

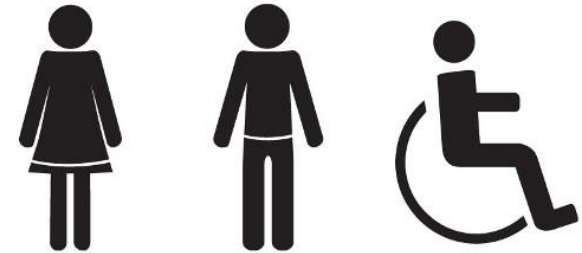
Sphagnum survey walks

The Big Moss Map



Housekeeping

- Emergency Exits
- Fire assembly point
- Toilets



Today's Session

1. Presentation

- Peak District moorlands
- Damage to our moorlands
- Conservation Works
- Why *Sphagnum*?
- **Meet the mosses!**
- *Sphagnum* ecology & ID
- Upland habitats
- Photo quiz
- **SHORT BREAK**
- How to conduct a survey
- Submitting your records
- How data will be used

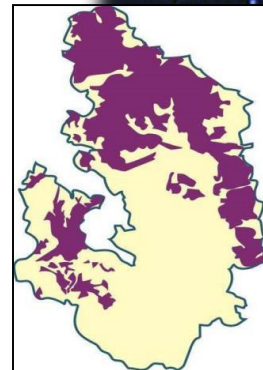


2. Practical session to practice survey methods and field ID

3. Feedback

Peak District & South Pennine moorlands

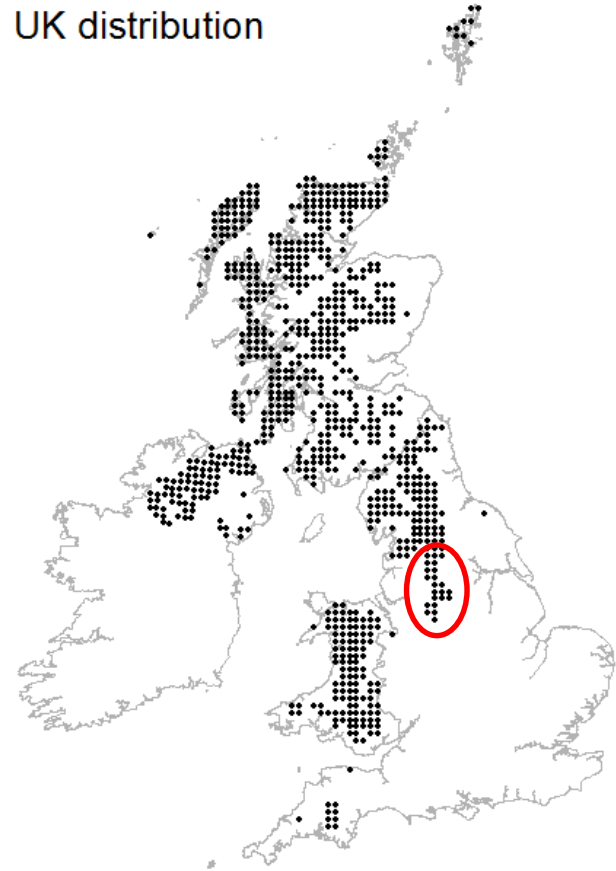
- Peak District is within 1 hour's drive for 20 million people
(Alan's Ramblings, 2004).
- Probably most visited moorlands worldwide with tradition of access across wide areas.
- First UK National Park created in 1951.



Moorland habitat: Blanket bog

- Water and mineral source comes from rainwater, mist & cloud-cover (ombrotrophic).
- Nutrient-poor and acidic; dominated by acid-loving plants, especially Sphagnum.
- 10–15 % global resource in UK.
- South Pennines represents most south-easterly occurrence in Europe.

UK distribution



Damage to our moorlands

- Air pollution
- Wildfires
- Weather
- Drainage
- Grazing levels
- Access by people
- Peat harvesting
- Competition from non-native plants



Conservation works



Sphagnum facts

- A group of closely related mosses essential for the formation of healthy peatlands.
- There are 34 species of *Sphagnum* moss in the UK, around a third of which are found in bogs.
- *Sphagnum* mosses can hold up to 20 times their own weight in water.
- Some species grow in hummocks, which can be a meter high. Others grow in lawns or wet hollows.



Photos: Rosser1954, John Fielding, Johannes Bergsma

Why *Sphagnum*?

- Lower parts of *Sphagnum* plants die but resist decomposition.
- This leads to the accumulation of organic material and the formation of peat.
- Peat can be several metres deep and have accumulated over thousands of years.
- Healthy peatlands support a range of wildlife, store carbon, help prevent flooding and provide high quality water.



