

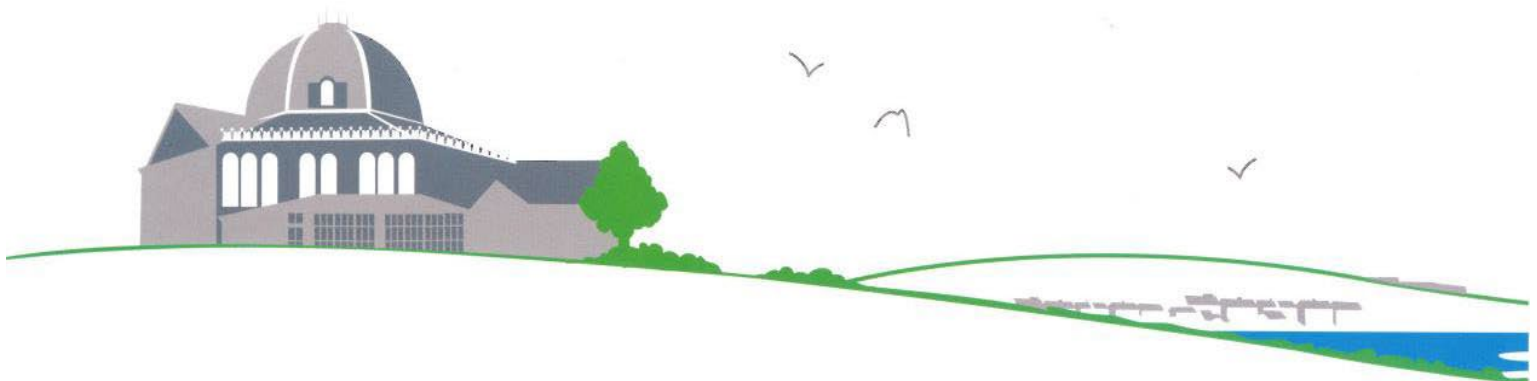
**Cannock
Chase**
National
Landscape

Penny Anderson
Associates Ltd
CONSULTANT ECOLOGISTS



CANNOCK CHASE NATIONAL LANDSCAPE

PEAT DEPOSIT SURVEY PHASE 1 – DESK STUDY



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This project has been undertaken in accordance with PAA policies and procedures on quality assurance.

Signed: _____



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1. EXECUTIVE SUMMARY

Introduction

- 1.1 Penny Anderson Associates Ltd (PAA) was commissioned by Staffordshire County Council on behalf of Cannock Chase National Landscape (CCNL) in December 2024 to undertake a desk study with the aim of providing greater clarity on the presence, extent, character and condition of peaty soils within CCNL.
- 1.2 PAA is a long-established independent consultancy with a specialism in peatland ecology, hydrology and geomorphology, and has carried out a large number of studies throughout the UK relating to peat and peatlands over the last forty years.

The Challenge

- 1.3 Knowledge of the peat and peaty soils resource within CCNL is currently dispersed and partly incomplete – there are a number of areas known to contain peat and peaty soils deposits, which have benefited from a series of studies, and also areas which have been modelled to potentially contain peat and peaty soils deposits. The aims of Phase 1 of the CCNL Peat Deposit Survey were to:
- Assimilate, collate, summarise and standardise all current information on peatland resource within CCNL;
 - Locate additional areas of interest which have potential to contain peat or peaty soils deposits; and
 - Make recommendations for further studies to gain a more complete knowledge and understanding of the extent, nature and condition of the peatland resource within CCNL.

Method

- 1.4 An extensive data search and collation exercise was carried out, aiming to obtain all data, mapping and reports, modern and historic, relating to existing or potential peat deposits within the CCNL boundary. Information was mapped and digitized, with an inventory of data produced (Appendix 1) along with standardised GIS data layers.
- 1.5 The formatted raw data was then used to generate a single spatial (GIS-based) data layer, covering the whole of CCNL, detailing the presence and likely extent of confirmed peat deposits and mapping the areas of potential peat deposits. The data layer uses a sliding scale identifying areas of higher potential for peat deposits from multiple data sources to areas with some evidence of the likelihood of potential peat deposits from fewer or a single data source.

Results

- 1.6 The desk study detailed four areas of confirmed peat deposits within the CCNL boundary, located at Gentleshaw Common, Oldacre Valley, Sherbrook Valley and Womere, totalling just over 20 hectares in combined extent. Peat depth measurements have been taken across each of these sites as part of previous studies, resulting in a calculated approximate total volume of around 55,000 cubic metres of peat.
- 1.7 The study highlighted areas with references to peat gained from a number of collaborative sources suggesting the potential for the presence of peat deposit, the most significant being the River Sow floodplain, but also the Stafford Brook valley, the Mere Pool/Long Mere area (south of Milford Common) and a marsh area near to the Katyn Memorial (east of Springslade Lodge).

Conclusions

- 1.8 The results of the study suggest that, in addition to the confirmed areas of peat deposits, there could be a significant additional peat deposit resource within Cannock Chase, both in terms of extent and volume. Despite their limited size, these peat resources are regionally significant due to the scarcity of peat and peaty soils in the area. Their location within a protected National Landscape further enhances their value for conservation and restoration efforts.
- 1.9 The findings of the study present a sliding scale of evidence, running from the confirmed peat deposits, through areas with stronger likelihood, to areas with lower likelihood of peat deposit presence. The output dataset has enabled the building-up of a more detailed picture of the potential distribution of peat/peaty soils deposits across Cannock Chase, together with providing some insight into their nature.

Recommendations

- 1.10 The report highlights the need for future studies, potentially forming part of Phase 2 of the Cannock Chase Peat Deposit Survey, to enable a greater level of knowledge on the extent, depth and nature of both the known areas of peat deposits, and also areas of potential peat deposits, including exploratory peat extent and depth surveys, and peat core extraction and analysis to allow greater understanding on the paleoenvironmental conditions within Cannock Chase during the development of peat deposits.

2. INTRODUCTION

- 2.1 Penny Anderson Associates Ltd (PAA) was commissioned by Staffordshire County Council (SCC) in December 2024, on behalf of Cannock Chase National Landscape (CCNL) Partnership, to undertake a desk study to provide greater clarity on the presence, extent, character and condition of peaty soils within CCNL.
- 2.2 Knowledge of the peat and peaty soils resource within CCNL is currently dispersed and partly incomplete – there are a number of areas known to contain peat and peaty soils deposits, which have benefited from a series of studies, both recent and historic, and also areas which have been modelled to potentially contain peat and peaty soils deposits. The aims of Phase 1 of the CCNL Peat Deposit Survey are to:
- Assimilate, collate, summarise and standardise all current information on peatland resource within CCNL;
 - Locate additional areas of interest which have potential to contain peat or peaty soils deposits; and
 - Make recommendations for further studies to gain a more complete knowledge and understanding of the extent, nature and condition of the peatland resource within CCNL.

The Study Area and Nature of Peat Deposits

- 2.3 Cannock Chase was designated as an Area of Outstanding Natural Beauty (AONB) in 1958 for the natural beauty of its woodland, elevated heaths and historic parklands. The area's geology, landforms, climate, habitats and wildlife, in combination with current and historic land use create a unique landscape, which is highly valued given its location within the heartland of the highly developed West Midlands region.
- 2.4 The geology of Cannock Chase is dominated by the Triassic Chester Formation, part of the Sherwood Sandstone Group, which in this area comprises conglomerates and cross-bedded pebbly sandstones. The erosion-resistant sandstones have resulted in the relatively high lying land which forms the bulk of Cannock Chase. This relatively permeable geology has resulted in a generally well-drained landscape, and as such is unlikely to support the waterlogged conditions required for the development of significant peat deposits. There are, however, a number of locations within Cannock Chase where these conditions have arisen and this has resulted in peat forming habitats – in particular within river valleys, such as the Sherbrook Valley and Oldacre Valley, and also potentially on the River Sow floodplain; locations where the water table is high enough to allow consistent waterlogging, enabling the development of peat-forming habitats.

Outline Methodology and Report Structure

- 2.5 PAA has taken a structured approach to the desk study appraisal of information relating to peat deposits within CCNL, and this report mirrors that structure, summarised as follows:
- Undertake a search for all data and information relevant to the location, extent, character and condition of peat deposits within CCNL;
 - Review, collate, format and summarise all raw data into a consistent structure, including creating Geographic Information Systems (GIS) datasets as required, and the production of a technical report detailing all relevant information gathered;
 - Spatial analysis of data and information to produce a GIS layer of known/potential peat deposits throughout CCNL;

- Produce descriptive assessments of confirmed areas of peat deposits and identify 'Areas of Interest' relating to potential peat deposits within CCNL; and
- Make recommendation for further studies of peat deposits within CCNL, including investigation into presence of peat deposits, surveys to define the extent and depth of peat deposits, and recommendations for the siting of peat core extraction to allow further insight into the development and character of peat deposits within CCNL.

2.6 Our approach to meeting these objectives is now presented in detail.

3. DATA SEARCH

- 3.1 A data search was carried out to locate and acquire all relevant datasets, reports and information relating to peat deposits and peat habitats within CCNL. A number of known reports were made available by the CCNL Partnership Team initially. PAA then carried out a further data search and collection process to acquire any other relevant reporting, data and information. Table 3.1 details all potential sources investigated, with a summary provided below. Note that the England Peat Map, due to be published by Natural England in March 2025, was unavailable for use in this study.

Existing Reports and Studies

- 3.2 Three reports were provided by the CCNL Partnership Team which detail extent and depth of peat deposits within each of the respective study areas. All studies were carried out within the last ten years, that is since 2015 and are as follows:
- Vegetation, Habitat and Ecohydrology of Gentleshaw Common - Roger Meade Associates for Staffordshire Wildlife Trust, 2018;
 - Restoration and Management Plan for Oldacre Valley - Penny Anderson Associates Ltd for Staffordshire County Council, 2022; and,
 - Investigation into the Hydrological Functioning of the Sherbrook Valley - Sheffield Wetland Ecologists for Natural England, 2017.
- 3.3 Additionally, a number of other reports were made available which included data relevant to peat-forming habitats, all detailed within Table 3.1.
- 3.4 A search was also carried out for any other scientific papers or studies relating to peat deposits within CCNL, including a request from the Centre for Ecology and Hydrology (CEH). No other relevant studies were located.

Existing Data Relating to Peat Deposits

- 3.5 A number of freely available datasets detailing peat deposits were acquired for the purpose for the study, as follows. All detailed in Table 3.1.
- British Geological Society (BGS), superficial geology layer, including areas containing peat deposits;
 - Natural England, *Peaty Soils Map* – England-wide modelled output of peat type and extent; and
 - National Soils Resources Institute (NSRI), *National Soils Map* (NATMAP) – detailed soil information which includes peat deposit extents.

Existing Non-Peat Data

- 3.6 A number of other datasets were included in the data search which were considered useful for indicating a likely presence of peat deposits, through presence of peat forming habitats or species associated with the presence of peat habitats. A full list of sources is detailed in Table 3.1, with key datasets as follows:
- Natural England Priority Habitats Inventory (data includes information on primary habitat type, and presence of secondary habitat types);

- Staffordshire Ecological Records (SER) Centre – species records. A list of species associated with peat habitats was forwarded to SER and a search returned showing the location of those species within CCNL. See Appendix 2 for full list of species;
- Ordnance Survey data – Modern and historic mapping was searched for presence of potential peat forming habitats – specifically marshes and bogs, both by map symbol and place name; and
- Phase 1 habitat data of locally designated sites, surveyed in 2019, were made available by Staffordshire Wildlife Trust for use in this project.

3.7 Several other potential sources of information were investigated, but found to have no relevant information, including the National Trust (Shugborough Estate), The Coal Authority, Forestry England and the Cannock Chase Minerals Team.

4. RAW DATA MANAGEMENT

- 4.1 Each potential data source was assessed for its suitability for use in the project. Table 3.1 outlines the decisions made for selection of data, but in summary, data was included if it was deemed relevant to the potential location of peat deposits, had information within the study areas (CCNL), and was not duplicated within another dataset. For example, many potential datasets were used as data sources when creating the Natural England Priority Habitats Inventory data and were, therefore, not included for use in this project.
- 4.2 Each data source selected for inclusion for use in the project was then summarised and the data was extracted to a standard GIS format (ESRI shapefile). For existing GIS data, this process was straightforward – essentially extracting the features relevant to potential peat deposits. Other data (for example the ecological species records data from Staffordshire Ecological Record) were supplied as a spreadsheet, so Ordnance Survey (OS) Grid references were used to generate a point-based GIS feature layer. Other data were supplied as PDF or scanned maps, in these cases the maps were georeferenced to British National Grid and then digitized on-screen to create point or polygon GIS feature datasets.
- 4.3 Appendix 1 sets out the raw dataset summary in more detail as a standalone technical report, and includes further information on data source, extent, use restrictions, and licencing and attribution statements. All formatted raw GIS datasets are provided within the report outputs folder.

5. DATA ANALYSIS

Methodology - Overview

- 5.1 One of the aims of Phase 1 of the project is to highlight areas within CCNL which either contain or have the potential to contain deposits of peat or peaty soils. The data selected for use in the project was deliberately wide-ranging in scope, in order to attempt to locate all areas with such potential, following which a balanced assessment could be made for further site-based investigations, which are to be carried out in Phase 2 of the project.
- 5.2 All record dates were considered relevant to be used for the creation of the peat deposit potential layer. Older records may well indicate peat deposits that are no longer under peat-forming habitats but could still be relevant for future peat habitat restoration works.
- 5.3 Due to the varied nature of the different datasets, it was decided that an overlay approach would be a relatively simple but effective way of highlighting potential areas of peat deposits without having to undertake any in-depth statistical analysis on spatial trends.
- 5.4 Some of the datasets comprised specific peat depth and extent surveys. These data were considered to be confirmed areas of peat deposits, and would be shown as such on the output maps and GIS data. All other datasets were considered to be surrogate for potential presence of peat deposits. The overlaying of these other datasets would have the effect of creating a 'hotspot' map, where locations with a greater number of corroborative features from different data sources would be given a higher score of potential to contain peat deposits.
- 5.5 For example, a location with four records from different data sources would score more highly than a location with two records from different sources. It was decided that multiple records in one location from the same source would not increase the score – some of the data had many records at a single location, so allowing this would have skewed the output and masked the true distribution of identified hotspots.
- 5.6 It was decided that a number of key features which were highly significant in predicting the potential location of peat deposits were to be raised above all other records (aside from the confirmed peat deposits mentioned above). These would form their own category in between 'confirmed peat deposit' and 'potential peat deposit' – essentially peat-forming habitats (lowland fens and reedbeds within the context of Cannock Chase) and peat forming species, namely species of *Sphagnum* moss and cottongrass¹ (*Eriophorum* sp.).
- 5.7 The output peat deposit potential model would then be run through a slope model, with all non-confirmed peat deposits present on land sloping more than 20 degrees to be removed from the output. There is no specific evidence for a maximum slope angle for the formation of peat deposits in the published literature; peat can form on fairly steep slopes where there is a continuous source of water, such as a spring or flush. It was decided that 20 degrees of slope seemed reasonable for a maximum slope for the study area following inspection of the results of the peat depth survey at Oldacre Valley as part of the *Oldacre Valley Mire Restoration and Management Plan* study (PAA 2022), which showed no peat deposits located on slopes greater than 20 degrees on the valley sides.
- 5.8 The final output is a polygon GIS layer detailing peat deposit potential, running from areas of confirmed peat deposits, areas of high-potential peat deposits, areas of potential peat deposits,

¹ Botanical species names follow Stace (2019)

with areas containing a higher number of source datasets being given a higher peat potential rating. The dataset includes details of which data source has contributed to the assigned peat potential attribute and can be viewed simultaneously in GIS with the various raw datasets to allow further insight into the provenance of the values. Figure 5.1 shows the mapped output of the peat deposit potential model. The methodology is described in further detail below.

Methodology - Detail

Confirmed Peat Deposits

- 5.9 Three of the data sources contained spatial records of confirmed peat deposits – *Sherbrook Valley Ecohydrology Investigation* (Sheffield Wetland Ecologists 2016), *Gentleshaw Common Ecohydrological Study* (Roger Meade Associates 2018) and *Oldacre Valley Restoration and Management Plan* (PAA 2022). Locations of all three studies are valley mire communities forming peat deposits of varying depth. The Sherbrook Valley study also contains details of peat deposits at Womere, a mire/bog community located in a glacial till-filled depression located near the summit of the hill between the Sherbrook and Oldacre Valleys.
- 5.10 Peat deposit extents were added as the first entries in the Peat Deposit Potential Model. As confirmed peat deposits these layers (and the original peat depth data) have also been exported to separate layers and formatted to be consistent with the standard required to be shared for inclusion in the next iteration of the England Peat Map, currently being developed by Natural England.

High-Potential Peat Deposits

- 5.11 As detailed in Paragraph 5.6 above, some data records contained the location of key habitats and species relating to the formation and development of peat deposits. These records were included as the next level of potential peat deposit – High-Potential of Peat Deposits.
- 5.12 Habitats and species included in this category were:
- Lowland fen or reedbed features from the Natural England Priority Habitats Inventory; and
 - Any *Sphagnum* moss or cottongrass species record from any of the studies.
- 5.13 Point features were converted to a 100m square polygon before being added to the model. This was done so that all point records had a consistent impact on the output of the model regardless of accuracy of location.
- 5.14 Point locations were shifted to the centre of the relevant grid square where necessary – for example SER data grid references are located at the bottom left of the grid square in which the record is found, so for a 100m accuracy location (6-figure grid reference – for example SJ989 209), the point would be moved 50m to the east and 50m to the north, before being converted to a 100m square.
- 5.15 Any overlapping features from the same data source were merged to create a single feature, to prevent multiple records from the same data source skewing the output
- 5.16 Records with an accuracy of 1km (4-figure grid reference) or less were excluded from the model. It should be noted that there were a number of these key high-potential peat deposit records at this lower level of accuracy, and it is worth noting the following locations which fall outside of the four known peat deposit areas of Sherbrook Valley, Gentleshaw Common, Oldacre Valley and Womere:

- Abrahams Valley – SK0020 (*Sphagnum auriculatum*, *Sphagnum palustre*);
- Milford Common – SJ9720 (*Sphagnum cuspidatum*, *Sphagnum fallax*, *Sphagnum inundatum*, *Sphagnum squarrosum*);
- Brindley Heath War Cemeteries - SJ9815 (*Eriophorum vaginatum*);
- Brindley Valley – SK01 (*Sphagnum squarrosum*);
- Beaudesert Old Park – SK01, SK0413 (*Sphagnum auriculatum*, *Sphagnum fimbriatum*, *Sphagnum squarrosum*); and
- Near Parr's Warren – SJ91Y (*Eriophorum angustifolium*, *Eriophorum vaginatum*).

Potential Peat Deposits 1

- 5.17 The next category of potential for peat deposits contains data from existing published models detailing likely presence of peat deposits. The model used for this category was the Natural England Peaty Soils Map. This dataset contains three different modelled categories: 'Deep Peaty Soils', 'Shallow Peaty Soils' and 'Soils with Peaty Pockets'.
- 5.18 The model was created by Natural England in 2008 as part of the Partnership Project to Protect and Enhance Peat soils (Defra 2008). Two of the categories were found to be present within the CCNL boundary – 'Deep Peaty Soils' (a few discrete areas near the village of Tixall on the River Sow floodplain) and 'Soils with Peaty Pockets' (covering a larger expanse within the River Sow floodplain).
- 5.19 The model uses the NSRI NATMAP as the primary dataset, with additional datasets used to supplement the categories as follows:
- Natural England, *National Peat Resources Inventory* (NPRI) (Headley and Dargie 2004);
 - Natural England, *Biodiversity Action Plan mapping of Blanket Bog and Fen habitats* (Natural England 2007); and
 - BGS, *Drift Geology Layer* (BGS, 2003).
- 5.20 Table 5.1 summarises the classification method for categorising areas for the model.

Table 5.1 Mapping definitions for delineating Deep peaty soils, Shallow Peaty Soils, Peaty pockets, and mineral soils, based on a range of different data sources. From Defra (2008)

Deep Peaty Soils	Shallow Peaty Soils	Soils with Peaty Pockets	Mineral Soils
Key Peaty Soils from NSRI soils map (revised to include "08" peat wastage soils) Plus BGS peat data (except where this is sole source and buried peat soils are recorded – NSRI soil)	Intermediate Peaty Soils from NSRI soils map Minus All additional areas identified as deep peaty	Other organic Soils from NSRI soils map (less excluded soils and promoted peat wastage soils). Minus	All other soils types, urban areas lakes etc.

Deep Peaty Soils	Shallow Peaty Soils	Soils with Peaty Pockets	Mineral Soils
types 0813h, 0813a and 0372) Plus Blanket bog BAP inventory mapping.	soils using method in column 1.	All additional areas identified as deep peaty soils using method in column 1.	

- 5.21 With the above classification method in mind, it was decided that only areas with the 'Deep Peaty Soils' category will be used in the 'Potential Peat 1' class of the peat deposit potential layer. The method shows a much more likely presence of peat deposits in this category compared to the 'Soils with peaty pockets' category, which essentially is areas defined as having 'Other organic soils'. Inspection of the NPRI dataset shows that the presence of deep peaty soils in this dataset is due to the presence of these features within the NPRI data. Areas within the '*Soils with Peaty Pockets*' category were used to contribute to the remaining Peat Potential Classes (2-5), see below.

Potential Peat Deposits 2 – 5

- 5.22 All the remaining data sources were used to contribute to the development of the remaining peat potential classes (Potential Peat 2 – 5).
- 5.23 Appendix 1 contains detail of each of the data sources used for this process. Key development decisions relating to two of the data sources are summarised below.

Priority Habitat Inventory

- 5.24 As detailed in Section 5.12 above, fen and reedbed habitat polygons from the Priority Habitat Inventory dataset were used to create some of the 'High-Potential Peat Deposits' features. There are a number of other categories within the inventory that suggest a (lower) potential for the presence of peat deposits, and these were included in the Potential Peat 2-5 categories. The NPRI was split into two layers, one where the primary habitat type was used and one where additional habitat types were used to categorise the peat potential layer.
- 5.25 For the 'Primary' habitat types these categories included 'Coastal and Floodplain Grazing Marsh', 'Deciduous Woodland' where wet woodland was specified by one of the data sources, any features containing a swamp category from National Vegetation Classification (NVC) survey, 'Lowland heath' where 'Northern Atlantic Wet Heaths' is specified by one of the data sources and 'Purple Moor-Grass and Rush Pastures'.
- 5.26 For the 'Additional' habitat types these categories included Site of Special Scientific Interest (SSSI) features of Valley fen (lowland), Northern Atlantic Wet Heaths and Wet Woodland. It should be noted that Countryside Stewardship Farm Environment Plan (FEP) categories (specifically W04 Fens) were not included for this study due to the large volume and extent of polygons containing this description, suggesting significant over-estimation of this additional habitat within the data.

National Landscape Carbon Stock Model

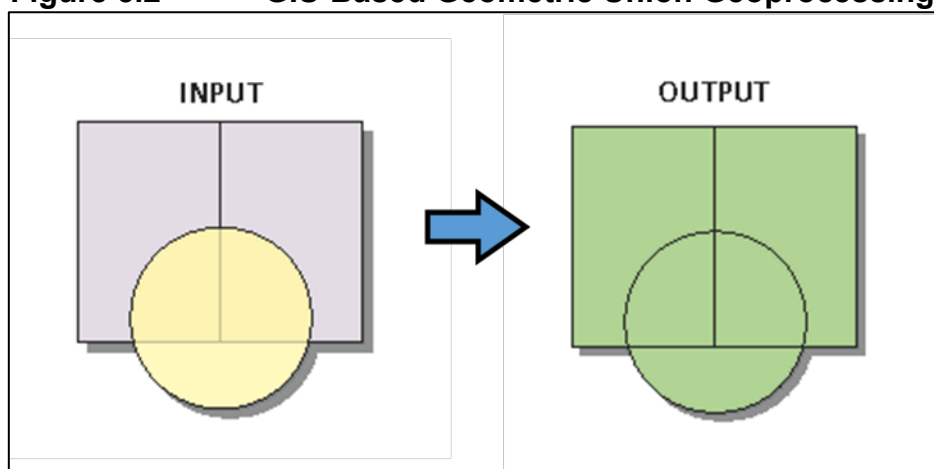
- 5.27 Data from the Cranfield University National Landscape Carbon Audit (Zawadzka *et al.* 2022) were used as a source for Potential Peat 2-5 categories. Areas with a carbon stock higher than 200 tons of carbon per hectare (tC ha⁻¹) were included, all other areas were excluded. This value is based on the average values of carbon stock per habitat type as detailed in the Carbon Audit

Report with all peatland-related habitats have an average carbon stock of at least 500tC ha⁻¹. A value of 200 was considered sufficient to catch any likely peatland habitats using this model.

Method

- 5.28 All point features were converted to 100m square polygon features and overlapping features from the same data source were merged. Features from each data source were then overlaid upon each other using a geometric 'union' geoprocessing tool. This process essentially creates one single layer which retains the extent and attributes of all the input features, but dissects the resulting polygons features, where more than one feature is present. Figure 5.2 below shows how the process works.

Figure 5.2 GIS-Based Geometric Union Geoprocessing



- 5.29 The count of data sources comprising each individual polygon was then used to assign the category of potential of peat deposit, as follows:
- Four or more separate data sources = Peat Potential 2;
 - Three separate data sources = Peat Potential 3;
 - Two separate data sources = Peat Potential 4; and
 - Single data source = Peat Potential 5.
- 5.30 The retained attributes from the union process were also used to define which data source has contributed to the resulting peat potential category, and a reason for classification was also added for each individual polygon. An example of the resulting attribute table is shown in Table 5.2 below.

