities most closely matching the test data are:

```
 1.    M22     coefficient =  65.5,   4 subcommunities.
 2.    M24     coefficient =  59.1,   3 subcommunities.
 3.    M23     coefficient =  52.3,   2 subcommunities.
 4.    M26     coefficient =  47.9,   2 subcommunities.
 5.    M13     coefficient =  47.5,   3 subcommunities.
 6.   SD17     coefficient =  47.1,   4 subcommunities.
 7.   MG 9     coefficient =  46.6,   2 subcommunities.
 8.   MG 8     coefficient =  45.4,   0 subcommunities.
 9.    M27     coefficient =  44.8,   3 subcommunities.
10.   SD15     coefficient =  43.3,   4 subcommunities.
```

Table of test data matched against diagnosis of M22 , coefficient = 65.5
Juncus subnodulosus-Cirsium palustre fen-meadow.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

2732	Juncus subnodulosus	III (V)*	6 (8)
1445	Calliergon cuspidatum	IV (V)	3 (5)
855	Mentha aquatica	II (IV)*	3 (7)
680	Holcus lanatus	V (IV)	6 (6)
418	Cirsium palustre	V (IV)	4 (4)
535	Equisetum palustre	II (IV)*	6 (6)
583	Filipendula ulmaria	IV (IV)	7 (3)*
802	Lotus pedunculatus	IV (IV)	4 (4)
295	Cardamine pratensis	IV (III)	2 (3)
722	Juncus articulatus	III (II)	2 (8)
384	Cerastium fontanum	I (II)	1 (3)
251	Briza media	I (II)	1 (6)
1350	Trifolium repens	II (II)	4 (3)*
1349	Trifolium pratense	I (II)	3 (3)
171	Anthoxanthum odoratum	II (II)	3 (3)
876	Molinia caerulea	II (II)	5 (7)
1139	Rumex acetosa	III (II)	3 (4)
733	Juncus inflexus	II (II)	4 (6)
526	Epilobium parviflorum	II (II)	1 (3)
466	Dactylorhiza fuchsii	II (II)	1 (4)
973	Plantago lanceolata	I (I)	3 (4)
1059	Prunella vulgaris	I (I)	3 (4)
371	Centaurea nigra	IV (I)*	3 (4)
1095	Ranunculus repens	IV (I)*	5 (4)*
1354	Triglochin palustre	. (I)	0 (2)
1106	Rhinanthus minor	. (I)	0 (4)
323	Carex flacca	II (I)	1 (3)
324	Carex hirta	III (I)*	3 (3)
730	Juncus effusus	III (I)*	4 (4)
460	Cynosurus cristatus	. (I)	0 (3)
961	Phragmites australis	. (II)*	0 (5)
690	Hydrocotyle vulgaris	II (III)	1 (6)
831	Lythrum salicaria	. (I)	0 (3)
862	Menyanthes trifoliata	. (I)	0 (4)
889	Myosotis scorpioides	. (I)	0 (3)
1571	Campylium stellatum	. (I)	0 (3)
1795	Plagiomnium rostratum	I (I)	1 (2)

320	Carex elata	.	(I)	0 (4)
1049	Potentilla palustris	.	(I)	0 (3)
609	Galium palustre	.	(II)*	0 (5)
525	Epilobium palustre	I	(II)	2 (3)
533	Equisetum fluviatile	.	(I)	0 (3)
467	Dactylorhiza incarnata	.	(II)*	0 (3)
232	Berula erecta	.	(I)	0 (3)
946	Pedicularis palustris	.	(I)	0 (4)
1169	Salix cinerea (s)	II	(I)	8 (3)*
469	Dactylorhiza praetermissa	.	(I)	0 (3)
1328	Thelypteris palustris	.	(I)	0 (3)
917	Ophioglossum vulgatum	.	(I)	0 (2)
302	Carex acutiformis	.	(II)*	0 (6)
715	Iris pseudacorus	.	(I)	0 (3)
1089	Ranunculus flammula	III	(I)*	3 (3)
1381	Valeriana officinalis	.	(I)	0 (4)
830	Lysimachia vulgaris	.	(I)	0 (3)
1323	Thalictrum flavum	.	(I)	0 (2)
521	Epilobium hirsutum	.	(I)	0 (3)
281	Calystegia sepium	.	(I)	0 (3)
955	Phalaris arundinacea	.	(I)	0 (4)
329	Carex viridula ssp brachyrrhyncha	.	(I)	0 (3)
3198	Peucedanum palustre	.	(I)	0 (3)
269	Calamagrostis canescens	.	(I)	0 (4)
1308	Symphytum officinale	.	(I)	0 (3)
420	Cladium mariscus	.	(I)	0 (2)
612	Galium uliginosum	IV	(III)	3 (5)
813	Lychnis flos-cuculi	III	(III)	3 (3)
990	Poa trivialis	.	(III)*	0 (4)
279	Caltha palustris	.	(III)*	0 (4)
339	Carex panicea	IV	(III)	4 (7)
576	Festuca rubra	V	(III)*	4 (5)
122	Agrostis stolonifera	II	(III)	3 (5)
1081	Ranunculus acris	.	(III)*	0 (4)
1380	Valeriana dioica	IV	(III)	4 (4)
1411	Vicia cracca	.	(III)*	0 (5)
758	Lathyrus pratensis	II	(III)	2 (5)
1519	Brachythecium rutabulum	III	(III)	3 (4)
167	Angelica sylvestris	II	(III)	4 (6)
1305	Succisa pratensis	IV	(III)	4 (5)
317	Carex disticha	.	(III)*	0 (7)
1046	Potentilla erecta	I	(II)	1 (4)
558	Eupatorium cannabinum	.	(II)*	0 (3)
703	Hypericum tetrapterum	II	(II)	1 (3)
197	Arrhenatherum elatius	.	(II)*	0 (4)
1219	Scrophularia auriculata	I	(II)	1 (4)
1043	Potentilla anserina	I	(I)	1 (3)
477	Deschampsia cespitosa cespitosa	II	(I)	1 (3)
333	Carex nigra	II	(I)	3 (6)
1069	Pulicaria dysenterica	II	(I)	1 (6)
1142	Rumex conglomeratus	.	(I)	0 (3)
886	Myosotis laxa caespitosa	.	(I)	0 (3)
1807	Plagiomnium undulatum	III	(I)*	3 (3)
1801	Rhizomnium punctatum	.	(I)	0 (3)
911	Oenanthe lachenalii	.	(I)	0 (3)
1050	Potentilla reptans	.	(I)	0 (4)
531	Epipactis palustris	.	(I)	0 (5)
2167	Lophocolea bidentata	.	(I)	0 (3)
823	Lycopus europaeus	.	(I)	0 (3)
1223	Scutellaria galericulata	.	(I)	0 (3)
546	Eriophorum angustifolium	.	(I)	0 (6)
809	Luzula multiflora	.	(I)	0 (3)
960	Phleum pratense	.	(I)	0 (3)
1394	Veronica beccabunga	.	(I)	0 (3)
127	Ajuga reptans	.	(I)	0 (4)
1148	Rumex sanguineus	.	(I)	0 (3)
415	Cirsium arvense	.	(I)	0 (3)
1914	Pseudoscleropodium purum	II	(I)	3 (3)

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 105 Achillea ptarmica                              .  (  I)      0 ( 4)
 572 Festuca arundinacea                           II  (  I)      3 ( 3)
1598 Cratoneuron filicinum                          I  (  I)      1 ( 3)
1268 Solanum dulcamara (g)                          .  (  I)      0 ( 3)
 765 Lemna minor                                    .  (  I)      0 ( 3)
1791 Plagiomnium affine                             .  (  I)      0 ( 3)
2714 Cirsium dissectum                              .  (  I)      0 ( 3)
 509 Eleocharis palustris                           .  (  I)      0 ( 3)
 352 Carex rostrata                                 .  (  I)      0 ( 3)
 998 Persicaria amphibia                            .  (  I)      0 ( 3)
1302 Stellaria palustris                            .  (  I)      0 ( 1)
 511 Eleocharis uniglumis                           .  (  I)      0 ( 3)

The following species found in the test data at a constancy of II or more are
not recorded in the N.V.C. diagnostic table for the unit  M22  The data for
each species are presented as follows: species code, name, constancy,
maximum quantitative value.


 532 Equisetum arvense                            III   4
 719 Juncus acutiflorus                            IV   7
 729 Juncus conglomeratus                          II   1
 768 Leontodon autumnalis                          II   1
 796 Lolium perenne                                II   2

The following numbers of species per sample were recorded:
             Mean     Min      Max
 Test data    24.9       0       32
   M22         0.0       0        0

*******************************************************************************

Table of test data matched against diagnosis of  M24 , coefficient =  59.1
Molinia caerulea-Cirsium dissectum fen-meadow.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 876 Molinia caerulea                              II (  V)*     5 ( 8)
1046 Potentilla erecta                              I (  V)*     1 ( 4)
1305 Succisa pratensis                             IV (  V)      4 ( 6)
2714 Cirsium dissectum                              . ( IV)*     0 ( 6)
 802 Lotus pedunculatus                            IV ( IV)      4 ( 4)
 339 Carex panicea                                 IV ( IV)      4 ( 5)
 612 Galium uliginosum                             IV (III)      3 ( 5)
1380 Valeriana dioica                              IV (III)      4 ( 3)*
 371 Centaurea nigra                               IV (III)      3 ( 4)
2732 Juncus subnodulosus                          III (III)      6 ( 5)*
 535 Equisetum palustre                            II ( II)      6 ( 3)*
1411 Vicia cracca                                   . ( II)*     0 ( 4)
 583 Filipendula ulmaria                           IV ( II)*     7 ( 5)*
 786 Linum catharticum                              . ( II)*     0 ( 3)
 649 Gymnadenia conopsea                            . ( II)*     0 ( 3)
 558 Eupatorium cannabinum                          . ( II)*     0 ( 3)
 961 Phragmites australis                           . ( II)*     0 ( 8)
1571 Campylium stellatum                            .  (  I)     0 ( 2)
 420 Cladium mariscus                               .  (  I)     0 ( 6)
 831 Lythrum salicaria                              .  (  I)     0 ( 3)
 467 Dactylorhiza incarnata                         .  (  I)     0 ( 3)
 680 Holcus lanatus                                 V (III)*     6 ( 5)*
 171 Anthoxanthum odoratum                         II (III)      3 ( 6)
 690 Hydrocotyle vulgaris                          II ( II)      1 ( 3)
 347 Carex pulicaris                                . ( II)*     0 ( 3)
 809 Luzula multiflora                              . ( II)*     0 ( 3)
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1081 Ranunculus acris                          .  ( II)*     0 ( 4)
1914 Pseudoscleropodium purum                 II  ( II)      3 ( 6)
 576 Festuca rubra                             V  ( II)*     4 ( 7)
 295 Cardamine pratensis                      IV  ( II)*     2 ( 3)
 251 Briza media                               I  ( II)      1 ( 4)
1139 Rumex acetosa                           III  ( II)      3 ( 3)
 531 Epipactis palustris                       .  (  I)      0 ( 4)
1050 Potentilla reptans                        .  (  I)      0 ( 3)
 703 Hypericum tetrapterum                    II  (  I)      1 ( 3)
 415 Cirsium arvense                           .  (  I)      0 ( 4)
 333 Carex nigra                              II  (  I)      3 ( 4)
1349 Trifolium pratense                        I  (  I)      3 ( 3)
 995 Polygala vulgaris                         .  (  I)      0 ( 4)
 770 Leontodon saxatilis                       .  (  I)      0 ( 3)
 722 Juncus articulatus                      III  (  I)*     2 ( 4)
 546 Eriophorum angustifolium                  .  (  I)      0 ( 2)
 466 Dactylorhiza fuchsii                     II  (  I)      1 ( 1)
 613 Galium verum                              .  (  I)      0 ( 3)
 384 Cerastium fontanum                        I  (  I)      1 ( 3)
1043 Potentilla anserina                       I  (  I)      1 ( 3)
 719 Juncus acutiflorus                       IV  ( II)*     7 ( 7)
 729 Juncus conglomeratus                     II  ( II)      1 ( 7)
 542 Erica tetralix                            .  ( II)*     0 ( 4)
 609 Galium palustre                           .  ( II)*     0 ( 3)
 468 Dactylorhiza maculata ericetorum          .  ( II)*     0 ( 4)
 278 Calluna vulgaris                          .  (  I)      0 ( 5)
 730 Juncus effusus                          III  (  I)*     4 ( 5)
1244 Serratula tinctoria                       .  (  I)      0 ( 3)
 901 Narthecium ossifragum                     .  (  I)      0 ( 4)
1482 Aulacomnium palustre                      .  (  I)      0 ( 4)
1089 Ranunculus flammula                    III  (  I)*     3 ( 3)
1766 Hypnum cupressiforme                      .  (  I)      0 ( 4)
 105 Achillea ptarmica                         .  (  I)      0 ( 4)
 120 Agrostis canina                           .  (  I)      0 ( 6)
1224 Scutellaria minor                         .  (  I)      0 ( 2)
1427 Viola palustris                           .  (  I)      0 ( 4)
2700 Sphagnum auriculatum var auriculatum      .  (  I)      0 ( 7)
3310 Hypericum undulatum                       .  (  I)      0 ( 3)
1179 Salix repens agg.                         .  (  I)      0 ( 4)
 947 Pedicularis sylvatica                     .  (  I)      0 ( 3)
1236 Senecio aquaticus                         .  (  I)      0 ( 2)
2003 Thuidium tamariscinum                     I  (  I)      3 ( 5)
1677 Eurhynchium praelongum                    .  (  I)      0 ( 4)
 418 Cirsium palustre                          V  (III)*     4 ( 5)
 167 Angelica sylvestris                      II  (III)      4 ( 5)
1445 Calliergon cuspidatum                    IV  (III)      3 ( 3)
 855 Mentha aquatica                          II  (III)      3 ( 4)
 325 Carex hostiana                            I  (III)*     4 ( 6)
 122 Agrostis stolonifera                     II  ( II)      3 ( 4)
1519 Brachythecium rutabulum                 III  ( II)      3 ( 6)
1059 Prunella vulgaris                         I  ( II)      3 ( 3)
 477 Deschampsia cespitosa cespitosa          II  ( II)      1 ( 4)
1207 Schoenus nigricans                        .  ( II)*     0 ( 8)
 973 Plantago lanceolata                       I  ( II)      3 ( 4)
 758 Lathyrus pratensis                       II  ( II)      2 ( 2)
1069 Pulicaria dysenterica                    II  ( II)      1 ( 4)
1136 Rubus fruticosus agg.                     .  (  I)      0 ( 3)
1169 Salix cinerea (s)                        II  (  I)      8 ( 3)*
1249 Danthonia decumbens                       .  (  I)      0 ( 5)
 163 Anagallis tenella                         .  (  I)      0 ( 6)
1973 Sphagnum subnitens                        .  (  I)      0 ( 7)
 813 Lychnis flos-cuculi                     III  (  I)*     3 ( 4)
 494 Drosera rotundifolia                      .  (  I)      0 ( 3)
2602 Alnus glutinosa (s)                       .  (  I)      0 ( 2)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M24 The data for each species are presented as follows: species code, name, constancy,

maximum quantitative value.