Re-introducing *Sphagnum*

- Various methods:
 - *Sphagnum* beads – ‘Beadamoss’
 - Liquid gel – ‘Solumoss’
 - Propagated plug plants – ‘Plugamoss’
 - Hummocks harvested from *Sphagnum* rich sites
- Climate change threatens peatlands because:
 - *Sphagnum* mosses can suffer damage if exposed to temperatures above 15 °C
 - Peat only forms when bogs are saturated
- Multi-purpose monitoring
 - Monitoring the re-introduction
 - Monitoring general trends due to a changing climate



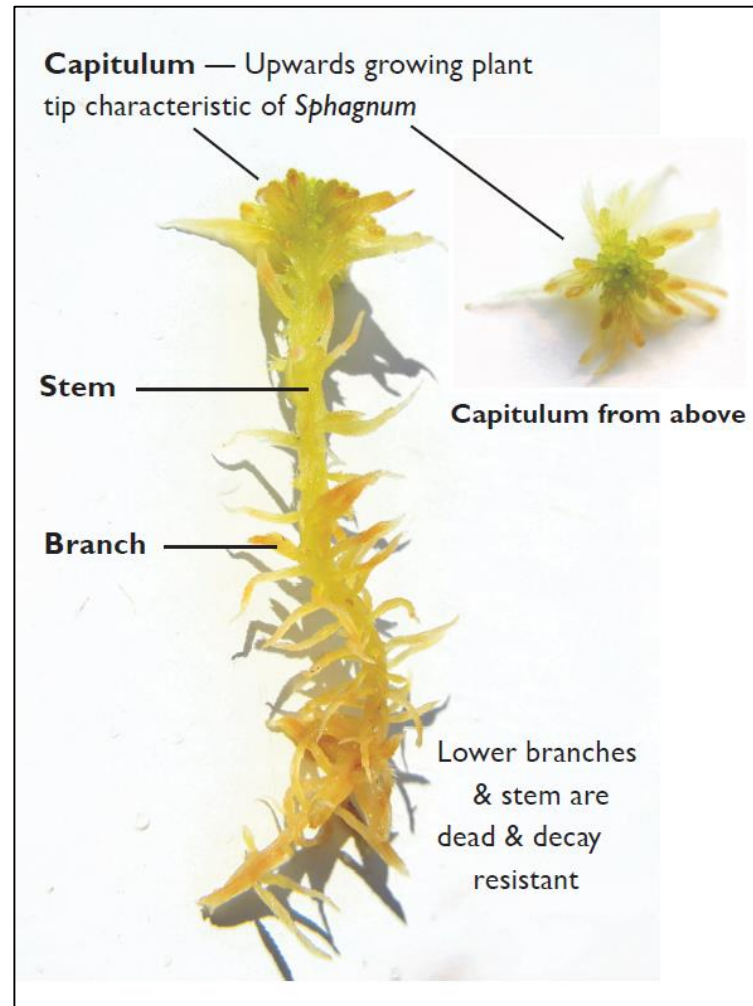
Meet the mosses!

Can you sort the *Sphagnum* from the other moss types?



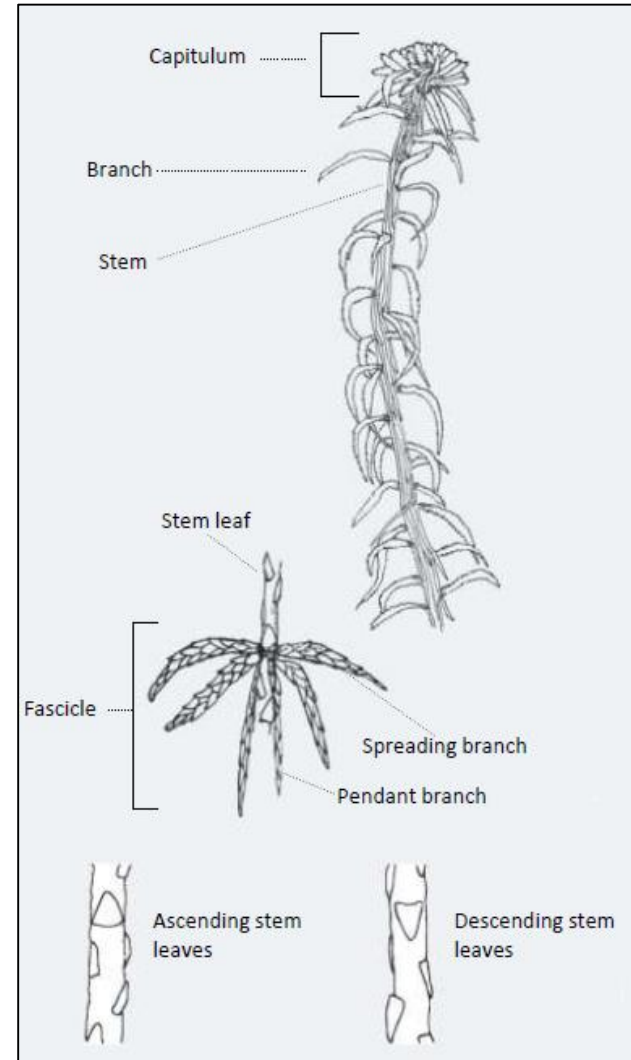
Sphagnum ID

- Each individual plant has a stem, branches (spreading and pendant) and a compact cluster of new branches called a 'capitulum'.
- All new growth occurs from the capitulum at the top of the plant.
- Occasionally a plant may split and a second capitulum grows.



Sphagnum ID

- Groups of branches leave the stem at the same point – this is called a fascicle.
- The stem and branches are covered in small leaves – visible with a hand lens.
- On some species these leaves point upwards and on others they point down.
- They also vary in shape between species.



Sphagnum ID

- All *Sphagnum* species share the same basic structure.
- Some species are skinny while some are chunky – chunky species hold the most water.