Table 5.2 Attribute Table Example

Status	Reason	Source 1	Source 2	Source 3	Source 4	Notes
Confirmed peat deposit	Measured peat extent and depth	Sherbrook Valley Hydrological Investigation 2018				Peat depth presence and depth measured from soil auger. No locations given for areas with no peat measured
High potential peat deposit	Peat forming species	Viola palustris survey 2015				Sphagnum hummocks, Sherbrook Valley 2015
Potential peat 1	Published model - deep peat	NE Peaty Soils				
Potential peat 3	3 evidence sources	NE Priority Habitat Inventory - Main Habitat	OS Mastermap - Marsh polygon	Soil Carbon Stock >200 t/ha		

Slope Model Integration

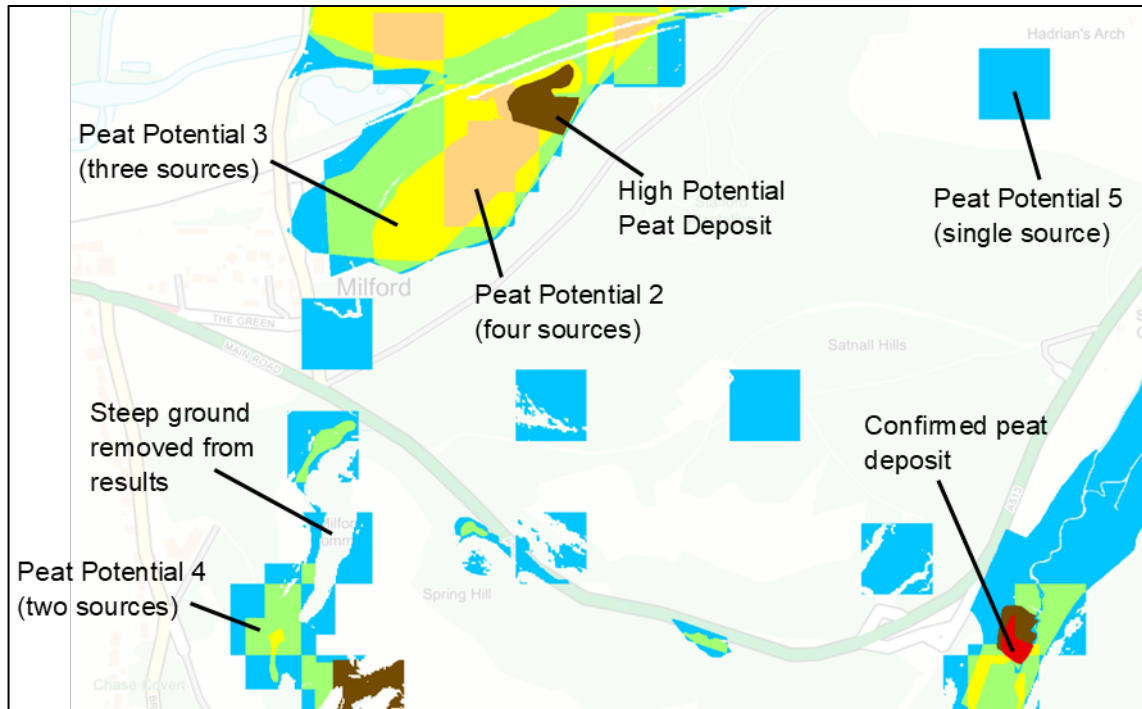
- 5.31 Once the potential peat deposit layer was fully populated with all the sources as specified above and in Appendix 1, a slope model was integrated to remove any steep areas of ground from the layer. 2m Light Detection and Ranging (LIDAR) Digital Terrain Model (DTM) data (available from the Defra.gov portal) was used to generate a raster slope model for the entire study area. The model was then converted to a mask polygon layer, where areas with a value of 20 degrees or higher were removed. A GIS-based geometric clip process was then carried out between the slope mask and the potential peat deposit layer to remove any high value sloping areas from the data.

Results

- 5.32 Figure 5.2 displays the results of the peat depth potential overlay model. The colours are used to create a hotspot effect, highlighting potential areas of interest for further investigation. Figure 5.3 below displays an annotated zoomed in section of the model.
- 5.33 It is acknowledged that using a 100m grid square to represent point features has the effect of over-emphasizing those features, both generally and in particular in relation to the true size of polygon features. However, it is felt that using a smaller area or point feature would likely result in these features being under-emphasized on the landscape scale upon which this project is

being conducted. Knowledge of the methodology used is important to be able to adequately interpret the resulting maps and GIS data.

Figure 5.3 Annotated Model Example



6. ANALYSIS OF OUTPUTS

Confirmed Peat Deposits

- 6.1 Paragraph 5.9 states that there are four separate areas within CCNL for which confirmed peat deposits have been identified through field survey. One of the aims of the project was to summarise and add detail to these known areas of peat deposits. Each area will be assessed in turn below. Figure 6.1 shows the locations of each of the four areas of confirmed peat deposits and Table 6.1 summarises the extent and volume of peat deposits in each of the four areas.

Table 6.1 Confirmed Peat Deposit Summary

Peat Deposit Location	Approximate extent of deposit (ha)	Estimate of peat volume (m ³)	Approximate upper limit of peat volume (m ³)
Sherbrook Valley	9.035	24,300	44,000
Womere	0.482	4,000	5,700
Gentleshaw Common	4.523	9,700	14,000
Oldacre Valley	6.090	16,600	16,600
Cannock Chase NL Total	20.130	54,600	80,300

Sherbrook Valley

- 6.2 Eades *et al.* (2017) carried out a peat depth and extent assessment as part of a hydrological investigation of the Sherbrook Valley. Results from the peat survey were mapped, and this data was transferred to the project raw dataset as described in Paragraph 5.10 and Appendix 1. The study found shallow (depths generally up to 50cm), highly humified peat deposits to be widespread on the valley floor, as well as some deeper, less humified deposits on the lower slopes of the valley sides, suggesting formation through outflow springs and seepages rather than wetness through seasonally high water table levels, which is the case for the valley floor deposits.
- 6.3 Areas containing peat deposits which were dry at the surface, with non-peat forming habitats present were also identified, suggesting the range of wetland habitats in the Sherbrook Valley has diminished over time. Mineral substrata beneath the peat were generally sand and gravel with large pebbles, with a siltier substrate found beneath peat deposits on the lower slopes of the valley sides.
- 6.4 The total extent of the mapped peat in Sherbrook Valley was 9.035 hectares. Using the mapped depth contours, the estimated total volume of peat is approximately 24,300 cubic metres, with an upper limit of approximately 44,000 cubic metres.

- 6.5 Sherbrook Valley is located within Cannock Chase Special Area of Conservation (SAC) and Cannock Chase SSSI. Part of the site lies within a Higher Tier Countryside Stewardship agreement area.

Womere

- 6.6 As part of the same study, Eades *et al.* (2017) also examined the peat extent and depth around Womere, a broad shallow depression on the ridge between the Sherbrook and Oldacre Valleys, which was found to be infilled with peat overlaying sandy silt and glacial till. The presence of the till is likely to promote waterlogging in this location, in contrast to the surrounding areas which are well-drained due to the permeable nature of the Sherwood Sandstone bedrock.
- 6.7 The peat is deep in this location, at over 200cm in the centre of the depression. The total extent of peat at Womere was mapped as 0.482 hectares, with an estimated total peat volume of approximately 4,000 cubic metres and an upper limit of approximately 5,700 cubic metres.
- 6.8 Womere is located within Cannock Chase SAC and Cannock Chase SSSI. The site lies entirely within a Higher Tier Countryside Stewardship agreement area.

Gentleshaw Common

- 6.9 Roger Meade Associates (2018) undertook a vegetation, habitats and ecohydrology investigation into the wetland area found on Gentleshaw Common in the south of CCNL. This study included peat depth and character surveys. Results from the peat survey were mapped, and this data was transferred to the project raw dataset as described in Paragraph 5.10 and Appendix 1. Significant peat deposits, up to 50cm depth were found to be coincident with the extent of the main valley mire community in the study area, with generally shallow peat (below 10cm depth) in *Molinia*-dominated areas to the west, together with one outlying area of deeper peat in the west of the site containing peat at a depth of up to 27cm.
- 6.10 The peat deposits were generally overlaying medium to coarse-grained sandy mineral sub-strata and ranged from damp to very wet.
- 6.11 The total extent of peat deposits was estimated from the extent of the valley mire habitat and the outlying peat areas as 4.523 hectares. Using the peat depth measurements peat volume is estimated to be approximately 9,700 cubic metres, with an upper limit of 14,000 cubic metres.
- 6.12 The site is located within Gentleshaw Common SSSI.

Oldacre Valley

- 6.13 PAA (2022) carried out a peat depth mapping and volume calculation exercise during a restoration feasibility investigation into the wetland valley mire habitats found in Oldacre Valley. Results from the peat survey were transferred to the project raw dataset as described in Paragraph 5.10 and Appendix 1.
- 6.14 Peat deposits were found to be confined to the valley bottom and lower slopes of the valley sides and were considered to be formed due to the result of waterlogging from the water table at the ground surface at the spring line and subsequent sub-surface seepages.
- 6.15 Peat depths were variable across the site, averaging approximately 27cm across the site with a maximum recorded depth of 110cm. The examination of extracted peat cores in Oldacre were considered to be a classic representation of a recently-formed lowland fen peat.
- 6.16 Palaeoecological analysis and carbon 14 (C14) dating of a peat core extracted within the site suggests the valley peat deposits began forming as recently as the 17th century, perhaps linked with the onset of the 'Little Ice Age'.

- 6.17 PAA estimated the extent of peat to be approximately 6.09 hectares, with a calculated peat volume estimate of 16,600 cubic metres.
- 6.18 Oldacre Valley is located within Cannock Chase SAC, Cannock Chase SSSI and Brocton Local Nature Reserve (LNR). Part of the site lies within a Higher Tier Countryside Stewardship agreement (although most of the valley bottom is excluded from this agreement area).

Identification of 'Areas of Interest' for Further Investigation

- 6.19 The output of the peat deposit potential layer shows a cluster of data records relating to peat deposits around the four confirmed areas of peat as discussed above. Part of Phase 1 of the project was to locate areas where peat deposits may be present but have not been visited for survey in terms of peat extent, depth or character. Several areas outside of the four confirmed peat areas appear worthy of further investigation for presence of peat, detailed as follows, shown on Figure 6.1 and summarised in Table 6.2

Table 6.2 Summary of Areas for Further Investigation

Area of Interest	Approximate area of potential peat deposit (ha)
1. River Sow Floodplain	74.0
2. Stafford Brook Valley	10.5
3. Mere Pool and Long Mere	2.6
4. Marsh near Katyn Memorial	0.5
Total	87.6

Area of Interest 1 – River Sow Floodplain

- 6.20 A large area of interest is located on the River Sow floodplain, to the north and east of Cannock Chase. The site contains a number of separate clusters of data, highlighting a higher potential for peat deposits, as follows and illustrated in Figure 6.2.
- 6.21 An area near Tixall village and north of Staffordshire and Worcestershire Canal, identified by the Natural England Peaty Soils Map as potentially having 'Deep Peaty Soils' and classified as 'Potential Peat 1' in the output layer for this project. No Priority Habitats Inventory features are present, the area appears to be artificially drained agricultural land (pasture) with three woodland blocks. No designated sites intersect within the main areas of interest, a small separate polygon to the east lies within Tixall Broad Water Site of Biological Importance (SBI). The area totals 6.9 hectares, so could have a significant volume of peat if deep peat deposits are confirmed at the site.
- 6.22 Millford Lake – An area of reedbed as classified by Natural England Priority Habitats Inventory, could contain peat deposits. The site was classified as marshland in the historic OS mapping

data (1880s) so may have been present for a significant length of time, although likely to be an artificial feature created during the construction of the adjacent railway. Within Shugborough Hall SBI, the area of the site is approximately 0.5 hectares

- 6.23 Tixall Broad Water SBI – An area of lowland fen, as classified by Natural England Priority Habitats Inventory, located on the northern flank of the Staffordshire and Worcestershire Canal. The current extent of fen habitat totals approximately 1.5 hectares.
- 6.24 The remainder of River Sow floodplain, specifically area between Staffordshire and Worcestershire Canal and River Sow, which includes Rawbones Meadow SSSI – An area of moderate potential for peat deposits, with three relevant sources – Natural England Priority Habitat Inventory (floodplain grazing marsh), high organic carbon content (from Cranfield University 2022) and an area mapped as ‘Soils with Peaty Pockets’ in the Natural England Peaty Soils Map. A large proportion of this area could contain significant peat deposits, if only as predicted in ‘Peaty Pockets’. The area extends over approximately 74 hectares.
- 6.25 Note that if peat deposits are found to be present on the River Sow floodplain, it would be worth considering surveys to investigate whether peat deposits are also present on the Trent Valley floodplain within the CCNL boundary, as landscape conditions and character are similar across these two areas.
- 6.26 In addition to the presence of the SSSI and the LNR sites specified above, the southern fringe of the floodplain and the Millford Lake area lie within the Shugborough Estate, which is designated a Registered Historic Park and Garden. There are also several areas of the floodplain which are under Countryside Stewardship Mid-Tier agreements.

Area of Interest 2 – Stafford Brook Valley

- 6.27 An area of Interest centred on the lower stretch of Stafford Brook, before it enters the River Trent at the Wolseley Centre Nature Reserve. Figure 6.3 shows the area in detail. Part of the valley is designated as a SSSI and has records in the Natural England Priority Habitat Inventory for ‘Purple Moor-Grass and Rush Pasture’ and wet woodland, in addition to the presence of other data sources, including a record from Shimwell (1982) detailing the presence of a ‘*Sphagnum* lawn’.
- 6.28 The area of potential peat deposit is approximately 10.5 hectares in extent. In addition to the SSSI specified above, part of the valley is currently under a Countryside Stewardship Mid-Tier agreement.

Area of Interest 3 – Mere Pool and Long Mere

- 6.29 An area north and northeast of Brocton Village within Cannock Chase SSSI, comprising two discrete areas – Mere Valley/Mere Pits on Broc Hill, and the area around Long Mere in the south of Milford Common. Figure 6.4 shows the area in detail.
- 6.30 The Mere Valley/Mere Pool area contains a cluster of data records obtained from multiple sources. Data from Smith (1955) classified the whole area as a bog, with more recent data (Godfrey and Hill 2006) noting that the area was much drier with scrub and woodland colonisation. SER species records from 2003 and 2005 detail the presence of *Sphagnum* species, suggesting there may still be some active peat forming habitats, with the historic data (1955 bog habitat and the old name of Mere Pool) suggesting there could be some inactive/dry peat deposits present. The pool is artificial, created by damming a shallow valley to store water for military camps.
- 6.31 The Long Mere area similarly contains a cluster of data source records, including presence of *Sphagnum* species (Godfrey and Hill 2006), in combination with standing water and inundation vegetation.
- 6.32 The combined area of higher potential peat deposit in this Area of Interest is approximately 2.6 hectares.

- 6.33 The area is located within Cannock Chase SAC and Cannock Chase SSSI, with the majority of the area within a Higher Tier Countryside Stewardship agreement.

Area of Interest 4 – Marsh Near Katyn Memorial

- 6.34 A small area of marsh to the west of Springslade Lodge, opposite Katyn Memorial. Figure 6.5 shows the area in detail. The site was categorised as 'Bog' by Smith (1955). Godfrey and Hill located *Sphagnum* species in 2006 but reported that the pool was drying. There is, thus, significant potential for inactive peat deposits at this location.
- 6.35 The area is located within Cannock Chase SAC and Cannock Chase SSSI and lies within a Higher Tier Countryside Stewardship agreement.

Other Potential Areas of Interest

- 6.36 Areas with small clusters or other records of note are summarised below, with locations included on Figure 6.1.
- Brindley Heath (cluster of features);
 - Hazelslade Local Nature Reserve (reedbed habitat);
 - Shropshire Brook Valley, Beaudesert Park (cluster of features);
 - Piggot's Bottom Local Wildlife Site (cluster of features and inundation vegetation from LWS survey 2017); and
 - Brocton Hall Golf Club (*Sphagnum* species record).

7. CONCLUSIONS

The Brief

- 7.1 The brief for Phase 1 of the Peat Deposit survey, produced by the CCNL Team, was to undertake a desk study of existing peatland resource within Cannock Chase, with the aim of improving knowledge and understanding of the resource, and to direct future studies to further increase knowledge and understanding, in order to inform the protection and potential restoration of peatland habitats.
- 7.2 Specifically, the brief required the completion of the following tasks:
- 7.3 ***Complete a full review of existing reports and information, to include identification of and sourcing of data, including mapped and GIS data, of peaty deposits on Cannock Chase.*** Detailed in Section 3, a full data search was carried out to uncover as many sources of information relating to peat deposits within Cannock Chase as possible. Table 3.1 lists all the data sources acquired and investigated for the study.
- 7.4 ***Collate and reference all existing relevant data.*** All relevant data was collated and referenced in a separate data summary document, the Raw Data Inventory, included with this report as Appendix 1. The inventory includes basic information, such as the date of the report/dataset, who created it, original format, description, licence and usage constraints and a summary of how the data was used in this study.
- 7.5 ***Using the findings of the review, report on the presence, extent, depth, character and condition of peaty soils we have, based on current knowledge.*** Detailed in Section 6, four areas of peat deposits confirmed by field survey were identified – Gentleshaw Common (4.5ha), Oldacre Valley (c.6ha), Sherbrook Valley (c.9ha) and Womere (c.0.5ha). All sites, with the exception of Womere, are valley mire habitats, with fen peat deposits comprising highly humified and dense layers of peat, generally less than one metre in depth. Womere appears to be an isolated hilltop deposit of deeper peat within a shallow basin, potentially associated with a lens of glacial till, which is less permeable than the surrounding sandstone bedrock.
- 7.6 ***Summarise any protections/status of the peaty deposits (e.g. SSSI, LNR, LWS, scheduled monument etc.), and any agri-environment schemes that are in place.*** All of the confirmed peat deposits lie within or partly within sites designated for nature conservation (SAC, SSSI, LNR) as detailed in Section 6, and, apart from Gentleshaw Common, are within Higher Level Countryside Stewardship Agreement areas.
- 7.7 ***Map the information discovered during the review in the form of GIS layers of peaty deposits across the site.*** Each dataset used for the study was digitised where required, formatted into a consistent format (ESRI Shapefile) and included in a data package for the client. Additionally, a single peat deposit layer was created, detailing the presence and likely extent of confirmed peat deposits, and mapping the areas of potential peat deposits, running on a sliding scale from areas of higher potential of peat deposits from multiple data sources to areas with some evidence of the likelihood of potential peat deposits from fewer or a single data source. This dataset was provided in ESRI shapefile format and is displayed in Figure 5.1.
- 7.8 ***Report on the level of confidence in the data.*** A description of each raw data set, including level of confidence, is included within the Raw Data Inventory document. More generally, the extents of confirmed peat deposits are reliable. The use of the other data to identify the potential deposits is much less reliable, and care should be taken when interpreting these areas of the potential peat deposits map. However, the approach of using a layered structure, where each area is assigned a potential peat deposit score based on how many different data sources indicate a presence of peat, has resulted in what should be a reasonable surrogate of peat deposit potential.

- 7.9 ***Make recommendations for future field survey work, including identifying potential sites and areas, to ground truth and better estimate, extent, depth, organic content and assess the condition of peaty soils at a sample of sites across the National Landscape, including methodology.*** Detailed in Section 8 – a number of recommendations for future work are proposed, with high priority being given to an investigation into the presence and extent of peat deposits on the River Sow floodplain.
- 7.10 ***Make recommendations for paleoenvironmental/palaeoecological investigations, to help improve understanding of the processes and conditions under which development of peat deposits across the different sites within Cannock Chase were taking place, and the chronology of the periods of peat deposition.*** Also detailed in Section 8, recommendations for further study of the confirmed peat deposits, as a comparison to the peat core extracted and analysed from Oldacre Valley as part of the 2022 study by PAA, which found the peat deposits formed relatively recently around the 17th Century.

The Study

- 7.11 Knowledge of the peatland resource within Cannock Chase is dispersed and incomplete. During this study, it became clear that considerable work has gone into the study of three areas of peat deposits – Gentleshaw Common, Oldacre Valley, and particularly Sherbrook Valley. Outside of these sites, there is very little scientific evidence for the presence of additional peat deposits, with the exception of Womere, which was visited during the Sherbrook Valley Ecohydrological Study (Eades *et al.* 2017).
- 7.12 Concentration on these areas is understandable, as they are key sites regarding the biodiversity and geomorphology of Cannock Chase and support a number of wetland habitats and species which are regionally and nationally scarce. With regards to peat deposits, however, there may well be significant deposits outside of these areas – especially on the River Sow floodplain, which has the potential to contain tens of thousands of cubic metres of peat deposits, based on the area in question – but also in several smaller, isolated areas, such as Long Mere/Mere Pool and Stafford Brook Valley. It should be noted that areas of peat deposits may well be considerably more extensive than current habitat and conditions indicate, where the peat has dried and partially wasted (degraded), allowing non peatland plant species and habitats to develop. Restoration of any such areas could be a viable and worthwhile management priority in the future.
- 7.13 As discussed at various points in this text, the mapped output data must be used with a sound knowledge of how the peat potential classifications were generated. The areas of confirmed peat deposits are reliable in terms of extent, and the prediction of peat volumes are reasonable (although these calculations should be used with caution if undertaking peat volumetric exercises). The potential peat layers as shown on Figure 5.1 are essentially self-ranking (areas with a higher number of data sources are given a higher potential raking), but as the categories are all based on the use of surrogate information; that is, habitat or species spatial data that suggests peat deposits may be present and no information was available confirming the presence of peat, all categories are an attempt to guide the user to areas of higher potential, rather than definitively map likelihood of peat. It is likely that some areas suggesting high potential will not contain peat, and that areas scoring poorly or not at all may have peat deposits present.
- 7.14 Despite their limited size, these confirmed and potential peat resources are regionally significant due to the scarcity of peat and peaty soils in the area. Their location within a protected National Landscape further enhances their value for conservation and restoration efforts.
- 7.15 Going forward, it is viewed that this report can form a solid, formally structured base for directing future studies. By using an unbiased approach to data analysis – that is treating each peat potential data source as of equal value – it is anticipated that sound decisions can be made on the direction and location of future studies to help increase knowledge and understanding of the peatland resource to be found within Cannock Chase.

8. RECOMMENDATIONS FOR FUTURE STUDIES

- 8.1 One of the aims of Phase 1 of the Peat Deposit Survey was to make recommendations for future studies to increase knowledge of peat deposits and their extent, depth, character and condition within CCNL.

Further Surveys – Peat Deposit Extent, Depth and Character

- 8.2 The four confirmed areas of peat deposits within Cannock Chase – Sherbrook Valley, Gentleshaw Common, Oldacre Valley and Womere have all had recent (i.e. within the last ten years), robust surveys of peat extent, depth and character. It is recommended that further surveys be directed away from these previously-studied sites for the next phase of the project, in order to assess other areas that have been flagged up by the desk study as having potential to contain peat deposits.
- 8.3 In future, a survey approach more consistent with the *Peatland Code Field Protocol* (IUCN 2024) could be deployed in these four areas, especially if peatland restoration measures are being considered for any of the sites.
- 8.4 This report considers Area of Interest 1 – The River Sow Floodplain, to be the priority for any future peat extent and depth field surveys. The considerable size and extent of this area and mixture of different potential peat depths mean that the extent and volume of peat deposits at this location could be significant.
- 8.5 A priority recommendation would be to undertake a peat scoping survey at a number of key locations within the area, with the aim of broadly demarcating the extent of any peat/peaty soil deposits. Surveys would be carried out using a Russian D-type corer, Dutch (hand) auger and graduated steel peat depth probes to determine presence, depth and character of peat or peaty soils, together with an accurate GNSS (satellite positioning) logger device to log the exact location of each sample point.
- 8.6 It should be noted that in addition to landowner permission, if the sample points lie within a SSSI (Rawbones Meadow SSSI is located within the River Sow floodplain) then a consents application would need to be made to the local Natural England team to carry out the survey.
- 8.7 This would then be followed up with a targeted peat depth and condition survey, based on the IUCN Peatland Code Field Survey Protocol, where peat deposits are found to exist. Data collected using the IUCN Field Survey Protocol will be consistent with the format required to submit to the Natural England – England Peat Map.
- 8.8 For the other Areas of Interest, no particular sites have priority, but the same method can be used for these areas.

Further Surveys – Paleoenvironmental Surveys

- 8.9 Peat core sampling and stratigraphic analysis adds to the understanding of the processes and conditions present during the formation and subsequent deposition of peat. PAA (2022) undertook paleo-analysis and C14 dating on a peat 'monolith' core extracted from Oldacre Valley in 2019. C14 dating showed that the peat began forming in the late 17th Century and has since accumulated at a rate of approximately 1.5mm per year, which is consistent with peat accumulation estimates elsewhere in the UK. Pollen analysis showed a continuous presence of bracken throughout the entire peat accumulation period. Composition analysis showed that although *Sphagnum* species are present throughout the peat column, spore counts are very low, and the majority of peat has been formed from herbaceous grass, tree and shrub species, specifically bracken (*Pteridium aquilinum*), grasses and heather.

- 8.10 Further peat core sampling and analysis should be considered at each of the other three sites of confirmed peat deposits, in addition to any significant deposits located during the suggested peat scoping exercise described in Paragraph 8.5 above. As with the peat depth surveys, any peat core extraction taking place within a SSSI will require a Natural England consents application, in addition to landowner permission.
- 8.11 The similarity between the Oldacre Valley and Sherbrook Valley mire systems would be likely to result in a similar character of peat development and composition, but it could also be the case that the more extensive Sherbrook Valley system contains significantly older peat deposits, especially areas with deeper peat – over 100cm in places, compared with up to 50cm in Oldacre Valley.
- 8.12 The locally unique peat deposit at Womere would also benefit from further analysis. It can be reasonably assumed that the development of peat at Womere is not related to the development of the valley mire systems in Oldacre and Sherbrook Valleys, and the deep peat measurements suggest that the peat deposit is likely to be older than that found in Oldacre Valley.
- 8.13 The wetland mire at Gentleshaw Common is also different in character to the other sites, is spatially separated from the other sites by over 8km and lies on the southern facing aspect of the chase, with the mire system draining to the south rather than the north. As such, it is likely that the development of peat in this location could also have occurred over different timescales and under different conditions to the other three sites.
- 8.14 Should significant deposits be located elsewhere, and particularly on the River Sow floodplain, this location would be a high priority for taking samples for paleoenvironmental analysis, due to the likely different nature of peat deposition. Particularly of interest would be the areas detailed as 'Deep Peaty Soils' on the Natural England Peaty Soils map.
- 8.15 A suggested order of priority of peat sampling for paleoenvironmental/palaeoecological sampling may be as follows:
1. Sherbrook Valley;
 2. Sow Floodplain (if significant peat deposits are located);
 3. Womere;
 4. Gentleshaw Common; and
 5. Any other sites where significant peat deposits are located.