323	Carex flacca	II	1
324	Carex hirta	III	3
526	Epilobium parviflorum	II	1
532	Equisetum arvense	III	4
572	Festuca arundinacea	II	3
733	Juncus inflexus	II	4
768	Leontodon autumnalis	II	1
796	Lolium perenne	II	2
1095	Ranunculus repens	IV	5
1350	Trifolium repens	II	4
1807	Plagiomnium undulatum	III	3

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	24.9	0	32
M24	26.0	9	52

****

The N.V.C subcommunities most closely matching the test data are:

1.	M22b	coefficient =	67.3
2.	M22	coefficient =	65.5
3.	M22a	coefficient =	64.1
4.	M24b	coefficient =	59.4
5.	M24	coefficient =	59.1
6.	M23a	coefficient =	53.6
7.	M23	coefficient =	52.3
8.	M22c	coefficient =	51.1
9.	M23b	coefficient =	50.7
10.	M26b	coefficient =	49.0

Table of test data matched against diagnosis of M22b, coefficient = 67.3
Juncus subnodulosus-Cirsium palustre fen-meadow: Briza media-Trifolium subc.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

2732	Juncus subnodulosus	III (IV)	6 (8)
1445	Calliergon cuspidatum	IV (V)	3 (3)
855	Mentha aquatica	II (V)*	3 (3)
680	Holcus lanatus	V (V)	6 (3)*
418	Cirsium palustre	V (V)	4 (3)*
535	Equisetum palustre	II (IV)*	6 (3)*
583	Filipendula ulmaria	IV (IV)	7 (3)*
802	Lotus pedunculatus	IV (IV)	4 (3)*
295	Cardamine pratensis	IV (IV)	2 (3)
722	Juncus articulatus	III (IV)	2 (6)
384	Cerastium fontanum	I (IV)*	1 (3)
251	Briza media	I (IV)*	1 (3)
1350	Trifolium repens	II (IV)*	4 (3)*
1349	Trifolium pratense	I (IV)*	3 (3)
171	Anthoxanthum odoratum	II (IV)*	3 (4)
876	Molinia caerulea	II (III)	5 (4)*
1139	Rumex acetosa	III (III)	3 (3)
733	Juncus inflexus	II (III)	4 (6)
526	Epilobium parviflorum	II (III)	1 (3)
466	Dactylorhiza fuchsii	II (III)	1 (3)
973	Plantago lanceolata	I (III)*	3 (3)
1059	Prunella vulgaris	I (III)*	3 (3)
371	Centaurea nigra	IV (III)	3 (2)*

1095	Ranunculus repens	IV	(III)	5 (3)*
1354	Triglochin palustre	.	(III)*	0 (2)
1106	Rhinanthus minor	.	(II)*	0 (3)
323	Carex flacca	II	(II)	1 (3)
324	Carex hirta	III	(II)	3 (3)
730	Juncus effusus	III	(II)	4 (3)*
460	Cynosurus cristatus	.	(II)*	0 (3)
961	Phragmites australis	.	(I)	0 (5)
690	Hydrocotyle vulgaris	II	(II)	1 (3)
831	Lythrum salicaria	.	(I)	0 (2)
862	Menyanthes trifoliata	.	(I)	0 (1)
889	Myosotis scorpioides	.	(I)	0 (1)
1571	Campylium stellatum	.	(I)	0 (2)
1795	Plagiomnium rostratum	I	(I)	1 (1)
609	Galium palustre	.	(III)*	0 (3)
525	Epilobium palustre	I	(I)	2 (1)*
533	Equisetum fluviatile	.	(I)	0 (3)
467	Dactylorhiza incarnata	.	(II)*	0 (3)
1169	Salix cinerea (s)	II	(I)	8 (3)*
469	Dactylorhiza praetermissa	.	(I)	0 (3)
302	Carex acutiformis	.	(II)*	0 (4)
715	Iris pseudacorus	.	(I)	0 (3)
1089	Ranunculus flammula	III	(II)	3 (2)*
1381	Valeriana officinalis	.	(I)	0 (1)
329	Carex viridula ssp brachyrrhyncha	.	(I)	0 (2)
612	Galium uliginosum	IV	(IV)	3 (3)
813	Lychnis flos-cuculi	III	(IV)	3 (3)
990	Poa trivialis	.	(IV)*	0 (3)
279	Caltha palustris	.	(III)*	0 (3)
339	Carex panicea	IV	(V)	4 (3)*
576	Festuca rubra	V	(V)	4 (4)
122	Agrostis stolonifera	II	(V)*	3 (5)
1081	Ranunculus acris	.	(V)*	0 (3)
1380	Valeriana dioica	IV	(IV)	4 (5)
1411	Vicia cracca	.	(IV)*	0 (3)
758	Lathyrus pratensis	II	(IV)*	2 (3)
1519	Brachythecium rutabulum	III	(III)	3 (2)*
167	Angelica sylvestris	II	(III)	4 (3)*
1305	Succisa pratensis	IV	(III)	4 (3)*
317	Carex disticha	.	(III)*	0 (6)
1046	Potentilla erecta	I	(III)*	1 (3)
558	Eupatorium cannabinum	.	(II)*	0 (3)
703	Hypericum tetrapterum	II	(II)	1 (3)
197	Arrhenatherum elatius	.	(II)*	0 (3)
1219	Scrophularia auriculata	I	(II)	1 (3)
1043	Potentilla anserina	I	(II)	1 (3)
477	Deschampsia cespitosa cespitosa	II	(II)	1 (3)
333	Carex nigra	II	(II)	3 (4)
1069	Pulicaria dysenterica	II	(II)	1 (3)
1142	Rumex conglomeratus	.	(I)	0 (3)
886	Myosotis laxa caespitosa	.	(I)	0 (3)
1807	Plagiomnium undulatum	III	(I)*	3 (3)
1801	Rhizomnium punctatum	.	(I)	0 (3)
911	Oenanthe lachenalii	.	(I)	0 (3)
1050	Potentilla reptans	.	(I)	0 (3)
531	Epipactis palustris	.	(I)	0 (3)
546	Eriophorum angustifolium	.	(I)	0 (6)
809	Luzula multiflora	.	(I)	0 (3)
960	Phleum pratense	.	(I)	0 (3)
1394	Veronica beccabunga	.	(I)	0 (3)
127	Ajuga reptans	.	(I)	0 (3)
1148	Rumex sanguineus	.	(I)	0 (3)
415	Cirsium arvense	.	(I)	0 (3)
1914	Pseudoscleropodium purum	II	(I)	3 (3)
105	Achillea ptarmica	.	(I)	0 (3)
572	Festuca arundinacea	II	(I)	3 (3)
1791	Plagiomnium affine	.	(I)	0 (3)
2714	Cirsium dissectum	.	(I)	0 (1)

```
 509 Eleocharis palustris                          .  (  I)      0 ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M22b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 532 Equisetum arvense                            III   4
 719 Juncus acutiflorus                            IV   7
 729 Juncus conglomeratus                          II   1
 768 Leontodon autumnalis                          II   1
 796 Lolium perenne                                II   2
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	24.9	0	32
M22b	0.0	0	0

****

Table of test data matched against diagnosis of M22a, coefficient = 64.1
Juncus subnodulosus-Cirsium palustre fen-meadow: typical subcommunity.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
2732 Juncus subnodulosus                         III (  V)*     6 ( 8)
1445 Calliergon cuspidatum                        IV ( IV)      3 ( 5)
 855 Mentha aquatica                              II ( IV)*     3 ( 7)
 680 Holcus lanatus                                V ( IV)      6 ( 6)
 418 Cirsium palustre                              V ( IV)      4 ( 4)
 535 Equisetum palustre                           II ( IV)*     6 ( 6)
 583 Filipendula ulmaria                          IV (III)      7 ( 7)
 802 Lotus pedunculatus                           IV (III)      4 ( 4)
 295 Cardamine pratensis                          IV ( II)*     2 ( 3)
 722 Juncus articulatus                          III ( II)      2 ( 8)
 384 Cerastium fontanum                            I ( II)      1 ( 3)
 251 Briza media                                   I (  I)      1 ( 6)
1350 Trifolium repens                             II (  I)      4 ( 5)
1349 Trifolium pratense                           I (  I)       3 ( 4)
 171 Anthoxanthum odoratum                        II (  I)      3 ( 5)
 876 Molinia caerulea                             II ( II)      5 ( 7)
1139 Rumex acetosa                               III ( II)      3 ( 4)
 733 Juncus inflexus                              II ( II)      4 ( 5)
 526 Epilobium parviflorum                        II ( II)      1 ( 3)
 466 Dactylorhiza fuchsii                         II (  I)      1 ( 4)
 973 Plantago lanceolata                           I (  I)      3 ( 4)
1059 Prunella vulgaris                             I (  I)      3 ( 4)
 371 Centaurea nigra                              IV (  I)*     3 ( 4)
1095 Ranunculus repens                            IV (  I)*     5 ( 4)*
1354 Triglochin palustre                           . (  I)      0 ( 2)
1106 Rhinanthus minor                              . (  I)      0 ( 4)
 323 Carex flacca                                 II (  I)      1 ( 3)
 324 Carex hirta                                 III (  I)*     3 ( 3)
 730 Juncus effusus                              III (  I)*     4 ( 4)
 961 Phragmites australis                           . ( II)*     0 ( 4)
 690 Hydrocotyle vulgaris                         II ( II)      1 ( 6)
 831 Lythrum salicaria                              . (  I)      0 ( 3)
 862 Menyanthes trifoliata                          . (  I)      0 ( 2)
 889 Myosotis scorpioides                           . (  I)      0 ( 3)
1571 Campylium stellatum                            . (  I)      0 ( 3)
1795 Plagiomnium rostratum                          I (  I)      1 ( 1)
 609 Galium palustre                                . ( II)*     0 ( 5)
```

525	Epilobium palustre	I (II)	2 (3)
533	Equisetum fluviatile	. (I)	0 (3)
232	Berula erecta	. (I)	0 (3)
946	Pedicularis palustris	. (I)	0 (4)
1169	Salix cinerea (s)	II (I)	8 (3)*
302	Carex acutiformis	. (II)*	0 (4)
715	Iris pseudacorus	. (I)	0 (2)
1381	Valeriana officinalis	. (I)	0 (4)
521	Epilobium hirsutum	. (I)	0 (3)
281	Calystegia sepium	. (I)	0 (3)
955	Phalaris arundinacea	. (I)	0 (4)
612	Galium uliginosum	IV (IV)	3 (5)
813	Lychnis flos-cuculi	III (III)	3 (3)
990	Poa trivialis	. (II)*	0 (4)
279	Caltha palustris	. (II)*	0 (4)
339	Carex panicea	IV (II)*	4 (7)
576	Festuca rubra	V (III)*	4 (5)
122	Agrostis stolonifera	II (III)	3 (5)
1081	Ranunculus acris	. (II)*	0 (4)
1380	Valeriana dioica	IV (III)	4 (4)
1411	Vicia cracca	. (III)*	0 (5)
758	Lathyrus pratensis	II (III)	2 (5)
1519	Brachythecium rutabulum	III (II)	3 (4)
167	Angelica sylvestris	II (III)	4 (6)
1305	Succisa pratensis	IV (II)*	4 (5)
317	Carex disticha	. (II)*	0 (7)
1046	Potentilla erecta	I (II)	1 (4)
558	Eupatorium cannabinum	. (II)*	0 (3)
703	Hypericum tetrapterum	II (II)	1 (2)
197	Arrhenatherum elatius	. (II)*	0 (4)
1219	Scrophularia auriculata	I (II)	1 (4)
1043	Potentilla anserina	I (I)	1 (3)
477	Deschampsia cespitosa cespitosa	II (I)	1 (3)
333	Carex nigra	II (I)	3 (6)
1069	Pulicaria dysenterica	II (I)	1 (6)
1142	Rumex conglomeratus	. (I)	0 (3)
886	Myosotis laxa caespitosa	. (I)	0 (2)
1807	Plagiomnium undulatum	III (I)*	3 (3)
1801	Rhizomnium punctatum	. (I)	0 (3)
911	Oenanthe lachenalii	. (I)	0 (3)
1050	Potentilla reptans	. (I)	0 (4)
531	Epipactis palustris	. (I)	0 (5)
2167	Lophocolea bidentata	. (I)	0 (2)
823	Lycopus europaeus	. (I)	0 (3)
1223	Scutellaria galericulata	. (I)	0 (2)
960	Phleum pratense	. (I)	0 (3)
1394	Veronica beccabunga	. (I)	0 (3)
127	Ajuga reptans	. (I)	0 (4)
1148	Rumex sanguineus	. (I)	0 (3)
415	Cirsium arvense	. (I)	0 (3)
1914	Pseudoscleropodium purum	II (I)	3 (3)
105	Achillea ptarmica	. (I)	0 (4)
572	Festuca arundinacea	II (I)	3 (3)
1598	Cratoneuron filicinum	I (I)	1 (3)
1268	Solanum dulcamara (g)	. (I)	0 (3)
765	Lemna minor	. (I)	0 (3)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M22a The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

532	Equisetum arvense	III	4
719	Juncus acutiflorus	IV	7
729	Juncus conglomeratus	II	1
768	Leontodon autumnalis	II	1
796	Lolium perenne	II	2

```
1089 Ranunculus flammula                        III   3

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    24.9       0       32
   M22a        0.0       0        0

*******************************************************************************

Table of test data matched against diagnosis of  M24b, coefficient =  59.4
Molinia caerulea-Cirsium dissectum fen-meadow: typical subcommunity.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 876 Molinia caerulea                          II (  V)*     5 ( 8)
1046 Potentilla erecta                          I (  V)*     1 ( 4)
1305 Succisa pratensis                         IV (  V)      4 ( 5)
2714 Cirsium dissectum                          . ( IV)*     0 ( 4)
 802 Lotus pedunculatus                        IV ( IV)      4 ( 3)*
 339 Carex panicea                             IV ( IV)      4 ( 5)
 612 Galium uliginosum                         IV ( IV)      3 ( 4)
1380 Valeriana dioica                          IV ( IV)      4 ( 3)*
 371 Centaurea nigra                           IV ( IV)      3 ( 4)
2732 Juncus subnodulosus                      III (III)      6 ( 3)*
 535 Equisetum palustre                        II (III)      6 ( 3)*
1411 Vicia cracca                               . (III)*     0 ( 4)
 583 Filipendula ulmaria                       IV (III)      7 ( 5)*
 786 Linum catharticum                          . ( II)*     0 ( 3)
 649 Gymnadenia conopsea                        . ( II)*     0 ( 3)
 558 Eupatorium cannabinum                      . ( II)*     0 ( 2)
 831 Lythrum salicaria                          . (  I)      0 ( 2)
1571 Campylium stellatum                        . (  I)      0 ( 1)
 961 Phragmites australis                       . ( II)*     0 ( 8)
 467 Dactylorhiza incarnata                     . (  I)      0 ( 3)
 680 Holcus lanatus                             V ( IV)      6 ( 4)*
 171 Anthoxanthum odoratum                     II (III)      3 ( 4)
 690 Hydrocotyle vulgaris                      II (III)      1 ( 3)
 347 Carex pulicaris                            . (III)*     0 ( 3)
 809 Luzula multiflora                          . (III)*     0 ( 3)
1081 Ranunculus acris                           . ( II)*     0 ( 2)
1914 Pseudoscleropodium purum                 II ( II)      3 ( 3)
 576 Festuca rubra                              V ( II)*     4 ( 2)*
 295 Cardamine pratensis                       IV ( II)*     2 ( 3)
 251 Briza media                                I (III)*     1 ( 4)
1139 Rumex acetosa                            III ( II)      3 ( 1)*
 531 Epipactis palustris                        . ( II)*     0 ( 4)
1050 Potentilla reptans                         . ( II)*     0 ( 3)
 703 Hypericum tetrapterum                     II ( II)      1 ( 3)
 415 Cirsium arvense                            . ( II)*     0 ( 4)
 333 Carex nigra                               II ( II)      3 ( 4)
1349 Trifolium pratense                         I ( II)      3 ( 3)
 995 Polygala vulgaris                          . ( II)*     0 ( 4)
 770 Leontodon saxatilis                        . ( II)*     0 ( 3)
 722 Juncus articulatus                        III ( II)      2 ( 4)
 546 Eriophorum angustifolium                   . ( II)*     0 ( 2)
 466 Dactylorhiza fuchsii                      II ( II)      1 ( 1)
 613 Galium verum                               . ( II)*     0 ( 3)
 384 Cerastium fontanum                         I ( II)      1 ( 3)
1043 Potentilla anserina                        I ( II)      1 ( 3)
 719 Juncus acutiflorus                        IV (  I)*     7 ( 6)*
 729 Juncus conglomeratus                      II ( II)      1 ( 4)
 542 Erica tetralix                             . ( II)*     0 ( 4)
 609 Galium palustre                            . (  I)      0 ( 2)
```