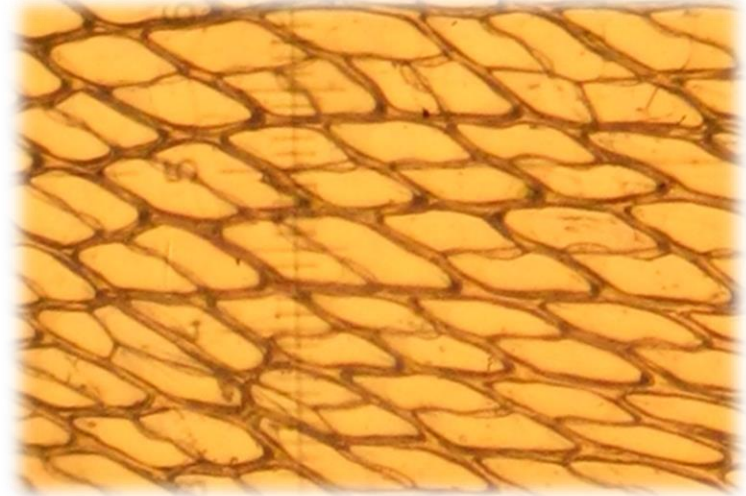
Sphagnum ID

- Wide variety of colour between species and even within species!
- Colour varies with growing conditions – plants in shade often greener even in same patch.
- May become bleached in dry weather.
- Often found growing with other mosses.



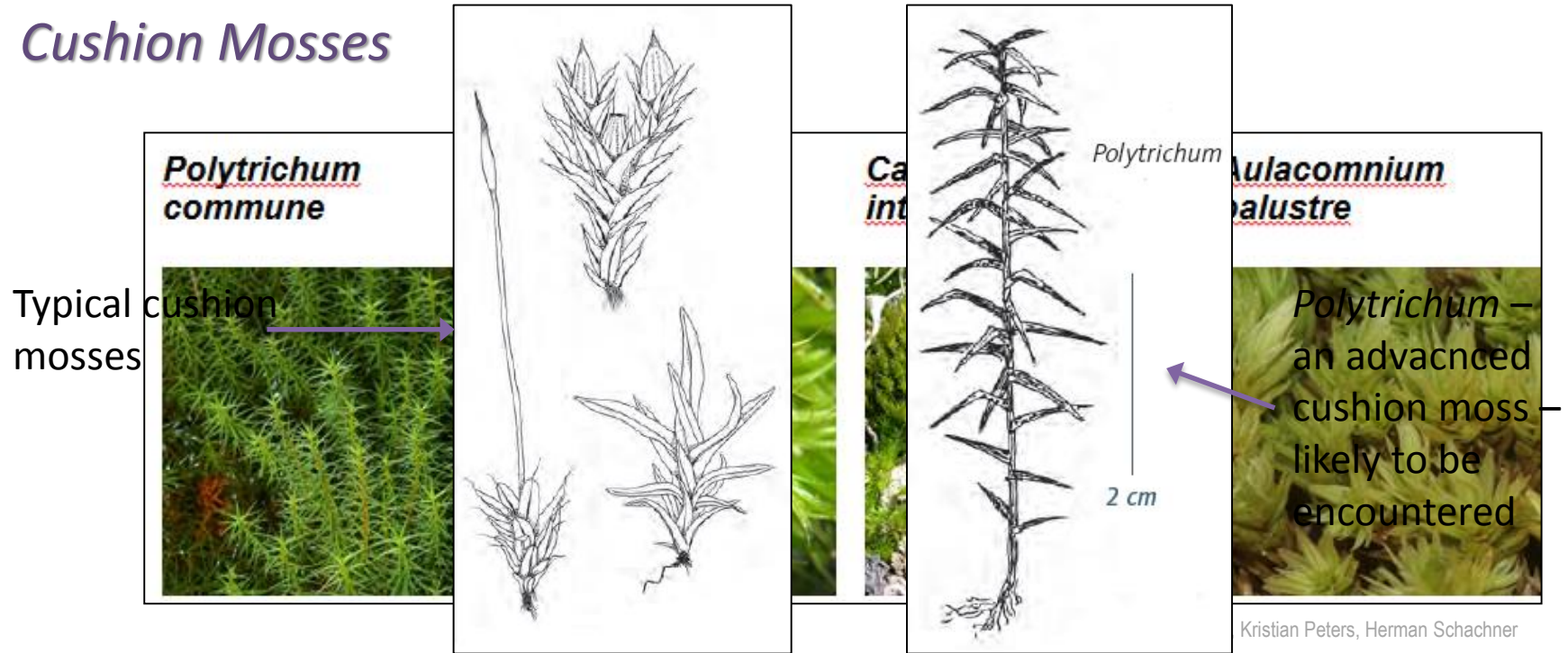
Sphagnum ID & structure

- Two types of cells:
 - Living green cells that photosynthesise
 - Large, empty, dead cells called 'Hyaline' cells – these enable *Sphagnum* to hold large quantities of water. They don't collapse when empty thanks to spiral thickening.
- *Sphagnum* reproduces by producing spores – the capsules containing the spores are sometimes visible.
- Can also reproduce vegetively.



Other mosses you may see

Cushion Mosses



- Like *Sphagnum* they grow in patches, cushions or carpets.
- Shoots and branches always point upwards, unlike in *Sphagnum* where they often hang down.
- Shoots are usually unbranched, but sometimes may have one or two branches.