9. REFERENCES

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10. GLOSSARY

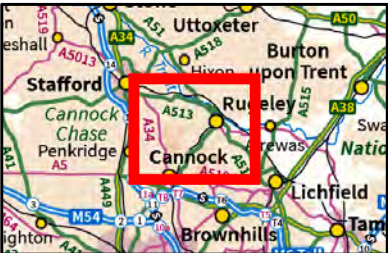
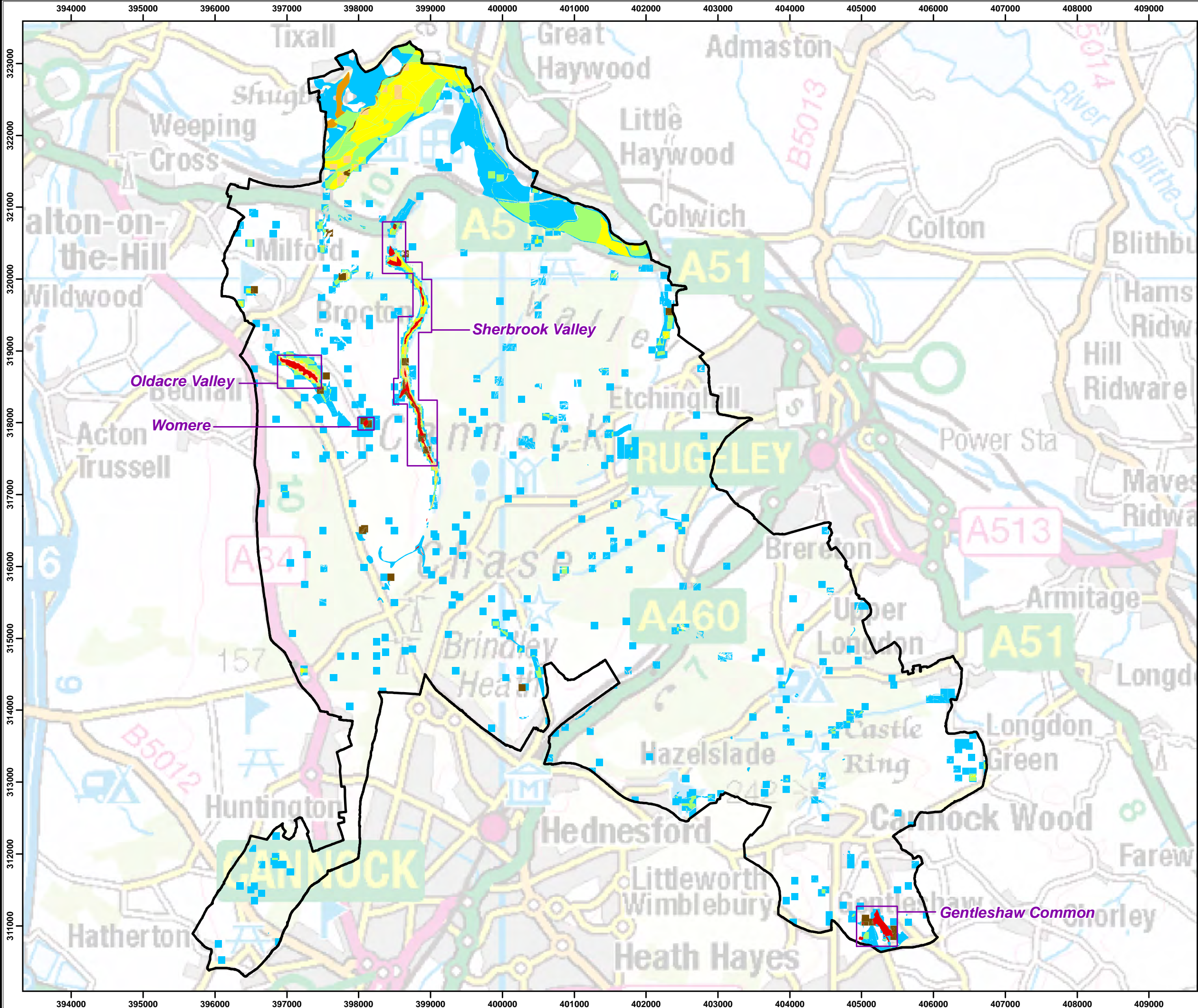
AONB	Area(s) of Outstanding Natural Beauty
BGS	British Geological Society
CCNL	Cannock Chase National Landscape
C14	Carbon 14
CEH	Centre for Ecology and Hydrology
DTM	Digital Terrain Model
FEP	Farm Environment Plan
GIS	Geographic Information Systems
LNR	Local Nature Reserve(s)
NATMAP	National Soils Map
NPRI	National Peat Resources Inventory
NSRI	National Soils Resources Institute
NVC	National Vegetation Classification
OS	Ordnance Survey
PAA	Penny Anderson Associates Ltd
PHI	Priority habitat inventory
SAC	Special Area of Conservation
SBI	Site(s) of Biological Importance
SCC	Staffordshire County Council
SER	Staffordshire Ecological Records
SSSI	Site(s) of Special Scientific Interest

TABLE

Table 3.1 Cannock Chase Peat Deposit Desk Study – Data Sources

Data/Report Name	Source	Date (and Updated)	Type	Format	Notes	Added	Study ID
Peaty Soils Map	Natural England	2008 (2024)	GIS data - polygon extent of peaty soils	ESRI shapefile	Modelled output using a number of key existing datasets	Yes	01_Natural_England_Peaty_Soils
Priority Habitat Inventory	Natural England	2014 (2024)	GIS data - polygon extent of priority habitats	ESRI shapefile	Some key habitats represent 'likely' peat deposits, others 'potential' peat deposits	Yes	02_Natural_England_PHI_Main_Habitat 03_Natural_England_PHI_Additional_Habitat
Sherbrook Valley Ecohydrology Investigation	Natural England/ Sheffield Wetland Ecologists	2017	Mapped peat extent and peat depth polygons	pdf maps		Yes	04_Sherbrook_Ecohydrology_2016_Peat_Depth
Vegetation, Habitat and Ecohydrology of Gentleshaw Common	Staffordshire Wilife Trust/ Roger Meade Associates	2018	Mapped peat depth points and mire habitat extent polygons	pdf maps + data tables		Yes	05_Gentleshaw_Common_2018_Peat_Depth
Oldacre Valley Restoration and Management Plan	Staffordshire County Council/ Penny Anderson Associates Ltd	2022	GIS data - peat depth measurement points + extent polygons	ESRI shapefile	Peat extent required amending to exclude measurement points with 0cm peat depth	Yes	06_Oldacre_Valley_2022_Peat_Depth
Purple Horizons Peatland Restoration Opportunities Mapping	Staffordshire Ecological Record	2024	Mapped areas of existing peat habitats and potential restoration areas	pdf maps	Study area outside of CCNL boundary	No	
NATMAP Soilscapes - Peaty Soils	National Soil Resource Institute	n/a	GIS data - extent of peaty soils	ESRI shapefile	No peaty soils data within CCNL boundary	No	
BGS Superficial Geology layer - peat deposits	British Geological Survey	n/a	GIS data - extent of peat deposits	ESRI shapefile	No peat deposit data within CCNL	No	
England Peat Map	Natural England	n/a	n/a	n/a	Not yet published	No	
National Peat Resources Inventory	Natural England	2008	GIS data - polygon extent of peat resources	ESRI shapefile	Included within NE peaty soils map	No	
West Staffordshire Peat Region	CCNL	n/a	GIS data - extent of peaty soils	ESRI shapefile	Extract of NE peaty soils map	No	
Cannock Chase Mires and Wet Woodland Survey	Staffordshire County Council	2006	Phase 1 + NVC maps, target notes, NVC species	pdf maps, report + tables		Yes	07_Mires_Wet_Woodland_Survey_2006
Viola palustris surveys, Sherbrook and Oldacre Valleys	Staffordshire County Council/Arvensis Ecology	2011, 2016	Reports including maps and tables with species	pdf report + tables	Locations of species relevant to potential peat presence extracted	Yes	08_Viola_Palustris_Surveys_2011_2015
Cannock Chase Vegetation Map	Staffordshire County Ranger Service	1955	Maps showing extent of broad habitats types, including 'Bog' and 'Cotton grass' categories	scanned hand-drawn map	could potentially show previous extent of peat forming habitats	Yes	09_Cannock_Chase_Vegetation_Map_1955
Cannock Chase LWS Re-Survey	Staffordshire Wildlife Trust	2019	Phase 1 habitat survey data for LWS within CCNL	ESRI shapefile	Relevant habitats extracted	Yes	10_Cannock_Chase_LWS_Re_Survey_2019
The Water Chemistry of the Springs and Mire Complexes of Cannock Chase Country Park	Countryside Commission	1982	Mapped locations of sample points containing description of species	pdf map	Relevant records digitised as point features	Yes	11_Mires_Water_Chemistry_Shimwell_1982
Designated Sites Citation/SSSI Database (ENSIS)	Natural England	n/a	Citation details for SAC and SSSIs within CCNL	pdf document	All mapped information for sites present in NE priority habitats inventory dataset.	No	
Cannock Chase Phase 1 Habitats Mapping	CCNL/Ecotech	1999 & 2005	Mapped Phase 1 Habitats	GIS data	All mapped information for sites present in NE priority habitats inventory dataset.	No	
Higher Level Stewardship features	Natural England	n/a	Mapped FEP/HLS features and options	GIS data	All mapped information for sites present in NE priority habitats inventory dataset.	No	
Ecological Record Data	Staffordshire Ecological Record	n/a	Species data as point locations	tables with grid references	Relevant list of species supplied to SER for data search	Yes	12_SER_Species_Records
National Landscapes Carbon Audit	Cranfield University	2022	Mapped carbon stock of soils	pdf map	Modelled carbon stock from soils and land use data.	Yes	13_National_Landscapes_Soil_Carbon_Stock
Ordnance Survey mapping	Ordnance Survey	n/a	Descriptive attributes of OS basemapping	ESRI shapefile	Relevant features extracted - e.g. 'Marsh'. Nb OS Mastermap data requires licence	Yes	14_Ordnance_Survey_Basemapping_Features
Ordnance Survey Historic Mapping	Ordnance Survey/ National Library of Scotland	1880s	Mapped marsh/bog features and place names from hisotric mapping	on-screen JPEG	approximate areas of relevant features transfereed to GIS data	Yes	15_Ordnance_Survey_Historic_Mapping
Staffordshire Past Track Images	Staffordshire Past Track	n/a	Historic images of Cannock Chase	on-screen JPEG	searched for relevant descriptive words (mire/bog/swamp/fen) - nothing clearly relevant located	No	

FIGURES



Legend

- Cannock Chase National Landscape boundary
- Peat Deposits Potential**
 - Peat deposit confirmed by field survey
 - High potential peat deposit (presence of peat forming habitats/species)
 - Potential peat 1 (Natural England Peaty Soils Layer, class = 'Deep Peaty Soils')
 - Potential peat 2 (Four or more peat related data sources)
 - Potential peat 3 (Three peat related data sources)
 - Potential peat 4 (Two peat related data sources)
 - Potential peat 5 (Single peat related data sources)
 - Labelled areas of confirmed peat deposits

British National Grid
Projection: Transverse Mercator
False Easting: 400000.000000
False Northing: 100000.000000
Central Meridian: 2.000000
Scale Factor: 0.999601
Latitude Of Origin: 49.000000

ISO A3

Metres

0 250 500 1,000 1,500 2,000

Cannock Chase National Landscape

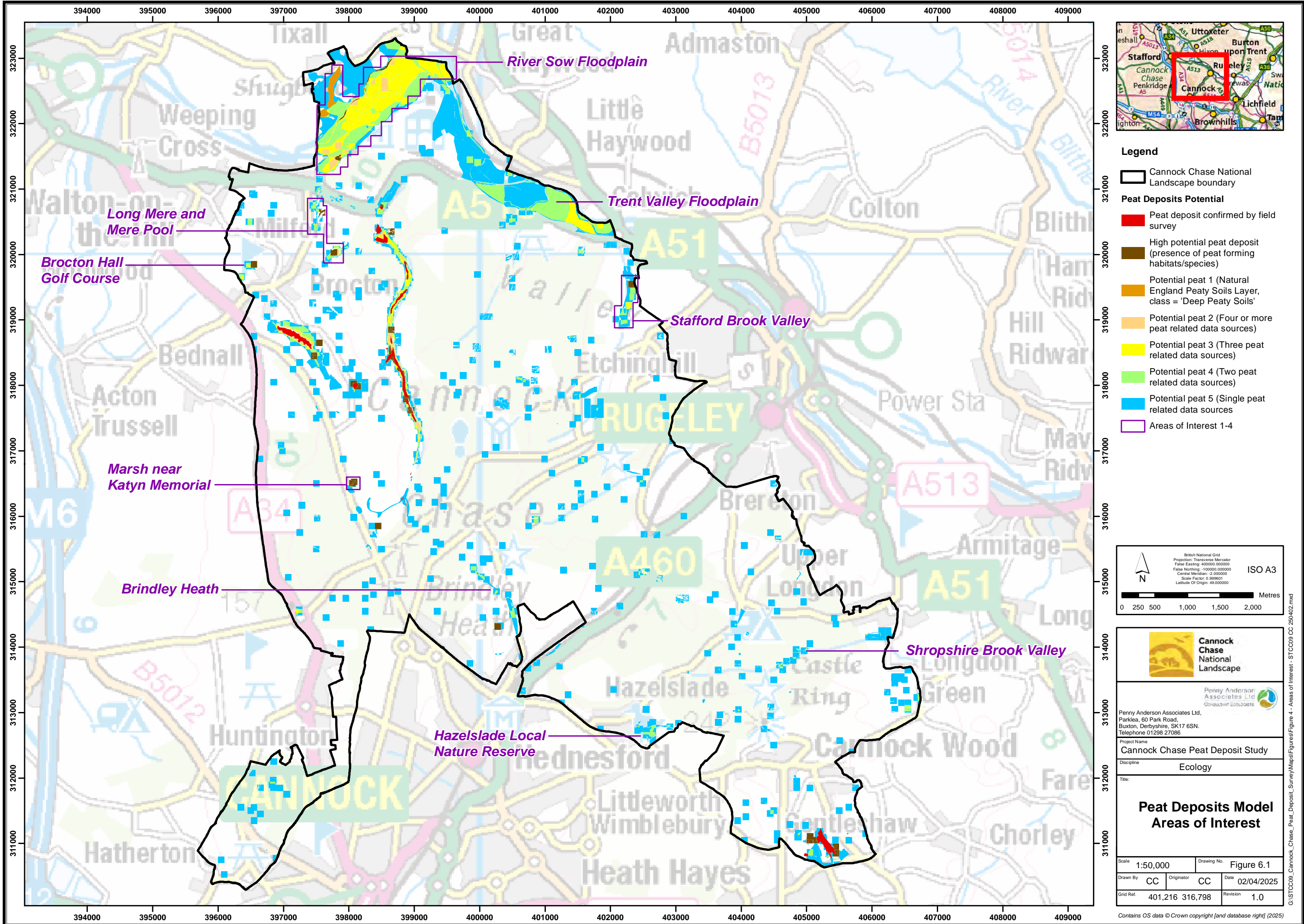
Penny Anderson Associates Ltd
Parklea, 60 Park Road,
Buxton, Derbyshire, SK17 6SN.
Telephone 01298 27086

Project Name
Cannock Chase Peat Deposit Study

Discipline
Ecology

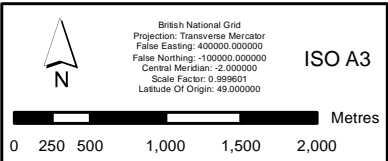
Title
Peat Deposits Potential Model


Scale 1:50,000	Drawing No. Figure 5.1	
Drawn By CC	Originator CC	Date 02/04/2025
Grid Ref. 401,500 316,839	Revision 1.0	




Legend

- Cannock Chase National Landscape boundary
- Peat Deposits Potential**
 - Peat deposit confirmed by field survey
 - High potential peat deposit (presence of peat forming habitats/species)
 - Potential peat 1 (Natural England Peaty Soils Layer, class = 'Deep Peaty Soils')
 - Potential peat 2 (Four or more peat related data sources)
 - Potential peat 3 (Three peat related data sources)
 - Potential peat 4 (Two peat related data sources)
 - Potential peat 5 (Single peat related data sources)
 - Areas of Interest 1-4





Cannock Chase National Landscape



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Project Name

Cannock Chase Peat Deposit Study

Discipline

Ecology

Title

Peat Deposits Model Areas of Interest

Scale

1:50,000

Drawing No.

Figure 6.1

Drawn By

CC

Originator

CC

Date

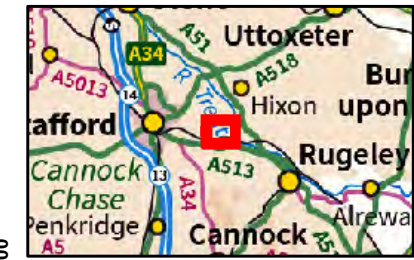
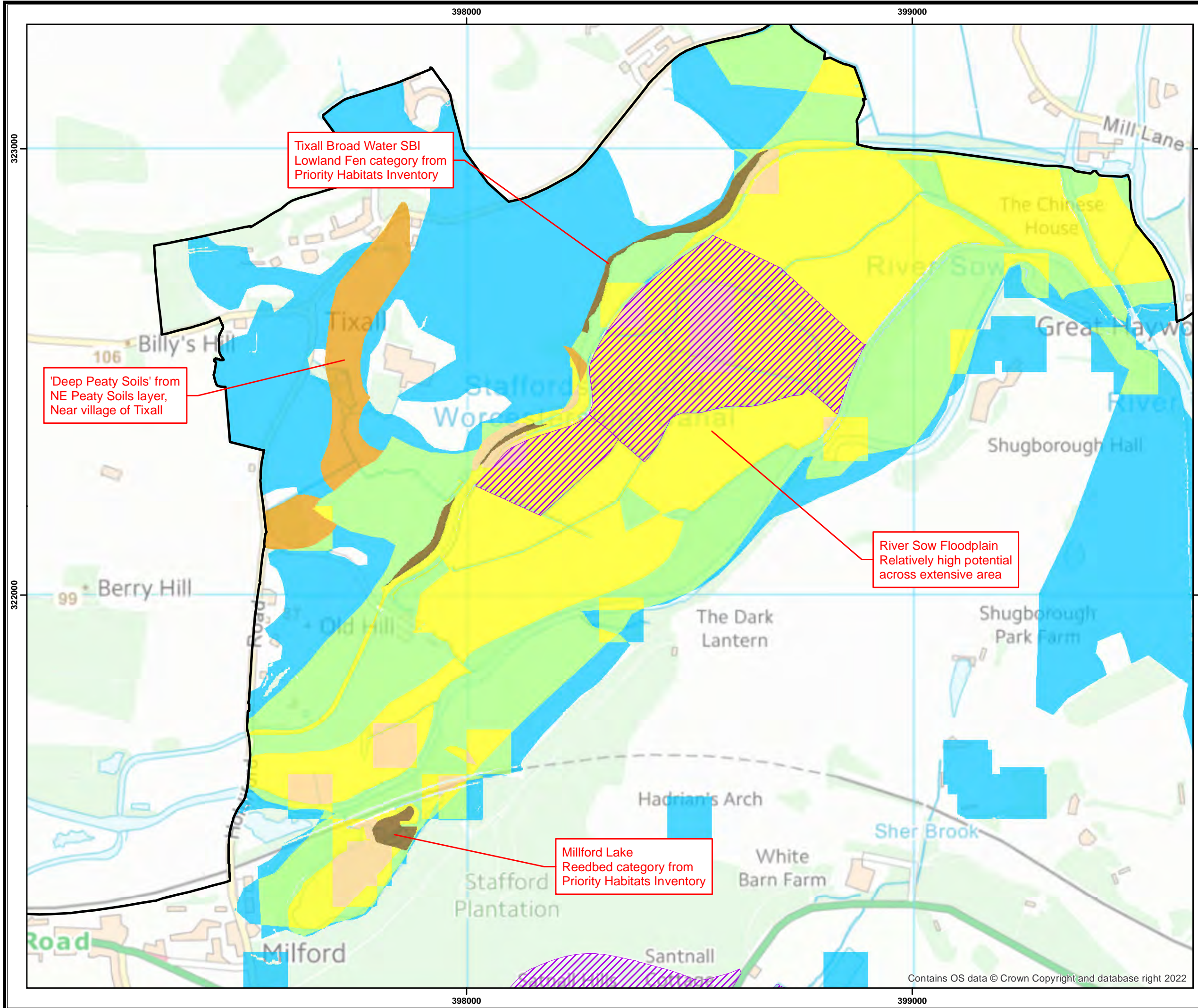
02/04/2025

Grid Ref.

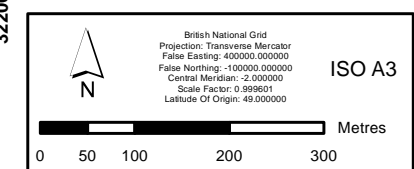
401,216 316,798

Revision

1.0



- Legend**
- Cannock Chase National Landscape boundary
 - Peat Deposits Potential**
 - Peat deposit confirmed by field survey
 - High potential peat deposit (presence of peat forming habitats/species)
 - Potential peat 1 (Natural England Peaty Soils Layer, class = 'Deep Peaty Soils')
 - Potential peat 2 (Four or more peat related data sources)
 - Potential peat 3 (Three peat related data sources)
 - Potential peat 4 (Two peat related data sources)
 - Potential peat 5 (Single peat related data sources)
 - Sites of Special Scientific Interest



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Project Name
Cannock Chase Peat Deposit Study

Discipline
Ecology

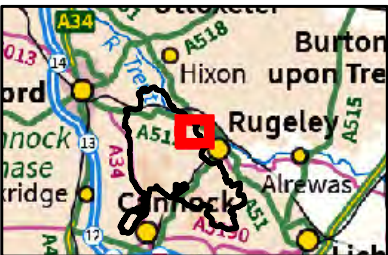
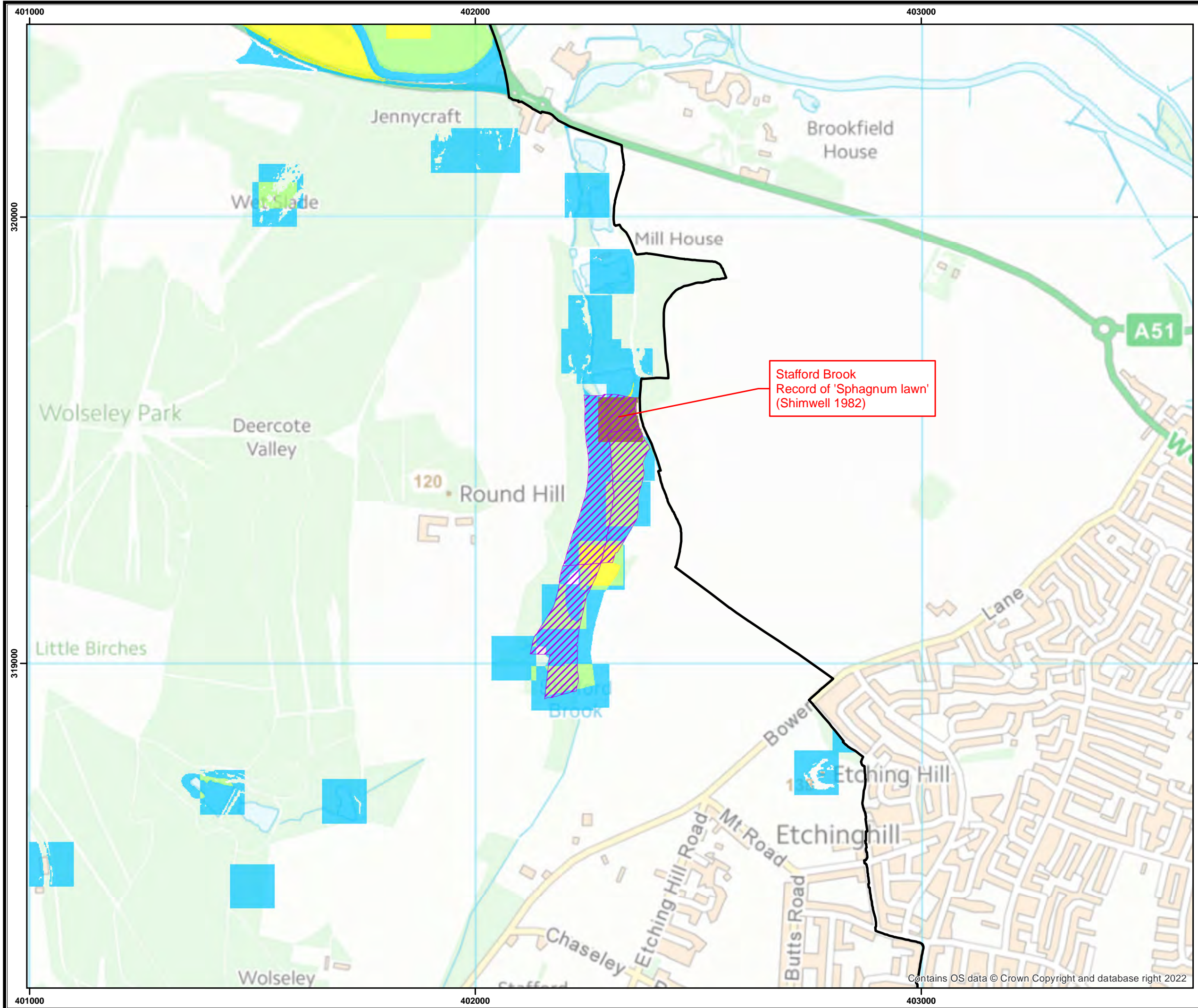
Title:
**Area of Interest 1
River Sow Floodplain**

Scale 1:8,000	Drawing No. Figure 6.2	
Drawn By CC	Originator CC	Date 02/04/2025
Grid Ref. 398,322 322,199	Revision 1.0	

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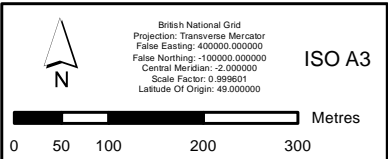
Contains OS data © Crown copyright [and database right] (2025)