468	Dactylorhiza maculata ericetorum	.	(I)	0	(4)
278	Calluna vulgaris	.	(I)	0	(5)
730	Juncus effusus	III	(I)*	4	(3)*
1244	Serratula tinctoria	.	(I)	0	(1)
901	Narthecium ossifragum	.	(I)	0	(1)
1482	Aulacomnium palustre	.	(I)	0	(3)
1089	Ranunculus flammula	III	(I)*	3	(2)*
1766	Hypnum cupressiforme	.	(I)	0	(1)
105	Achillea ptarmica	.	(I)	0	(1)
418	Cirsium palustre	V	(IV)	4	(5)
167	Angelica sylvestris	II	(III)	4	(3)*
1445	Calliergon cuspidatum	IV	(III)	3	(3)
855	Mentha aquatica	II	(III)	3	(4)
325	Carex hostiana	I	(III)*	4	(3)*
122	Agrostis stolonifera	II	(II)	3	(4)
1519	Brachythecium rutabulum	III	(II)	3	(3)
1059	Prunella vulgaris	I	(II)	3	(2)*
477	Deschampsia cespitosa cespitosa	II	(II)	1	(3)
1207	Schoenus nigricans	.	(II)*	0	(4)
973	Plantago lanceolata	I	(II)	3	(4)
758	Lathyrus pratensis	II	(II)	2	(3)
1069	Pulicaria dysenterica	II	(II)	1	(3)
1136	Rubus fruticosus agg.	.	(I)	0	(3)
1169	Salix cinerea (s)	II	(I)	8	(3)*
1249	Danthonia decumbens	.	(I)	0	(3)
163	Anagallis tenella	.	(I)	0	(6)
1973	Sphagnum subnitens	.	(I)	0	(2)
813	Lychnis flos-cuculi	III	(I)*	3	(4)
494	Drosera rotundifolia	.	(I)	0	(3)
2602	Alnus glutinosa (s)	.	(I)	0	(2)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M24b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

323	Carex flacca	II	1
324	Carex hirta	III	3
526	Epilobium parviflorum	II	1
532	Equisetum arvense	III	4
572	Festuca arundinacea	II	3
733	Juncus inflexus	II	4
768	Leontodon autumnalis	II	1
796	Lolium perenne	II	2
1095	Ranunculus repens	IV	5
1350	Trifolium repens	II	4
1807	Plagiomnium undulatum	III	3

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	24.9	0	32
M24b	29.0	14	52

11.7 TROUTSDALE M24

```
The matching procedures have produced the following results for
Q8, Q9, Q11


The N.V.C. communities most closely matching the test data are:

 1.    M24     coefficient =  64.5,   3 subcommunities.
 2.    M13     coefficient =  53.2,   3 subcommunities.
 3.    M26     coefficient =  53.0,   2 subcommunities.
 4.    M22     coefficient =  51.5,   4 subcommunities.
 5.    M25     coefficient =  45.1,   3 subcommunities.
 6.    M23     coefficient =  41.1,   2 subcommunities.
 7.    M 9     coefficient =  39.1,   2 subcommunities.
 8.    M27     coefficient =  37.7,   3 subcommunities.
 9.   SD15     coefficient =  37.3,   4 subcommunities.
10.    M10     coefficient =  34.9,   3 subcommunities.

Table of test data matched against diagnosis of  M24 , coefficient =  64.5
Molinia caerulea-Cirsium dissectum fen-meadow.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 876 Molinia caerulea                          IV (  V)      5 ( 8)
1046 Potentilla erecta                         IV (  V)      3 ( 4)
1305 Succisa pratensis                         IV (  V)      3 ( 6)
2714 Cirsium dissectum                          . ( IV)*     0 ( 6)
 802 Lotus pedunculatus                       III ( IV)      1 ( 4)
 339 Carex panicea                             IV ( IV)      5 ( 5)
 612 Galium uliginosum                         IV (III)      2 ( 5)
1380 Valeriana dioica                        III (III)      4 ( 3)*
 371 Centaurea nigra                         III (III)      2 ( 4)
2732 Juncus subnodulosus                     III (III)      9 ( 5)*
 535 Equisetum palustre                       II ( II)      1 ( 3)
1411 Vicia cracca                              . ( II)*     0 ( 4)
 583 Filipendula ulmaria                     III ( II)      1 ( 5)
 786 Linum catharticum                         . ( II)*     0 ( 3)
 649 Gymnadenia conopsea                       . ( II)*     0 ( 3)
 558 Eupatorium cannabinum                     . ( II)*     0 ( 3)
 961 Phragmites australis                     II ( II)      4 ( 8)
1571 Campylium stellatum                       . (  I)      0 ( 2)
 420 Cladium mariscus                          . (  I)      0 ( 6)
 831 Lythrum salicaria                         . (  I)      0 ( 3)
 467 Dactylorhiza incarnata                    . (  I)      0 ( 3)
 680 Holcus lanatus                            IV (III)     3 ( 5)
 171 Anthoxanthum odoratum                     . (III)*     0 ( 6)
 690 Hydrocotyle vulgaris                    III ( II)      3 ( 3)
 347 Carex pulicaris                         III ( II)      2 ( 3)
 809 Luzula multiflora                         . ( II)*     0 ( 3)
1081 Ranunculus acris                         II ( II)      2 ( 4)
1914 Pseudoscleropodium purum               III ( II)      2 ( 6)
 576 Festuca rubra                             IV ( II)*    3 ( 7)
 295 Cardamine pratensis                       . ( II)*     0 ( 3)
 251 Briza media                              II ( II)      1 ( 4)
1139 Rumex acetosa                             . ( II)*     0 ( 3)
 531 Epipactis palustris                       . (  I)      0 ( 4)
1050 Potentilla reptans                        . (  I)      0 ( 3)
 703 Hypericum tetrapterum                     . (  I)      0 ( 3)
 415 Cirsium arvense                           . (  I)      0 ( 4)
 333 Carex nigra                               . (  I)      0 ( 4)
```

1349	Trifolium pratense	.	(I)	0	(3)
995	Polygala vulgaris	.	(I)	0	(4)
770	Leontodon saxatilis	.	(I)	0	(3)
722	Juncus articulatus	.	(I)	0	(4)
546	Eriophorum angustifolium	.	(I)	0	(2)
466	Dactylorhiza fuchsii	III	(I)*	2	(1)*
613	Galium verum	.	(I)	0	(3)
384	Cerastium fontanum	.	(I)	0	(3)
1043	Potentilla anserina	.	(I)	0	(3)
719	Juncus acutiflorus	III	(II)	5	(7)
729	Juncus conglomeratus	II	(II)	1	(7)
542	Erica tetralix	.	(II)*	0	(4)
609	Galium palustre	II	(II)	1	(3)
468	Dactylorhiza maculata ericetorum	.	(II)*	0	(4)
278	Calluna vulgaris	.	(I)	0	(5)
730	Juncus effusus	.	(I)	0	(5)
1244	Serratula tinctoria	.	(I)	0	(3)
901	Narthecium ossifragum	.	(I)	0	(4)
1482	Aulacomnium palustre	.	(I)	0	(4)
1089	Ranunculus flammula	.	(I)	0	(3)
1766	Hypnum cupressiforme	.	(I)	0	(4)
105	Achillea ptarmica	II	(I)	1	(4)
120	Agrostis canina	.	(I)	0	(6)
1224	Scutellaria minor	.	(I)	0	(2)
1427	Viola palustris	II	(I)	1	(4)
2700	Sphagnum auriculatum var auriculatum	.	(I)	0	(7)
3310	Hypericum undulatum	.	(I)	0	(3)
1179	Salix repens agg.	.	(I)	0	(4)
947	Pedicularis sylvatica	.	(I)	0	(3)
1236	Senecio aquaticus	.	(I)	0	(2)
2003	Thuidium tamariscinum	.	(I)	0	(5)
1677	Eurhynchium praelongum	.	(I)	0	(4)
418	Cirsium palustre	IV	(III)	3	(5)
167	Angelica sylvestris	III	(III)	3	(5)
1445	Calliergon cuspidatum	IV	(III)	4	(3)*
855	Mentha aquatica	II	(III)	2	(4)
325	Carex hostiana	III	(III)	5	(6)
122	Agrostis stolonifera	.	(II)*	0	(4)
1519	Brachythecium rutabulum	.	(II)*	0	(6)
1059	Prunella vulgaris	II	(II)	1	(3)
477	Deschampsia cespitosa cespitosa	.	(II)*	0	(4)
1207	Schoenus nigricans	III	(II)	1	(8)
973	Plantago lanceolata	II	(II)	2	(4)
758	Lathyrus pratensis	.	(II)*	0	(2)
1069	Pulicaria dysenterica	.	(II)*	0	(4)
1136	Rubus fruticosus agg.	.	(I)	0	(3)
1169	Salix cinerea (s)	.	(I)	0	(3)
1249	Danthonia decumbens	.	(I)	0	(5)
163	Anagallis tenella	.	(I)	0	(6)
1973	Sphagnum subnitens	.	(I)	0	(7)
813	Lychnis flos-cuculi	.	(I)	0	(4)
494	Drosera rotundifolia	.	(I)	0	(3)
2602	Alnus glutinosa (s)	.	(I)	0	(2)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M24 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

127	Ajuga reptans	III	1
234	Stachys officinalis	II	1
319	Carex echinata	III	1
323	Carex flacca	III	4
355	Carex viridula ssp viridula	II	1
532	Equisetum arvense	II	2
944	Parnassia palustris	II	1
1056	Primula veris	II	1

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1683 Fissidens adianthoides                    II   1
1795 Plagiomnium rostratum                     II   1
1807 Plagiomnium undulatum                     II   3
2982 Taraxacum seedling/sp                     II   1
3192 Dactylorhiza sp.                          II   1

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    20.0       0       32
   M24        26.0       9       52

*******************************************************************************

Table of test data matched against diagnosis of  M13 , coefficient =  53.2
Schoenus nigricans-Juncus subnodulosus mire.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 339 Carex panicea                              IV (  V)      5 ( 5)
2732 Juncus subnodulosus                       III (  V)*     9 ( 7)*
1207 Schoenus nigricans                        III (  V)*     1 ( 8)
 876 Molinia caerulea                           IV (  V)      5 ( 7)
1445 Calliergon cuspidatum                      IV (  V)      4 ( 5)
1305 Succisa pratensis                          IV ( IV)      3 ( 4)
1046 Potentilla erecta                          IV ( IV)      3 ( 4)
1571 Campylium stellatum                         . ( IV)*     0 ( 4)
 167 Angelica sylvestris                       III (III)      3 ( 3)
 418 Cirsium palustre                           IV (III)      3 ( 3)
 855 Mentha aquatica                            II (III)      2 ( 3)
 531 Epipactis palustris                         . (III)*     0 ( 3)
 961 Phragmites australis                       II (III)      4 ( 7)
 163 Anagallis tenella                           . (III)*     0 ( 4)
 535 Equisetum palustre                         II (III)      1 ( 3)
 946 Pedicularis palustris                       . (III)*     0 ( 3)
1658 Drepanocladus revolvens                     . ( II)*     0 ( 5)
1683 Fissidens adianthoides                     II ( II)      1 ( 4)
1546 Bryum pseudotriquetrum                      . ( II)*     0 ( 3)
2256 Aneura pinguis                              . ( II)*     0 ( 3)
1973 Sphagnum subnitens                          . ( II)*     0 ( 4)
2222 Pellia endiviifolia                         . ( II)*     0 ( 3)
1600 Ctenidium molluscum                         . ( II)*     0 ( 6)
 547 Eriophorum latifolium                       . ( II)*     0 ( 4)
 171 Anthoxanthum odoratum                       . (III)*     0 ( 3)
 680 Holcus lanatus                              IV (III)      3 ( 3)
 576 Festuca rubra                               IV ( II)*     3 ( 4)
 719 Juncus acutiflorus                        III (  I)*     5 ( 4)*
 120 Agrostis canina                             . (  I)      0 ( 3)
 323 Carex flacca                              III (III)      4 ( 4)
 251 Briza media                                 II ( II)      1 ( 4)
 466 Dactylorhiza fuchsii                      III ( II)      2 ( 3)
1596 Cratoneuron commutatum                      . ( II)*     0 ( 4)
 371 Centaurea nigra                           III ( II)      2 ( 3)
 649 Gymnadenia conopsea                         . ( II)*     0 ( 4)
 944 Parnassia palustris                         II ( II)      1 ( 3)
 970 Pinguicula vulgaris                         . ( II)*     0 ( 4)
 325 Carex hostiana                            III ( II)      5 ( 4)*
1244 Serratula tinctoria                         . ( II)*     0 ( 3)
 347 Carex pulicaris                           III ( II)      2 ( 3)
 722 Juncus articulatus                          . ( II)*     0 ( 4)
 995 Polygala vulgaris                           . ( II)*     0 ( 3)
 122 Agrostis stolonifera                        . ( II)*     0 ( 4)
 911 Oenanthe lachenalii                         . ( II)*     0 ( 3)
1089 Ranunculus flammula                         . ( II)*     0 ( 3)
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809	Luzula multiflora	.	(II)*	0	(3)	
1249	Danthonia decumbens	.	(II)*	0	(3)	
470	Dactylorhiza purpurella	.	(II)*	0	(3)	
786	Linum catharticum	.	(II)*	0	(3)	
1349	Trifolium pratense	.	(I)	0	(3)	
893	Myrica gale	.	(I)	0	(4)	
278	Calluna vulgaris	.	(I)	0	(3)	
1354	Triglochin palustre	.	(I)	0	(3)	
1235	Selaginella selaginoides	.	(I)	0	(3)	
702	Hypericum pulchrum	.	(I)	0	(3)	
975	Plantago maritima	.	(I)	0	(4)	
919	Ophrys insectifera	.	(I)	0	(3)	
1214	Isolepis setacea	.	(I)	0	(3)	
558	Eupatorium cannabinum	.	(III)*	0	(4)	
1380	Valeriana dioica	III	(III)	4	(3)*	
583	Filipendula ulmaria	III	(III)	1	(3)	
612	Galium uliginosum	IV	(II)*	2	(3)	
279	Caltha palustris	.	(II)*	0	(3)	
813	Lychnis flos-cuculi	.	(II)*	0	(3)	
1914	Pseudoscleropodium purum	III	(II)	2	(4)	
467	Dactylorhiza incarnata	.	(II)*	0	(4)	
469	Dactylorhiza praetermissa	.	(II)*	0	(3)	
1804	Plagiomnium elatum	.	(II)*	0	(3)	
1411	Vicia cracca	.	(II)*	0	(3)	
862	Menyanthes trifoliata	.	(I)	0	(4)	
546	Eriophorum angustifolium	.	(I)	0	(3)	
1795	Plagiomnium rostratum	II	(I)	1	(3)	
320	Carex elata	.	(I)	0	(4)	
1801	Rhizomnium punctatum	.	(I)	0	(3)	
313	Carex diandra	.	(I)	0	(4)	
2257	Riccardia chamedryfolia	.	(I)	0	(3)	
1845	Philonotis calcarea	.	(I)	0	(3)	
2254	Riccardia multifida	.	(I)	0	(3)	
352	Carex rostrata	.	(I)	0	(4)	
1025	Potamogeton coloratus	.	(I)	0	(3)	
1370	Utricularia intermedia	.	(I)	0	(3)	
1371	Utricularia minor	.	(I)	0	(3)	
1372	Utricularia australis	.	(I)	0	(3)	
1373	Utricularia vulgaris	.	(I)	0	(3)	
329	Carex viridula ssp brachyrrhyncha	.	(III)*	0	(4)	
690	Hydrocotyle vulgaris	III	(III)	3	(5)	
802	Lotus pedunculatus	III	(III)	1	(3)	
333	Carex nigra	.	(II)*	0	(4)	
542	Erica tetralix	.	(II)*	0	(3)	
2167	Lophocolea bidentata	.	(II)*	0	(3)	
295	Cardamine pratensis	.	(II)*	0	(3)	
420	Cladium mariscus	.	(II)*	0	(7)	
1081	Ranunculus acris	II	(II)	2	(3)	
831	Lythrum salicaria	.	(II)*	0	(3)	
1598	Cratoneuron filicinum	.	(I)	0	(4)	
2714	Cirsium dissectum	.	(I)	0	(3)	
525	Epilobium palustre	.	(I)	0	(3)	
533	Equisetum fluviatile	.	(I)	0	(4)	
770	Leontodon saxatilis	.	(I)	0	(3)	
1482	Aulacomnium palustre	.	(I)	0	(4)	
609	Galium palustre	II	(I)	1	(3)	
1381	Valeriana officinalis	.	(I)	0	(3)	
1519	Brachythecium rutabulum	.	(I)	0	(3)	
568	Euphrasia officinalis agg	.	(I)	0	(3)	
758	Lathyrus pratensis	.	(I)	0	(3)	
1350	Trifolium repens	.	(I)	0	(3)	
2982	Taraxacum seedling/sp	II	(I)	1	(3)	
510	Eleocharis quinqueflora	.	(I)	0	(3)	
315	Carex dioica	.	(I)	0	(3)	
703	Hypericum tetrapterum	.	(I)	0	(3)	
471	Dactylorhiza traunsteineri	.	(I)	0	(3)	
494	Drosera rotundifolia	.	(I)	0	(3)	