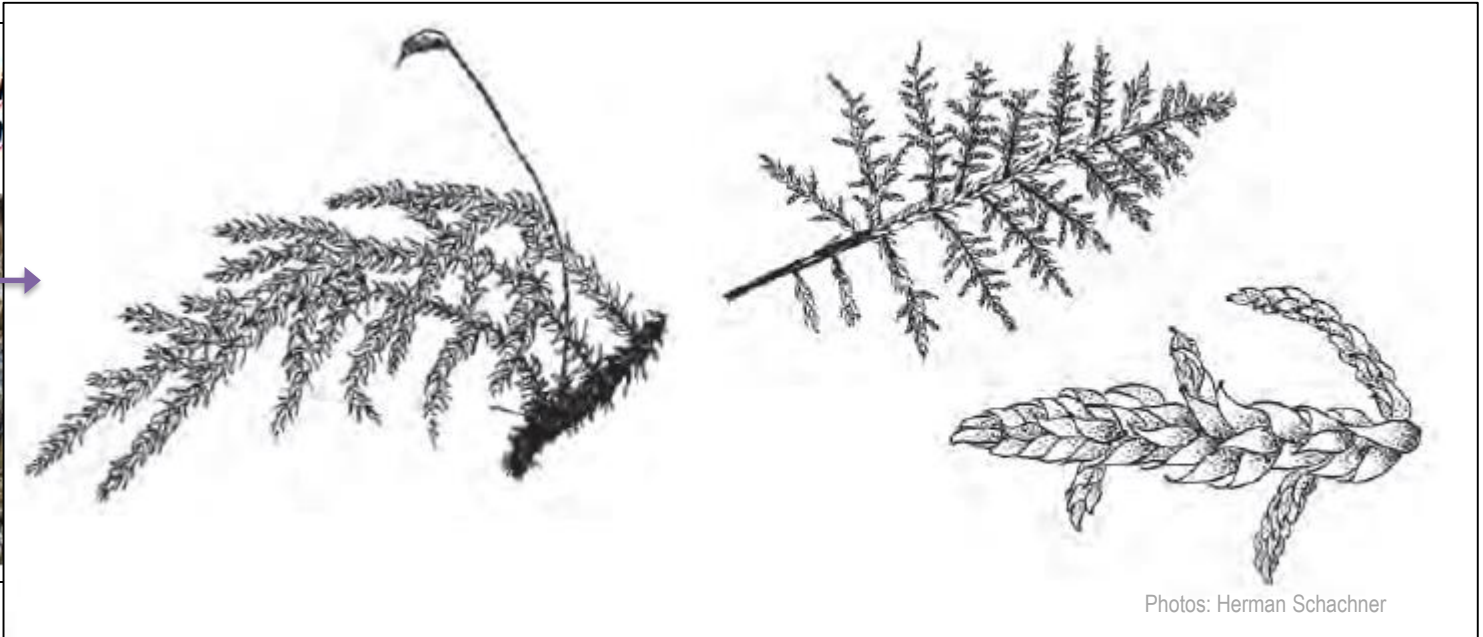
Other mosses you may see

Feather Mosses

Racomitrium lanuginum



Typical feather mosses



- Also found in bogs.
- Tend to sprawl along the ground.
- Shoots often divide into branches (may look fern-like).
- Have red or green stems.

Habitats

Acid bogs

- Wet, peat forming sites created by the build-up of *Sphagnum* mosses that retain water and decay slowly.
- Blanket bogs atop the hills in the Peak District.
- Mix of vegetation, but most commonly seen with cotton grasses and other mosses like *Polytrichum* spp.
- Shrubs also found but do not dominate as on dry-heaths.



Common cotton grass



Polytrichum



Sphagnum moss
(*S. papillosum*)

Habitats

Heaths / Moorlands

- Dominated by heathers and dwarf shrubs like bilberry and crowberry and larger bushes such as gorse.
- Typically found on poor, acid, often sandy, well drained soils, hence known as “dry heath”.
- Waterlogged moors become peat generating bogs, some can be rich in *Sphagnum* mosses.



Typical heathland



Heather



A tasty crop of bilberries

Habitats

Acid Grasslands

- Dominated by grasses and herbs.
- Found on a range of lime-deficient soils derived from acid rocks such as sandstones and gritstones.
- Usually species-poor, but some patches are home to rarer plants such as the greater butterfly orchid.
- Often dominated by Purple moor grass (*Molinia caerulea*), Mat grass (*Nardus stricta*) and Wavy hair grass (*Deschampsia flexuosa*) in the Peak.

Purple moor grass and rushes



Wavy hair grass



Greater butterfly orchid

Habitats

Bracken hillsides

- Bracken is a species of fern common in the hills of the Peak District.
- It is a very successful plant (it is poisonous) that dominates, creating a distinctive habitat lacking in many other species.
- Its thick cover provides nesting sites for birds and invertebrates alike.



A bracken covered hillside



Bracken dying off in autumn



A stand of bracken

Habitats

Flushes

- Wet areas where water from underground flows out onto the surface.
- Often enriched with minerals leading to a different plant community than the surrounding area.
- Sedges and rushes often grow above a layer of mosses and liverworts.
- Sometimes host to rarer plants.