G:\STCC09_Cannock_Chase_Peat_Deposit_Survey\Map\Figures\Figure 4a - Area of Interest 1 Tixall - STCC09 CC 250402.mxd



Legend

- Cannock Chase National Landscape boundary
- Peat Deposits Potential
 - Peat deposit confirmed by field survey
 - High potential peat deposit (presence of peat forming habitats/species)
 - Potential peat 1 (Natural England Peaty Soils Layer, class = 'Deep Peaty Soils')
 - Potential peat 2 (Four or more peat related data sources)
 - Potential peat 3 (Three peat related data sources)
 - Potential peat 4 (Two peat related data sources)
 - Potential peat 5 (Single peat related data sources)
 - Sites of Special Scientific Interest



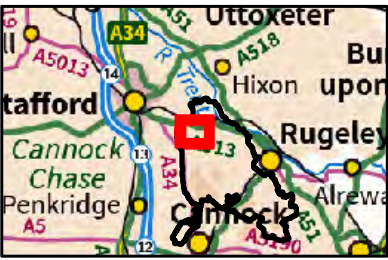
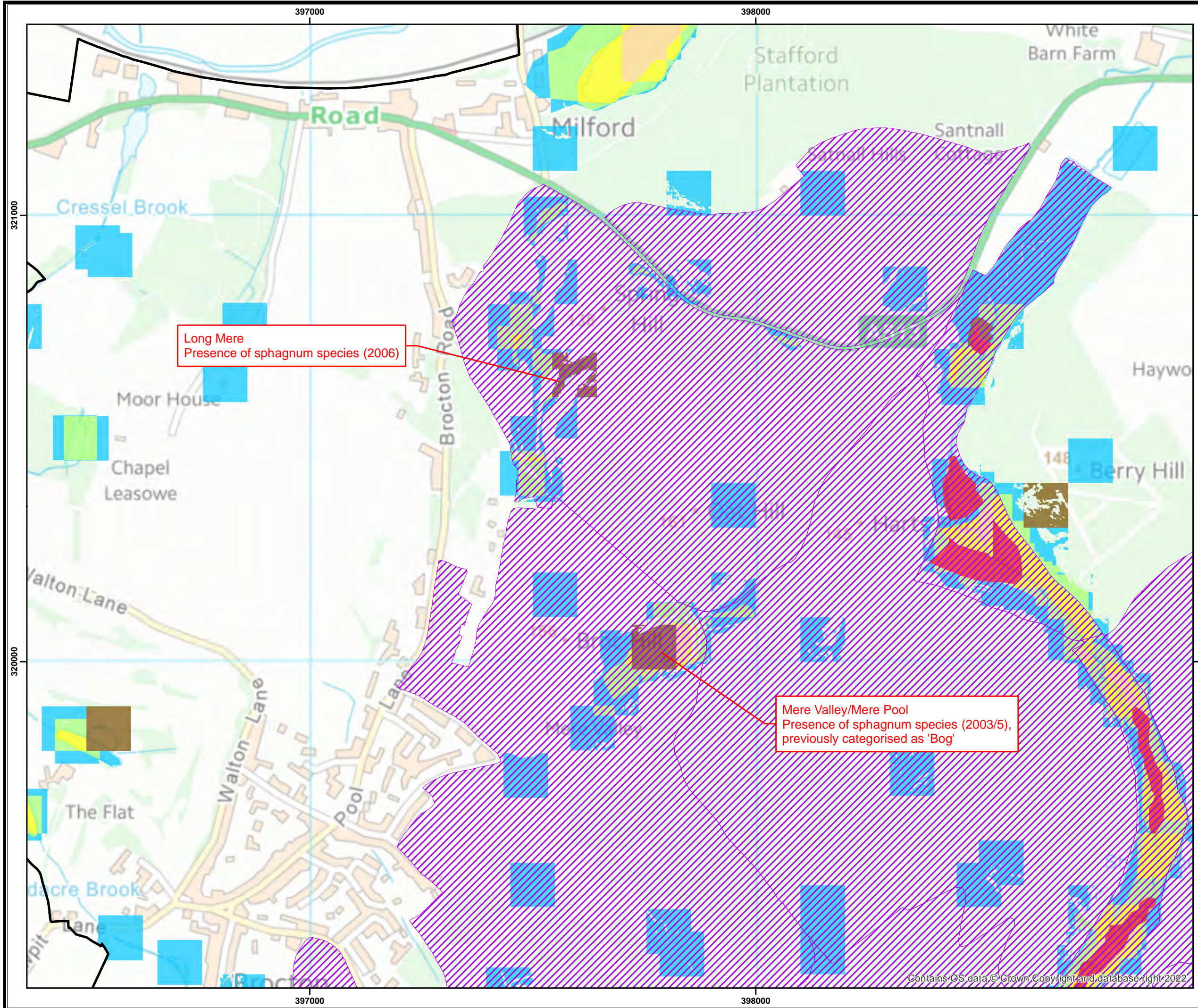
Penny Anderson Associates Ltd,
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Buxton, Derbyshire, SK17 6SN.
Telephone 01298 27086

Project Name
Cannock Chase Peat Deposit Study

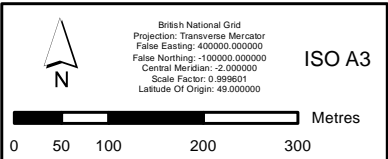
Discipline
Ecology

Title:
**Area of Interest 2
Stafford Brook Valley**

Scale 1:8,000	Drawing No. Figure 6.3	
Drawn By CC	Originator CC	Date 02/04/2025
Grid Ref. 402,302 319,352	Revision 1.0	



- Legend**
- Cannock Chase National Landscape boundary
 - Peat Deposits Potential**
 - Peat deposit confirmed by field survey
 - High potential peat deposit (presence of peat forming habitats/species)
 - Potential peat 1 (Natural England Peaty Soils Layer, class = 'Deep Peaty Soils')
 - Potential peat 2 (Four or more peat related data sources)
 - Potential peat 3 (Three peat related data sources)
 - Potential peat 4 (Two peat related data sources)
 - Potential peat 5 (Single peat related data sources)
 - Sites of Special Scientific Interest



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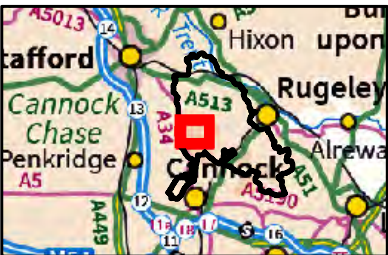
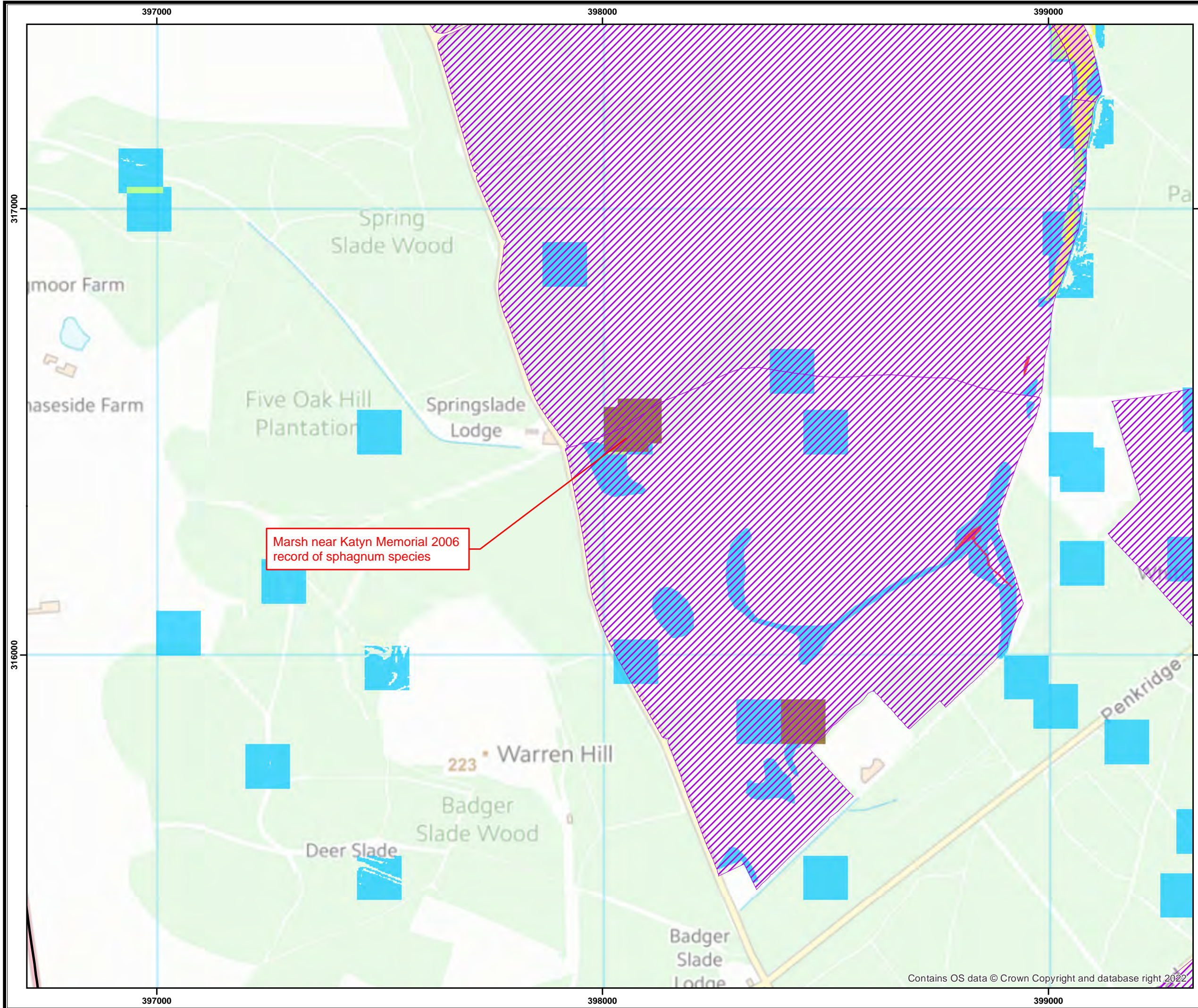
Project Name
Cannock Chase Peat Deposit Study

Discipline
Ecology

Title:
**Area of Interest 3
Mere Pool and
Long Mere**

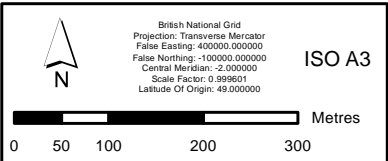
Scale 1:8,000	Drawing No. Figure 6.4	
Drawn By CC	Originator CC	Date 02/04/2025
Grid Ref. 397,673 320,348	Revision 1.0	

G:\STC009_Cannock_Chase_Peat_Deposit_Survey\Map\Figures\Figure 4c- Area of Interest 3 Mere Pool and Long Mere - STC009 CC 250402.mxd



Legend

- Cannock Chase National Landscape boundary
- Peat Deposits Potential**
 - Peat deposit confirmed by field survey
 - High potential peat deposit (presence of peat forming habitats/species)
 - Potential peat 1 (Natural England Peaty Soils Layer, class = 'Deep Peaty Soils')
 - Potential peat 2 (Four or more peat related data sources)
 - Potential peat 3 (Three peat related data sources)
 - Potential peat 4 (Two peat related data sources)
 - Potential peat 5 (Single peat related data sources)
 - Sites of Special Scientific Interest



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Telephone 01298 27086

Project Name
Cannock Chase Peat Deposit Study

Discipline
Ecology

Title:
**Area of Interest 4
Marsh Near
Katyn Memorial**

Scale 1:8,000	Drawing No. Figure 6.5	
Drawn By CC	Originator CC	Date 02/04/2025
Grid Ref. 398,017 316,333	Revision 1.0	

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G:\STCC09_Cannock_Chase_Peat_Deposit_Survey\Maps\Figures\Figure 4d - Area of Interest 4 Marsh Near Katyn Memorial - STCC09 CC 250402.mxd

APPENDICES

APPENDIX 1

Cannock Chase Peat Deposit – Raw Data Summary



PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 01_NATURAL_ENGLAND_PEATY_SOILS

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Peaty Soils Location	Natural England	22/10/2008	03/06/2024

SUMMARY

The Peat Layer was produced by Natural England (ARM team) during June-October 2008, with the aim of identifying the extent of three classes of peaty soils for the purposes of the Partnership Project to Protect and Enhance Peat Soils (aka. The Peat Project). A series of peat-related datasets were combined in a reductive approach to categorise the three peatland soil types : 'Deep peaty soils', 'Shallow peaty soils' and 'Soils with peaty pockets'. Datasets used were the NSRI England Soils Map, BAP blanket bog and fen inventories, BGS deep peat mapping, National Peatland Resource Inventory, and OS Mastermap reed, marsh or saltmarsh polygons. The data is produced on generally reliable datasets, but has not been ground-truthed extensively, and in particular reference of this project, within the Cannock Chase area, so it should not be viewed as definitive in terms of peat deposits.

DETAIL

DATA FORMAT	ESRI polygon Shapefile
ORIGINAL FORMAT	ESRI Shapefile
EXTENT	Whole of CCNL
DESIGNATION	Features intersect Rawbones Meadow SSSI and Tixall Broad Water LWS
LICENCE	Non-Commercial Government Licence
USAGE RESTRICTIONS	No public access constraints, subject to licence identified
WEB LINK	https://www.data.gov.uk/dataset/9d494f48-f0d7-4333-96f0-8b736ac8fb18/peaty-soils-location1
ATTRIBUTION	Contains IPR from Cranfield University (NSRI) soils data and BGS geological data. Derived from 1:50 000 scale BGS Digital Data under Licence 2006/072 British Geological Survey. © NERC.National Soils map © Cranfield University (NSRI) © Crown Copyright and database rights [year]. © Natural England copyright [Year], reproduced with the permission of Natural England, https://www.gov.uk/help/terms-conditions © Crown Copyright and database right [year]. Ordnance Survey licence number 100022021.

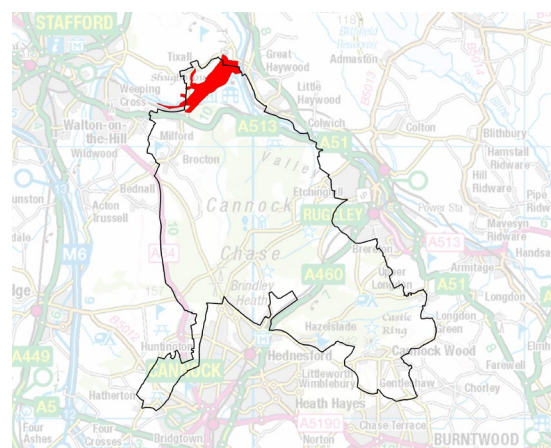
NOTES

Data clipped to Cannock Chase NL boundary – data exists for the River Sow floodplain in the north of CCNL, features defined as 'Soils with peaty pockets' and 'deep peaty soils'.

The model defined areas as 'deep peaty soils' as being defined as 'Deep peaty soils' within the NSRI National Soils Map, or located within one of four additional existing key peat-related datasets. Areas defined as soils with peaty pockets were defined as 'other organic soils' in the NSRI National Soils Map, and were not located in any of the four additional key datasets.

Based on the classification process above, for this project areas defined as deep peaty soils were added to the CCNL Peat Potential layer as 'Potential Peat 1', areas defined as soils with peaty pockets were used as overlay layers to contribute to one of the other Potential Peat categories (2-5).

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 02_NATURAL_ENGLAND_PHI_MAIN_HABITAT

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Priority Habitat Inventory – Main Habitat category	Natural England	24/11/2014	15/08/2024

SUMMARY

The Priority Habitat Inventory is a spatial dataset that maps priority habitats identified in the UK Biodiversity Action Plan and listed as being of principal importance for the purpose of conserving or enhancing biodiversity, under Section 41 of the Natural Environment and Rural Communities Act (2006). The PHI is updated twice a year and where possible habitats are mapped to polygons in OS Mastermap. These polygons are merged or split where necessary to create resulting habitat patches. The PHI currently maps 27 terrestrial and freshwater priority habitats across England. Presence of key peat-forming habitats are likely to be a good guide for the presence of peat, but there are some issue relating to the reliability of the classification of these habitats, so come caution should be used when interpreting this data

DETAIL

DATA FORMAT	ESRI polygon Shapefile
ORIGINAL FORMAT	ESRI file geodatabase
EXTENT	Whole of CCNL
DESIGNATION	Features intersect Cannock Chase SAC and SSSI, Rawbones Meadow SSSI, Stafford Brook SSSI, Brocton LNR and Tixall Broad Water LWS
LICENCE	Open Government Licence for public sector information
USAGE RESTRICTIONS	There are no public access constraints to this data. Use of this data is subject to the licence identified.
WEB LINK	https://www.data.gov.uk/dataset/4b6ddab7-6c0f-4407-946e-d6499f19fcde/priority-habitats-inventory-england
ATTRIBUTION	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right [year].

NOTES

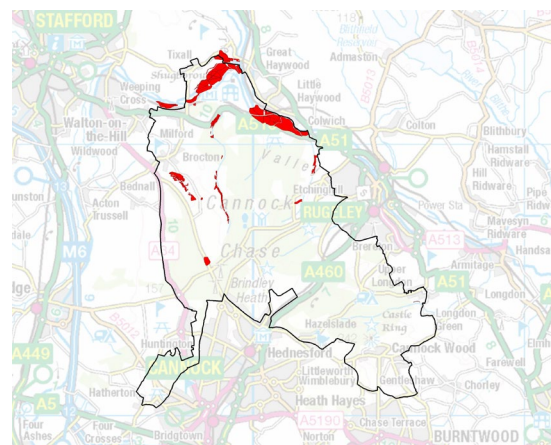
Data clipped to Cannock Chase NL boundary (plus a 200m buffer). Polygons with habitats relevant to the potential presence of peat deposits and specified within the 'Main Habitat' category exported. Habitats included as follows. Note this list excludes relevant habitats with no records within CCNL boundary (e.g. Blanket bog)

- Reedbeds
- Purple moor grass and rush pastures
- Lowland fens
- Coastal and floodplain grazing marsh

Polygons were also included from other Main Habitat categories where sources suggested presence of potential peat-forming habitat, as follows:

- Wet woodland
- NVC 'S' classification (swamp)
- Northern Atlantic Wet Heaths With Erica Tetralix
- Phase 1 Habitat 'D6' classification (wet heath/acid grassland)

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 03_NATURAL_ENGLAND_PHI_ADDITIONAL_HABITAT

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Priority Habitat Inventory – Additional Habitat category	Natural England	24/11/2014	15/08/2024

SUMMARY

The Priority Habitat Inventory is a spatial dataset that maps priority habitats identified in the UK Biodiversity Action Plan and listed as being of principal importance for the purpose of conserving or enhancing biodiversity, under Section 41 of the Natural Environment and Rural Communities Act (2006). The PHI is updated twice a year and where possible habitats are mapped to polygons in OS Mastermap. These polygons are merged or split where necessary to create resulting habitat patches. The PHI currently maps 27 terrestrial and freshwater priority habitats across England. Additional habitats show there is a chance there may be some peat deposits relating to these habitats, although this is less likely than where these habitats are categorized as the main habitat in the Priority Habitat Inventory.

DETAIL

DATA FORMAT	ESRI polygon Shapefile
ORIGINAL FORMAT	ESRI file geodatabase
EXTENT	Whole of CCNL
DESIGNATION	Features intersect Cannock Chase SAC and SSSI, Gentleshaw Common SSSI, Stafford Brook SSSI, Brocton LNR and Tixall Broad Water LWS
LICENCE	Open Government Licence for public sector information
USAGE RESTRICTIONS	There are no public access constraints to this data. Use of this data is subject to the licence identified.
WEB LINK	https://www.data.gov.uk/dataset/4b6ddab7-6c0f-4407-946e-d6499f19fcde/priority-habitats-inventory-england
ATTRIBUTION	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right [year].

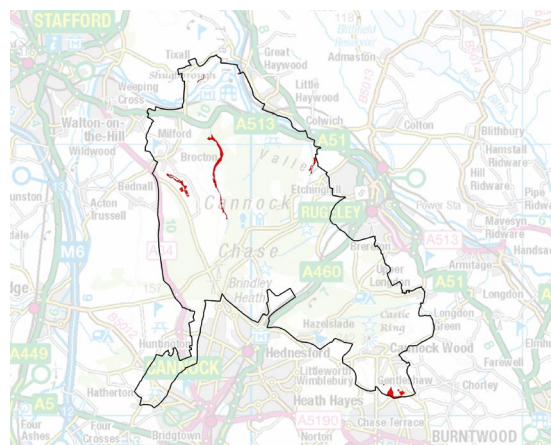
NOTES

Data clipped to Cannock Chase NL boundary (plus a 200m buffer). Polygons included within dataset 02_Natural_England_PHI_Main_Habitat (as detailed on page 2) excluded. Habitats relevant to the potential presence of peat deposits and specified within the 'Additional Habitat' category exported, as follows:

- SSSI features – Valley fen (lowland), Northern Atlantic Wet Heaths with Erica Tetralix, Wet Woodland
- SBI Resurvey Stafford Borough (Lowland fens, Reedbeds)
- Trent Washlands Survey 2006 (coastal and floodplain grazing marsh)

Note FEP categories (specifically W04 Fens) were not included for this study due to the large volume and extent of polygons containing this description, suggesting significant over-estimation of this additional habitat within the data.

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 04_SHERBROOK_ECOHYDROLOGY_2016_Peat_DEPTH

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
PE158: Sherbrook Valley Ecohydrology Investigation, 2016 – Peat depth and extent	Natural England/Sheffield Wetland Ecologists & Pendleton Hydro Ltd	June 2017	-

SUMMARY

Peat extent and depth polygon data - one of the outputs from the 2016 Natural England Project - Investigation into the Hydrological Functioning of the Sherbrook Valley, carried out by Sheffield Wetland Ecologists and Pendleton Hydro Ltd. The survey used a hand auger to measure peat extent and depth within the study catchment. It is noted that this study is a reliable source for the presence, extent, depth and character of peat deposits.

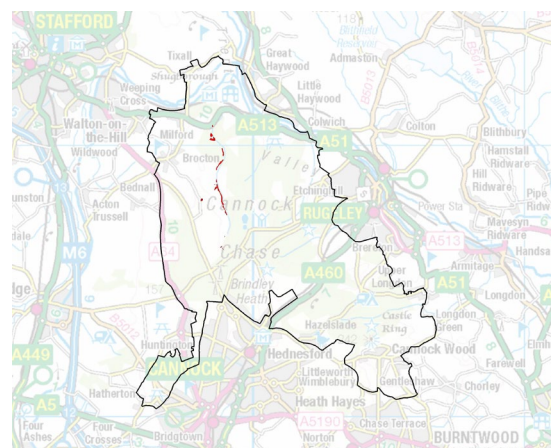
DETAIL

DATA FORMAT	ESRI polygon Shapefile
ORIGINAL FORMAT	JPEG map from report
EXTENT	Sherbrook Valley catchment
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI
LICENCE	Open Government Licence for public sector information
USAGE RESTRICTIONS	There are no public access constraints to this data. Use of this data is subject to the licence identified.
CITATION	Eades, P., Pendleton, E., Wheeler, B., Tratt, R., & Shaw, S., (2017), Investigation into the Hydrological Functioning of the Sherbrook Valley, Natural England Research Project PE158
ATtribution	© Natural England copyright.

NOTES

Data digitized from geo-referenced maps detailing peat depth and extent, Figures 5a-5e in the report. Also includes measurements for Womere, which lies outside of the Sherbrook catchment to the west. The report describes areas with no peat deposits, outside of the mapped peat extent, but does not include the location of points visited/surveyed which were found to have no peat, so the exact extent of the surveyed area is not known.

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 05_GENTLESHAW_COMMON_2018_PEA_T_DEPTH

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Peat Depth Points from Vegetation, habitat and ecohydrological study of Gentleshaw Common 2018	Staffordshire Wildlife Trust/Roger Meade Associates	October 2018	-

SUMMARY

Peat depth survey - one of the outputs from the 2018 report - Vegetation, habitat and ecohydrological study of Gentleshaw Common, carried out by Roger Mead Associates. The survey used a hemi-cylindrical hand auger to measure peat depth and character within the study area. It is noted that this study is a reliable source for the presence, extent, depth and character of peat deposits.

DETAIL

DATA FORMAT	ESRI point and polygon Shapefile
ORIGINAL FORMAT	Results table from report
EXTENT	Gentleshaw Common
DESIGNATIONS	Features intersect Gentleshaw Common SSSI
USAGE RESTRICTIONS	By permission from the data holder, Staffordshire Wildlife Trust
CITATION	Meade, R., 2018. Vegetation, habitat and ecohydrological study of Gentleshaw Common 2018; Vegetation and habitats.
ATTRIBUTION	© Staffordshire Wildlife Trust copyright.

NOTES

Data converted to point GIS dataset automatically using 12 figure OSGB grid reference values. Data also includes assessment/description of peat colour, texture and wetness, presence of other organic and mineral material within the peat column, surface vegetation, depth of sub-peat soil and a general description.

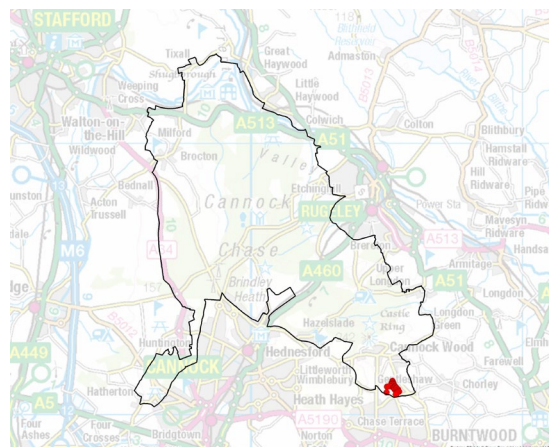
Area of NVC mire features containing confirmed peat measurements used as extent of main peat deposits

Data includes points where no peat was located during the survey. Each point feature was buffered and enveloped to produce a 100m square to be consistent with all point features added to the peat deposit layer.