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

105	Achillea ptarmica	II	1
127	Ajuga reptans	III	1
234	Stachys officinalis	II	1
319	Carex echinata	III	1
355	Carex viridula ssp viridula	II	1
532	Equisetum arvense	II	2
729	Juncus conglomeratus	II	1
973	Plantago lanceolata	II	2
1056	Primula veris	II	1
1059	Prunella vulgaris	II	1
1427	Viola palustris	II	1
1807	Plagiomnium undulatum	II	3
3192	Dactylorhiza sp.	II	1

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	20.0	0	32
M13	27.0	7	65

****

The N.V.C subcommunities most closely matching the test data are:

1.	M24	coefficient =	64.5
2.	M24b	coefficient =	60.1
3.	M13a	coefficient =	56.3
4.	M13	coefficient =	53.2
5.	M26	coefficient =	53.0
6.	M22a	coefficient =	53.0
7.	M24a	coefficient =	52.6
8.	M22	coefficient =	51.5
9.	M26b	coefficient =	49.6
10.	M24c	coefficient =	48.2

Table of test data matched against diagnosis of M24b, coefficient = 60.1
Molinia caerulea-Cirsium dissectum fen-meadow: typical subcommunity.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

876	Molinia caerulea	IV (V)	5 (8)
1046	Potentilla erecta	IV (V)	3 (4)
1305	Succisa pratensis	IV (V)	3 (5)
2714	Cirsium dissectum	. (IV)*	0 (4)
802	Lotus pedunculatus	III (IV)	1 (3)
339	Carex panicea	IV (IV)	5 (5)
612	Galium uliginosum	IV (IV)	2 (4)
1380	Valeriana dioica	III (IV)	4 (3)*
371	Centaurea nigra	III (IV)	2 (4)
2732	Juncus subnodulosus	III (III)	9 (3)*
535	Equisetum palustre	II (III)	1 (3)
1411	Vicia cracca	. (III)*	0 (4)
583	Filipendula ulmaria	III (III)	1 (5)
786	Linum catharticum	. (II)*	0 (3)
649	Gymnadenia conopsea	. (II)*	0 (3)
558	Eupatorium cannabinum	. (II)*	0 (2)
831	Lythrum salicaria	. (I)	0 (2)
1571	Campylium stellatum	. (I)	0 (1)

961	Phragmites australis	II	(II)	4 (8)
467	Dactylorhiza incarnata	.	(I)	0 (3)
680	Holcus lanatus	IV	(IV)	3 (4)
171	Anthoxanthum odoratum	.	(III)*	0 (4)
690	Hydrocotyle vulgaris	III	(III)	3 (3)
347	Carex pulicaris	III	(III)	2 (3)
809	Luzula multiflora	.	(III)*	0 (3)
1081	Ranunculus acris	II	(II)	2 (2)
1914	Pseudoscleropodium purum	III	(II)	2 (3)
576	Festuca rubra	IV	(II)*	3 (2)*
295	Cardamine pratensis	.	(II)*	0 (3)
251	Briza media	II	(III)	1 (4)
1139	Rumex acetosa	.	(II)*	0 (1)
531	Epipactis palustris	.	(II)*	0 (4)
1050	Potentilla reptans	.	(II)*	0 (3)
703	Hypericum tetrapterum	.	(II)*	0 (3)
415	Cirsium arvense	.	(II)*	0 (4)
333	Carex nigra	.	(II)*	0 (4)
1349	Trifolium pratense	.	(II)*	0 (3)
995	Polygala vulgaris	.	(II)*	0 (4)
770	Leontodon saxatilis	.	(II)*	0 (3)
722	Juncus articulatus	.	(II)*	0 (4)
546	Eriophorum angustifolium	.	(II)*	0 (2)
466	Dactylorhiza fuchsii	III	(II)	2 (1)*
613	Galium verum	.	(II)*	0 (3)
384	Cerastium fontanum	.	(II)*	0 (3)
1043	Potentilla anserina	.	(II)*	0 (3)
719	Juncus acutiflorus	III	(I)*	5 (6)
729	Juncus conglomeratus	II	(II)	1 (4)
542	Erica tetralix	.	(II)*	0 (4)
609	Galium palustre	II	(I)	1 (2)
468	Dactylorhiza maculata ericetorum	.	(I)	0 (4)
278	Calluna vulgaris	.	(I)	0 (5)
730	Juncus effusus	.	(I)	0 (3)
1244	Serratula tinctoria	.	(I)	0 (1)
901	Narthecium ossifragum	.	(I)	0 (1)
1482	Aulacomnium palustre	.	(I)	0 (3)
1089	Ranunculus flammula	.	(I)	0 (2)
1766	Hypnum cupressiforme	.	(I)	0 (1)
105	Achillea ptarmica	II	(I)	1 (1)
418	Cirsium palustre	IV	(IV)	3 (5)
167	Angelica sylvestris	III	(III)	3 (3)
1445	Calliergon cuspidatum	IV	(III)	4 (3)*
855	Mentha aquatica	II	(III)	2 (4)
325	Carex hostiana	III	(III)	5 (3)*
122	Agrostis stolonifera	.	(II)*	0 (4)
1519	Brachythecium rutabulum	.	(II)*	0 (3)
1059	Prunella vulgaris	II	(II)	1 (2)
477	Deschampsia cespitosa cespitosa	.	(II)*	0 (3)
1207	Schoenus nigricans	III	(II)	1 (4)
973	Plantago lanceolata	II	(II)	2 (4)
758	Lathyrus pratensis	.	(II)*	0 (3)
1069	Pulicaria dysenterica	.	(II)*	0 (3)
1136	Rubus fruticosus agg.	.	(I)	0 (3)
1169	Salix cinerea (s)	.	(I)	0 (3)
1249	Danthonia decumbens	.	(I)	0 (3)
163	Anagallis tenella	.	(I)	0 (6)
1973	Sphagnum subnitens	.	(I)	0 (2)
813	Lychnis flos-cuculi	.	(I)	0 (4)
494	Drosera rotundifolia	.	(I)	0 (3)
2602	Alnus glutinosa (s)	.	(I)	0 (2)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M24b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 127 Ajuga reptans                              III   1
 234 Stachys officinalis                         II   1
 319 Carex echinata                             III   1
 323 Carex flacca                               III   4
 355 Carex viridula ssp viridula                 II   1
 532 Equisetum arvense                           II   2
 944 Parnassia palustris                         II   1
1056 Primula veris                               II   1
1427 Viola palustris                             II   1
1683 Fissidens adianthoides                      II   1
1795 Plagiomnium rostratum                       II   1
1807 Plagiomnium undulatum                       II   3
2982 Taraxacum seedling/sp                       II   1
3192 Dactylorhiza sp.                            II   1

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    20.0       0       32
   M24b       29.0      14       52

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Table of test data matched against diagnosis of  M13a, coefficient =  56.3
Schoenus nigricans-Juncus subnodulosus mire: Festuca rubra-J. acutiflorus subc.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 339 Carex panicea                              IV (  V)      5 ( 4)*
2732 Juncus subnodulosus                       III ( IV)      9 ( 4)*
1207 Schoenus nigricans                        III ( IV)      1 ( 4)
 876 Molinia caerulea                           IV ( IV)      5 ( 4)*
1445 Calliergon cuspidatum                      IV ( IV)      4 ( 4)
1305 Succisa pratensis                          IV ( IV)      3 ( 3)
1046 Potentilla erecta                          IV ( IV)      3 ( 3)
1571 Campylium stellatum                         . (III)*     0 ( 3)
 167 Angelica sylvestris                       III ( II)      3 ( 3)
 418 Cirsium palustre                           IV ( II)*     3 ( 3)
 855 Mentha aquatica                            II ( II)      2 ( 3)
 531 Epipactis palustris                         . (  I)      0 ( 3)
 961 Phragmites australis                       II ( II)      4 ( 3)*
 535 Equisetum palustre                         II ( II)      1 ( 3)
 946 Pedicularis palustris                       . (  I)      0 ( 3)
1658 Drepanocladus revolvens                     . (  I)      0 ( 1)
1973 Sphagnum subnitens                          . (  I)      0 ( 3)
 171 Anthoxanthum odoratum                       . (III)*     0 ( 3)
 680 Holcus lanatus                             IV (III)      3 ( 3)
 576 Festuca rubra                              IV (III)      3 ( 4)
 719 Juncus acutiflorus                        III ( II)      5 ( 4)*
 120 Agrostis canina                             . ( II)*     0 ( 3)
 323 Carex flacca                              III (III)      4 ( 4)
1596 Cratoneuron commutatum                      . (  I)      0 ( 3)
 371 Centaurea nigra                           III (  I)*     2 ( 3)
 122 Agrostis stolonifera                        . ( II)*     0 ( 4)
 911 Oenanthe lachenalii                         . (  I)      0 ( 1)
1089 Ranunculus flammula                         . (  I)      0 ( 3)
 809 Luzula multiflora                           . (  I)      0 ( 2)
1249 Danthonia decumbens                         . (  I)      0 ( 3)
 893 Myrica gale                                 . ( II)*     0 ( 4)
 558 Eupatorium cannabinum                       . ( II)*     0 ( 3)
1380 Valeriana dioica                         III ( II)      4 ( 3)*
 583 Filipendula ulmaria                      III ( II)      1 ( 3)
 612 Galium uliginosum                         IV (  I)*     2 ( 3)
 279 Caltha palustris                            . (  I)      0 ( 1)
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813	Lychnis flos-cuculi	.	(I)	0 (2)
1914	Pseudoscleropodium purum	III	(I)*	2 (3)
862	Menyanthes trifoliata	.	(I)	0 (3)
329	Carex viridula ssp brachyrrhyncha	.	(III)*	0 (3)
690	Hydrocotyle vulgaris	III	(III)	3 (3)
802	Lotus pedunculatus	III	(II)	1 (3)
333	Carex nigra	.	(II)*	0 (3)
542	Erica tetralix	.	(II)*	0 (3)
2167	Lophocolea bidentata	.	(II)*	0 (3)
295	Cardamine pratensis	.	(II)*	0 (2)
420	Cladium mariscus	.	(II)*	0 (4)
1081	Ranunculus acris	II	(II)	2 (3)
831	Lythrum salicaria	.	(I)	0 (1)
1598	Cratoneuron filicinum	.	(I)	0 (3)
2714	Cirsium dissectum	.	(I)	0 (3)
525	Epilobium palustre	.	(I)	0 (3)
533	Equisetum fluviatile	.	(I)	0 (4)
770	Leontodon saxatilis	.	(I)	0 (1)
1482	Aulacomnium palustre	.	(I)	0 (4)
609	Galium palustre	II	(I)	1 (2)
1381	Valeriana officinalis	.	(I)	0 (3)
1519	Brachythecium rutabulum	.	(I)	0 (3)
758	Lathyrus pratensis	.	(I)	0 (2)
1350	Trifolium repens	.	(I)	0 (3)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13a The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

105	Achillea ptarmica	II	1
127	Ajuga reptans	III	1
234	Stachys officinalis	II	1
251	Briza media	II	1
319	Carex echinata	III	1
325	Carex hostiana	III	5
347	Carex pulicaris	III	2
355	Carex viridula ssp viridula	II	1
466	Dactylorhiza fuchsii	III	2
532	Equisetum arvense	II	2
729	Juncus conglomeratus	II	1
944	Parnassia palustris	II	1
973	Plantago lanceolata	II	2
1056	Primula veris	II	1
1059	Prunella vulgaris	II	1
1427	Viola palustris	II	1
1683	Fissidens adianthoides	II	1
1795	Plagiomnium rostratum	II	1
1807	Plagiomnium undulatum	II	3
2982	Taraxacum seedling/sp	II	1
3192	Dactylorhiza sp.	II	1

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	20.0	0	32
M13a	14.0	7	27

11.8 SAND DALE SSSI M13

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The matching procedures have produced the following results for
Q1, Q2, Q8-Q12, Q17, Q19, Q22


The N.V.C. communities most closely matching the test data are:

 1.    M13     coefficient =  66.5,   3 subcommunities.
 2.    M10     coefficient =  57.0,   3 subcommunities.
 3.    M24     coefficient =  48.9,   3 subcommunities.
 4.    M 9     coefficient =  45.4,   2 subcommunities.
 5.    M11     coefficient =  45.4,   2 subcommunities.
 6.    M26     coefficient =  44.8,   2 subcommunities.
 7.    M22     coefficient =  44.0,   4 subcommunities.
 8.    M25     coefficient =  39.8,   3 subcommunities.
 9.   SD14     coefficient =  38.3,   4 subcommunities.
10.    M38     coefficient =  37.0,   0 subcommunities.