A flush



Sphagnum fallax – A species commonly found in flushes

Habitats

Woodlands

- Sphagnum is most likely to be found in **wet woodland**.
- These are most widespread on flushed slopes, valley sides and moorland cloughs.
- Wet woodlands often form a mosaic with other habitats such as upland oakwoods – or in transition with acid grassland or heath.
- Conifer plantations may also host *Sphagnum*



Wet woodland



*Sphagnum mosses
in wet woodland*

Useful resources & further information

Field Guides

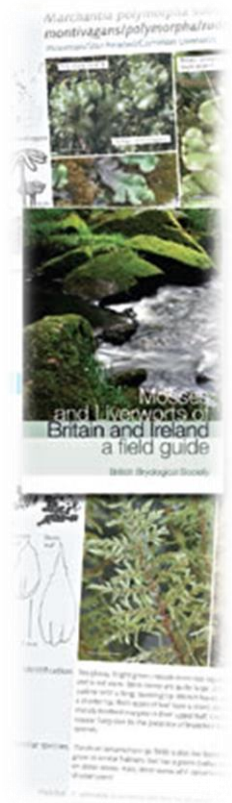
- FSC laminate guide “Sphagnum mosses in bogs” - <http://www.field-studies-council.org/publications/pubs/Sphagnum-mosses-in-bogs.aspx>
- A more detailed key to identifying *Sphagnum* species can be found at http://jncc.defra.gov.uk/pdf/Sphagnum_a_field_guide_PRINT.pdf
- *Mosses and Liverworts of Britain and Ireland: A Field Guide* by Atherton, Bosanquet and Llawley and published by the British Bryological Society.

Websites

- The British Bryological Society has a wealth of information about mosses, liverworts and hornworts, including species guides and details of training courses - www.britishbryologicalsociety.org.uk
- Community Science - www.moorsforthefuture.org.uk/community-science

Apps

- MoorMoss app produced by Moors for the Future – Information about the mosses you might encounter on our moorlands - <http://www.moorsforthefuture.org.uk/node/704>



Quiz Time!



Not Sphagnum

Quiz Time!



Sphagnum

Quiz Time!



Not Sphagnum

Quiz Time!



Not *Sphagnum*

Quiz Time!



Sphagnum

Quiz Time!



Sphagnum

Quiz Time!



Not Sphagnum

Quiz Time!



Sphagnum & not Sphagnum!

Quiz Time!



Not Sphagnum

Quiz Time!



Sphagnum

Quiz Time!



Not Sphagnum

Quiz Time!



Sphagnum

Tea break!

- Resume in 10-15 mins



Surveying

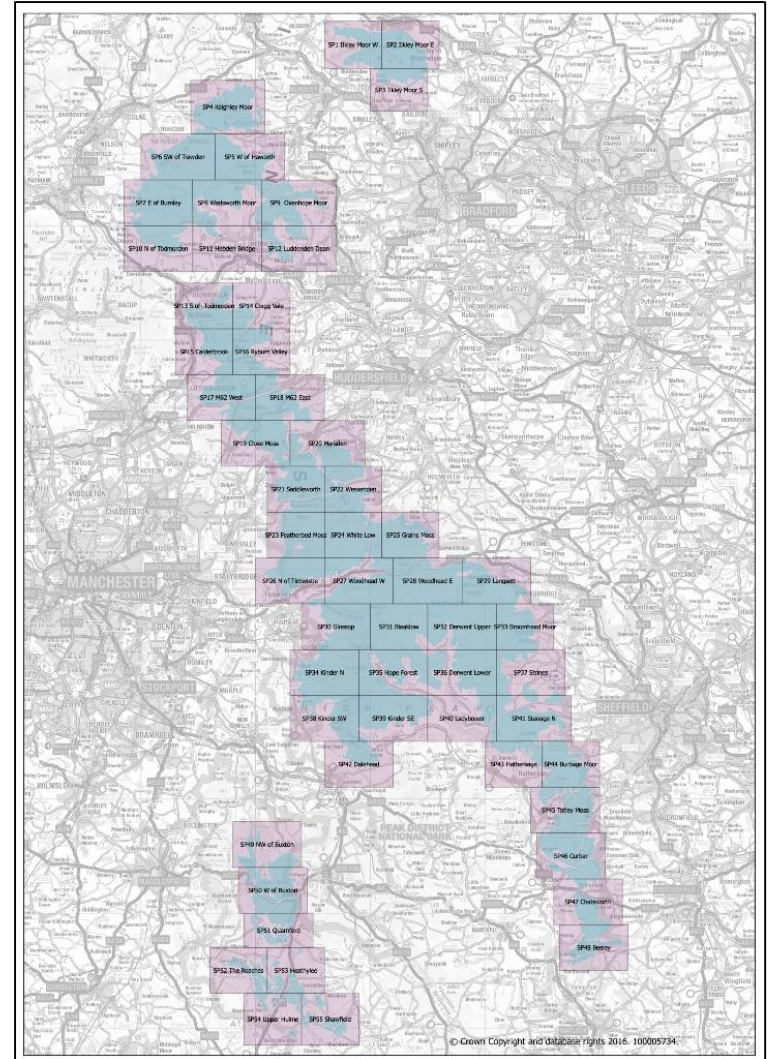
- Surveys are conducted along Public Rights of Way and alternative routes.
- We are aiming to maximise coverage of the project area each year.
- Record the presence and absence of *Sphagnum* along the route you have selected rather than the species present.
- Record different features of any patches of *Sphagnum* you find.
- Enter your records online – whether you find any *Sphagnum* or not.
- The standardised methodology will provide high-quality, long-term data to reliably detect changes in abundance and distribution.