Useful text from report:

With the exception of the wetland outlier in the west, where the peat is 27cm thick, all the Molinia-dominated land in the west is less than 10cm or absent. All the major peat deposits are associated with the main valley mire, point 214 being the deepest with 54cm, on the eastern edge of the mire. Although there are exceptions, the deeper peat tends to be here or in the north-western edge of the mire rather than along its centre. The peat tails out to the north and the south of the mire.

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 06_OLDACRE_VALLEY_2022_PEA_T_DEPTH

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Peat Depth Points from Oldacre Valley Restoration and Management Plan 2022	Staffordshire County Council/Penny Anderson Associates Ltd	July 2022	-

SUMMARY

Peat depth survey – 20m grid of peat depth measurements taken across study area within Oldacre Valley. Peat depth was measured using steel peat probes. A number of core samples were also taken. It is noted that this study is a reliable source for the presence, extent, depth and character of peat deposits.

DETAIL

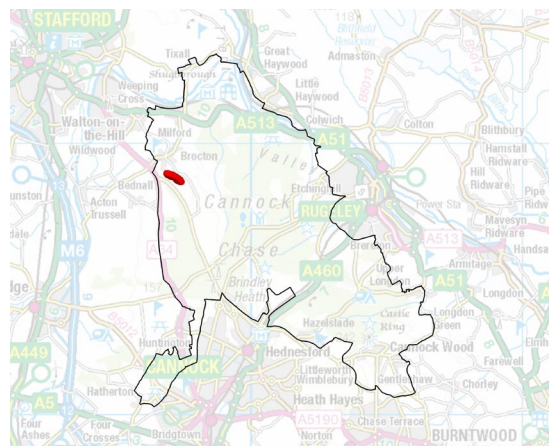
DATA FORMAT	ESRI point Shapefile
ORIGINAL FORMAT	ESRI point shapefile
EXTENT	Oldacre Valley
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI and Brocton LNR
USAGE RESTRICTIONS	By permission from the data holder, Staffordshire County Council
CITATION	Hammond, G., Hawley, G., Hamilton, H., Martin-Bacon, H., Batchelor, C., 2022, Restoration and Management Plan for Oldacre Valley, Cannock Chase Country Park, Report for Staffordshire County Council
ATTRIBUTION	© Staffordshire County Council copyright.

NOTES

Data includes points where no peat was located during the survey. Data includes whether any species of sphagnum were present at each data point. Core samples taken during the survey suggest that peat deposits lie directly over bedrock, with no sub-peat soil or other depositional materials.

The layer defining approximate extent of peat included all peat depth survey points, including those which detailed 0cm of peat. The extent of peat was reduced for this project to remove the areas falling within the areas of 0cm peat measurements.

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 07_MIRES_WET_WOODLANDS_SURVEY_2006

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Phase 1 Habitat polygons and target note points and NVC point data from Mires and Wet Woodland Surveys, 2006	Staffordshire County Council	2006	-

SUMMARY

Two reports produced for Staffordshire County Council, surveying 11 sites identified as containing target mire and wet woodland habitats, as follows: Long Mere, Carr north of Long Mere, Milford Pond, Pond North of railway cutting, Mere pool, the Oldacre Valley, Womere, Sherbrook Valley, Katyn Pool, Brindley Valley and Brindley Heath mire.

The first report mapped the habitats using Phase 1 classification, with target notes, a follow-up survey then categorized vegetation using NVC classification. This study is considered to be a reliable source of information relating to the presence of potential peat deposits, although as peat was not the focus of the study, the presence of peat-forming habitat can only be a reasonable surrogate for the presence of peat deposits.

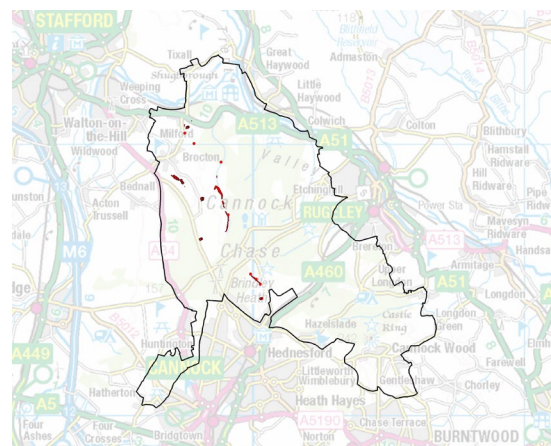
DETAIL

DATA FORMAT	ESRI point and polygon shapefile
ORIGINAL FORMAT	Report maps and tables
EXTENT	11 sites as detailed in summary above
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI
USAGE RESTRICTIONS	By permission from the data holder, Staffordshire County Council
CITATION	Godfrey, M. & Hill, R., 2006 Cannock Chase Mires and Wet Woodland Survey - Interim Report Godfrey, M. & Hill, R., 2006 Cannock Chase Mires and Wet Woodland Survey – NVC Communities
ATTRIBUTION	© Staffordshire County Council copyright.

NOTES

Phase 1 Habitat data was extracted and digitized from the report maps, polygon data showing extent of mire/wet woodland habitat and Target note data as point features. Point locations for peat-forming species were also extracted from the NVC species lists, and transferred to the approximate location using the site description and location of NVC quadrats taken. Each point feature was buffered and enveloped to produce a 100m square to be consistent with all point features added to the peat deposit layer. Key species (sphagnum, cottongrass) were added to the High-Potential Peat Deposits category, all other species were included in the general peat potential categories (2-5)

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 08_VIOLA_PALUSTRIS_SURVEYS_2011_2015

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Point locations of two surveys for Viola palustris carried out in 2011 and 2015	Staffordshire County Council/Arvensis Ecology	2011 & 2015	-

SUMMARY

Two surveys carried out in 2011 and 2015 by Arvensis Ecology for Staffordshire County, in the North Sherbrook Valley (2011), and in Oldacre and Sherbrook Valleys (2015) locating populations of Viola palustris, Marsh violet. NVC quadrats were also taken, and results presented in the report. This study is considered to be a reliable source of information relating to the presence of potential peat deposits, although as peat was not the focus of the study, the presence of peat-forming habitat can only be a reasonable surrogate for the presence of peat deposits.

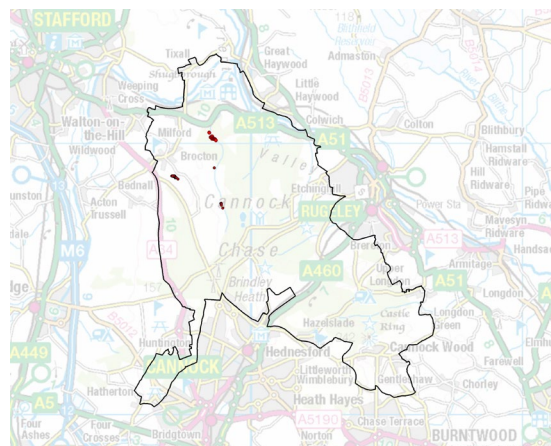
DETAIL

DATA FORMAT	ESRI point shapefile
ORIGINAL FORMAT	Report maps and tables
EXTENT	Sherbrook and Oldacre Valleys
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI
USAGE RESTRICTIONS	By permission from the data holder, Staffordshire County Council
CITATION	Godfrey, M., 2011, Viola palustris distribution in the North Sherbrook Valley Handley, J. & Boardman, P., 2015, Report on the Survey of Viola palustris within Sherbrook and Oldacre Valley undertaken by Arvensis Ecology on behalf of Staffordshire County Council.
ATTRIBUTION	© Staffordshire County Council copyright.

NOTES

Point data from the 2011 survey detailed locations of Viola palustris only. 2015 data included more detail on the habitat and species composition of locations where Viola palustris were located, including presence of sphagnum, which were added as point features of 'assumed peat'. Each point feature was buffered and enveloped to produce a 100m square to be consistent with all point features added to the peat deposit layer. Key species (sphagnum, cottongrass) were added to the High-Potential Peat Deposits category, all other species were included in the general peat potential categories (2-5)

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 09_CANNOCK_CHASE_VEGETATION_MAP_1955

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Broad category vegetation map for central/western Cannock Chase	Staffordshire County Ranger Service	1955	-

SUMMARY

Broad category vegetation map for central/western Cannock Chase undertaken by Staffordshire County Ranger Service in 1955, variety of categories, including 'Bog' and 'Cotton Grass'. Due to the historic nature of this study, the unknown provenance and the large-scale mapping of the habitats, this data can only be used as an indicator of the extent of potential peat deposits based on the habitat types as mapped.

DETAIL

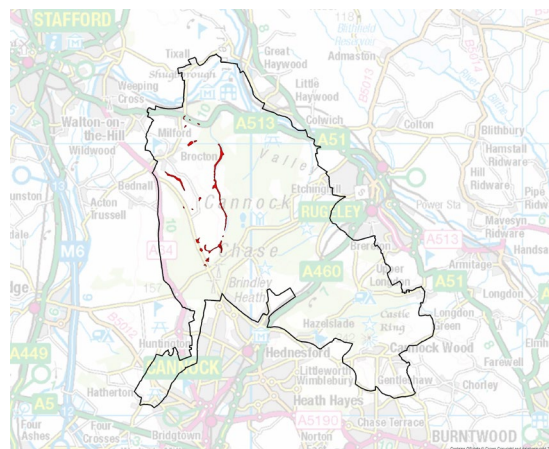
DATA FORMAT	ESRI polygon shapefile
ORIGINAL FORMAT	Scanned hand-drawn map
EXTENT	Central/Western Cannock Chase including Sherbrook and Oldacre Valleys
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI
USAGE RESTRICTIONS	By permission from the data holder, Staffordshire County Council
CITATION	Smith, J., Cannock Chase Vegetation Map 1955, Staffordshire County Ranger Service
ATTRIBUTION	© Staffordshire County Council copyright.

NOTES

Georeferenced scan of habitat map also provided within data folder. 'Bog', 'Cotton grass' and mixtures including those two categories were digitized as polygon features.

All features were added to the general peat potential categories (2-5)

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 10_CANNOCK_CHASE_LWS_RE_SURVEY_2019

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Phase 1 habitat survey data for Local Wildlife Sites within Cannock Chase	Staffordshire County Council/Staffordshire Wildlife Trust	2020	-

SUMMARY

Phase 1 Habitat data for Local Wildlife Sites within Cannock Chase AONB, surveyed by Staffordshire Wildlife Trust in 2019. Reliable source of habitat survey data, and can be used as a reasonable surrogate for potential presence of peat deposits.

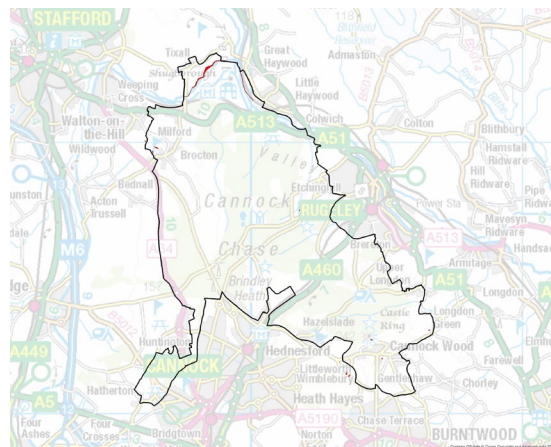
DETAIL

DATA FORMAT	ESRI polygon shapefile
ORIGINAL FORMAT	ESRI polygon shapefile
EXTENT	All LWS within Cannock Chase
DESIGNATIONS	All features within respective Local Wildlife Sites
USAGE RESTRICTIONS	By permission from the data holder, Staffordshire County Council
CITATION	Fryer, R., 2020, Cannock Chase AONB Local Wildlife Sites Re-Survey 2019, Staffordshire Wildlife Trust
ATTRIBUTION	© Staffordshire County Council copyright.

NOTES

Phase 1 habitat categories with potential for peat deposits were extracted from the original dataset, as follows: B5 (Marsh/marshy grassland), E2.1 (Acid/neutral flush), F2.1 (Marginal vegetation) and G1 (Standing water). All features were added to the general peat potential categories (2-5)

MAP



PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 11_MIRES_WATER_CHEMISTRY_SHIMWELL_1982

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Mapped point location of sample sites of mires	Countryside Commission	1982	-

SUMMARY

Mapped point location of sample sites of mires and springs carried out for an investigation into the water chemistry of a selection of mire and spring complexes in Cannock Chase in 1982. Each point includes a summary with some detail of vegetation composition, including presence of sphagnum and other species relevant to potential presence of peat deposits. Reliable study – age of report means the presence of peat-forming species and habitats could be an indicator of peat deposits outside of areas of current peat-forming habitats.

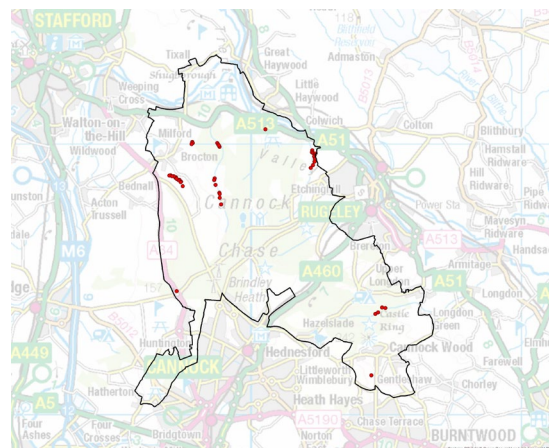
DETAIL

DATA FORMAT	ESRI point shapefile
ORIGINAL FORMAT	Report maps
EXTENT	Sample sites across Cannock Chase, including Sherbrook and Oldacre Valleys, Stafford Brook and Beaudesert Old Park
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI and Stafford Brook SSSI
USAGE RESTRICTIONS	By permission from the data holder, Staffordshire County Council
CITATION	Shimwell et al, 1982, The Water Chemistry of the Spring and Mire Complexes of the Cannock Chase Country Park, Technical Report Number 6, Countryside Commission
ATTRIBUTION	© Natural England copyright.

NOTES

Relevant records were digitized from georeferenced pdf maps exported from the report body, including details of relevant vegetation descriptions. Each point feature was buffered and enveloped to produce a 100m square to be consistent with all point features added to the peat deposit layer. Key species (sphagnum, cottongrass) were added to the High-Potential Peat Deposits category, all other species were included in the general peat potential categories (2-5)

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

DATASET: 12_SER_SPECIES_RECORDS

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Species records from Staffordshire Ecological Record data search	Staffordshire Ecological Record	n/a	-

SUMMARY

Data search returns for species relevant to peat habitats as held by Staffordshire Ecological Record. A list of relevant species was comprised by PAA and ecological staff at Staffordshire CC. Presence of peat-forming species can be used as a reasonable surrogate of potential presence of peat deposit – other species only to be used with other datasets to build a higher likelihood of presence of peat deposit, rather than suggest a peat deposit individually.

DETAIL

DATA FORMAT	ESRI point shapefile
ORIGINAL FORMAT	Spreadsheet containing species information and grid reference
EXTENT	Complete study area
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI, Stafford Brook SSSI, Gentleshaw Common SSSI, Rawbones Meadow SSSI and other locally designated sites within CCNL.
USAGE RESTRICTIONS	Must only be used for the purpose for which it was originally supplied. It may not be used for any other purpose and any re-use of data is strictly prohibited without the express permission of SER.
CITATION	
ATTRIBUTION	© Staffordshire Ecological Record

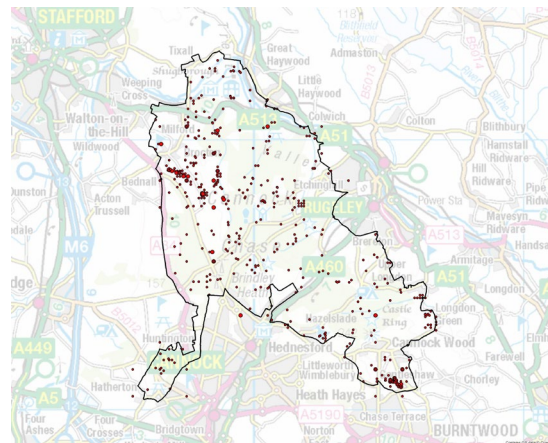
NOTES

List of relevant species provided in the Raw Data folder, along with the returns spreadsheet. Records with a location resolution of 100m or better were included in the peat potential dataset. All other data 1,000m resolution or higher were not included.

Each point feature was transformed to the centre of the relevant OS grid square, buffered and enveloped to produce a 100m square to be consistent with all point features added to the peat deposit layer.

Key species (sphagnum, cottongrass) were added to the High-Potential Peat Deposits category, all other species were included in the general peat potential categories (2-5)

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

13_NATIONAL_LANDSCAPES_SOIL_CARBON_STOCK

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Soil Carbon Stock Model	Cranfield University	2022	-

SUMMARY

Extract from modelled output of soil carbon stock, carried out by Cranfield University in 2022 as part of the Carbon Audit Report for National Landscapes, the goal of which was to provide a baseline assessment of organic carbon storage capacity of and fluxes from habitats present within all 34 Areas of Outstanding Natural Beauty (AONBs) located in England, with emphasis on priority habitats. A sound modelling study into soil carbon storage – data can be used as an indicator for the potential of peat deposit based, as opposed to a high likelihood of presence of peat.

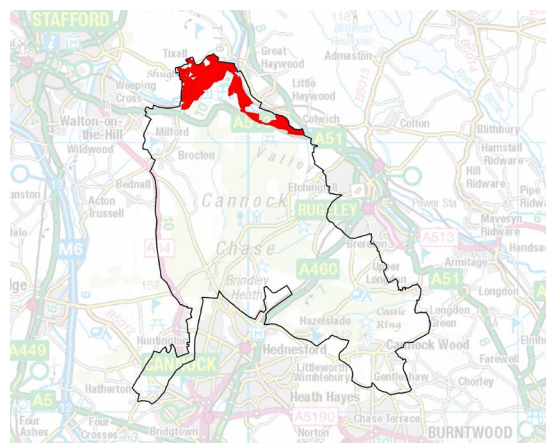
DETAIL

DATA FORMAT	ESRI polygon shapefile
ORIGINAL FORMAT	Pdf map
EXTENT	Complete study area
DESIGNATIONS	Digitized Features intersect Rawbones Meadow SSSI
USAGE RESTRICTIONS	For use by Cannock Chase National Landscape projects only
CITATION	Zawadzka, J.E., Keay, C., Hannam, J., Burgess, P.J., Corstanje, R. (2022). National Landscapes Carbon Audit & Metric (land management), Bedfordshire: Cranfield University.
ATTRIBUTION	Non-priority habitats: data owned by UK Centre for Ecology & Hydrology © Database Right/Copyright UKCEH; Priority habitats: Ordnance Survey MasterMap® (OSMM); Natural England; Soil data: © Cranfield University (NSRI) and for the Controller of HMSO [2022]

NOTES

Features digitized from georeferenced map of carbon stock model (included in raw data folder). Areas with a carbon stock higher than 200 tons of carbon per hectare ($t\ C\ ha^{-1}$) were included, all other areas were excluded. This value based on the average values of carbon stock per habitat type as detailed in the accompanying Carbon Audit Report. All peatland-related habitats have an average carbon stock of at least $500\ t\ C\ ha^{-1}$, so a value of 200 will catch any likely peatland habitats using this model.

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

14_ORDNANCE_SURVEY_BASEMAPPING_FEATURES

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Ordnance Survey (OS) basemapping features relevant to potential peat deposits	Ordnance Survey	n/a	-

SUMMARY

Extract of place names and mapped polygon features from OS Opendata and OS Mastermap relating to potential peat deposits. Data only to be used with other datasets to build a higher likelihood of presence of peat deposit, rather than suggest a peat deposit individually.

DETAIL

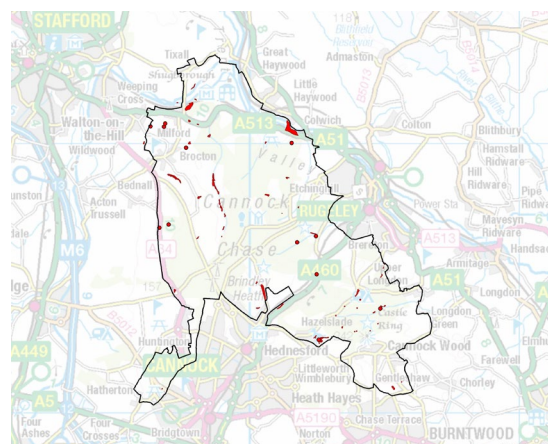
DATA FORMAT	ESRI point and polygon shapefiles
ORIGINAL FORMAT	ESRI shapefile
EXTENT	Complete study area
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI and Gentleshaw Common SSSI
USAGE RESTRICTIONS	Subject to licence
LICENCE	OS Opendata: Open Government Licence for public sector information OS Mastermap: Requires separate OS licence agreement
ATTRIBUTION	Contains Ordnance Survey data © Crown copyright and database right [year].

NOTES

OS Mastermap 'marsh' and 'reed' features were extracted. OS Opendata placename features extracted – place names including the word 'mire', 'bog', 'mere', 'moor', 'wet' were included.

Each point feature was buffered and enveloped to produce a 100m square to be consistent with all point features added to the peat deposit layer.

MAP





PEAT DEPOSIT - RAW DATA INVENTORY

15_ORDNANCE_SURVEY_HISTORIC_MAPPING

DATASET	SOURCE	DATE PUBLISHED	DATE UPDATED
Historic Ordnance Survey mapping: 6 inch map (1880s)	National library of Scotland	n/a	-

SUMMARY

Extract of place names and mapped features relevant to peatland habitats from historic 6-inch 1880s mapping, made available through the National Library of Scotland Mapping Portal. Data only to be used with other datasets to build a higher likelihood of presence of peat deposit, rather than suggest a peat deposit individually.

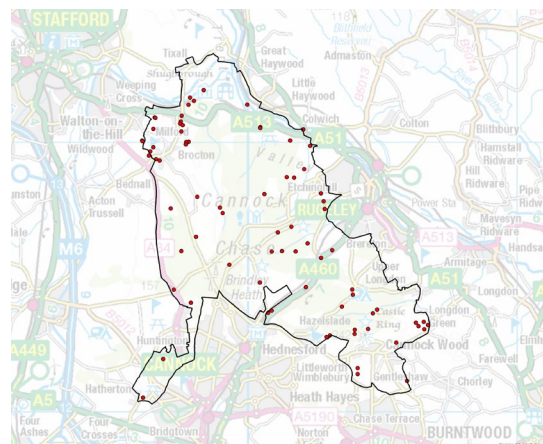
DETAIL

DATA FORMAT	ESRI point shapefile
ORIGINAL FORMAT	Scanned map
EXTENT	Complete study area
DESIGNATIONS	Features intersect Cannock Chase SAC and SSSI and Stafford Brook SSSI
USAGE RESTRICTIONS	No usage restrictions
LICENCE	Creative Commons by Attribution Licence (National Library of Scotland)
ATTRIBUTION	CC-BY-NLS

NOTES

Relevant features digitized to point features. Any feature relating to potential peatland habitats included: 'Marsh', 'Pond', 'Liable to floods' for example. Each point feature was buffered and enveloped to produce a 100m square to be consistent with all point features added to the peat deposit layer.