Table of test data matched against diagnosis of  M13 , coefficient =  66.5
Schoenus nigricans-Juncus subnodulosus mire.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 339 Carex panicea                          IV (  V)      5 ( 5)
2732 Juncus subnodulosus                     V (  V)      8 ( 7)*
1207 Schoenus nigricans                     IV (  V)      7 ( 8)
 876 Molinia caerulea                       IV (  V)      5 ( 7)
1445 Calliergon cuspidatum                  IV (  V)      5 ( 5)
1305 Succisa pratensis                       V ( IV)      4 ( 4)
1046 Potentilla erecta                     III ( IV)      2 ( 4)
1571 Campylium stellatum                    IV ( IV)      4 ( 4)
 167 Angelica sylvestris                    II (III)      4 ( 3)*
 418 Cirsium palustre                       II (III)      4 ( 3)*
 855 Mentha aquatica                         I (III)*     3 ( 3)
 531 Epipactis palustris                     . (III)*     0 ( 3)
 961 Phragmites australis                    I (III)*     3 ( 7)
 163 Anagallis tenella                     III (III)      3 ( 4)
 535 Equisetum palustre                    III (III)      3 ( 3)
 946 Pedicularis palustris                 III (III)      4 ( 3)*
1658 Drepanocladus revolvens                 . ( II)*     0 ( 5)
1683 Fissidens adianthoides                 IV ( II)*     2 ( 4)
1546 Bryum pseudotriquetrum                 II ( II)      2 ( 3)
2256 Aneura pinguis                          I ( II)      1 ( 3)
1973 Sphagnum subnitens                      . ( II)*     0 ( 4)
2222 Pellia endiviifolia                     I ( II)      1 ( 3)
1600 Ctenidium molluscum                   III ( II)      5 ( 6)
 547 Eriophorum latifolium                   I ( II)      4 ( 4)
 171 Anthoxanthum odoratum                   I (III)*     4 ( 3)*
 680 Holcus lanatus                        III (III)      5 ( 3)*
 576 Festuca rubra                         III ( II)      4 ( 4)
 719 Juncus acutiflorus                      I (  I)      5 ( 4)*
 120 Agrostis canina                         . (  I)      0 ( 3)
 323 Carex flacca                          III (III)      5 ( 4)*
 251 Briza media                            IV ( II)*     4 ( 4)
 466 Dactylorhiza fuchsii                  III ( II)      2 ( 3)
1596 Cratoneuron commutatum                III ( II)      8 ( 4)*
 371 Centaurea nigra                         I ( II)      2 ( 3)
 649 Gymnadenia conopsea                     . ( II)*     0 ( 4)
 944 Parnassia palustris                    II ( II)      4 ( 3)*
 970 Pinguicula vulgaris                   III ( II)      3 ( 4)
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325	Carex hostiana	III (II)	5 (4)*
1244	Serratula tinctoria	. (II)*	0 (3)
347	Carex pulicaris	II (II)	4 (3)*
722	Juncus articulatus	IV (II)*	4 (4)
995	Polygala vulgaris	I (II)	1 (3)
122	Agrostis stolonifera	I (II)	3 (4)
911	Oenanthe lachenalii	. (II)*	0 (3)
1089	Ranunculus flammula	II (II)	2 (3)
809	Luzula multiflora	I (II)	1 (3)
1249	Danthonia decumbens	. (II)*	0 (3)
470	Dactylorhiza purpurella	. (II)*	0 (3)
786	Linum catharticum	I (II)	2 (3)
1349	Trifolium pratense	I (I)	2 (3)
893	Myrica gale	. (I)	0 (4)
278	Calluna vulgaris	I (I)	3 (3)
1354	Triglochin palustre	II (I)	3 (3)
1235	Selaginella selaginoides	III (I)*	1 (3)
702	Hypericum pulchrum	. (I)	0 (3)
975	Plantago maritima	. (I)	0 (4)
919	Ophrys insectifera	. (I)	0 (3)
1214	Isolepis setacea	. (I)	0 (3)
558	Eupatorium cannabinum	I (III)*	1 (4)
1380	Valeriana dioica	IV (III)	4 (3)*
583	Filipendula ulmaria	. (III)*	0 (3)
612	Galium uliginosum	I (II)	1 (3)
279	Caltha palustris	. (II)*	0 (3)
813	Lychnis flos-cuculi	. (II)*	0 (3)
1914	Pseudoscleropodium purum	I (II)	1 (4)
467	Dactylorhiza incarnata	. (II)*	0 (4)
469	Dactylorhiza praetermissa	. (II)*	0 (3)
1804	Plagiomnium elatum	. (II)*	0 (3)
1411	Vicia cracca	. (II)*	0 (3)
862	Menyanthes trifoliata	. (I)	0 (4)
546	Eriophorum angustifolium	I (I)	3 (3)
1795	Plagiomnium rostratum	. (I)	0 (3)
320	Carex elata	. (I)	0 (4)
1801	Rhizomnium punctatum	. (I)	0 (3)
313	Carex diandra	. (I)	0 (4)
2257	Riccardia chamedryfolia	. (I)	0 (3)
1845	Philonotis calcarea	. (I)	0 (3)
2254	Riccardia multifida	I (I)	1 (3)
352	Carex rostrata	. (I)	0 (4)
1025	Potamogeton coloratus	. (I)	0 (3)
1370	Utricularia intermedia	. (I)	0 (3)
1371	Utricularia minor	. (I)	0 (3)
1372	Utricularia australis	. (I)	0 (3)
1373	Utricularia vulgaris	. (I)	0 (3)
329	Carex viridula ssp brachyrrhyncha	III (III)	4 (4)
690	Hydrocotyle vulgaris	I (III)*	6 (5)*
802	Lotus pedunculatus	I (III)*	4 (3)*
333	Carex nigra	I (II)	2 (4)
542	Erica tetralix	. (II)*	0 (3)
2167	Lophocolea bidentata	. (II)*	0 (3)
295	Cardamine pratensis	I (II)	1 (3)
420	Cladium mariscus	. (II)*	0 (7)
1081	Ranunculus acris	. (II)*	0 (3)
831	Lythrum salicaria	. (II)*	0 (3)
1598	Cratoneuron filicinum	I (I)	1 (4)
2714	Cirsium dissectum	. (I)	0 (3)
525	Epilobium palustre	. (I)	0 (3)
533	Equisetum fluviatile	. (I)	0 (4)
770	Leontodon saxatilis	. (I)	0 (3)
1482	Aulacomnium palustre	. (I)	0 (4)
609	Galium palustre	. (I)	0 (3)
1381	Valeriana officinalis	. (I)	0 (3)
1519	Brachythecium rutabulum	. (I)	0 (3)
568	Euphrasia officinalis agg	II (I)	2 (3)
758	Lathyrus pratensis	. (I)	0 (3)

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1350 Trifolium repens                              I (  I)      2 ( 3)
2982 Taraxacum seedling/sp                         I (  I)      1 ( 3)
 510 Eleocharis quinqueflora                       I (  I)      2 ( 3)
 315 Carex dioica                                 II (  I)      2 ( 3)
 703 Hypericum tetrapterum                         . (  I)      0 ( 3)
 471 Dactylorhiza traunsteineri                  III (  I)*     2 ( 3)
 494 Drosera rotundifolia                          I (  I)      1 ( 3)

The following species found in the test data at a constancy of II or more are
not recorded in the N.V.C. diagnostic table for the unit  M13  The data for
each species are presented as follows: species code, name, constancy,
maximum quantitative value.


 319 Carex echinata                               II   4
 532 Equisetum arvense                            II   3
 574 Festuca ovina                                II   2
1803 Plagiomnium ellipticum                       II   2
3266 Drepanocladus revolvens var. intermedius    III   5

The following numbers of species per sample were recorded:
             Mean     Min      Max
 Test data    27.0       0       39
   M13        27.0       7       65

*******************************************************************************


The N.V.C subcommunities most closely matching the test data are:
 1.    M13     coefficient =  66.5
 2.    M13b    coefficient =  64.9
 3.    M10b    coefficient =  60.1
 4.    M13c    coefficient =  57.9
 5.    M10     coefficient =  57.0
 6.    M10a    coefficient =  55.7
 7.    M13a    coefficient =  53.9
 8.    M24     coefficient =  48.9
 9.    M24b    coefficient =  47.9
10.    M11b    coefficient =  47.1

Table of test data matched against diagnosis of  M13b, coefficient =  64.9
Schoenus nigricans-Juncus subnodulosus mire: Briza media-Pinguicula vulgaris sub


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


1207 Schoenus nigricans                           IV (  V)      7 ( 7)
 876 Molinia caerulea                             IV (  V)      5 ( 7)
1445 Calliergon cuspidatum                        IV (  V)      5 ( 3)*
1305 Succisa pratensis                             V (  V)      4 ( 4)
 339 Carex panicea                                IV (  V)      5 ( 5)
2732 Juncus subnodulosus                           V (  V)      8 ( 7)*
1046 Potentilla erecta                           III (  V)*     2 ( 3)
1571 Campylium stellatum                          IV (  V)      4 ( 4)
 167 Angelica sylvestris                          II ( IV)*     4 ( 3)*
 418 Cirsium palustre                             II ( IV)*     4 ( 3)*
 855 Mentha aquatica                               I ( IV)*     3 ( 3)
 531 Epipactis palustris                           . (III)*     0 ( 3)
 961 Phragmites australis                          I (III)*     3 ( 3)
 163 Anagallis tenella                           III (  V)*     3 ( 3)
 535 Equisetum palustre                          III (III)      3 ( 3)
 946 Pedicularis palustris                       III ( IV)      4 ( 3)*
1658 Drepanocladus revolvens                       . (III)*     0 ( 4)
1683 Fissidens adianthoides                       IV (III)      2 ( 3)
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1546	Bryum pseudotriquetrum	II	(II)	2 (3)
2256	Aneura pinguis	I	(II)	1 (3)
1973	Sphagnum subnitens	.	(II)*	0 (4)
2222	Pellia endiviifolia	I	(II)	1 (3)
1600	Ctenidium molluscum	III	(II)	5 (6)
547	Eriophorum latifolium	I	(II)	4 (4)
171	Anthoxanthum odoratum	I	(III)*	4 (3)*
680	Holcus lanatus	III	(III)	5 (3)*
576	Festuca rubra	III	(II)	4 (3)*
323	Carex flacca	III	(IV)	5 (3)*
251	Briza media	IV	(V)	4 (4)
466	Dactylorhiza fuchsii	III	(V)*	2 (3)
1596	Cratoneuron commutatum	III	(IV)	8 (4)*
371	Centaurea nigra	I	(IV)*	2 (3)
649	Gymnadenia conopsea	.	(IV)*	0 (3)
944	Parnassia palustris	II	(IV)*	4 (3)*
970	Pinguicula vulgaris	III	(IV)	3 (4)
325	Carex hostiana	III	(IV)	5 (4)*
1244	Serratula tinctoria	.	(IV)*	0 (3)
347	Carex pulicaris	II	(IV)*	4 (3)*
722	Juncus articulatus	IV	(IV)	4 (4)
995	Polygala vulgaris	I	(IV)*	1 (3)
122	Agrostis stolonifera	I	(III)*	3 (3)
911	Oenanthe lachenalii	.	(III)*	0 (3)
1089	Ranunculus flammula	II	(III)	2 (3)
809	Luzula multiflora	I	(III)*	1 (3)
1249	Danthonia decumbens	.	(III)*	0 (3)
470	Dactylorhiza purpurella	.	(III)*	0 (3)
786	Linum catharticum	I	(III)*	2 (3)
1349	Trifolium pratense	I	(III)*	2 (3)
893	Myrica gale	.	(II)*	0 (4)
278	Calluna vulgaris	I	(II)	3 (3)
1354	Triglochin palustre	II	(II)	3 (3)
1235	Selaginella selaginoides	III	(II)	1 (3)
702	Hypericum pulchrum	.	(II)*	0 (3)
975	Plantago maritima	.	(II)*	0 (4)
919	Ophrys insectifera	.	(II)*	0 (3)
1214	Isolepis setacea	.	(I)	0 (3)
558	Eupatorium cannabinum	I	(III)*	1 (3)
1380	Valeriana dioica	IV	(II)*	4 (3)*
583	Filipendula ulmaria	.	(II)*	0 (3)
612	Galium uliginosum	I	(II)	1 (3)
279	Caltha palustris	.	(I)	0 (3)
813	Lychnis flos-cuculi	.	(I)	0 (1)
1914	Pseudoscleropodium purum	I	(I)	1 (3)
467	Dactylorhiza incarnata	.	(II)*	0 (3)
469	Dactylorhiza praetermissa	.	(I)	0 (1)
1804	Plagiomnium elatum	.	(I)	0 (1)
1411	Vicia cracca	.	(I)	0 (3)
862	Menyanthes trifoliata	.	(I)	0 (1)
546	Eriophorum angustifolium	I	(I)	3 (3)
1795	Plagiomnium rostratum	.	(I)	0 (1)
320	Carex elata	.	(I)	0 (1)
329	Carex viridula ssp brachyrrhyncha	III	(IV)	4 (4)
690	Hydrocotyle vulgaris	I	(II)	6 (3)*
802	Lotus pedunculatus	I	(III)*	4 (3)*
333	Carex nigra	I	(II)	2 (3)
542	Erica tetralix	.	(II)*	0 (3)
2167	Lophocolea bidentata	.	(I)	0 (3)
295	Cardamine pratensis	I	(I)	1 (1)
420	Cladium mariscus	.	(I)	0 (4)
1081	Ranunculus acris	.	(II)*	0 (3)
831	Lythrum salicaria	.	(II)*	0 (3)
1598	Cratoneuron filicinum	I	(II)	1 (3)
2714	Cirsium dissectum	.	(I)	0 (3)
525	Epilobium palustre	.	(I)	0 (3)
533	Equisetum fluviatile	.	(I)	0 (1)
770	Leontodon saxatilis	.	(I)	0 (3)

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1482 Aulacomnium palustre                          .  (  I)      0 ( 3)
 609 Galium palustre                               .  (  I)      0 ( 1)
1381 Valeriana officinalis                         .  (  I)      0 ( 1)
1519 Brachythecium rutabulum                       .  (  I)      0 ( 1)
 568 Euphrasia officinalis agg                    II  ( II)      2 ( 3)
1350 Trifolium repens                              I  (  I)      2 ( 3)
2982 Taraxacum seedling/sp                         I  (  I)      1 ( 3)
 510 Eleocharis quinqueflora                       I  (  I)      2 ( 3)
 315 Carex dioica                                 II  (  I)      2 ( 1)*
 703 Hypericum tetrapterum                         .  (  I)      0 ( 3)
 471 Dactylorhiza traunsteineri                  III  (  I)*     2 ( 3)
 494 Drosera rotundifolia                          I  (  I)      1 ( 3)
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The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 319 Carex echinata                               II   4
 532 Equisetum arvense                            II   3
 574 Festuca ovina                                II   2
1803 Plagiomnium ellipticum                       II   2
3266 Drepanocladus revolvens var. intermedius    III   5
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	27.0	0	39
M13b	45.0	26	57

****

Table of test data matched against diagnosis of M10b, coefficient = 60.1
Carex dioica-Pinguicula vulgaris mire: Briza media-Primula farinosa subcommunity

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                                IV  (  V)      5 ( 6)
 970 Pinguicula vulgaris                         III  ( IV)      3 ( 3)
 315 Carex dioica                                 II  ( IV)*     2 ( 5)
2256 Aneura pinguis                                I  ( IV)*     1 ( 4)
1658 Drepanocladus revolvens                       .  ( IV)*     0 ( 7)
 722 Juncus articulatus                           IV  ( IV)      4 ( 4)
 329 Carex viridula ssp brachyrrhyncha           III  ( IV)      4 ( 6)
1546 Bryum pseudotriquetrum                       II  ( IV)*     2 ( 3)
1571 Campylium stellatum                          IV  ( IV)      4 ( 4)
1235 Selaginella selaginoides                   III  ( IV)      1 ( 4)
 325 Carex hostiana                             III  (  V)*     5 ( 6)
1600 Ctenidium molluscum                        III  (  V)*     5 ( 8)
 347 Carex pulicaris                              II  ( IV)*     4 ( 5)
 546 Eriophorum angustifolium                      I  ( IV)*     3 ( 4)
1046 Potentilla erecta                          III  ( IV)      2 ( 6)
1305 Succisa pratensis                            V  ( IV)      4 ( 4)
 876 Molinia caerulea                            IV  ( IV)      5 ( 6)
 333 Carex nigra                                  I  (III)*     2 ( 4)
1683 Fissidens adianthoides                      IV  (III)      2 ( 3)
 171 Anthoxanthum odoratum                        I  ( II)      4 ( 3)*
1649 Ditrichum flexicaule                         .  (  I)      0 ( 3)
1322 Thalictrum alpinum                           .  (  I)      0 ( 3)
1761 Hylocomium splendens                         .  (  I)      0 ( 3)
1973 Sphagnum subnitens                           .  (  I)      0 ( 1)
1081 Ranunculus acris                             .  (  I)      0 ( 3)
2982 Taraxacum seedling/sp                        I  (  I)      1 ( 3)
```

574	Festuca ovina	II	(III)	2 (7)
786	Linum catharticum	I	(IV)*	2 (4)
1054	Primula farinosa	.	(IV)*	0 (4)
1596	Cratoneuron commutatum	III	(III)	8 (6)*
122	Agrostis stolonifera	I	(III)*	3 (3)
1333	Thymus polytrichus	.	(II)*	0 (4)
539	Equisetum variegatum	.	(II)*	0 (6)
721	Juncus alpinoarticulatus	.	(II)*	0 (3)
1598	Cratoneuron filicinum	I	(I)	1 (3)
477	Deschampsia cespitosa cespitosa	.	(I)	0 (4)
510	Eleocharis quinqueflora	I	(II)	2 (4)
312	Carex viridula ssp oedocarpa	.	(I)	0 (3)
726	Juncus bulbosus	.	(I)	0 (3)
542	Erica tetralix	.	(I)	0 (4)
1947	Scorpidium scorpioides	.	(I)	0 (1)
319	Carex echinata	II	(I)	4 (3)*
901	Narthecium ossifragum	.	(I)	0 (3)
494	Drosera rotundifolia	I	(I)	1 (1)
1195	Saxifraga aizoides	.	(I)	0 (5)
1207	Schoenus nigricans	IV	(I)*	7 (1)*
1354	Triglochin palustre	II	(IV)*	3 (3)
323	Carex flacca	III	(IV)	5 (5)
251	Briza media	IV	(IV)	4 (4)
1932	Racomitrium lanuginosum	.	(III)*	0 (9)
1059	Prunella vulgaris	.	(III)*	0 (6)
946	Pedicularis palustris	III	(III)	4 (3)*
535	Equisetum palustre	III	(III)	3 (4)
547	Eriophorum latifolium	I	(III)*	4 (4)
744	Kobresia simpliciuscula	.	(III)*	0 (8)
768	Leontodon autumnalis	.	(III)*	0 (3)
1336	Tofieldia pusilla	.	(II)*	0 (4)
1445	Calliergon cuspidatum	IV	(II)*	5 (4)*
2222	Pellia endiviifolia	I	(II)	1 (3)
944	Parnassia palustris	II	(II)	4 (4)
583	Filipendula ulmaria	.	(II)*	0 (3)
1089	Ranunculus flammula	II	(II)	2 (3)
418	Cirsium palustre	II	(II)	4 (3)*
295	Cardamine pratensis	I	(II)	1 (3)
770	Leontodon saxatilis	.	(II)*	0 (4)
1245	Sesleria caerulea	.	(II)*	0 (7)
1380	Valeriana dioica	IV	(II)*	4 (3)*
167	Angelica sylvestris	II	(II)	4 (3)*
612	Galium uliginosum	I	(II)	1 (3)
1795	Plagiomnium rostratum	.	(II)*	0 (3)
2012	Tortella tortuosa	.	(I)	0 (3)
2273	Scapania aspera	.	(I)	0 (3)
229	Bartsia alpina	.	(I)	0 (3)
279	Caltha palustris	.	(I)	0 (3)
719	Juncus acutiflorus	I	(I)	5 (4)*
809	Luzula multiflora	I	(I)	1 (3)
466	Dactylorhiza fuchsii	III	(I)*	2 (3)
680	Holcus lanatus	III	(I)*	5 (3)*
609	Galium palustre	.	(I)	0 (3)
975	Plantago maritima	.	(II)*	0 (4)
1740	Gymnostomum recurvirostrum	.	(I)	0 (4)
1156	Sagina nodosa	.	(I)	0 (3)
309	Carex capillaris	.	(I)	0 (4)
739	Juncus triglumis	.	(I)	0 (3)
568	Euphrasia officinalis agg	II	(III)	2 (4)
900	Nardus stricta	.	(I)	0 (4)
576	Festuca rubra	III	(I)*	4 (5)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M10b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

163	Anagallis tenella	III	3
471	Dactylorhiza traunsteineri	III	2
532	Equisetum arvense	II	3
1803	Plagiomnium ellipticum	II	2
2732	Juncus subnodulosus	V	8
3266	Drepanocladus revolvens var. intermedius	III	5

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	27.0	0	39
M10b	37.0	19	56

11.9 SAND DALE SSSI M22 / M24 / M26