Surveying

Where and when to survey

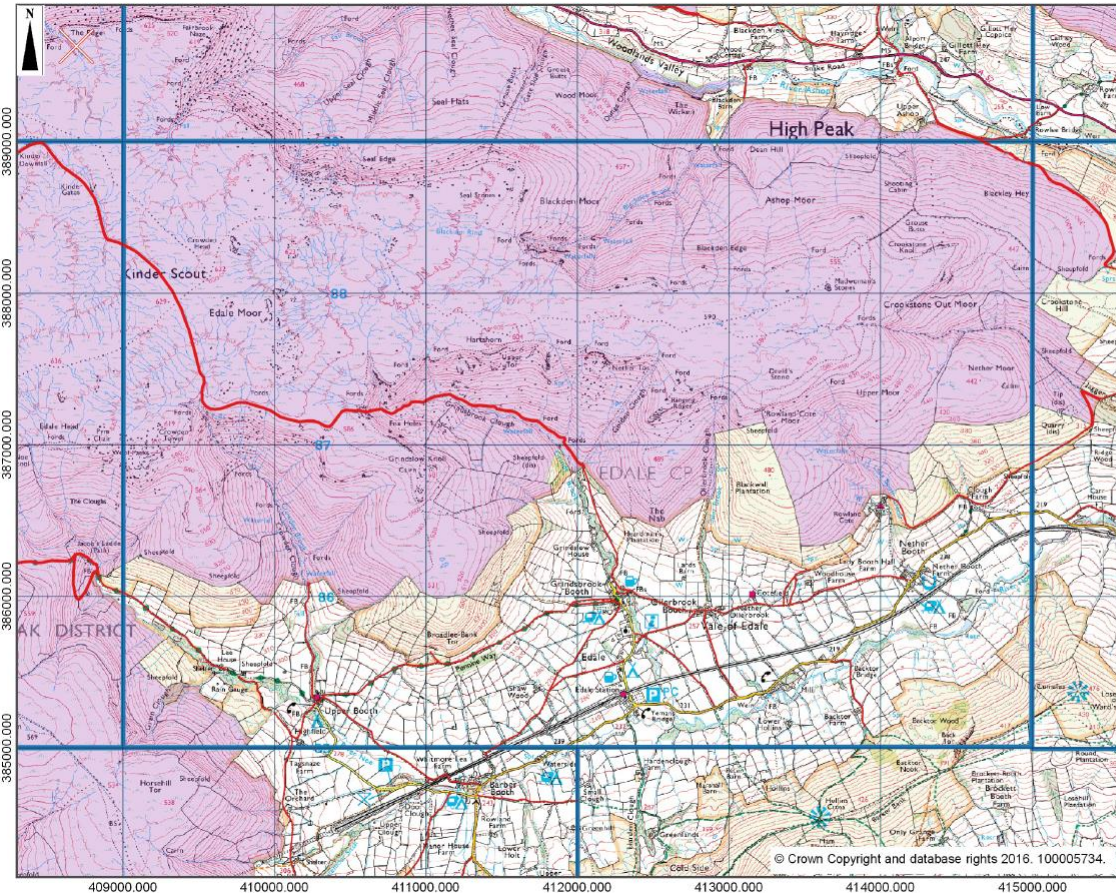
- We have split the SAC into boxes and are allocating volunteers a numbered area to cover.
- Choose a box in a convenient area for you to survey.
- Each year walk and record *Sphagnum* on all the rights of way within that box, both in the SAC and just outside.
- We are happy to put you in touch with other existing volunteers if a box you would like to survey is already allocated.



Surveying

Where and when to survey

- The blue box shows the square boundary.
- The purple represents the SAC.
- Red lines are rights of way to survey.
- Some squares will have more rights of way than others.



Legend

- Map Area
- Rights of way
- SAC

MOORS FOR THE FUTURE

PARTNERSHIP

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www.moorsforthefuture.org.uk

Drawing Name : SP39
Kinder South East
SK0900085000


Drawn By: RJF Date: 29/12/2016

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Surveying

What to take with you

- Survey guide
- Map of your route/s (OS map and/or print out of satellite image e.g from iRecord)
- Survey form
- Guide for identifying vegetation types
- Camera to take photos for verification
- GPS unit (if you have one) or a GPS app on your smartphone e.g. GridPoint GB (iOS) / Grid Reference (Android)
- Health & safety guidelines



Community Science
Sphagnum Survey Guide

MOORS FOR THE FUTURE PARTNERSHIP

This guide provides information about how to conduct the Sphagnum Survey on moorland. If you're new to the survey, visit our website for more information about why we're doing it and how you can get involved www.moorsforthefuture.org.uk/community-science




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Why are we interested?

Sphagnum mosses grow in cool, damp places, with a third of the UK's 34 species found in bogs. As the climate is predicted to get hotter and drier in the Peak District and South Pennine moors we may see changes in where and how much Sphagnum grows. This survey aims to map the distribution of Sphagnum across the Peak District and South Pennine moors and monitor how this changes over time.

How to identify Sphagnum

Individual plants form patches in a:

		
Hummock	Lawn	Hollow



Sphagnum can vary in colour from bright green to dark red and looks bleached when dry.

What is Sphagnum moss?