MAP



APPENDIX 2

List of Species for SER Data Search

Appendix 1 List of Species for SER Data Search

TLIKS	Scientific Name	Common Name
NBNORG0000010013	<i>Acilius sulcatus</i>	<i>Acilius sulcatus</i>
NBNORG0000094741	<i>Acompus rufipes</i>	<i>Acompus rufipes</i>
NBNORG0000019961	<i>Acrometopia wahlbergi</i>	<i>Acrometopia wahlbergi</i>
NBNORG0000087054	<i>Actenicerus sjaelandicus</i>	Marsh Click Beetle
NBNORG0000009954	<i>Acupalpus dubius</i>	<i>Acupalpus dubius</i>
NBNORG0000094744	<i>Adelphocoris seticornis</i>	<i>Adelphocoris seticornis</i>
NBNORG0000094745	<i>Adelphocoris ticinensis</i>	<i>Adelphocoris ticinensis</i>
NHMORG0100008677	<i>Aeshna isoceles</i>	Green-eyed Hawker
NBNORG0000008984	<i>Aeshna juncea</i>	Common Hawker
NBNORG0000087103	<i>Agabus unguicularis</i>	<i>Agabus unguicularis</i>
NBNORG0000087144	<i>Agonum gracile</i>	<i>Agonum gracile</i>
NBNORG0000087148	<i>Agonum thoreyi</i>	<i>Agonum thoreyi</i>
NBNORG0000087276	<i>Anacaena lutescens</i>	<i>Anacaena lutescens</i>
NBNORG0000020243	<i>Anagnota bicolor</i>	<i>Anagnota bicolor</i>
NBNORG0000009825	<i>Anasimyia interpuncta</i>	<i>Anasimyia interpuncta</i>
NBNORG0000008181	<i>Andromeda polifolia</i>	Bog-rosemary
NBNORG0000008065	<i>Angelica sylvestris</i>	Wild Angelica
NBNORG0000021003	<i>Angioneura acerba</i>	Pale Least Blowfly
NBNORG0000021004	<i>Angioneura cyrtoneurina</i>	Dark Least Blowfly
NBNORG0000010510	<i>Anisosticta novemdecimpunctata</i>	Water Ladybird
NBNORG0000072139	<i>Anoplius caviventris</i>	<i>Anoplius caviventris</i>
NBNORG0000041107	<i>Anticheta analis</i>	<i>Anticheta analis</i>
NBNORG0000011564	<i>Aphthona nonstriata</i>	Iris Flea Beetle
NBNORG0000011433	<i>Aromia moschata</i>	Musk Beetle
NHMORG0100004599	<i>Attulus caricis</i>	Sedge Jumper
NBNORG0000087497	<i>Badister dilatatus</i>	<i>Badister dilatatus</i>
NBNORG0000087498	<i>Badister peltatus</i>	<i>Badister peltatus</i>
NBNORG0000091886	<i>Bagous binodulus</i>	<i>Bagous binodulus</i>
NBNORG0000091888	<i>Bagous collignensis</i>	<i>Bagous collignensis</i>
NBNORG0000091891	<i>Bagous frit</i>	<i>Bagous frit</i>
NBNORG0000091879	<i>Bagous glabrirostris</i>	<i>Bagous glabrirostris</i>
NBNORG0000091892	<i>Bagous limosus</i>	<i>Bagous limosus</i>
NBNORG0000091893	<i>Bagous longitarsis</i>	<i>Bagous longitarsis</i>
NBNORG0000091895	<i>Bagous nodulosus</i>	Flowering Rush Weevil
NBNORG0000091882	<i>Bagous puncticollis</i>	<i>Bagous puncticollis</i>
NBNORG0000091896	<i>Bagous subcarinatus</i>	<i>Bagous subcarinatus</i>
NBNORG0000091897	<i>Bagous tempestivus</i>	<i>Bagous tempestivus</i>
NBNORG0000011107	<i>Baryphyma gowerense</i>	<i>Baryphyma gowerense</i>
NBNORG0000041210	<i>Bembidion fumigatum</i>	<i>Bembidion fumigatum</i>
NBNORG0000010074	<i>Beris clavipes</i>	Scarce Orange Legionnaire
NBNORG0000010075	<i>Beris fuscipes</i>	Short-horned Black Legionnaire
NBNORG0000008141	<i>Betula nana</i>	Dwarf Birch
NBNORG0000017791	<i>Biblopectus delhermi</i>	<i>Biblopectus delhermi</i>
NBNORG0000017792	<i>Biblopectus pusillus</i>	<i>Biblopectus pusillus</i>
NBNORG0000017793	<i>Biblopectus spinosus</i>	<i>Biblopectus spinosus</i>
NBNORG0000017794	<i>Biblopectus tenebrosus</i>	<i>Biblopectus tenebrosus</i>
NBNORG0000009911	<i>Blethisa multipunctata</i>	<i>Blethisa multipunctata</i>
NBNORG0000017549	<i>Bryoporus cernuus</i>	<i>Bryoporus cernuus</i>
NBNORG0000007392	<i>Calamagrostis stricta</i>	Narrow Small-reed
NBNORG0000012827	<i>Campsicnemus loripes</i>	<i>Campsicnemus loripes</i>
NBNORG0000012832	<i>Campsicnemus scambus</i>	<i>Campsicnemus scambus</i>
NBNORG0000094883	<i>Capsodes gothicus</i>	<i>Capsodes gothicus</i>
NBNORG0000094887	<i>Capsus wagneri</i>	<i>Capsus wagneri</i>
NBNORG0000007310	<i>Carex acuta</i>	Slender Tufted-sedge
NBNORG0000090297	<i>Carex acuta x elata = C. x proluxa</i>	<i>Carex acuta x elata = C. x proluxa</i>

TLIKS	Scientific Name	Common Name
NBNORG0000052170	<i>Carex acuta x nigra</i>	<i>Carex acuta x nigra</i>
NBNORG0000007292	<i>Carex acutiformis</i>	Lesser Pond-sedge
NBNORG0000089915	<i>Carex acutiformis x acuta = C. x subgracilis</i>	<i>Carex acutiformis x acuta = C. x subgracilis</i>
NBNORG0000090176	<i>Carex acutiformis x riparia = C. x sooi</i>	<i>Carex acutiformis x riparia = C. x sooi</i>
NBNORG0000028238	<i>Carex acutiformis x vesicaria = C. x ducellieri</i>	<i>Carex acutiformis x vesicaria = C. x ducellieri</i>
NBNORG0000047058	<i>Carex appressa</i>	Tall Sedge
NBNORG0000053479	<i>Carex appropinquata</i>	Fibrous Tussock-sedge
NBNORG0000007311	<i>Carex aquatilis</i>	Water Sedge
NBNORG0000053480	<i>Carex aquatilis x acuta</i>	<i>Carex aquatilis x acuta</i>
NBNORG0000090296	<i>Carex aquatilis x bigelowii = C. x limula</i>	<i>Carex aquatilis x bigelowii = C. x limula</i>
NBNORG0000090233	<i>Carex aquatilis x nigra = C. x hibernica</i>	<i>Carex aquatilis x nigra = C. x hibernica</i>
NBNORG0000052188	<i>Carex arenaria</i>	Sand Sedge
NBNORG0000007307	<i>Carex atrata</i>	Black Alpine-sedge
NBNORG0000007308	<i>Carex atrofusca</i>	Scorched Alpine-sedge
NBNORG0000007315	<i>Carex bicolor</i>	Bicoloured Sedge
NBNORG0000053481	<i>Carex bigelowii</i>	Stiff Sedge
NBNORG0000053482	<i>Carex binervis</i>	Green-ribbed Sedge
NBNORG0000013494	<i>Carex binervis x punctata</i>	<i>Carex binervis x punctata</i>
NBNORG0000090276	<i>Carex binervis x viridula = C. x corstorphineii</i>	<i>Carex binervis x viridula = C. x corstorphineii</i>
NBNORG0000047059	<i>Carex brunnea</i>	<i>Carex brunnea</i>
NBNORG00000107923	<i>Carex buehneri</i>	Silver-spiked Sedge
NBNORG0000007306	<i>Carex buxbaumii</i>	Club Sedge
NBNORG0000007325	<i>Carex canescens</i>	White Sedge
NBNORG0000007285	<i>Carex capillaris</i>	Hair Sedge
NBNORG0000007328	<i>Carex capitata</i>	<i>Carex capitata</i>
NBNORG0000053483	<i>Carex caryophyllaea</i>	Spring-sedge
NBNORG00000116088	<i>Carex cespitosa</i>	<i>Carex cespitosa</i>
NBNORG0000053484	<i>Carex chordorrhiza</i>	String Sedge
NBNORG0000053485	<i>Carex crawfordii</i>	Crawford's Sedge
NBNORG0000053486	<i>Carex davalliana</i>	Davall's Sedge
NBNORG0000043853	<i>Carex demissa x C. hostiana</i>	<i>Carex demissa x C. hostiana</i>
NBNORG0000043854	<i>Carex demissa x C. lepidocarpa</i>	<i>Carex demissa x C. lepidocarpa</i>
NBNORG0000043855	<i>Carex demissa x C. serotina</i>	<i>Carex demissa x C. serotina</i>
NBNORG0000007286	<i>Carex depauperata</i>	Starved Wood-sedge
NBNORG0000047060	<i>Carex devia</i>	<i>Carex devia</i>
NBNORG0000047061	<i>Carex deweyana</i>	<i>Carex deweyana</i>
NBNORG0000007317	<i>Carex diandra</i>	Lesser Tussock-sedge
NBNORG0000007304	<i>Carex digitata</i>	Fingered Sedge
NBNORG0000053487	<i>Carex dioica</i>	Dioecious Sedge
NBNORG0000007280	<i>Carex distans</i>	Distant Sedge
NBNORG0000090266	<i>Carex distans x extensa = C. x tornabeni</i>	<i>Carex distans x extensa = C. x tornabeni</i>
NBNORG0000090287	<i>Carex distans x hostiana = C. x muelleriana</i>	<i>Carex distans x hostiana = C. x muelleriana</i>
NBNORG0000090347	<i>Carex distans x viridula = C. x luteola</i>	<i>Carex distans x viridula = C. x luteola</i>
NBNORG0000053488	<i>Carex disticha</i>	Brown Sedge
NBNORG0000053489	<i>Carex divisa</i>	Divided Sedge
NBNORG0000013399	<i>Carex divulsa</i>	<i>Carex divulsa</i>
NBNORG0000053490	<i>Carex divulsa subsp. divulsa</i>	Grey Sedge
NBNORG0000053491	<i>Carex divulsa subsp. leersii</i>	Many-leaved Sedge
NBNORG0000090220	<i>Carex divulsa x remota = C. x emmae</i>	<i>Carex divulsa x remota = C. x emmae</i>
NBNORG0000007323	<i>Carex echinata</i>	Star Sedge
NBNORG0000090031	<i>Carex echinata x curta = C. x biharica</i>	<i>Carex echinata x curta = C. x biharica</i>
NBNORG0000090048	<i>Carex echinata x dioica = C. x gaudiniana</i>	<i>Carex echinata x dioica = C. x gaudiniana</i>
NBNORG0000007309	<i>Carex elata</i>	Tufted-sedge
NBNORG0000007322	<i>Carex elongata</i>	Elongated Sedge
NBNORG0000007302	<i>Carex ericetorum</i>	Rare Spring-sedge
NBNORG0000007284	<i>Carex extensa</i>	Long-bracted Sedge
NBNORG0000007294	<i>Carex filiformis</i>	Downy-fruited Sedge

TLIKS	Scientific Name	Common Name
NBNORG0000053492	<i>Carex flacca</i>	Glaucous Sedge
NBNORG0000047062	<i>Carex flagellifera</i>	<i>Carex flagellifera</i>
NBNORG0000007283	<i>Carex flava</i>	Large Yellow-sedge
NBNORG0000025188	<i>Carex flava</i> agg.	<i>Carex flava</i> agg.
NBNORG0000090388	<i>Carex flava x viridula</i> = <i>C. x alsatica</i>	<i>Carex flava x viridula</i> = <i>C. x alsatica</i>
NBNORG0000026758	<i>Carex fusca</i>	<i>Carex fusca</i>
NBNORG0000053493	<i>Carex glacialis</i>	<i>Carex glacialis</i>
NBNORG0000007299	<i>Carex hirta</i>	Hairy Sedge
NBNORG0000090288	<i>Carex hirta x vesicaria</i> = <i>C. x grossii</i>	<i>Carex hirta x vesicaria</i> = <i>C. x grossii</i>
NBNORG0000007282	<i>Carex hostiana</i>	Tawny Sedge
NBNORG0000028239	<i>Carex hostiana x viridula</i> = <i>C. x fulva</i>	<i>Carex hostiana x viridula</i> = <i>C. x fulva</i>
NBNORG0000047063	<i>Carex hubbardii</i>	<i>Carex hubbardii</i>
NBNORG0000053494	<i>Carex humilis</i>	Dwarf Sedge
NBNORG0000047064	<i>Carex inversa</i>	Knob Sedge
NBNORG0000053495	<i>Carex lachenalii</i>	Hare's-foot Sedge
NBNORG0000090032	<i>Carex lachenalii x curta</i> = <i>C. x helvola</i>	<i>Carex lachenalii x curta</i> = <i>C. x helvola</i>
NBNORG0000053496	<i>Carex laevigata</i>	Smooth-stalked Sedge
NBNORG0000089980	<i>Carex laevigata x binervis</i> = <i>C. x deserta</i>	<i>Carex laevigata x binervis</i> = <i>C. x deserta</i>
NBNORG0000023409	<i>Carex laevigata x pallescens</i>	<i>Carex laevigata x pallescens</i>
NBNORG0000013368	<i>Carex laevigata x viridula</i>	<i>Carex laevigata x viridula</i>
NBNORG0000007300	<i>Carex lasiocarpa</i>	Slender Sedge
NBNORG0000090309	<i>Carex lasiocarpa x riparia</i> = <i>C. x evoluta</i>	<i>Carex lasiocarpa x riparia</i> = <i>C. x evoluta</i>
NBNORG0000007326	<i>Carex leporina</i>	Oval Sedge
NBNORG0000007297	<i>Carex limosa</i>	Bog-sedge
NBNORG0000053497	<i>Carex longebrachiata</i>	Drooping Sedge
NBNORG0000007298	<i>Carex magellanica</i>	Tall Bog-sedge
NBNORG0000107924	<i>Carex magellanica</i> subsp. <i>irrigua</i>	<i>Carex magellanica</i> subsp. <i>irrigua</i>
NBNORG0000028634	<i>Carex malato-belizii</i>	<i>Carex malato-belizii</i>
NBNORG0000007320	<i>Carex maritima</i>	Curved Sedge
NBNORG0000007327	<i>Carex microglochin</i>	Bristle Sedge
NBNORG0000007303	<i>Carex montana</i>	Soft-leaved Sedge
NBNORG0000024708	<i>Carex muricata</i>	Prickly Sedge
NBNORG0000007321	<i>Carex muricata</i> agg.	<i>Carex muricata</i> agg.
NBNORG0000053498	<i>Carex muricata</i> subsp. <i>muricata</i>	Large-fruited Prickly-sedge
NBNORG0000091579	<i>Carex muricata</i> subsp. <i>pairae</i>	Small-fruited Prickly-sedge
NBNORG0000107925	<i>Carex muricata x divulsa</i>	<i>Carex muricata x divulsa</i>
NBNORG0000007313	<i>Carex nigra</i>	Common Sedge
NBNORG0000097426	<i>Carex nigra</i> type (<i>C. acuta</i> or <i>aquatilis</i> or <i>hibernica</i>)	<i>Carex nigra</i> type (<i>C. acuta</i> or <i>aquatilis</i> or <i>hibernica</i>)
NBNORG0000089979	<i>Carex nigra x bigelowii</i> = <i>C. x decolorans</i>	<i>Carex nigra x bigelowii</i> = <i>C. x decolorans</i>
NBNORG0000090056	<i>Carex nigra x elata</i> = <i>C. x turfosa</i>	<i>Carex nigra x elata</i> = <i>C. x turfosa</i>
NBNORG0000091190	<i>Carex nigra x recta</i>	<i>Carex nigra x recta</i>
NBNORG0000053499	<i>Carex norvegica</i>	Close-headed Alpine-sedge
NBNORG0000052189	<i>Carex oedocarpa</i>	<i>Carex oedocarpa</i>
NBNORG0000007305	<i>Carex ornithopoda</i>	Bird's-foot Sedge
NBNORG0000007318	<i>Carex otrubae</i>	False Fox-sedge
NBNORG0000107926	<i>Carex otrubae x divulsa</i>	<i>Carex otrubae x divulsa</i>
NBNORG0000090330	<i>Carex otrubae x remota</i> = <i>C. x pseudoaxillaris</i>	<i>Carex otrubae x remota</i> = <i>C. x pseudoaxillaris</i>
NBNORG0000091191	<i>Carex otrubae x spicata</i>	<i>Carex otrubae x spicata</i>
NBNORG0000091192	<i>Carex otrubae x vulpina</i>	<i>Carex otrubae x vulpina</i>
NBNORG0000007293	<i>Carex pallescens</i>	Pale Sedge
NBNORG0000007295	<i>Carex panicea</i>	Carnation Sedge
NBNORG0000007316	<i>Carex paniculata</i>	Greater Tussock-sedge
NBNORG0000089948	<i>Carex paniculata x appropinquata</i> = <i>C. x rotae</i>	<i>Carex paniculata x appropinquata</i> = <i>C. x rotae</i>
NBNORG0000090033	<i>Carex paniculata x curta</i> = <i>C. x ludibunda</i>	<i>Carex paniculata x curta</i> = <i>C. x ludibunda</i>
NBNORG0000090047	<i>Carex paniculata x diandra</i> = <i>C. x beckmannii</i>	<i>Carex paniculata x diandra</i> = <i>C. x beckmannii</i>
NBNORG0000090373	<i>Carex paniculata x remota</i> (<i>C. x boenninghausiana</i>)	<i>Carex paniculata x remota</i> (<i>C. x boenninghausiana</i>)

TLIKS	Scientific Name	Common Name
NBNORG0000029025	<i>Carex panormitana</i>	Carex panormitana
NBNORG0000053500	<i>Carex pauciflora</i>	Few-flowered Sedge
NBNORG0000053501	<i>Carex pendula</i>	Pendulous Sedge
NBNORG0000007301	<i>Carex pilulifera</i>	Pill Sedge
NBNORG0000007287	<i>Carex pseudocyperus</i>	Cyperus Sedge
NBNORG0000090326	<i>Carex pseudocyperus x rostrata = C. x justii-schmidtii</i>	<i>Carex pseudocyperus x rostrata = C. x justii-schmidtii</i>
NBNORG0000007329	<i>Carex pulicaris</i>	Flea Sedge
NBNORG0000007281	<i>Carex punctata</i>	Dotted Sedge
NBNORG0000053502	<i>Carex rariflora</i>	Mountain Bog-sedge
NBNORG0000007312	<i>Carex recta</i>	Estuarine Sedge
NBNORG0000089952	<i>Carex recta x aquatilis = C. x grantii</i>	<i>Carex recta x aquatilis = C. x grantii</i>
NBNORG0000007324	<i>Carex remota</i>	Remote Sedge
NBNORG0000007291	<i>Carex riparia</i>	Greater Pond-sedge
NBNORG0000047608	<i>Carex riparia x rostrata</i>	<i>Carex riparia x rostrata</i>
NBNORG0000090363	<i>Carex riparia x vesicaria = C. x csomadensis</i>	<i>Carex riparia x vesicaria = C. x csomadensis</i>
NBNORG0000007288	<i>Carex rostrata</i>	Bottle Sedge
NBNORG0000090207	<i>Carex rostrata x vesicaria = C. x involuta</i>	<i>Carex rostrata x vesicaria = C. x involuta</i>
NBNORG0000053503	<i>Carex rupestris</i>	Rock Sedge
NBNORG0000091580	<i>Carex salina</i>	Saltmarsh Sedge
NBNORG0000007290	<i>Carex saxatilis</i>	Russet Sedge
NBNORG0000091632	<i>Carex saxatilis x viridula</i>	<i>Carex saxatilis x viridula</i>
NBNORG0000091193	<i>Carex saxatilis x viridula subsp. brachyrrhyncha</i>	<i>Carex saxatilis x viridula subsp. brachyrrhyncha</i>
NBNORG0000100113	<i>Carex secalina</i>	Carex secalina
NBNORG0000047065	<i>Carex secta</i>	Carex secta
NBNORG0000047066	<i>Carex solandri</i>	Carex solandri
NBNORG0000053504	<i>Carex spicata</i>	Spiked Sedge
NBNORG0000053505	<i>Carex strigosa</i>	Thin-spiked Wood-sedge
NBNORG0000053506	<i>Carex sylvatica</i>	Wood-sedge
NBNORG0000047067	<i>Carex tereticaulis</i>	Carex tereticaulis
NBNORG0000043856	<i>Carex torfosa</i>	Carex torfosa
NBNORG0000007314	<i>Carex trinervis</i>	Three-nerved Sedge
NBNORG0000007296	<i>Carex vaginata</i>	Sheathed Sedge
NBNORG0000007289	<i>Carex vesicaria</i>	Bladder-sedge
NBNORG0000090184	<i>Carex vesicaria x saxatilis = C. x grahamii</i>	Mountain Bladder-sedge
NBNORG0000047068	<i>Carex virgata</i>	<i>Carex virgata</i>
NBNORG0000053507	<i>Carex viridula</i>	Yellow Sedge
NBNORG0000053508	<i>Carex viridula subsp. brachyrrhyncha</i>	Long-stalked Yellow-sedge
NBNORG0000053509	<i>Carex viridula subsp. oedocarpa</i>	Common Yellow-sedge
NBNORG0000053510	<i>Carex viridula subsp. viridula</i>	Small-fruited Yellow-sedge
NBNORG0000007319	<i>Carex vulpina</i>	True Fox-sedge
NBNORG0000053511	<i>Carex vulpinoidea</i>	American Fox-sedge
NBNORG0000043857	<i>Carex x schatzii</i>	<i>Carex x schatzii</i>
NBNORG0000017395	<i>Carpelimus lindrothi</i>	<i>Carpelimus lindrothi</i>
NBNORG0000053522	<i>Carum verticillatum</i>	Whorled Caraway
NBNORG0000041398	<i>Centromerus semiater</i>	<i>Centromerus semiater</i>
NBNORG0000087842	<i>Cercyon sternalis</i>	<i>Cercyon sternalis</i>
NBNORG0000008972	<i>Ceriatrigon tenellum</i>	Small Red Damselfly
NBNORG0000020898	<i>Ceromya silacea</i>	<i>Ceromya silacea</i>
NBNORG0000011612	<i>Chaetocnema aerosa</i>	<i>Chaetocnema aerosa</i>
NBNORG0000011619	<i>Chaetocnema subcoerulea</i>	<i>Chaetocnema subcoerulea</i>
NBNORG0000019951	<i>Chamaemyia elegans</i>	<i>Chamaemyia elegans</i>
NBNORG0000019952	<i>Chamaemyia fasciata</i>	<i>Chamaemyia fasciata</i>
NBNORG0000019958	<i>Chamaemyia paludosa</i>	<i>Chamaemyia paludosa</i>
NBNORG0000009783	<i>Cheilosia mutabilis</i>	<i>Cheilosia mutabilis</i>
NBNORG0000009788	<i>Cheilosia pubera</i>	<i>Cheilosia pubera</i>
NHMORG0100004485	<i>Chilo thorax distinctus</i>	<i>Aphodius (Chilo thorax) distinctus</i>

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NBNORG0000009962	<i>Chlaenius tristis</i>	Black Night-runner
NBNORG0000020750	<i>Chlorops gracilis</i>	<i>Chlorops gracilis</i>
NBNORG0000020752	<i>Chlorops planifrons</i>	<i>Chlorops planifrons</i>
NBNORG0000041502	<i>Chlorops rossicus</i>	<i>Chlorops rossicus</i>
NBNORG0000103030	<i>Chorisops nagatomii</i>	Bright Four-spined Legionnaire
NBNORG0000026764	<i>Chrysogaster cimiteriorum</i>	<i>Chrysogaster cimiteriorum</i>
NBNORG0000009808	<i>Chrysogaster solstitialis</i>	<i>Chrysogaster solstitialis</i>
NBNORG0000009809	<i>Chrysogaster virescens</i>	<i>Chrysogaster virescens</i>
NBNORG0000010119	<i>Chrysopilus cristatus</i>	Black Snipefly
NBNORG0000010133	<i>Chrysops relictus</i>	Twin-lobed Deerfly
NBNORG0000019945	<i>Chyliza vittata</i>	<i>Chyliza vittata</i>
NBNORG0000008224	<i>Cicendia filiformis</i>	Yellow Centaury
NBNORG0000008601	<i>Cirsium dissectum</i>	Meadow Thistle
NBNORG0000007279	<i>Cladium mariscus</i>	Great Fen-sedge
NBNORG0000012611	<i>Clinocera fontinalis</i>	<i>Clinocera fontinalis</i>
NBNORG0000010838	<i>Clubiona juvenis</i>	<i>Clubiona juvenis</i>
NBNORG0000010827	<i>Clubiona rosserae</i>	Rosser's Sac-spider
NBNORG0000010497	<i>Coccidula rufa</i>	<i>Coccidula rufa</i>
NBNORG0000010498	<i>Coccidula scutellata</i>	<i>Coccidula scutellata</i>
NBNORG0000012979	<i>Colobaea bifasciella</i>	<i>Colobaea bifasciella</i>
NBNORG0000041611	<i>Conisternum decipiens</i>	<i>Conisternum decipiens</i>
NBNORG0000041613	<i>Conisternum tinctinerve</i>	<i>Conisternum tinctinerve</i>
NHMORG0100004377	<i>Contacyphon hilaris</i>	<i>Contacyphon hilaris</i>
NHMORG0100003929	<i>Contacyphon padi</i>	<i>Contacyphon padi</i>
NBNORG0000021064	<i>Cordilura aemula</i>	<i>Cordilura aemula</i>
NBNORG0000021066	<i>Cordilura atrata</i>	<i>Cordilura atrata</i>
NBNORG0000041625	<i>Cordilura picticornis</i>	<i>Cordilura picticornis</i>
NBNORG0000021073	<i>Cordilura rufimana</i>	<i>Cordilura rufimana</i>
NBNORG0000021074	<i>Cordilura ustulata</i>	<i>Cordilura hyalinipennis</i>
NBNORG0000021085	<i>Cosmetopus dentimanus</i>	<i>Cosmetopus dentimanus</i>
NBNORG0000008651	<i>Crepis paludosa</i>	Marsh Hawk's-beard
NBNORG0000010998	<i>Crustulina sticta</i>	<i>Crustulina sticta</i>
NBNORG0000011499	<i>Cryptocephalus exiguus</i>	Pashford Pot Beetle
NBNORG0000011305	<i>Cymus aurescens</i>	<i>Cymus aurescens</i>
NBNORG0000017587	<i>Cypha discoidea</i>	<i>Cypha discoidea</i>
NBNORG0000053979	<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid
NBNORG0000053991	<i>Dactylorhiza praetermissa</i>	Southern Marsh-orchid
NBNORG0000092225	<i>Datonychus angulosus</i>	<i>Datonychus angulosus</i>
NHMORG0100003844	<i>Datonychus arquata</i>	<i>Datonychus arquata</i>
NBNORG0000088001	<i>Demetrias monostigma</i>	<i>Demetrias monostigma</i>
NBNORG0000054037	<i>Deschampsia setacea</i>	Bog Hair-grass
NBNORG0000013005	<i>Dichetophora finlandica</i>	<i>Dichetophora finlandica</i>
NBNORG0000041783	<i>Dicranomyia distendens</i>	<i>Dicranomyia distendens</i>
NBNORG0000011177	<i>Diplocephalus protuberans</i>	<i>Diplocephalus protuberans</i>
NBNORG0000011735	<i>Dixella amphibia</i>	<i>Dixella amphibia</i>
NBNORG0000012621	<i>Dolichopus atratus</i>	<i>Dolichopus atratus</i>
NBNORG0000012622	<i>Dolichopus atripes</i>	<i>Dolichopus atripes</i>
NBNORG0000012623	<i>Dolichopus brevipennis</i>	<i>Dolichopus brevipennis</i>
NBNORG0000012625	<i>Dolichopus campestris</i>	<i>Dolichopus campestris</i>
NBNORG0000012635	<i>Dolichopus lineatocornis</i>	<i>Dolichopus lineatocornis</i>
NBNORG0000012647	<i>Dolichopus phaeopus</i>	<i>Dolichopus phaeopus</i>
NBNORG0000012648	<i>Dolichopus picipes</i>	<i>Dolichopus picipes</i>
NBNORG0000012655	<i>Dolichopus signatus</i>	<i>Dolichopus signatus</i>
NBNORG0000012664	<i>Dolichopus vitripennis</i>	<i>Dolichopus vitripennis</i>
NBNORG0000010962	<i>Dolomedes plantarius</i>	Fen Raft Spider
NBNORG0000011472	<i>Donacia semicuprea</i>	<i>Donacia semicuprea</i>
NBNORG0000011196	<i>Donacochara speciosa</i>	<i>Donacochara speciosa</i>