```
The matching procedures have produced the following results for
Q4, Q13-Q15, Q18, Q20, Q21


The N.V.C. communities most closely matching the test data are:

 1.    M24     coefficient =  63.6,   3 subcommunities.
 2.    M26     coefficient =  56.4,   2 subcommunities.
 3.    M13     coefficient =  54.5,   3 subcommunities.
 4.    M22     coefficient =  53.5,   4 subcommunities.
 5.    M25     coefficient =  46.1,   3 subcommunities.
 6.    M23     coefficient =  43.1,   2 subcommunities.
 7.    M10     coefficient =  39.6,   3 subcommunities.
 8.    M 9     coefficient =  38.5,   2 subcommunities.
 9.   MG 8     coefficient =  37.8,   0 subcommunities.
10.   SD15     coefficient =  37.5,   4 subcommunities.

Table of test data matched against diagnosis of  M24 , coefficient =  63.6
Molinia caerulea-Cirsium dissectum fen-meadow.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 876 Molinia caerulea                          V (  V)      5 ( 8)
1046 Potentilla erecta                        IV (  V)      2 ( 4)
1305 Succisa pratensis                         V (  V)      5 ( 6)
2714 Cirsium dissectum                         I ( IV)*     1 ( 6)
 802 Lotus pedunculatus                       IV ( IV)      5 ( 4)*
 339 Carex panicea                            IV ( IV)      4 ( 5)
 612 Galium uliginosum                       III (III)      3 ( 5)
1380 Valeriana dioica                          V (III)*     4 ( 3)*
 371 Centaurea nigra                          IV (III)      3 ( 4)
2732 Juncus subnodulosus                      IV (III)      8 ( 5)*
 535 Equisetum palustre                      III ( II)      3 ( 3)
1411 Vicia cracca                              I ( II)      1 ( 4)
 583 Filipendula ulmaria                       I ( II)      3 ( 5)
 786 Linum catharticum                         I ( II)      4 ( 3)*
 649 Gymnadenia conopsea                       . ( II)*     0 ( 3)
 558 Eupatorium cannabinum                     I ( II)      1 ( 3)
 961 Phragmites australis                      . ( II)*     0 ( 8)
1571 Campylium stellatum                       I (  I)      4 ( 2)*
 420 Cladium mariscus                          . (  I)      0 ( 6)
 831 Lythrum salicaria                         . (  I)      0 ( 3)
 467 Dactylorhiza incarnata                    . (  I)      0 ( 3)
 680 Holcus lanatus                           IV (III)      5 ( 5)
 171 Anthoxanthum odoratum                    IV (III)      3 ( 6)
 690 Hydrocotyle vulgaris                      I ( II)      4 ( 3)*
 347 Carex pulicaris                          II ( II)      1 ( 3)
 809 Luzula multiflora                         . ( II)*     0 ( 3)
1081 Ranunculus acris                          I ( II)      1 ( 4)
1914 Pseudoscleropodium purum                 II ( II)      2 ( 6)
 576 Festuca rubra                            IV ( II)*     4 ( 7)
 295 Cardamine pratensis                       I ( II)      2 ( 3)
 251 Briza media                              IV ( II)*     4 ( 4)
1139 Rumex acetosa                             I ( II)      2 ( 3)
 531 Epipactis palustris                       . (  I)      0 ( 4)
1050 Potentilla reptans                        . (  I)      0 ( 3)
 703 Hypericum tetrapterum                     . (  I)      0 ( 3)
 415 Cirsium arvense                           . (  I)      0 ( 4)
 333 Carex nigra                               . (  I)      0 ( 4)
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1349	Trifolium pratense	III (I)*	4 (3)*
995	Polygala vulgaris	. (I)	0 (4)
770	Leontodon saxatilis	. (I)	0 (3)
722	Juncus articulatus	III (I)*	3 (4)
546	Eriophorum angustifolium	. (I)	0 (2)
466	Dactylorhiza fuchsii	III (I)*	2 (1)*
613	Galium verum	. (I)	0 (3)
384	Cerastium fontanum	. (I)	0 (3)
1043	Potentilla anserina	. (I)	0 (3)
719	Juncus acutiflorus	IV (II)*	9 (7)*
729	Juncus conglomeratus	II (II)	2 (7)
542	Erica tetralix	. (II)*	0 (4)
609	Galium palustre	. (II)*	0 (3)
468	Dactylorhiza maculata ericetorum	. (II)*	0 (4)
278	Calluna vulgaris	. (I)	0 (5)
730	Juncus effusus	I (I)	2 (5)
1244	Serratula tinctoria	. (I)	0 (3)
901	Narthecium ossifragum	. (I)	0 (4)
1482	Aulacomnium palustre	. (I)	0 (4)
1089	Ranunculus flammula	II (I)	1 (3)
1766	Hypnum cupressiforme	. (I)	0 (4)
105	Achillea ptarmica	IV (I)*	3 (4)
120	Agrostis canina	II (I)	4 (6)
1224	Scutellaria minor	. (I)	0 (2)
1427	Viola palustris	. (I)	0 (4)
2700	Sphagnum auriculatum var auriculatum	. (I)	0 (7)
3310	Hypericum undulatum	. (I)	0 (3)
1179	Salix repens agg.	. (I)	0 (4)
947	Pedicularis sylvatica	. (I)	0 (3)
1236	Senecio aquaticus	. (I)	0 (2)
2003	Thuidium tamariscinum	. (I)	0 (5)
1677	Eurhynchium praelongum	. (I)	0 (4)
418	Cirsium palustre	IV (III)	4 (5)
167	Angelica sylvestris	III (III)	2 (5)
1445	Calliergon cuspidatum	IV (III)	5 (3)*
855	Mentha aquatica	I (III)*	1 (4)
325	Carex hostiana	IV (III)	5 (6)
122	Agrostis stolonifera	. (II)*	0 (4)
1519	Brachythecium rutabulum	. (II)*	0 (6)
1059	Prunella vulgaris	III (II)	2 (3)
477	Deschampsia cespitosa cespitosa	II (II)	3 (4)
1207	Schoenus nigricans	. (II)*	0 (8)
973	Plantago lanceolata	II (II)	2 (4)
758	Lathyrus pratensis	. (II)*	0 (2)
1069	Pulicaria dysenterica	. (II)*	0 (4)
1136	Rubus fruticosus agg.	. (I)	0 (3)
1169	Salix cinerea (s)	. (I)	0 (3)
1249	Danthonia decumbens	II (I)	1 (5)
163	Anagallis tenella	I (I)	1 (6)
1973	Sphagnum subnitens	. (I)	0 (7)
813	Lychnis flos-cuculi	I (I)	1 (4)
494	Drosera rotundifolia	. (I)	0 (3)
2602	Alnus glutinosa (s)	. (I)	0 (2)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M24 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

234	Stachys officinalis	II	4
319	Carex echinata	II	3
323	Carex flacca	IV	5
568	Euphrasia officinalis agg	II	3
572	Festuca arundinacea	III	1
769	Leontodon hispidus	II	5
944	Parnassia palustris	II	3
946	Pedicularis palustris	II	1

```
1095 Ranunculus repens                          II   3
1354 Triglochin palustre                        II   4
1807 Plagiomnium undulatum                      II   3
1940 Rhytidiadelphus squarrosus                 II   4

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    26.0       0       41
   M24        26.0       9       52

*******************************************************************************

Table of test data matched against diagnosis of  M26 , coefficient =  56.4
Molinia caerulea-Crepis paludosa fen.


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


 876 Molinia caerulea                            V (  V)      5 ( 8)
 449 Crepis paludosa                             . (  V)*     0 ( 5)
 333 Carex nigra                                 . (  V)*     0 ( 8)
 339 Carex panicea                              IV (  V)      4 ( 6)
1380 Valeriana dioica                            V (  V)      4 ( 5)
1305 Succisa pratensis                           V ( IV)      5 ( 5)
 535 Equisetum palustre                         III ( IV)      3 ( 5)
1046 Potentilla erecta                           IV ( IV)      2 ( 3)
 583 Filipendula ulmaria                          I ( IV)*     3 ( 4)
1445 Calliergon cuspidatum                       IV ( IV)      5 ( 5)
1081 Ranunculus acris                            I ( IV)*     1 ( 4)
1190 Sanguisorba officinalis                     I (III)*     4 ( 6)
 167 Angelica sylvestris                        III (III)      2 ( 4)
1244 Serratula tinctoria                         . ( II)*     0 ( 4)
 609 Galium palustre                             . ( II)*     0 ( 3)
1600 Ctenidium molluscum                         . ( II)*     0 ( 3)
2922 Plagiochila asplenioides                    . ( II)*     0 ( 4)
1567 Campylium elodes                            . ( II)*     0 ( 3)
1482 Aulacomnium palustre                        . (  I)      0 ( 3)
 317 Carex disticha                              . (  I)      0 ( 1)
 122 Agrostis stolonifera                        . (  I)      0 ( 3)
 533 Equisetum fluviatile                        . (  I)      0 ( 2)
 612 Galium uliginosum                          III (  I)*     3 ( 2)*
 862 Menyanthes trifoliata                       . (  I)      0 ( 4)
 961 Phragmites australis                        . (  I)      0 ( 2)
 325 Carex hostiana                             IV (  I)*     5 ( 5)
2669 Carex appropinquata                         . (  I)      0 ( 8)
1049 Potentilla palustris                        . (  I)      0 ( 1)
 576 Festuca rubra                              IV (III)      4 ( 5)
 251 Briza media                                IV (III)      4 ( 4)
 680 Holcus lanatus                             IV (III)      5 ( 4)*
 758 Lathyrus pratensis                          . (III)*     0 ( 4)
 477 Deschampsia cespitosa cespitosa            II (III)      3 ( 2)*
 633 Geum rivale                                 . (III)*     0 ( 4)
 171 Anthoxanthum odoratum                      IV (III)      3 ( 3)
 719 Juncus acutiflorus                         IV (III)      9 ( 5)*
 574 Festuca ovina                               . ( II)*     0 ( 4)
1593 Climacium dendroides                        I ( II)      1 ( 4)
 729 Juncus conglomeratus                       II ( II)      2 ( 2)
 319 Carex echinata                             II ( II)      3 ( 1)*
1059 Prunella vulgaris                         III ( II)      2 ( 4)
1807 Plagiomnium undulatum                      II ( II)      3 ( 3)
 769 Leontodon hispidus                         II (  I)      5 ( 3)*
 973 Plantago lanceolata                        II (  I)      2 ( 2)
1106 Rhinanthus minor                            I (  I)      1 ( 2)
1350 Trifolium repens                            . (  I)      0 ( 2)
```

```
 813 Lychnis flos-cuculi                          I (  I)      1 ( 1)
1761 Hylocomium splendens                         I (  I)      1 ( 4)
 418 Cirsium palustre                            IV (III)      4 ( 2)*
 347 Carex pulicaris                             II (III)      1 ( 3)
 279 Caltha palustris                             . (III)*     0 ( 3)
1357 Trollius europaeus                           . (III)*     0 ( 3)
2167 Lophocolea bidentata                         . (III)*     0 ( 4)
 166 Anemone nemorosa                             . (III)*     0 ( 3)
2003 Thuidium tamariscinum                        . (III)*     0 ( 6)
 722 Juncus articulatus                          III (III)      3 ( 4)
1571 Campylium stellatum                          I (III)*     4 ( 6)
 323 Carex flacca                                IV (III)      5 ( 5)
1940 Rhytidiadelphus squarrosus                  II (III)      4 ( 4)
1914 Pseudoscleropodium purum                    II (III)      2 ( 4)
 371 Centaurea nigra                             IV (III)      3 ( 5)
1084 Ranunculus auricomus                         . ( II)*     0 ( 2)
1139 Rumex acetosa                                I ( II)      2 ( 1)*
1054 Primula farinosa                             . (  I)      0 ( 5)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M26 The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 105 Achillea ptarmica                           IV   3
 120 Agrostis canina                             II   4
 234 Stachys officinalis                         II   4
 466 Dactylorhiza fuchsii                       III   2
 568 Euphrasia officinalis agg                   II   3
 572 Festuca arundinacea                        III   1
 802 Lotus pedunculatus                          IV   5
 944 Parnassia palustris                         II   3
 946 Pedicularis palustris                       II   1
1089 Ranunculus flammula                         II   1
1095 Ranunculus repens                           II   3
1249 Danthonia decumbens                         II   1
1349 Trifolium pratense                        III   4
1354 Triglochin palustre                         II   4
2732 Juncus subnodulosus                         IV   8
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	26.0	0	41
M26	31.0	17	52

****

The N.V.C subcommunities most closely matching the test data are:

```
 1.    M24     coefficient =  63.6
 2.    M24b    coefficient =  62.2
 3.    M26b    coefficient =  58.1
 4.    M22b    coefficient =  57.4
 5.    M26     coefficient =  56.4
 6.    M13     coefficient =  54.5
 7.    M13b    coefficient =  54.2
 8.    M22     coefficient =  53.5
 9.    M22a    coefficient =  51.5
10.    M13a    coefficient =  50.4
```

Table of test data matched against diagnosis of M24b, coefficient = 62.2
Molinia caerulea-Cirsium dissectum fen-meadow: typical subcommunity.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies

are indicated by asterisks.

876	Molinia caerulea	V	(V)	5 (8)
1046	Potentilla erecta	IV	(V)	2 (4)
1305	Succisa pratensis	V	(V)	5 (5)
2714	Cirsium dissectum	I	(IV)*	1 (4)
802	Lotus pedunculatus	IV	(IV)	5 (3)*
339	Carex panicea	IV	(IV)	4 (5)
612	Galium uliginosum	III	(IV)	3 (4)
1380	Valeriana dioica	V	(IV)	4 (3)*
371	Centaurea nigra	IV	(IV)	3 (4)
2732	Juncus subnodulosus	IV	(III)	8 (3)*
535	Equisetum palustre	III	(III)	3 (3)
1411	Vicia cracca	I	(III)*	1 (4)
583	Filipendula ulmaria	I	(III)*	3 (5)
786	Linum catharticum	I	(II)	4 (3)*
649	Gymnadenia conopsea	.	(II)*	0 (3)
558	Eupatorium cannabinum	I	(II)	1 (2)
831	Lythrum salicaria	.	(I)	0 (2)
1571	Campylium stellatum	I	(I)	4 (1)*
961	Phragmites australis	.	(II)*	0 (8)
467	Dactylorhiza incarnata	.	(I)	0 (3)
680	Holcus lanatus	IV	(IV)	5 (4)*
171	Anthoxanthum odoratum	IV	(III)	3 (4)
690	Hydrocotyle vulgaris	I	(III)*	4 (3)*
347	Carex pulicaris	II	(III)	1 (3)
809	Luzula multiflora	.	(III)*	0 (3)
1081	Ranunculus acris	I	(II)	1 (2)
1914	Pseudoscleropodium purum	II	(II)	2 (3)
576	Festuca rubra	IV	(II)*	4 (2)*
295	Cardamine pratensis	I	(II)	2 (3)
251	Briza media	IV	(III)	4 (4)
1139	Rumex acetosa	I	(II)	2 (1)*
531	Epipactis palustris	.	(II)*	0 (4)
1050	Potentilla reptans	.	(II)*	0 (3)
703	Hypericum tetrapterum	.	(II)*	0 (3)
415	Cirsium arvense	.	(II)*	0 (4)
333	Carex nigra	.	(II)*	0 (4)
1349	Trifolium pratense	III	(II)	4 (3)*
995	Polygala vulgaris	.	(II)*	0 (4)
770	Leontodon saxatilis	.	(II)*	0 (3)
722	Juncus articulatus	III	(II)	3 (4)
546	Eriophorum angustifolium	.	(II)*	0 (2)
466	Dactylorhiza fuchsii	III	(II)	2 (1)*
613	Galium verum	.	(II)*	0 (3)
384	Cerastium fontanum	.	(II)*	0 (3)
1043	Potentilla anserina	.	(II)*	0 (3)
719	Juncus acutiflorus	IV	(I)*	9 (6)*
729	Juncus conglomeratus	II	(II)	2 (4)
542	Erica tetralix	.	(II)*	0 (4)
609	Galium palustre	.	(I)	0 (2)
468	Dactylorhiza maculata ericetorum	.	(I)	0 (4)
278	Calluna vulgaris	.	(I)	0 (5)
730	Juncus effusus	I	(I)	2 (3)
1244	Serratula tinctoria	.	(I)	0 (1)
901	Narthecium ossifragum	.	(I)	0 (1)
1482	Aulacomnium palustre	.	(I)	0 (3)
1089	Ranunculus flammula	II	(I)	1 (2)
1766	Hypnum cupressiforme	.	(I)	0 (1)
105	Achillea ptarmica	IV	(I)*	3 (1)*
418	Cirsium palustre	IV	(IV)	4 (5)
167	Angelica sylvestris	III	(III)	2 (3)
1445	Calliergon cuspidatum	IV	(III)	5 (3)*
855	Mentha aquatica	I	(III)*	1 (4)
325	Carex hostiana	IV	(III)	5 (3)*
122	Agrostis stolonifera	.	(II)*	0 (4)
1519	Brachythecium rutabulum	.	(II)*	0 (3)

```
1059 Prunella vulgaris                          III ( II)      2 ( 2)
 477 Deschampsia cespitosa cespitosa             II ( II)      3 ( 3)
1207 Schoenus nigricans                           . ( II)*     0 ( 4)
 973 Plantago lanceolata                         II ( II)      2 ( 4)
 758 Lathyrus pratensis                           . ( II)*     0 ( 3)
1069 Pulicaria dysenterica                        . ( II)*     0 ( 3)
1136 Rubus fruticosus agg.                        . (  I)      0 ( 3)
1169 Salix cinerea (s)                            . (  I)      0 ( 3)
1249 Danthonia decumbens                         II (  I)      1 ( 3)
 163 Anagallis tenella                            I (  I)      1 ( 6)
1973 Sphagnum subnitens                           . (  I)      0 ( 2)
 813 Lychnis flos-cuculi                          I (  I)      1 ( 4)
 494 Drosera rotundifolia                         . (  I)      0 ( 3)
2602 Alnus glutinosa (s)                          . (  I)      0 ( 2)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M24b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 120 Agrostis canina                             II   4
 234 Stachys officinalis                         II   4
 319 Carex echinata                              II   3
 323 Carex flacca                                IV   5
 568 Euphrasia officinalis agg                   II   3
 572 Festuca arundinacea                        III   1
 769 Leontodon hispidus                          II   5
 944 Parnassia palustris                         II   3
 946 Pedicularis palustris                       II   1
1095 Ranunculus repens                           II   3
1354 Triglochin palustre                         II   4
1807 Plagiomnium undulatum                       II   3
1940 Rhytidiadelphus squarrosus                  II   4
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	26.0	0	41
M24b	29.0	14	52

****

Table of test data matched against diagnosis of M26b, coefficient = 58.1
Molinia caerulea-Crepis paludosa fen: Festuca rubra subcommunity.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 876 Molinia caerulea                             V (  V)      5 ( 8)
 449 Crepis paludosa                               . (  V)*     0 ( 5)
 333 Carex nigra                                   . (  V)*     0 ( 6)
 339 Carex panicea                                IV (  V)      4 ( 5)
1380 Valeriana dioica                              V (  V)      4 ( 5)
1305 Succisa pratensis                             V ( IV)      5 ( 5)
 535 Equisetum palustre                           III ( IV)      3 ( 5)
1046 Potentilla erecta                             IV ( IV)      2 ( 3)
 583 Filipendula ulmaria                           I ( IV)*     3 ( 3)
1445 Calliergon cuspidatum                         IV ( IV)      5 ( 5)
1081 Ranunculus acris                              I (  V)*     1 ( 4)
1190 Sanguisorba officinalis                       I ( II)      4 ( 3)*
 167 Angelica sylvestris                          III ( II)      2 ( 4)
1244 Serratula tinctoria                           . (  I)      0 ( 2)
 576 Festuca rubra                                 IV (  V)      4 ( 5)
 251 Briza media                                   IV (  V)      4 ( 4)
```

680	Holcus lanatus	IV	(V)	5 (4)*
758	Lathyrus pratensis	.	(IV)*	0 (4)
477	Deschampsia cespitosa cespitosa	II	(IV)*	3 (2)*
633	Geum rivale	.	(IV)*	0 (4)
171	Anthoxanthum odoratum	IV	(IV)	3 (3)
719	Juncus acutiflorus	IV	(IV)	9 (5)*
574	Festuca ovina	.	(III)*	0 (4)
1593	Climacium dendroides	I	(III)*	1 (4)
729	Juncus conglomeratus	II	(III)	2 (2)
319	Carex echinata	II	(III)	3 (1)*
1059	Prunella vulgaris	III	(III)	2 (4)
1807	Plagiomnium undulatum	II	(III)	3 (3)
769	Leontodon hispidus	II	(II)	5 (3)*
973	Plantago lanceolata	II	(II)	2 (2)
1106	Rhinanthus minor	I	(II)	1 (2)
1350	Trifolium repens	.	(II)*	0 (2)
813	Lychnis flos-cuculi	I	(II)	1 (1)
1761	Hylocomium splendens	I	(II)	1 (4)
418	Cirsium palustre	IV	(III)	4 (2)*
347	Carex pulicaris	II	(III)	1 (2)
279	Caltha palustris	.	(III)*	0 (3)
1357	Trollius europaeus	.	(III)*	0 (2)
2167	Lophocolea bidentata	.	(III)*	0 (4)
166	Anemone nemorosa	.	(III)*	0 (2)
2003	Thuidium tamariscinum	.	(II)*	0 (4)
722	Juncus articulatus	III	(III)	3 (4)
1571	Campylium stellatum	I	(II)	4 (6)
323	Carex flacca	IV	(III)	5 (5)
1940	Rhytidiadelphus squarrosus	II	(III)	4 (4)
1914	Pseudoscleropodium purum	II	(III)	2 (2)
371	Centaurea nigra	IV	(III)	3 (5)
1084	Ranunculus auricomus	.	(II)*	0 (2)
1139	Rumex acetosa	I	(II)	2 (1)*
1054	Primula farinosa	.	(I)	0 (5)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M26b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

105	Achillea ptarmica	IV	3
120	Agrostis canina	II	4
234	Stachys officinalis	II	4
325	Carex hostiana	IV	5
466	Dactylorhiza fuchsii	III	2
568	Euphrasia officinalis agg	II	3
572	Festuca arundinacea	III	1
612	Galium uliginosum	III	3
802	Lotus pedunculatus	IV	5
944	Parnassia palustris	II	3
946	Pedicularis palustris	II	1
1089	Ranunculus flammula	II	1
1095	Ranunculus repens	II	3
1249	Danthonia decumbens	II	1
1349	Trifolium pratense	III	4
1354	Triglochin palustre	II	4
2732	Juncus subnodulosus	IV	8

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	26.0	0	41
M26b	34.0	17	52

****

Table of test data matched against diagnosis of M22b, coefficient = 57.4
Juncus subnodulosus-Cirsium palustre fen-meadow: Briza media-Trifolium subc.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

2732	Juncus subnodulosus	IV (IV)	8 (8)
1445	Calliergon cuspidatum	IV (V)	5 (3)*
855	Mentha aquatica	I (V)*	1 (3)
680	Holcus lanatus	IV (V)	5 (3)*
418	Cirsium palustre	IV (V)	4 (3)*
535	Equisetum palustre	III (IV)	3 (3)
583	Filipendula ulmaria	I (IV)*	3 (3)
802	Lotus pedunculatus	IV (IV)	5 (3)*
295	Cardamine pratensis	I (IV)*	2 (3)
722	Juncus articulatus	III (IV)	3 (6)
384	Cerastium fontanum	. (IV)*	0 (3)
251	Briza media	IV (IV)	4 (3)*
1350	Trifolium repens	. (IV)*	0 (3)
1349	Trifolium pratense	III (IV)	4 (3)*
171	Anthoxanthum odoratum	IV (IV)	3 (4)
876	Molinia caerulea	V (III)*	5 (4)*
1139	Rumex acetosa	I (III)*	2 (3)
733	Juncus inflexus	. (III)*	0 (6)
526	Epilobium parviflorum	. (III)*	0 (3)
466	Dactylorhiza fuchsii	III (III)	2 (3)
973	Plantago lanceolata	II (III)	2 (3)
1059	Prunella vulgaris	III (III)	2 (3)
371	Centaurea nigra	IV (III)	3 (2)*
1095	Ranunculus repens	II (III)	3 (3)
1354	Triglochin palustre	II (III)	4 (2)*
1106	Rhinanthus minor	I (II)	1 (3)
323	Carex flacca	IV (II)*	5 (3)*
324	Carex hirta	. (II)*	0 (3)
730	Juncus effusus	I (II)	2 (3)
460	Cynosurus cristatus	. (II)*	0 (3)
961	Phragmites australis	. (I)	0 (5)
690	Hydrocotyle vulgaris	I (II)	4 (3)*
831	Lythrum salicaria	. (I)	0 (2)
862	Menyanthes trifoliata	. (I)	0 (1)
889	Myosotis scorpioides	. (I)	0 (1)
1571	Campylium stellatum	I (I)	4 (2)*
1795	Plagiomnium rostratum	. (I)	0 (1)
609	Galium palustre	. (III)*	0 (3)
525	Epilobium palustre	. (I)	0 (1)
533	Equisetum fluviatile	. (I)	0 (3)
467	Dactylorhiza incarnata	. (II)*	0 (3)
1169	Salix cinerea (s)	. (I)	0 (3)
469	Dactylorhiza praetermissa	. (I)	0 (3)
302	Carex acutiformis	. (II)*	0 (4)
715	Iris pseudacorus	. (I)	0 (3)
1089	Ranunculus flammula	II (II)	1 (2)
1381	Valeriana officinalis	. (I)	0 (1)
329	Carex viridula ssp brachyrrhyncha	. (I)	0 (2)
612	Galium uliginosum	III (IV)	3 (3)
813	Lychnis flos-cuculi	I (IV)*	1 (3)
990	Poa trivialis	I (IV)*	2 (3)
279	Caltha palustris	. (III)*	0 (3)
339	Carex panicea	IV (V)	4 (3)*
576	Festuca rubra	IV (V)	4 (4)
122	Agrostis stolonifera	. (V)*	0 (5)
1081	Ranunculus acris	I (V)*	1 (3)
1380	Valeriana dioica	V (IV)	4 (5)
1411	Vicia cracca	I (IV)*	1 (3)
758	Lathyrus pratensis	. (IV)*	0 (3)
1519	Brachythecium rutabulum	. (III)*	0 (2)

167	Angelica sylvestris	III	(III)	2 (3)
1305	Succisa pratensis	V	(III)*	5 (3)*
317	Carex disticha	.	(III)*	0 (6)
1046	Potentilla erecta	IV	(III)	2 (3)
558	Eupatorium cannabinum	I	(II)	1 (3)
703	Hypericum tetrapterum	.	(II)*	0 (3)
197	Arrhenatherum elatius	.	(II)*	0 (3)
1219	Scrophularia auriculata	.	(II)*	0 (3)
1043	Potentilla anserina	.	(II)*	0 (3)
477	Deschampsia cespitosa cespitosa	II	(II)	3 (3)
333	Carex nigra	.	(II)*	0 (4)
1069	Pulicaria dysenterica	.	(II)*	0 (3)
1142	Rumex conglomeratus	.	(I)	0 (3)
886	Myosotis laxa caespitosa	.	(I)	0 (3)
1807	Plagiomnium undulatum	II	(I)	3 (3)
1801	Rhizomnium punctatum	.	(I)	0 (3)
911	Oenanthe lachenalii	.	(I)	0 (3)
1050	Potentilla reptans	.	(I)	0 (3)
531	Epipactis palustris	.	(I)	0 (3)
546	Eriophorum angustifolium	.	(I)	0 (6)
809	Luzula multiflora	.	(I)	0 (3)
960	Phleum pratense	.	(I)	0 (3)
1394	Veronica beccabunga	.	(I)	0 (3)
127	Ajuga reptans	I	(I)	1 (3)
1148	Rumex sanguineus	.	(I)	0 (3)
415	Cirsium arvense	.	(I)	0 (3)
1914	Pseudoscleropodium purum	II	(I)	2 (3)
105	Achillea ptarmica	IV	(I)*	3 (3)
572	Festuca arundinacea	III	(I)*	1 (3)
1791	Plagiomnium affine	.	(I)	0 (3)
2714	Cirsium dissectum	I	(I)	1 (1)
509	Eleocharis palustris	.	(I)	0 (3)

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M22b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

120	Agrostis canina	II	4
234	Stachys officinalis	II	4
319	Carex echinata	II	3
325	Carex hostiana	IV	5
347	Carex pulicaris	II	1
568	Euphrasia officinalis agg	II	3
719	Juncus acutiflorus	IV	9
729	Juncus conglomeratus	II	2
769	Leontodon hispidus	II	5
944	Parnassia palustris	II	3
946	Pedicularis palustris	II	1
1249	Danthonia decumbens	II	1
1940	Rhytidiadelphus squarrosus	II	4

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	26.0	0	41
M22b	0.0	0	0

11.10 SAND DALE NON-SSSI M13

The matching procedures have produced the following results for
Q1-Q6

The N.V.C. communities most closely matching the test data are:

```
 1.    M13     coefficient =  51.7,   3 subcommunities.
 2.    M10     coefficient =  44.1,   3 subcommunities.
 3.    M24     coefficient =  43.5,   3 subcommunities.
 4.    M22     coefficient =  43.1,   4 subcommunities.
 5.    M26     coefficient =  42.2,   2 subcommunities.
 6.    M 9     coefficient =  39.0,   2 subcommunities.
 7.    M11     coefficient =  38.6,   2 subcommunities.
 8.    M25     coefficient =  36.5,   3 subcommunities.
 9.   SD15     coefficient =  36.0,   4 subcommunities.
10.   SD14     coefficient =  35.9,   4 subcommunities.
```

Table of test data matched against diagnosis of M13 , coefficient = 51.7
Schoenus nigricans-Juncus subnodulosus mire.

The information for each species is presented in the order: code, species name, constancy, maximum quantitative value with the constancy and maximum quantitative values of the N.V.C. unit in brackets. Any marked discrepancies are indicated by asterisks.