Like other mosses Sphagnum are small, low growing, non-vascular plants that thrive in wet, low nutrient environments. Their stems do not transport water and nutrients from the soil. Instead Sphagnum absorbs nutrients from the water around it so is sensitive to changes in water quality. In the uplands Sphagnum grows in habitats mainly fed by rain water so if the rainwater is affected by changes in air quality, this can affect the occurrence and growth of Sphagnum in these habitats. Sphagnum grows upwards from its tip (called the capitulum) whilst its lower parts die off. It is these decay resistant parts of the plant that help form carbon-rich peat soils. Sphagnum is a key species of blanket bog habitat. It helps maintain healthy, resilient wet bogs and creates an environment for other wildlife to survive (www.moorsforthefuture.org.uk).


Capitulum
Compact cluster of upward-growing young branches.
Not present in other moss species.

Stem

Branch

Capitulum view from above

Lower branches and stem are dead and decay resistant



Transect monitoring

Health & Safety

Please ensure that you are aware of the risks involved in moorland surveying and use your common sense.

Don't forget to:

- Wear appropriate footwear for rough ground.
- Check the weather forecast before you go out.
- Wear appropriate clothing, and take additional layers.
- Take a hat and/or sunscreen – it is easy to get burnt on the hill.
- Let someone know where you are going, and carry a mobile phone.
- Please take care of the moors – do not smoke, and take your litter home.




Surveying

Conducting the survey

Fill in the details at the top of the survey form first. This information will help when analysing the data.

Each form has 10 sections. Take a few forms in case your path is rich in Sphagnum.

The Big Moss Map		CommunityScience					
Sphagnum Survey Form							
Date				Number of surveyors			
Recorder Name							
Start time				Start grid reference			
Finish time				Finish grid reference			
Patch no.	Patch location <small>(10 fig. grid ref. or notes to help you identify location on aerial photo)</small>	Patch width <small>(to nearest 25 cm)</small>	Patch length <small>(to nearest 25 cm)</small>	How was the Sphagnum growing? <small>(hummock, lawn, hollow or unknown)</small>	Dominant vegetation type	Photo file Numbers <small>(if using a digital camera)</small>	Sphagnum Species <small>(if known)</small>
1							
2							
3							
4							
5							
6							
7							

Surveying

Conducting the survey

- Navigate to the starting point of your survey route – Record the grid reference.
- Look for *Sphagnum* **2 m to each side** of the edge of the footpath you are walking along.
- On wide paths (>2 m) you may need to walk up one side and then down the other.
- Some patches may be continuous, others made up of small, less distinct patches. If patches are <2 m apart, treat as a single patch.