TLIKS	Scientific Name	Common Name
NBNORG0000026830	<i>Drosera anglica</i>	Great Sundew
NBNORG0000013178	<i>Drosera binata</i>	Forked Sundew
NBNORG0000013329	<i>Drosera capensis</i>	Cape Sundew
NBNORG0000007968	<i>Drosera intermedia</i>	Oblong-leaved Sundew
NBNORG0000007967	<i>Drosera rotundifolia</i>	Round-leaved Sundew
NBNORG0000089943	<i>Drosera rotundifolia</i> x <i>anglica</i> = <i>D. x obovata</i>	Hybrid Sundew
NBNORG0000090090	<i>Drosera rotundifolia</i> x <i>intermedia</i> = <i>D. x belezeana</i>	Sundew
NBNORG0000054102	<i>Dryopteris cristata</i>	Crested Buckler-fern
NBNORG0000088099	<i>Dyschirius globosus</i>	<i>Dyschirius globosus</i>
NBNORG0000021055	<i>Eggisops pecchiolii</i>	False Woodlouse-fly
NBNORG0000041867	<i>Elachiptera austriaca</i>	<i>Elachiptera austriaca</i>
NBNORG0000088126	<i>Elaphrus uliginosus</i>	<i>Elaphrus uliginosus</i>
NBNORG0000054150	<i>Eleocharis multicaulis</i>	Many-stalked Spike-rush
NBNORG0000054930	<i>Eleogiton fluitans</i>	Floating Club-rush
NBNORG0000013009	<i>Elgiva cucularia</i>	<i>Elgiva cucularia</i>
NBNORG0000104437	<i>Enoplognatha caricis</i>	<i>Enoplognatha caricis</i>
NBNORG0000011093	<i>Entelecara omissa</i>	<i>Entelecara omissa</i>
NBNORG0000054201	<i>Epilobium brunnescens</i>	New Zealand Willowherb
NBNORG0000054214	<i>Epipactis palustris</i>	Marsh Helleborine
NBNORG0000007070	<i>Equisetum arvense</i>	Field Horsetail
NBNORG0000090258	<i>Equisetum arvense</i> x <i>palustre</i> = <i>E. x rothmaleri</i>	<i>Equisetum arvense</i> x <i>palustre</i> = <i>E. x rothmaleri</i>
NBNORG0000090191	<i>Equisetum arvense</i> x <i>telmateia</i> = <i>E. x robertsii</i>	<i>Equisetum arvense</i> x <i>telmateia</i> = <i>E. x robertsii</i>
NBNORG0000007066	<i>Equisetum fluvatile</i>	Water Horsetail
NBNORG0000089959	<i>Equisetum fluvatile</i> x <i>arvense</i> = <i>E. x litorale</i>	Shore Horsetail
NBNORG0000090257	<i>Equisetum fluvatile</i> x <i>palustre</i> = <i>E. x dycei</i>	<i>Equisetum fluvatile</i> x <i>palustre</i> = <i>E. x dycei</i>
NBNORG0000090190	<i>Equisetum fluvatile</i> x <i>telmateia</i> = <i>E. x willmotii</i>	<i>Equisetum fluvatile</i> x <i>telmateia</i> = <i>E. x willmotii</i>
NBNORG0000007064	<i>Equisetum hyemale</i>	Rough Horsetail
NBNORG0000028259	<i>Equisetum hyemale</i> x <i>ramosissimum</i> = <i>E. x moorei</i>	Moore's Horsetail
NBNORG0000028260	<i>Equisetum hyemale</i> x <i>variegatum</i> = <i>E. x trachyodon</i>	Mackay's Horsetail
NBNORG0000007067	<i>Equisetum palustre</i>	Marsh Horsetail
NBNORG0000090356	<i>Equisetum palustre</i> x <i>telmateia</i> = <i>E. x font-queri</i>	<i>Equisetum palustre</i> x <i>telmateia</i> = <i>E. x font-queri</i>
NBNORG0000007069	<i>Equisetum pratense</i>	Shady Horsetail
NBNORG0000090355	<i>Equisetum pratense</i> x <i>sylvaticum</i> = <i>E. x mildeanum</i>	<i>Equisetum pratense</i> x <i>sylvaticum</i> = <i>E. x mildeanum</i>
NBNORG0000007065	<i>Equisetum ramosissimum</i>	Branched Horsetail
NBNORG0000116286	<i>Equisetum ramosissimum</i> x <i>E. variegatum</i> = <i>E. x meridionale</i>	<i>Equisetum ramosissimum</i> x <i>E. variegatum</i> = <i>E. x meridionale</i>
NHMORG0100006788	<i>Equisetum scirpoides</i>	<i>Equisetum scirpoides</i>
NBNORG0000007068	<i>Equisetum sylvaticum</i>	Wood Horsetail
NBNORG0000090259	<i>Equisetum sylvaticum</i> x <i>telmateia</i> = <i>E. x bowmanii</i>	<i>Equisetum sylvaticum</i> x <i>telmateia</i> = <i>E. x bowmanii</i>
NBNORG0000007071	<i>Equisetum telmateia</i>	Great Horsetail
NBNORG0000107969	<i>Equisetum torgesianum</i>	<i>Equisetum torgesianum</i>
NBNORG0000054220	<i>Equisetum variegatum</i>	Variegated Horsetail
NBNORG0000054251	<i>Erica erigena</i>	Irish Heath
NBNORG0000008187	<i>Erica mackaiana</i>	Mackay's Heath
NBNORG0000008186	<i>Erica tetralix</i>	Cross-leaved Heath
NBNORG0000017470	<i>Erichsonius cinerascens</i>	<i>Erichsonius cinerascens</i>
NBNORG0000011192	<i>Erigone welchi</i>	Welch's Money-spider
NBNORG0000011170	<i>Erigonella ignobilis</i>	<i>Erigonella ignobilis</i>
NBNORG0000007150	<i>Eriocaulon aquaticum</i>	Pipewort
NBNORG0000007263	<i>Eriophorum angustifolium</i>	Common Cottongrass
NBNORG0000054267	<i>Eriophorum gracile</i>	Slender Cottongrass
NBNORG0000007264	<i>Eriophorum latifolium</i>	Broad-leaved Cottongrass
NBNORG0000007265	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass
NBNORG0000041929	<i>Erioptera flavata</i>	<i>Erioptera flavata</i>

TLIKS	Scientific Name	Common Name
NBNORG0000010428	<i>Erioptera fuscipennis</i>	<i>Erioptera fuscipennis</i>
NBNORG0000025308	<i>Erioptera lutea</i>	<i>Erioptera lutea</i>
NBNORG0000009830	<i>Eristalinus sepulchralis</i>	<i>Eristalinus sepulchralis</i>
NHMORG0100004161	<i>Eristalis abusiva</i>	<i>Eristalis abusiva</i>
NBNORG0000009832	<i>Eristalis arbustorum</i>	<i>Eristalis arbustorum</i>
NBNORG0000009834	<i>Eristalis horticola</i>	<i>Eristalis horticola</i>
NHMORG0100004162	<i>Eristalis intricaria</i>	<i>Eristalis intricaria</i>
NBNORG0000041931	<i>Eristalis nemorum</i>	<i>Eristalis interrupta</i>
NBNORG0000009836	<i>Eristalis pertinax</i>	<i>Eristalis pertinax</i>
NBNORG0000010705	<i>Erotesis baltica</i>	<i>Erotesis baltica</i>
NBNORG0000017420	<i>Euaesthetus bipunctatus</i>	<i>Euaesthetus bipunctatus</i>
NBNORG0000018385	<i>Eubrychius velutus</i>	<i>Eubrychius velutus</i>
NBNORG0000041986	<i>Euphyllidorea lineola</i>	<i>Euphyllidorea lineola</i>
NBNORG0000041987	<i>Euphyllidorea meigenii</i>	<i>Euphyllidorea meigenii</i>
NBNORG0000096007	<i>Eurysula lurida</i>	<i>Eurysula lurida</i>
NBNORG0000008225	<i>Exaculum pusillum</i>	Guernsey Centaury
NBNORG0000007855	<i>Filipendula ulmaria</i>	Meadowsweet
NBNORG0000017510	<i>Gabrius bishopi</i>	<i>Gabrius bishopi</i>
NBNORG0000088229	<i>Gabrius trossulus</i>	<i>Gabrius trossulus</i>
NBNORG0000008465	<i>Galium constrictum</i>	Slender Marsh-bedstraw
NBNORG0000008464	<i>Galium palustre</i>	Marsh-bedstraw
NBNORG0000020203	<i>Geomyza majuscula</i>	<i>Geomyza majuscula</i>
NBNORG0000095103	<i>Gerris (Gerriselloides) lateralis</i>	<i>Gerris (Gerriselloides) lateralis</i>
NBNORG0000021102	<i>Gimnomera tarsea</i>	<i>Gimnomera tarsea</i>
NBNORG0000011161	<i>Gongyliellum murcidum</i>	<i>Gongyliellum murcidum</i>
NBNORG0000010406	<i>Gonomyia dentata</i>	<i>Gonomyia dentata</i>
NBNORG00000100804	<i>Grammotaulius nitidus</i>	<i>Grammotaulius nitidus</i>
NBNORG0000009652	<i>Gryllotalpa gryllotalpa</i>	Mole Cricket
NBNORG0000018425	<i>Gymnetron beccabungae</i>	<i>Gymnetron beccabungae</i>
NBNORG0000018429	<i>Gymnetron veronicae</i>	Brooklime Gall Weevil
NBNORG0000018430	<i>Gymnetron villosulum</i>	<i>Gymnetron villosulum</i>
NBNORG0000012668	<i>Gymnopternus aerosus</i>	<i>Gymnopternus aerosus</i>
NBNORG0000012675	<i>Gymnopternus cupreus</i>	<i>Gymnopternus cupreus</i>
NBNORG0000088287	<i>Hadrognathus longipalpis</i>	<i>Hadrognathus longipalpis</i>
NBNORG0000010139	<i>Haematopota pluvialis</i>	Notch-horned Cleg
NBNORG0000007240	<i>Hammarbya paludosa</i>	Bog Orchid
NBNORG0000095136	<i>Hebrus (Hebrus) pusillus</i>	Semi-aquatic bugs
NBNORG0000010343	<i>Helius flavus</i>	<i>Helius flavus</i>
NBNORG0000010045	<i>Helochares punctatus</i>	<i>Helochares punctatus</i>
NBNORG0000009840	<i>Helophilus hybridus</i>	<i>Helophilus hybridus</i>
NBNORG0000009841	<i>Helophilus pendulus</i>	<i>Helophilus pendulus</i>
NBNORG0000009842	<i>Helophilus trivittatus</i>	<i>Helophilus trivittatus</i>
NBNORG0000060557	<i>Hesperocorixa castanea</i>	<i>Hesperocorixa castanea</i>
NBNORG0000012531	<i>Hilara chorica</i>	<i>Hilara chorica</i>
NBNORG0000012537	<i>Hilara flavipes</i>	<i>Hilara flavipes</i>
NBNORG0000010143	<i>Hybomitra bimaculata</i>	Hairy-legged Horsefly
NBNORG0000010145	<i>Hybomitra distinguenda</i>	Bright Horsefly
NBNORG0000042178	<i>Hybomitra muehlfeldi</i>	Broadland Horsefly
NBNORG0000060560	<i>Hydrometra gracilentia</i>	Lesser Water Measurer
NHMORG0100003835	<i>Hydronomus alismatis</i>	<i>Bagous alismatis</i>
NBNORG0000088425	<i>Hydroporus gyllenhali</i>	<i>Hydroporus gyllenhali</i>
NBNORG0000009988	<i>Hydroporus memnonius</i>	<i>Hydroporus memnonius</i>
NBNORG0000088430	<i>Hydroporus nigrita</i>	<i>Hydroporus nigrita</i>
NBNORG0000009992	<i>Hydroporus pubescens</i>	<i>Hydroporus pubescens</i>
NBNORG0000009995	<i>Hydroporus umbrosus</i>	<i>Hydroporus umbrosus</i>
NBNORG0000010937	<i>Hygrolycosa rubrofasciata</i>	<i>Hygrolycosa rubrofasciata</i>
NBNORG0000072534	<i>Hylaeus cornutus</i>	Spined Hylaeus

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NBNORG0000072548	<i>Hylaeus pectoralis</i>	Reed Yellow-face Bee
NBNORG0000072543	<i>Hylaeus pictipes</i>	Little Yellow-face Bee
NBNORG0000092452	<i>Hylobius transversovittatus</i>	<i>Hylobius transversovittatus</i>
NBNORG0000092460	<i>Hypera diversipunctata</i>	<i>Hypera diversipunctata</i>
NBNORG0000007608	<i>Hypericum canadense</i>	Irish St John's-wort
NBNORG0000007607	<i>Hypericum elodes</i>	Marsh St John's-wort
NBNORG0000054898	<i>Hypericum undulatum</i>	Wavy St John's-wort
NBNORG0000052247	<i>Hypomma fulvum</i>	<i>Hypomma fulvum</i>
NBNORG0000011056	<i>Hypsosinga heri</i>	<i>Hypsosinga heri</i>
NBNORG0000013013	<i>Ilione albiseta</i>	<i>Ilione albiseta</i>
NBNORG0000088491	<i>Ilybius montanus</i>	<i>Ilybius montanus</i>
NBNORG0000088492	<i>Ilybius quadriguttatus</i>	<i>Ilybius quadriguttatus</i>
NBNORG0000088505	<i>Ischnosoma longicorne</i>	<i>Ischnosoma longicorne</i>
NBNORG0000007061	<i>Isoetes lacustris</i>	<i>Isoetes lacustris</i>
NBNORG0000007199	<i>Juncus acutiflorus</i>	Sharp-flowered Rush
NBNORG0000116357	<i>Juncus acutiflorus/articulatus</i>	<i>Juncus acutiflorus/articulatus</i>
NBNORG0000007196	<i>Juncus acutus</i>	Sharp Rush
NBNORG0000007201	<i>Juncus alpinoarticulatus</i>	Alpine Rush
NBNORG0000116769	<i>Juncus alpinoarticulatus subsp. alpinoarticulatus</i>	<i>Juncus alpinoarticulatus subsp. alpinoarticulatus</i>
NBNORG0000116708	<i>Juncus alpinoarticulatus subsp. rariflorus</i>	<i>Juncus alpinoarticulatus subsp. rariflorus</i>
NBNORG0000090271	<i>Juncus alpinoarticulatus x articulatus = J. x buchenau</i>	<i>Juncus alpinoarticulatus x articulatus = J. x buchenau</i>
NBNORG0000007188	<i>Juncus ambiguus</i>	Frog Rush
NBNORG0000044242	<i>Juncus aplinoarticulatus</i>	<i>Juncus aplinoarticulatus</i>
NBNORG0000054946	<i>Juncus aridicola</i>	Tussock Rush
NBNORG0000007200	<i>Juncus articulatus</i>	Jointed Rush
NBNORG0000089916	<i>Juncus articulatus x acutiflorus = J. x surrejanus</i>	<i>Juncus articulatus x acutiflorus = J. x surrejanus</i>
NBNORG0000054947	<i>Juncus australis</i>	Austral Rush
NBNORG0000007194	<i>Juncus balticus</i>	Baltic Rush
NBNORG0000090354	<i>Juncus balticus x effusus = J. x obotritorum</i>	<i>Juncus balticus x effusus = J. x obotritorum</i>
NBNORG0000013279	<i>Juncus balticus x inflexus</i>	<i>Juncus balticus x inflexus</i>
NBNORG0000007203	<i>Juncus biglumis</i>	Two-flowered Rush
NBNORG0000026903	<i>Juncus bufonius</i>	Toad Rush
NBNORG0000052240	<i>Juncus bufonius agg.</i>	Toad Rush agg.
NBNORG0000007202	<i>Juncus bulbosus</i>	Bulbous Rush
NBNORG0000116770	<i>Juncus bulbosus subsp. bulbosus</i>	<i>Juncus bulbosus subsp. bulbosus</i>
NBNORG0000007197	<i>Juncus capitatus</i>	Dwarf Rush
NBNORG0000054948	<i>Juncus castaneus</i>	Chestnut Rush
NBNORG0000026904	<i>Juncus communis</i>	<i>Juncus communis</i>
NBNORG0000007185	<i>Juncus compressus</i>	Round-fruited Rush
NBNORG0000007192	<i>Juncus conglomeratus</i>	Compact Rush
NBNORG0000042235	<i>Juncus conglomeratus var. conglomeratus</i>	<i>Juncus conglomeratus var. conglomeratus</i>
NBNORG0000023494	<i>Juncus conglomeratus var. subuliflorus</i>	Compact Rush
NBNORG0000054949	<i>Juncus continuus</i>	<i>Juncus continuus</i>
NBNORG0000046365	<i>Juncus distegus</i>	<i>Juncus distegus</i>
NBNORG0000007191	<i>Juncus effusus</i>	Soft-rush
NBNORG0000042236	<i>Juncus effusus var. effusus</i>	<i>Juncus effusus var. effusus</i>
NBNORG0000042237	<i>Juncus effusus var. spiralis</i>	<i>Juncus effusus var. spiralis</i>
NBNORG0000013490	<i>Juncus effusus var. subglomeratus</i>	<i>Juncus effusus var. subglomeratus</i>
NBNORG0000090011	<i>Juncus effusus x conglomeratus = J. x kern-reichgeltii</i>	<i>Juncus effusus x conglomeratus = J. x kern-reichgeltii</i>
NBNORG0000008929	<i>Juncus effusus x pallidus</i>	<i>Juncus effusus x pallidus</i>
NBNORG0000054950	<i>Juncus ensifolius</i>	Sword-leaved Rush
NBNORG0000007193	<i>Juncus filiformis</i>	Thread Rush
NBNORG0000054951	<i>Juncus flavidus</i>	<i>Juncus flavidus</i>
NBNORG0000007189	<i>Juncus foliosus</i>	Leafy Rush
NBNORG0000007186	<i>Juncus gerardii</i>	Saltmarsh Rush
NBNORG0000054952	<i>Juncus gregiflorus</i>	<i>Juncus gregiflorus</i>

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NBNORG0000046366	<i>Juncus hybridus</i>	<i>Juncus hybridus</i>
NBNORG0000046367	<i>Juncus imbricatus</i>	<i>Juncus imbricatus</i>
NBNORG0000007190	<i>Juncus inflexus</i>	Hard Rush
NBNORG0000090054	<i>Juncus inflexus x effusus = J. x diffusus</i>	<i>Juncus inflexus x effusus = J. x diffusus</i>
NBNORG0000023435	<i>Juncus inflexus x pallidus</i>	<i>Juncus inflexus x pallidus</i>
NBNORG0000116338	<i>Juncus inflexus/effusus/conglomeratus</i>	Hard Rush / Soft Rush / Compact Rush
NBNORG0000054953	<i>Juncus involucratus</i>	<i>Juncus involucratus</i>
NBNORG0000007195	<i>Juncus maritimus</i>	Sea Rush
NBNORG0000047560	<i>Juncus maritimus var. atlanticus</i>	<i>Juncus maritimus var. atlanticus</i>
NBNORG0000047561	<i>Juncus maritimus var. maritimus</i>	<i>Juncus maritimus var. maritimus</i>
NBNORG0000046368	<i>Juncus noname</i>	<i>Juncus noname</i>
NBNORG0000054954	<i>Juncus ochrocoleus</i>	<i>Juncus ochrocoleus</i>
NBNORG0000054955	<i>Juncus oxycarpus</i>	<i>Juncus oxycarpus</i>
NBNORG0000054956	<i>Juncus pallidus</i>	Great Soft-rush
NBNORG0000046369	<i>Juncus pauciflorus</i>	Loose-flowered Rush
NBNORG0000054957	<i>Juncus planifolius</i>	Broad-leaved Rush
NBNORG0000054958	<i>Juncus procerus</i>	<i>Juncus procerus</i>
NBNORG0000054959	<i>Juncus pygmaeus</i>	Pigmy Rush
NBNORG0000046370	<i>Juncus radula</i>	Hoary Rush
NBNORG0000054960	<i>Juncus sarophorus</i>	<i>Juncus sarophorus</i>
NBNORG0000007183	<i>Juncus squarrosus</i>	Heath Rush
NBNORG0000007198	<i>Juncus subnodulosus</i>	Blunt-flowered Rush
NBNORG0000054961	<i>Juncus subsecundus</i>	Fingered Rush
NBNORG0000054962	<i>Juncus subulatus</i>	Somerset Rush
NBNORG0000007184	<i>Juncus tenuis</i>	Slender Rush
NBNORG0000007187	<i>Juncus trifidus</i>	Three-leaved Rush
NBNORG0000007204	<i>Juncus triglumis</i>	Three-flowered Rush
NBNORG0000046371	<i>Juncus uruguensis</i>	<i>Juncus uruguensis</i>
NBNORG0000054963	<i>Juncus usitatus</i>	<i>Juncus usitatus</i>
NBNORG0000046372	<i>Juncus vaginatus</i>	Clustered Rush
NBNORG0000029060	<i>Juncus valvatus</i>	<i>Juncus valvatus</i>
NBNORG0000104443	<i>Karita paludosa</i>	<i>Karita paludosa</i>
NBNORG0000095189	<i>Lamprolax picea</i>	<i>Lamprolax picea</i>
NBNORG0000088547	<i>Lathrobium elongatum</i>	<i>Lathrobium elongatum</i>
NBNORG0000088548	<i>Lathrobium fovulum</i>	<i>Lathrobium fovulum</i>
NBNORG0000088551	<i>Lathrobium impressum</i>	<i>Lathrobium impressum</i>
NBNORG0000088555	<i>Lathrobium rufipenne</i>	<i>Lathrobium rufipenne</i>
NBNORG0000009811	<i>Lejogaster metallina</i>	<i>Lejogaster metallina</i>
NBNORG0000026915	<i>Lejogaster tarsata</i>	<i>Lejogaster tarsata</i>
NBNORG0000008975	<i>Lestes dryas</i>	Scarce Emerald Damselfly
NBNORG0000008995	<i>Libellula fulva</i>	Scarce Chaser
NBNORG0000010650	<i>Limnephilus binotatus</i>	<i>Limnephilus binotatus</i>
NBNORG0000010662	<i>Limnephilus ignavus</i>	<i>Limnephilus ignavus</i>
NBNORG0000010668	<i>Limnephilus pati</i>	<i>Limnephilus pati</i>
NBNORG0000010674	<i>Limnephilus tauricus</i>	<i>Limnephilus tauricus</i>
NBNORG0000104448	<i>Liocranoeca striata</i>	<i>Liocranoeca striata</i>
NBNORG0000088628	<i>Liopterus haemorrhoidalis</i>	<i>Liopterus haemorrhoidalis</i>
NBNORG0000055163	<i>Liparis loeselii</i>	Fen Orchid
NBNORG0000028358	<i>Lispocephala falculata</i>	<i>Lispocephala falculata</i>
NBNORG0000092568	<i>Lixus paraplecticus</i>	<i>Lixus paraplecticus</i>
NBNORG0000008452	<i>Lobelia urens</i>	Heath Lobelia
NBNORG0000011570	<i>Longitarsus brunneus</i>	<i>Longitarsus brunneus</i>
NBNORG0000011595	<i>Longitarsus rutilus</i>	<i>Longitarsus rutilus</i>
NHMORG0100003802	<i>Longitarsus strigicollis</i>	<i>Longitarsus fowleri</i>
NBNORG0000011157	<i>Lophomma punctatum</i>	<i>Lophomma punctatum</i>
NBNORG0000007975	<i>Ludwigia palustris</i>	Hampshire-purslane
NBNORG0000007057	<i>Lycopodiella inundata</i>	Marsh Clubmoss

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NBNORG0000008212	<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife
NBNORG0000011604	<i>Lytharia salicariae</i>	Loosestrife Flea Beetle
NBNORG0000072620	<i>Macropis europaea</i>	Yellow Loosestrife Bee
NBNORG0000011237	<i>Maro sublestus</i>	<i>Maro sublestus</i>
NBNORG0000010908	<i>Marpissa radiata</i>	<i>Marpissa radiata</i>
NBNORG0000011114	<i>Maso gallicus</i>	<i>Maso gallicus</i>
NBNORG0000042460	<i>Melanogaster hirtella</i>	<i>Melanogaster hirtella</i>
NBNORG0000008231	<i>Menyanthes trifoliata</i>	Bogbean
NBNORG0000009897	<i>Microdon devius</i>	<i>Microdon devius</i>
NBNORG0000017307	<i>Microscydus nanus</i>	<i>Microscydus nanus</i>
NBNORG0000095307	<i>Microvelia (Microvelia) buenoi</i>	<i>Microvelia (Microvelia) buenoi</i>
NBNORG0000095308	<i>Microvelia (Microvelia) pygmaea</i>	<i>Microvelia (Microvelia) pygmaea</i>
NBNORG0000007331	<i>Molinia caerulea</i>	Purple Moor-grass
NBNORG0000010471	<i>Molophilus griseus</i>	<i>Molophilus griseus</i>
NBNORG0000010476	<i>Molophilus occultus</i>	<i>Molophilus occultus</i>
NBNORG0000072668	<i>Monosapyga clavicornis</i>	<i>Monosapyga clavicornis</i>
NBNORG0000017546	<i>Mycetoporus punctus</i>	<i>Mycetoporus punctus</i>
NBNORG0000008009	<i>Myrica gale</i>	Bog-myrtle
NBNORG0000010922	<i>Myrmarachne formicaria</i>	Ant-Spider
NBNORG0000009407	<i>Mythimna straminea</i>	Southern Wainscot
NBNORG0000055395	<i>Narthecium ossifragum</i>	Bog Asphodel
NBNORG0000017101	<i>Nemoura dubitans</i>	<i>Nemoura dubitans</i>
NBNORG0000009813	<i>Neoascia geniculata</i>	<i>Neoascia geniculata</i>
NBNORG0000009814	<i>Neoascia interrupta</i>	<i>Neoascia interrupta</i>
NBNORG0000010912	<i>Neon valentulus</i>	<i>Neon valentulus</i>
NBNORG0000092790	<i>Neophytobius muricatus</i>	<i>Neophytobius muricatus</i>
NBNORG0000092797	<i>Notaris aethiops</i>	<i>Notaris aethiops</i>
NBNORG0000092798	<i>Notaris scirpi</i>	<i>Notaris scirpi</i>
NBNORG0000011166	<i>Notioscopus sarcinatus</i>	Swamp Lookout Spider
NBNORG0000011450	<i>Oberea oculata</i>	Eyed Longhorn Beetle
NBNORG0000020326	<i>Ochthera manicata</i>	<i>Ochthera manicata</i>
NBNORG0000088895	<i>Ocypus fuscatus</i>	<i>Ocypus fuscatus</i>
NBNORG0000010106	<i>Odontomyia argentata</i>	Silver Colonel
NBNORG0000072739	<i>Odynerus simillimus</i>	Fen Mason-wasp
NBNORG0000011120	<i>Oedothorax gibbosus</i>	<i>Oedothorax gibbosus</i>
NBNORG0000088933	<i>Onthophagus fracticornis</i>	<i>Onthophagus fracticornis</i>
NBNORG0000088942	<i>Oodes helopioides</i>	<i>Oodes helopioides</i>
NBNORG0000105629	<i>Ophiola plutonia</i>	<i>Ophiola plutonia</i>
NBNORG0000020208	<i>Opomyza lineatopunctata</i>	<i>Opomyza lineatopunctata</i>
NBNORG0000009819	<i>Orthonevra brevicornis</i>	<i>Orthonevra brevicornis</i>
NBNORG0000009820	<i>Orthonevra geniculata</i>	<i>Orthonevra geniculata</i>
NBNORG0000095440	<i>Orthotylus (Orthotylus) virens</i>	<i>Orthotylus (Orthotylus) virens</i>
NBNORG0000020693	<i>Oscinella angularis</i>	<i>Oscinella angularis</i>
NBNORG0000020694	<i>Oscinella angustipennis</i>	<i>Oscinella angustipennis</i>
NBNORG0000042706	<i>Oscinisoma gilvipes</i>	<i>Oscinisoma gilvipes</i>
NHMORG0100004394	<i>Oulema erichsonii</i>	<i>Oulema erichsonii</i>
NBNORG0000097655	<i>Oxyloma (Oxyloma) sarsii</i>	Slender Amber Snail
NBNORG0000017414	<i>Oxytelus fulvipes</i>	<i>Oxytelus fulvipes</i>
NBNORG0000095452	<i>Pachybrachius fracticollis</i>	<i>Pachybrachius fracticollis</i>
NBNORG0000094962	<i>Pachycoleus waltli</i>	<i>Pachycoleus waltli</i>
NBNORG0000011028	<i>Pachygnatha clercki</i>	<i>Pachygnatha clercki</i>
NBNORG0000089025	<i>Paradromius longiceps</i>	<i>Paradromius longiceps</i>
NBNORG0000010936	<i>Pardosa paludicola</i>	<i>Pardosa paludicola</i>
NBNORG0000009845	<i>Parhelophilus consimilis</i>	<i>Parhelophilus consimilis</i>
NBNORG0000009847	<i>Parhelophilus versicolor</i>	<i>Parhelophilus versicolor</i>
NBNORG0000072770	<i>Passaloecus clypealis</i>	<i>Passaloecus clypealis</i>
NBNORG0000008332	<i>Pedicularis sylvatica</i>	Lousewort