```
 339 Carex panicea                          III (  V)*     3 ( 5)
2732 Juncus subnodulosus                    III (  V)*     3 ( 7)
1207 Schoenus nigricans                       I (  V)*     2 ( 8)
 876 Molinia caerulea                        IV (  V)      5 ( 7)
1445 Calliergon cuspidatum                   IV (  V)      5 ( 5)
1305 Succisa pratensis                        I ( IV)*     4 ( 4)
1046 Potentilla erecta                        I ( IV)*     1 ( 4)
1571 Campylium stellatum                     II ( IV)*     2 ( 4)
 167 Angelica sylvestris                    III (III)      4 ( 3)*
 418 Cirsium palustre                       III (III)      3 ( 3)
 855 Mentha aquatica                          I (III)*     1 ( 3)
 531 Epipactis palustris                      . (III)*     0 ( 3)
 961 Phragmites australis                     . (III)*     0 ( 7)
 163 Anagallis tenella                      III (III)      3 ( 4)
 535 Equisetum palustre                     III (III)      2 ( 3)
 946 Pedicularis palustris                    I (III)*     1 ( 3)
1658 Drepanocladus revolvens                  . ( II)*     0 ( 5)
1683 Fissidens adianthoides                  II ( II)      1 ( 4)
1546 Bryum pseudotriquetrum                   . ( II)*     0 ( 3)
2256 Aneura pinguis                           . ( II)*     0 ( 3)
1973 Sphagnum subnitens                       . ( II)*     0 ( 4)
2222 Pellia endiviifolia                      I ( II)      1 ( 3)
1600 Ctenidium molluscum                    III ( II)      3 ( 6)
 547 Eriophorum latifolium                    . ( II)*     0 ( 4)
 171 Anthoxanthum odoratum                    . (III)*     0 ( 3)
 680 Holcus lanatus                          II (III)      4 ( 3)*
 576 Festuca rubra                          III ( II)      3 ( 4)
 719 Juncus acutiflorus                       I (  I)      3 ( 4)
 120 Agrostis canina                          . (  I)      0 ( 3)
 323 Carex flacca                             V (III)*     5 ( 4)*
 251 Briza media                              I ( II)      2 ( 4)
 466 Dactylorhiza fuchsii                   III ( II)      2 ( 3)
1596 Cratoneuron commutatum                 III ( II)      8 ( 4)*
 371 Centaurea nigra                          I ( II)      1 ( 3)
 649 Gymnadenia conopsea                      . ( II)*     0 ( 4)
 944 Parnassia palustris                      . ( II)*     0 ( 3)
 970 Pinguicula vulgaris                     II ( II)      1 ( 4)
```

325	Carex hostiana	I	(II)	4 (4)
1244	Serratula tinctoria	.	(II)*	0 (3)
347	Carex pulicaris	IV	(II)*	3 (3)
722	Juncus articulatus	V	(II)*	5 (4)*
995	Polygala vulgaris	.	(II)*	0 (3)
122	Agrostis stolonifera	II	(II)	2 (4)
911	Oenanthe lachenalii	.	(II)*	0 (3)
1089	Ranunculus flammula	III	(II)	2 (3)
809	Luzula multiflora	I	(II)	1 (3)
1249	Danthonia decumbens	.	(II)*	0 (3)
470	Dactylorhiza purpurella	.	(II)*	0 (3)
786	Linum catharticum	.	(II)*	0 (3)
1349	Trifolium pratense	.	(I)	0 (3)
893	Myrica gale	.	(I)	0 (4)
278	Calluna vulgaris	.	(I)	0 (3)
1354	Triglochin palustre	III	(I)*	5 (3)*
1235	Selaginella selaginoides	.	(I)	0 (3)
702	Hypericum pulchrum	I	(I)	1 (3)
975	Plantago maritima	.	(I)	0 (4)
919	Ophrys insectifera	.	(I)	0 (3)
1214	Isolepis setacea	.	(I)	0 (3)
558	Eupatorium cannabinum	III	(III)	2 (4)
1380	Valeriana dioica	II	(III)	4 (3)*
583	Filipendula ulmaria	I	(III)*	2 (3)
612	Galium uliginosum	.	(II)*	0 (3)
279	Caltha palustris	.	(II)*	0 (3)
813	Lychnis flos-cuculi	.	(II)*	0 (3)
1914	Pseudoscleropodium purum	.	(II)*	0 (4)
467	Dactylorhiza incarnata	.	(II)*	0 (4)
469	Dactylorhiza praetermissa	.	(II)*	0 (3)
1804	Plagiomnium elatum	.	(II)*	0 (3)
1411	Vicia cracca	.	(II)*	0 (3)
862	Menyanthes trifoliata	.	(I)	0 (4)
546	Eriophorum angustifolium	.	(I)	0 (3)
1795	Plagiomnium rostratum	.	(I)	0 (3)
320	Carex elata	.	(I)	0 (4)
1801	Rhizomnium punctatum	.	(I)	0 (3)
313	Carex diandra	.	(I)	0 (4)
2257	Riccardia chamedryfolia	.	(I)	0 (3)
1845	Philonotis calcarea	.	(I)	0 (3)
2254	Riccardia multifida	I	(I)	1 (3)
352	Carex rostrata	.	(I)	0 (4)
1025	Potamogeton coloratus	.	(I)	0 (3)
1370	Utricularia intermedia	.	(I)	0 (3)
1371	Utricularia minor	.	(I)	0 (3)
1372	Utricularia australis	.	(I)	0 (3)
1373	Utricularia vulgaris	.	(I)	0 (3)
329	Carex viridula ssp brachyrrhyncha	IV	(III)	4 (4)
690	Hydrocotyle vulgaris	.	(III)*	0 (5)
802	Lotus pedunculatus	.	(III)*	0 (3)
333	Carex nigra	.	(II)*	0 (4)
542	Erica tetralix	.	(II)*	0 (3)
2167	Lophocolea bidentata	.	(II)*	0 (3)
295	Cardamine pratensis	.	(II)*	0 (3)
420	Cladium mariscus	.	(II)*	0 (7)
1081	Ranunculus acris	.	(II)*	0 (3)
831	Lythrum salicaria	.	(II)*	0 (3)
1598	Cratoneuron filicinum	.	(I)	0 (4)
2714	Cirsium dissectum	.	(I)	0 (3)
525	Epilobium palustre	.	(I)	0 (3)
533	Equisetum fluviatile	.	(I)	0 (4)
770	Leontodon saxatilis	.	(I)	0 (3)
1482	Aulacomnium palustre	.	(I)	0 (4)
609	Galium palustre	.	(I)	0 (3)
1381	Valeriana officinalis	.	(I)	0 (3)
1519	Brachythecium rutabulum	.	(I)	0 (3)
568	Euphrasia officinalis agg	.	(I)	0 (3)
758	Lathyrus pratensis	.	(I)	0 (3)

```
1350 Trifolium repens                              .  (  I)      0 ( 3)
2982 Taraxacum seedling/sp                         .  (  I)      0 ( 3)
 510 Eleocharis quinqueflora                       .  (  I)      0 ( 3)
 315 Carex dioica                                  .  (  I)      0 ( 3)
 703 Hypericum tetrapterum                         .  (  I)      0 ( 3)
 471 Dactylorhiza traunsteineri                    .  (  I)      0 ( 3)
 494 Drosera rotundifolia                          .  (  I)      0 ( 3)

The following species found in the test data at a constancy of II or more are
not recorded in the N.V.C. diagnostic table for the unit  M13  The data for
each species are presented as follows: species code, name, constancy,
maximum quantitative value.


 477 Deschampsia cespitosa cespitosa           III   3
 526 Epilobium parviflorum                     III   1
 729 Juncus conglomeratus                      III   2
 733 Juncus inflexus                            II   3
2802 Betula seedling/sp                        III   3

The following numbers of species per sample were recorded:
              Mean     Min      Max
 Test data    18.3       0       30
   M13        27.0       7       65

*******************************************************************************


The N.V.C subcommunities most closely matching the test data are:
 1.    M13     coefficient =  51.7
 2.    M13b    coefficient =  50.2
 3.    M13a    coefficient =  48.3
 4.    M10b    coefficient =  47.2
 5.    M10     coefficient =  44.1
 6.    M22a    coefficient =  43.6
 7.    M24     coefficient =  43.5
 8.    M22     coefficient =  43.1
 9.    M13c    coefficient =  43.1
10.    M26     coefficient =  42.2

Table of test data matched against diagnosis of  M13b, coefficient =  50.2
Schoenus nigricans-Juncus subnodulosus mire: Briza media-Pinguicula vulgaris sub


The information for each species is presented in the order: code, species
name, constancy, maximum quantitative value with the constancy and maximum
quantitative values of the N.V.C. unit in brackets.  Any marked discrepancies
are indicated by asterisks.


1207 Schoenus nigricans                          I (  V)*     2 ( 7)
 876 Molinia caerulea                           IV (  V)      5 ( 7)
1445 Calliergon cuspidatum                      IV (  V)      5 ( 3)*
1305 Succisa pratensis                           I (  V)*     4 ( 4)
 339 Carex panicea                              III (  V)*     3 ( 5)
2732 Juncus subnodulosus                        III (  V)*     3 ( 7)
1046 Potentilla erecta                           I (  V)*     1 ( 3)
1571 Campylium stellatum                        II (  V)*     2 ( 4)
 167 Angelica sylvestris                        III ( IV)      4 ( 3)*
 418 Cirsium palustre                           III ( IV)      3 ( 3)
 855 Mentha aquatica                              I ( IV)*     1 ( 3)
 531 Epipactis palustris                          . (III)*     0 ( 3)
 961 Phragmites australis                         . (III)*     0 ( 3)
 163 Anagallis tenella                          III (  V)*     3 ( 3)
 535 Equisetum palustre                         III (III)      2 ( 3)
 946 Pedicularis palustris                        I ( IV)*     1 ( 3)
1658 Drepanocladus revolvens                      . (III)*     0 ( 4)
1683 Fissidens adianthoides                      II (III)      1 ( 3)
```

1546	Bryum pseudotriquetrum	. (II)*	0 (3)	
2256	Aneura pinguis	. (II)*	0 (3)	
1973	Sphagnum subnitens	. (II)*	0 (4)	
2222	Pellia endiviifolia	I (II)	1 (3)	
1600	Ctenidium molluscum	III (II)	3 (6)	
547	Eriophorum latifolium	. (II)*	0 (4)	
171	Anthoxanthum odoratum	. (III)*	0 (3)	
680	Holcus lanatus	II (III)	4 (3)*	
576	Festuca rubra	III (II)	3 (3)	
323	Carex flacca	V (IV)	5 (3)*	
251	Briza media	I (V)*	2 (4)	
466	Dactylorhiza fuchsii	III (V)*	2 (3)	
1596	Cratoneuron commutatum	III (IV)	8 (4)*	
371	Centaurea nigra	I (IV)*	1 (3)	
649	Gymnadenia conopsea	. (IV)*	0 (3)	
944	Parnassia palustris	. (IV)*	0 (3)	
970	Pinguicula vulgaris	II (IV)*	1 (4)	
325	Carex hostiana	I (IV)*	4 (4)	
1244	Serratula tinctoria	. (IV)*	0 (3)	
347	Carex pulicaris	IV (IV)	3 (3)	
722	Juncus articulatus	V (IV)	5 (4)*	
995	Polygala vulgaris	. (IV)*	0 (3)	
122	Agrostis stolonifera	II (III)	2 (3)	
911	Oenanthe lachenalii	. (III)*	0 (3)	
1089	Ranunculus flammula	III (III)	2 (3)	
809	Luzula multiflora	I (III)*	1 (3)	
1249	Danthonia decumbens	. (III)*	0 (3)	
470	Dactylorhiza purpurella	. (III)*	0 (3)	
786	Linum catharticum	. (III)*	0 (3)	
1349	Trifolium pratense	. (III)*	0 (3)	
893	Myrica gale	. (II)*	0 (4)	
278	Calluna vulgaris	. (II)*	0 (3)	
1354	Triglochin palustre	III (II)	5 (3)*	
1235	Selaginella selaginoides	. (II)*	0 (3)	
702	Hypericum pulchrum	I (II)	1 (3)	
975	Plantago maritima	. (II)*	0 (4)	
919	Ophrys insectifera	. (II)*	0 (3)	
1214	Isolepis setacea	. (I)	0 (3)	
558	Eupatorium cannabinum	III (III)	2 (3)	
1380	Valeriana dioica	II (II)	4 (3)*	
583	Filipendula ulmaria	I (II)	2 (3)	
612	Galium uliginosum	. (II)*	0 (3)	
279	Caltha palustris	. (I)	0 (3)	
813	Lychnis flos-cuculi	. (I)	0 (1)	
1914	Pseudoscleropodium purum	. (I)	0 (3)	
467	Dactylorhiza incarnata	. (II)*	0 (3)	
469	Dactylorhiza praetermissa	. (I)	0 (1)	
1804	Plagiomnium elatum	. (I)	0 (1)	
1411	Vicia cracca	. (I)	0 (3)	
862	Menyanthes trifoliata	. (I)	0 (1)	
546	Eriophorum angustifolium	. (I)	0 (3)	
1795	Plagiomnium rostratum	. (I)	0 (1)	
320	Carex elata	. (I)	0 (1)	
329	Carex viridula ssp brachyrrhyncha	IV (IV)	4 (4)	
690	Hydrocotyle vulgaris	. (II)*	0 (3)	
802	Lotus pedunculatus	. (III)*	0 (3)	
333	Carex nigra	. (II)*	0 (3)	
542	Erica tetralix	. (II)*	0 (3)	
2167	Lophocolea bidentata	. (I)	0 (3)	
295	Cardamine pratensis	. (I)	0 (1)	
420	Cladium mariscus	. (I)	0 (4)	
1081	Ranunculus acris	. (II)*	0 (3)	
831	Lythrum salicaria	. (II)*	0 (3)	
1598	Cratoneuron filicinum	. (II)*	0 (3)	
2714	Cirsium dissectum	. (I)	0 (3)	
525	Epilobium palustre	. (I)	0 (3)	
533	Equisetum fluviatile	. (I)	0 (1)	
770	Leontodon saxatilis	. (I)	0 (3)	

```
1482 Aulacomnium palustre                          .  (  I)      0 ( 3)
 609 Galium palustre                               .  (  I)      0 ( 1)
1381 Valeriana officinalis                         .  (  I)      0 ( 1)
1519 Brachythecium rutabulum                       .  (  I)      0 ( 1)
 568 Euphrasia officinalis agg                     .  ( II)*     0 ( 3)
1350 Trifolium repens                              .  (  I)      0 ( 3)
2982 Taraxacum seedling/sp                         .  (  I)      0 ( 3)
 510 Eleocharis quinqueflora                       .  (  I)      0 ( 3)
 315 Carex dioica                                  .  (  I)      0 ( 1)
 703 Hypericum tetrapterum                         .  (  I)      0 ( 3)
 471 Dactylorhiza traunsteineri                    .  (  I)      0 ( 3)
 494 Drosera rotundifolia                          .  (  I)      0 ( 3)
```

The following species found in the test data at a constancy of II or more are not recorded in the N.V.C. diagnostic table for the unit M13b The data for each species are presented as follows: species code, name, constancy, maximum quantitative value.

```
 477 Deschampsia cespitosa cespitosa           III   3
 526 Epilobium parviflorum                     III   1
 729 Juncus conglomeratus                      III   2
 733 Juncus inflexus                            II   3
2802 Betula seedling/sp                        III   3
```

The following numbers of species per sample were recorded:

	Mean	Min	Max
Test data	18.3	0	30
M13b	45.0	26	57

Further information

Natural England evidence can be downloaded from our **Access to Evidence Catalogue**. For more information about Natural England and our work see **Gov.UK**. For any queries contact the Natural England Enquiry Service on 0300 060 3900 or e-mail **enquiries@naturalengland.org.uk** .

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Report number RP2921

ISBN 978-1-78354-511-7