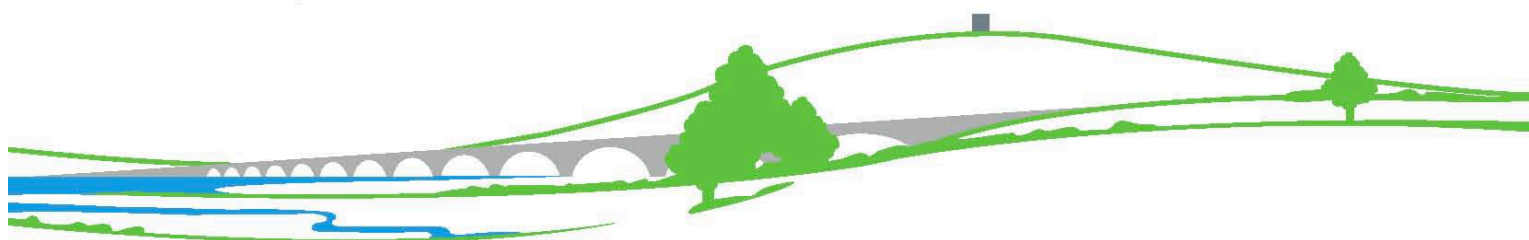
TLIKS	Scientific Name	Common Name
NBNORG0000092930	<i>Pelenomus canaliculatus</i>	<i>Pelenomus canaliculatus</i>
NHMORG0100003866	<i>Pelenomus commari</i>	<i>Pelenomus comari</i>
NBNORG0000092933	<i>Pelenomus quadricorniger</i>	<i>Pelenomus quadricorniger</i>
NBNORG0000012978	<i>Pelidnoptera nigripennis</i>	<i>Pelidnoptera nigripennis</i>
NBNORG0000007415	<i>Phalaris arundinacea</i>	Reed Canary-grass
NBNORG0000021358	<i>Phaonia atriceps</i>	<i>Phaonia atriceps</i>
NBNORG0000021379	<i>Phaonia nymphaearum</i>	<i>Phaonia nymphaearum</i>
NBNORG0000012986	<i>Pherbellia brunnipes</i>	<i>Pherbellia brunnipes</i>
NBNORG0000012990	<i>Pherbellia griseola</i>	<i>Pherbellia griseola</i>
NBNORG0000017481	<i>Philonthus corvinus</i>	<i>Philonthus corvinus</i>
NBNORG0000017488	<i>Philonthus fumarius</i>	<i>Philonthus fumarius</i>
NBNORG0000017495	<i>Philonthus mannerheimi</i>	<i>Philonthus mannerheimi</i>
NBNORG0000017498	<i>Philonthus nigrita</i>	<i>Philonthus nigrita</i>
NBNORG0000089082	<i>Philorhizus sigma</i>	<i>Philorhizus sigma</i>
NBNORG0000055529	<i>Phragmites australis</i>	Common Reed
NBNORG0000010615	<i>Phryganea bipunctata</i>	<i>Phryganea bipunctata</i>
NBNORG0000093004	<i>Phytobius leucogaster</i>	<i>Phytobius leucogaster</i>
NBNORG0000007107	<i>Pilularia globulifera</i>	Pillwort
NBNORG0000008367	<i>Pinguicula alpina</i>	Alpine Butterwort
NBNORG0000028764	<i>Pinguicula crystallina</i>	<i>Pinguicula crystallina</i>
NBNORG0000008369	<i>Pinguicula grandiflora</i>	Large-flowered Butterwort
NBNORG0000008366	<i>Pinguicula lusitanica</i>	Pale Butterwort
NBNORG0000028765	<i>Pinguicula nevadensis</i>	<i>Pinguicula nevadensis</i>
NBNORG0000008368	<i>Pinguicula vulgaris</i>	Common Butterwort
NBNORG0000090074	<i>Pinguicula vulgaris x grandiflora = P. x scullyi</i>	Hybrid Butterwort
NHMORG0100004590	<i>Piratula hygrophila</i>	<i>Pirata hygrophilus</i>
NBNORG0000009677	<i>Platycheirus amplus</i>	<i>Platycheirus amplus</i>
NBNORG0000023204	<i>Platycheirus occultus</i>	<i>Platycheirus occultus</i>
NBNORG0000009687	<i>Platycheirus perpallidus</i>	<i>Platycheirus perpallidus</i>
NHMORG0100004840	<i>Platystethus nodifrons</i>	<i>Platystethus nodifrons</i>
NHMORG0100000463	<i>Podocera delicata</i>	<i>Podocera delicata</i>
NHMORG0100006206	<i>Polytrichum commune s.l.</i>	Common Haircap
NBNORG0000011220	<i>Porrhomma oblitum</i>	<i>Porrhomma oblitum</i>
NBNORG0000007877	<i>Potentilla erecta</i>	Tormentil
NBNORG0000007868	<i>Potentilla palustris</i>	Marsh Cinquefoil
NHMORG0100003799	<i>Prasocuris hannoveriana</i>	<i>Hydrothassa hannoveriana</i>
NBNORG0000013019	<i>Psacadina verbekei</i>	<i>Psacadina verbekei</i>
NBNORG0000013020	<i>Psacadina vittigera</i>	<i>Psacadina vittigera</i>
NBNORG0000013021	<i>Psacadina zernyi</i>	<i>Psacadina zernyi</i>
NBNORG0000093084	<i>Psammoecus bipunctatus</i>	<i>Psammoecus bipunctatus</i>
NBNORG0000017821	<i>Pselaphaulax dresdensis</i>	<i>Pselaphaulax dresdensis</i>
NBNORG0000021504	<i>Pseudocoenosia solitaria</i>	<i>Pseudocoenosia solitaria</i>
NBNORG0000010373	<i>Pseudolimnophila lucorum</i>	<i>Pseudolimnophila lucorum</i>
NBNORG0000012998	<i>Pteromicra glabricula</i>	<i>Pteromicra glabricula</i>
NHMORG0100004521	<i>Pterostichus anthracinus</i>	<i>Pterostichus anthracinus</i>
NBNORG0000089226	<i>Pterostichus aterrimus</i>	<i>Pterostichus aterrimus</i>
NBNORG0000089217	<i>Pterostichus diligens</i>	<i>Pterostichus diligens</i>
NBNORG0000089235	<i>Pterostichus gracilis</i>	<i>Pterostichus gracilis</i>
NBNORG0000089236	<i>Pterostichus minor</i>	<i>Pterostichus minor</i>
NBNORG0000010122	<i>Ptiolina obscura</i>	Black-fringed Moss-snipefly
NBNORG0000010485	<i>Ptychoptera contaminata</i>	<i>Ptychoptera contaminata</i>
NBNORG0000008961	<i>Pyrrhosoma nymphula</i>	Large Red Damselfly
NBNORG0000089303	<i>Quedius balticus</i>	<i>Quedius balticus</i>
NBNORG0000089305	<i>Quedius fuliginosus</i>	<i>Quedius fuliginosus</i>
NBNORG0000089321	<i>Quedius picipes</i>	<i>Quedius picipes</i>
NBNORG0000013022	<i>Renocera pallida</i>	<i>Renocera pallida</i>
NBNORG0000043113	<i>Renocera stroblii</i>	<i>Renocera stroblii</i>

TLIKS	Scientific Name	Common Name
NBNORG0000012765	<i>Rhaphium lanceolatum</i>	<i>Rhaphium lanceolatum</i>
NBNORG0000043136	<i>Rhopalopterum femorale</i>	<i>Rhopalopterum femorale</i>
NBNORG0000072847	<i>Rhopalum gracile</i>	<i>Rhopalum gracile</i>
NBNORG0000095615	<i>Rhopalus (Aeschyntelus) maculatus</i>	<i>Rhopalus (Aeschyntelus) maculatus</i>
NBNORG000007278	<i>Rhynchospora alba</i>	White Beak-sedge
NBNORG0000055989	<i>Rhynchospora fusca</i>	Brown Beak-sedge
NBNORG0000043145	<i>Riponnensia splendens</i>	<i>Riponnensia splendens</i>
NBNORG0000011018	<i>Robertus insignis</i>	<i>Robertus insignis</i>
NBNORG0000017446	<i>Rugilus erichsonii</i>	<i>Rugilus erichsonii</i>
NBNORG0000038974	<i>Rugulina fragilis</i>	<i>Rugulina fragilis</i>
NBNORG0000095637	<i>Saldula opacula</i>	<i>Saldula opacula</i>
NBNORG0000008163	<i>Salix aurita</i>	Eared Willow
NBNORG0000011158	<i>Saloca diceros</i>	Saloca diceros
NBNORG0000011447	<i>Saperda carcharias</i>	Poplar Borer
NBNORG0000007947	<i>Saxifraga spathularis</i>	St. Patrick's-cabbage
NBNORG0000017312	<i>Scaphisoma boleti</i>	<i>Scaphisoma boleti</i>
NBNORG0000012704	<i>Scellus notatus</i>	<i>Scellus notatus</i>
NBNORG0000007125	<i>Scheuchzeria palustris</i>	Rannoch-rush
NBNORG0000017667	<i>Schistoglossa viduata</i>	<i>Schistoglossa viduata</i>
NBNORG0000007272	<i>Schoenoplectus lacustris</i>	Common Club-rush
NBNORG0000056411	<i>Scutellaria minor</i>	Lesser Skullcap
NBNORG0000017301	<i>Scydmorephes helvolus</i>	<i>Scydmorephes helvolus</i>
NBNORG0000017557	<i>Sepedophilus immaculatus</i>	<i>Sepedophilus immaculatus</i>
NBNORG0000017562	<i>Sepedophilus pedicularius</i>	<i>Sepedophilus pedicularius</i>
NBNORG0000009873	<i>Sericomyia silentis</i>	<i>Sericomyia silentis</i>
NHMORG0100000660	<i>Sericomyia superbiens</i>	<i>Arctophila superbiens</i>
NBNORG0000095667	<i>Sigara (Retrocorixa) semistriata</i>	<i>Sigara (Retrocorixa) semistriata</i>
NBNORG0000056568	<i>Sparganium angustifolium</i>	Floating Bur-reed
NBNORG0000050694	<i>Sphagnum affine</i>	Imbricate Bog-moss
NBNORG0000061666	<i>Sphagnum angermanicum</i>	<i>Sphagnum angermanicum</i>
NBNORG0000050695	<i>Sphagnum angustifolium</i>	Fine Bog-moss
NBNORG0000061667	<i>Sphagnum annulatum</i>	<i>Sphagnum annulatum</i>
NBNORG0000061668	<i>Sphagnum aongstroemii</i>	<i>Sphagnum aongstroemii</i>
NHMORG0100006212	<i>Sphagnum auriculatum</i>	Cow-horn Bog-moss
NBNORG0000050696	<i>Sphagnum austinii</i>	Austin's Bog-moss
NBNORG0000050697	<i>Sphagnum balticum</i>	Baltic Bog-Moss
NBNORG0000129270	<i>Sphagnum beothuk</i>	<i>Sphagnum beothuk</i>
NHMORG0100006211	<i>Sphagnum capillifolium</i>	Red Bog-moss
NHMORG0100006397	<i>Sphagnum capillifolium</i>	<i>Sphagnum capillifolium</i>
NHMORG0100000823	<i>Sphagnum capillifolium x quinquefarium</i>	<i>Sphagnum capillifolium x quinquefarium</i>
NBNORG0000050700	<i>Sphagnum compactum</i>	Compact Bog-moss
NBNORG0000023729	<i>Sphagnum contortum</i>	Twisted Bog-moss
NBNORG0000091467	<i>Sphagnum contortum</i>	<i>Sphagnum contortum</i>
NBNORG0000023730	<i>Sphagnum cuspidatum</i>	Feathery Bog-moss
NBNORG0000050840	<i>Sphagnum denticulatum</i>	<i>Sphagnum denticulatum</i>
NBNORG0000129828	<i>Sphagnum divinum</i>	<i>Sphagnum divinum</i>
NBNORG0000050701	<i>Sphagnum fallax</i>	Flat-topped Bog-moss
NBNORG0000050703	<i>Sphagnum fimbriatum</i>	Fringed Bog-moss
NBNORG0000050704	<i>Sphagnum flexuosum</i>	Flexuous Bog-moss
NBNORG0000050705	<i>Sphagnum fuscum</i>	Rusty Bog-moss
NBNORG0000129269	<i>Sphagnum fuscum</i>	<i>Sphagnum fuscum</i>
NBNORG0000050706	<i>Sphagnum girgensohnii</i>	Girgensohn's Bog-moss
NBNORG0000050841	<i>Sphagnum imbricatum</i>	<i>Sphagnum imbricatum</i>
NBNORG0000050707	<i>Sphagnum inundatum</i>	Lesser Cow-horn Bog-moss
NBNORG0000061669	<i>Sphagnum jensenii</i>	<i>Sphagnum jensenii</i>
NBNORG0000061670	<i>Sphagnum lenense</i>	<i>Sphagnum lenense</i>
NBNORG0000023733	<i>Sphagnum lindbergii</i>	Lindberg's Bog-moss

TLIKS	Scientific Name	Common Name
NBNORG0000023722	<i>Sphagnum magellanicum</i>	Magellanic Bog-moss
NBNORG0000050708	<i>Sphagnum majus</i>	Olive Bog-moss
NBNORG0000129827	<i>Sphagnum medium</i>	<i>Sphagnum medium</i>
NBNORG0000023727	<i>Sphagnum molle</i>	Blushing Bog-moss
NBNORG0000023732	<i>Sphagnum obtusum</i>	Obtuse Bog-moss
NBNORG0000023721	<i>Sphagnum palustre</i>	Blunt-leaved Bog-moss
NBNORG0000050709	<i>Sphagnum palustre</i> var. <i>centrale</i>	<i>Sphagnum palustre</i> var. <i>centrale</i>
NBNORG0000050710	<i>Sphagnum palustre</i> var. <i>palustre</i>	<i>Sphagnum palustre</i> var. <i>palustre</i>
NBNORG0000023720	<i>Sphagnum papillosum</i>	Papillose Bog-moss
NBNORG0000050711	<i>Sphagnum platyphyllum</i>	Flat-leaved Bog-moss
NBNORG0000050712	<i>Sphagnum pulchrum</i>	Golden Bog-moss
NBNORG0000061671	<i>Sphagnum pylaesii</i>	<i>Sphagnum pylaesii</i>
NBNORG0000050713	<i>Sphagnum quinquefarium</i>	Five-ranked Bog-moss
NBNORG0000023731	<i>Sphagnum recurvum</i>	<i>Sphagnum recurvum</i>
NBNORG0000050842	<i>Sphagnum recurvum</i>	<i>Sphagnum recurvum</i>
NBNORG0000050714	<i>Sphagnum riparium</i>	Cleft Bog-moss
NHMORG0100006213	<i>Sphagnum rubellum</i>	Red Bog-moss
NBNORG0000023724	<i>Sphagnum russowii</i>	Russow's Bog-moss
NBNORG0000023725	<i>Sphagnum skyense</i>	Skye bog-moss
NBNORG0000023723	<i>Sphagnum squarrosum</i>	Spiky Bog-moss
NBNORG0000023728	<i>Sphagnum strictum</i>	Pale Bog-moss
NBNORG0000050715	<i>Sphagnum subnitens</i>	Lustrous Bog-moss
NHMORG0100006214	<i>Sphagnum subnitens</i> subsp. <i>ferrugineum</i>	<i>Sphagnum subnitens</i> subsp. <i>ferrugineum</i>
NHMORG0100006215	<i>Sphagnum subnitens</i> subsp. <i>subnitens</i>	<i>Sphagnum subnitens</i> subsp. <i>subnitens</i>
NBNORG0000050843	<i>Sphagnum subsecundum</i>	<i>Sphagnum subsecundum</i>
NHMORG0100006216	<i>Sphagnum subsecundum</i>	Slender Cow-horn Bog-moss
NBNORG0000050719	<i>Sphagnum tenellum</i>	Soft Bog-moss
NBNORG0000050720	<i>Sphagnum teres</i>	Rigid Bog-moss
NBNORG0000050721	<i>Sphagnum warnstorffii</i>	Warnstorff's Bog-moss
NBNORG0000061672	<i>Sphagnum wulfianum</i>	<i>Sphagnum wulfianum</i>
NBNORG0000096390	<i>Squamapion vicinum</i>	<i>Squamapion vicinum</i>
NBNORG0000008402	<i>Stachys palustris</i>	Marsh Woundwort
NBNORG0000072886	<i>Stelis phaeoptera</i>	Plain Dark Bee
NBNORG0000096126	<i>Stenocranus fuscovittatus</i>	<i>Stenocranus fuscovittatus</i>
NBNORG0000020232	<i>Stenomicra cogani</i>	<i>Stenomicra cogani</i>
NBNORG0000089503	<i>Stenus argus</i>	<i>Stenus argus</i>
NBNORG0000089489	<i>Stenus bifoveolatus</i>	<i>Stenus bifoveolatus</i>
NBNORG0000089490	<i>Stenus binotatus</i>	<i>Stenus binotatus</i>
NBNORG0000089512	<i>Stenus canaliculatus</i>	<i>Stenus canaliculatus</i>
NBNORG0000089513	<i>Stenus carbonarius</i>	<i>Stenus carbonarius</i>
NBNORG0000089514	<i>Stenus circularis</i>	<i>Stenus circularis</i>
NBNORG0000089518	<i>Stenus europaeus</i>	<i>Stenus europaeus</i>
NBNORG0000089542	<i>Stenus formicetorum</i>	<i>Stenus formicetorum</i>
NBNORG0000089520	<i>Stenus fuscipes</i>	<i>Stenus fuscipes</i>
NBNORG0000089525	<i>Stenus incrassatus</i>	<i>Stenus incrassatus</i>
NBNORG0000089528	<i>Stenus lustrator</i>	<i>Stenus lustrator</i>
NBNORG0000089530	<i>Stenus melanopus</i>	<i>Stenus melanopus</i>
NBNORG0000089543	<i>Stenus nigrutilus</i>	<i>Stenus nigrutilus</i>
NBNORG0000089533	<i>Stenus nitens</i>	<i>Stenus nitens</i>
NBNORG0000089496	<i>Stenus niveus</i>	<i>Stenus niveus</i>
NBNORG0000089544	<i>Stenus opticus</i>	<i>Stenus opticus</i>
NBNORG0000089475	<i>Stenus pallipes</i>	<i>Stenus pallipes</i>
NBNORG0000089476	<i>Stenus palustris</i>	<i>Stenus palustris</i>
NBNORG0000089535	<i>Stenus proditor</i>	<i>Stenus proditor</i>
NBNORG0000089500	<i>Stenus pubescens</i>	<i>Stenus pubescens</i>
NBNORG0000089486	<i>Stenus solutus</i>	<i>Stenus solutus</i>
NBNORG0000009656	<i>Stethophyma grossum</i>	Large Marsh Grasshopper

TLIKS	Scientific Name	Common Name
NBNORG0000010110	<i>Stratiomys chamaeleon</i>	Clubbed General
NBNORG00000101874	<i>Stroggylocephalus livens</i>	<i>Stroggylocephalus livens</i>
NBNORG0000008493	<i>Succisa pratensis</i>	Devil's-bit Scabious
NBNORG0000009006	<i>Sympetrum danae</i>	Black Darter
NBNORG0000012835	<i>Sympycnus pulicarius</i>	<i>Sympycnus pulicarius</i>
NBNORG0000010921	<i>Synageles venator</i>	<i>Synageles venator</i>
NBNORG0000017567	<i>Tachyporus pallidus</i>	<i>Tachyporus pallidus</i>
NHMORG0100003876	<i>Tapinotus sellatus</i>	<i>Tapeinotus sellatus</i>
NBNORG0000013028	<i>Tetanocera ferruginea</i>	<i>Tetanocera ferruginea</i>
NBNORG0000013035	<i>Tetanocera fuscinervis</i>	<i>Tetanocera fuscinervis</i>
NHMORG0100004845	<i>Tetartopeus quadratus</i>	<i>Lathrobium (Tetartopeus) quadratum</i>
NBNORG0000011022	<i>Tetragnatha extensa</i>	<i>Tetragnatha extensa</i>
NBNORG0000011024	<i>Tetragnatha montana</i>	<i>Tetragnatha montana</i>
NBNORG0000093373	<i>Thamiocolus viduatus</i>	<i>Thamiocolus viduatus</i>
NBNORG0000011062	<i>Theridiosoma gemmosum</i>	Ray Spider
NBNORG0000017403	<i>Thinobius brevipennis</i>	<i>Thinobius brevipennis</i>
NBNORG0000093376	<i>Thryogenes fiorii</i>	<i>Thryogenes fiorii</i>
NBNORG0000018348	<i>Thryogenes scirrhosus</i>	<i>Thryogenes scirrhosus</i>
NBNORG0000010280	<i>Tipula oleracea</i>	<i>Tipula oleracea</i>
NHMORG0100004929	<i>Tournotaris bimaculata</i>	<i>Tournotaris bimaculata</i>
NBNORG0000089658	<i>Trechus rivularis</i>	<i>Trechus rivularis</i>
NBNORG0000010726	<i>Trichoniscoides albidus</i>	<i>Trichoniscoides albidus</i>
NBNORG0000007266	<i>Trichophorum alpinum</i>	Cotton Deergrass
NBNORG0000056901	<i>Trichophorum caespitosum</i>	Deergrass
NBNORG0000007261	<i>Typha latifolia</i>	Bulrush
NBNORG0000043557	<i>Typhamyza bifasciata</i>	<i>Typhamyza bifasciata</i>
NBNORG0000095773	<i>Tytthus pubescens</i>	<i>Tytthus pubescens</i>
NBNORG0000095774	<i>Tytthus pygmaeus</i>	<i>Tytthus pygmaeus</i>
NBNORG0000056994	<i>Utricularia australis</i>	Bladderwort
NBNORG0000097427	<i>Utricularia australis</i>	<i>Utricularia australis</i>
NBNORG0000116089	<i>Utricularia bremii</i>	<i>Utricularia bremii</i>
NBNORG0000008370	<i>Utricularia intermedia</i>	<i>Utricularia intermedia</i>
NBNORG0000108084	<i>Utricularia intermedia</i>	Intermediate Bladderwort
NBNORG0000044956	<i>Utricularia intermedia</i> x <i>U. minor</i>	<i>Utricularia intermedia</i> x <i>U. minor</i>
NBNORG0000008371	<i>Utricularia minor</i>	Lesser Bladderwort
NBNORG0000056995	<i>Utricularia ochroleuca</i>	Pale Bladderwort
NBNORG0000097428	<i>Utricularia ochroleuca</i>	<i>Utricularia ochroleuca</i>
NBNORG0000056996	<i>Utricularia stygia</i>	Nordic Bladderwort
NBNORG0000027118	<i>Utricularia vulgaris</i>	Greater Bladderwort
NBNORG0000025169	<i>Utricularia vulgaris</i>	<i>Utricularia vulgaris</i>
NBNORG0000097429	<i>Utricularia vulgaris</i>	<i>Utricularia vulgaris</i>
NBNORG0000008197	<i>Vaccinium microcarpum</i>	Small Cranberry
NBNORG0000008196	<i>Vaccinium oxycoccos</i>	Cranberry
NBNORG0000010094	<i>Vanoyia tenuicornis</i>	Long-horned Soldier
NBNORG0000086908	<i>Vertigo (Vertigo) moulinsiana</i>	Desmoulin's Whorl Snail
NBNORG0000086912	<i>Vertigo (Vertilla) angustior</i>	Narrow-mouthed Whorl Snail
NBNORG0000007590	<i>Viola palustris</i>	Marsh Violet
NBNORG0000057094	<i>Wahlenbergia hederacea</i>	Ivy-leaved Bellflower
NBNORG0000010857	<i>Zora armillata</i>	<i>Zora armillata</i>

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