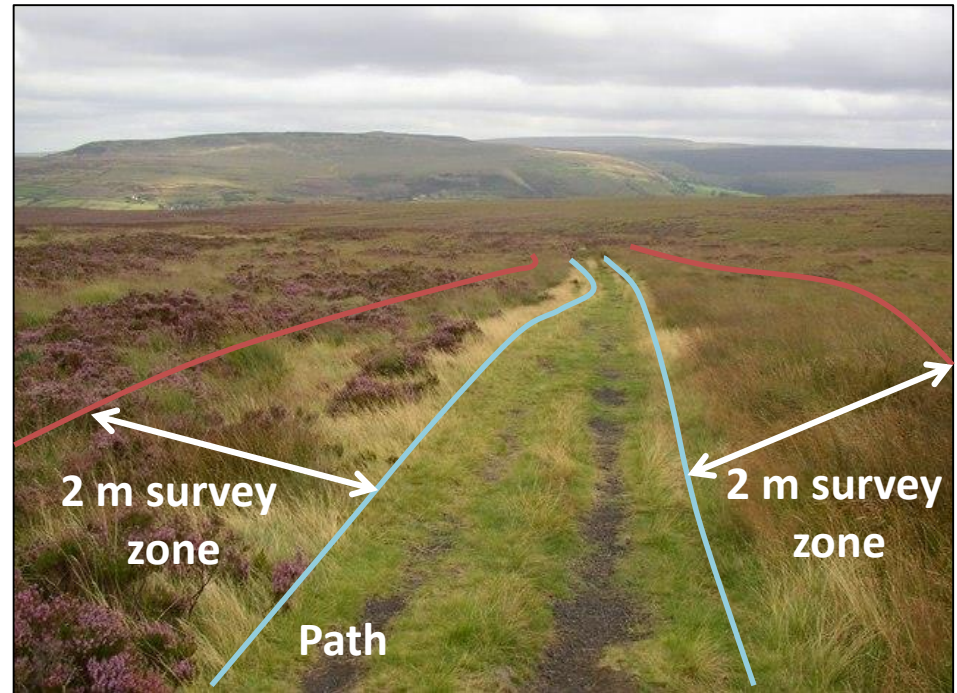


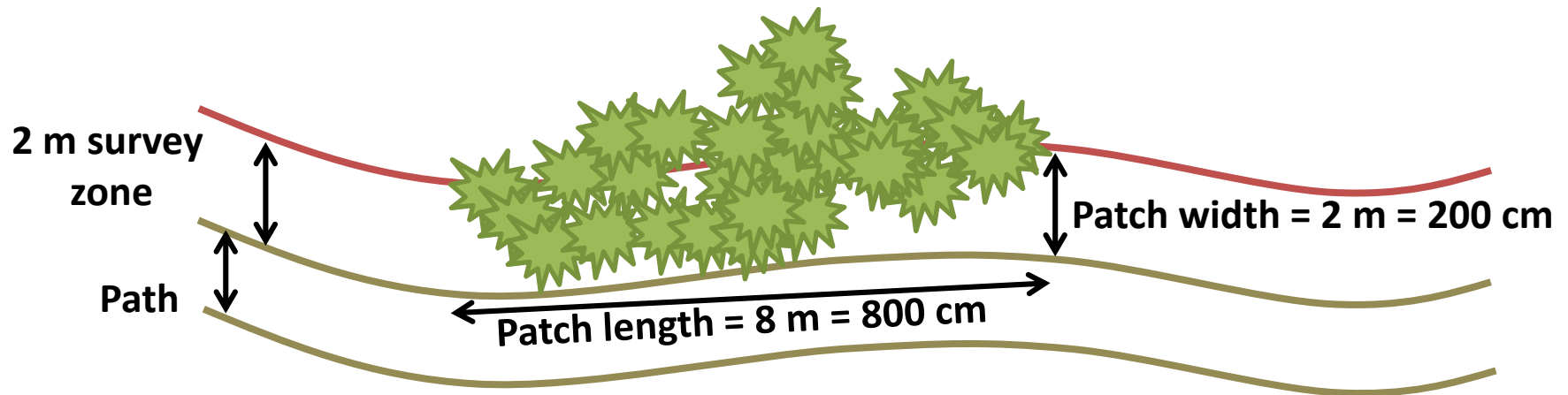
Photo: Humphrey Bolton

Surveying

Conducting the survey

For each patch of *Sphagnum* you find, record:

1. The location of its **centre point**. Mark as accurately as you can on your map or take a GPS reading.
2. How wide the patch is (up to 200 cm) to the nearest 25 cm.
3. How long the patch is to the nearest 25 cm.



Surveying

Conducting the survey

4. Whether the *Sphagnum* is growing as a hummock, lawn or in a wet hollow.



Photo: Rosser1954



Photo: John Fielding



Photo: Dominicus Johannes Bergsma

5. Record the dominant surrounding vegetation type using the accompanying guide.

Surveying

Conducting the survey

6. If you have a camera, take photos (1) up close to help verify your findings and (2) of the whole patch to compare with findings in future years.

Note down the photo ID from your camera on the form so when you get home you know which Sphagnum patch each photo relates to.


7. Identifying *Sphagnum* to species can be tricky, even for experts. However, if you are confident in identifying them, please note down the species of *Sphagnum* present in the patch (There could be multiple species in a single patch).

Surveying

At the end of the survey

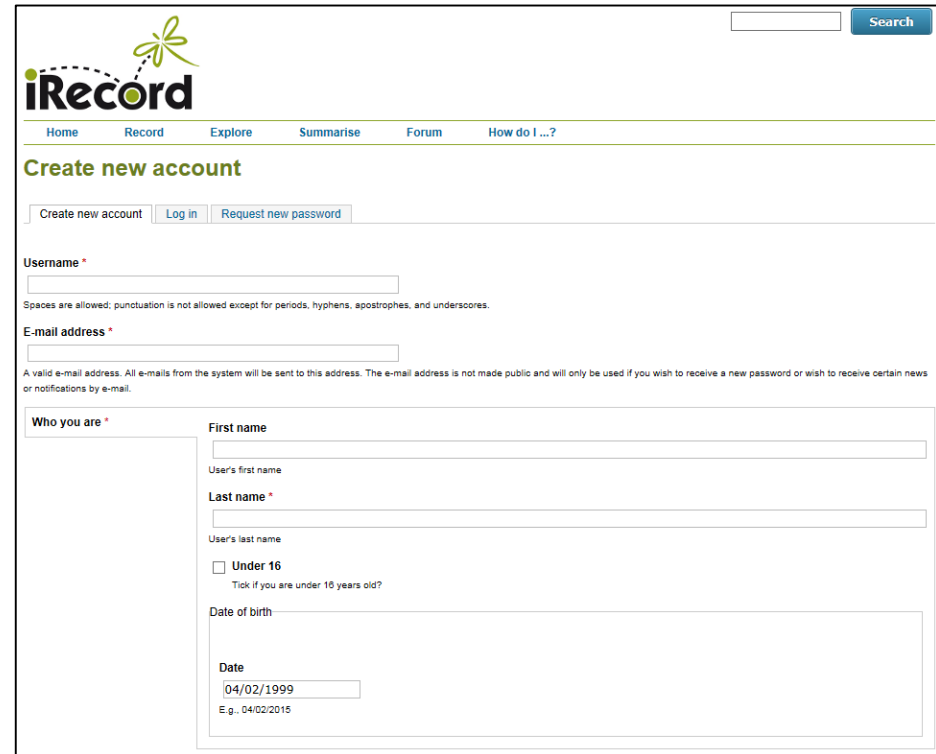
Enter your finish time at the top of the form along with the end grid reference.

In the notes section include anything that might have affected the presence of Sphagnum at each patch location e.g. recent path widening or erection of fencing or tree planting

The Big Moss Map		Sphagnum Survey Form		CommunityScience			
Date		Number of surveyors					
Recorder Name							
Start time		Start grid reference					
Finish time		Finish grid reference					
Patch no.	Patch location <small>(10 fig. grid ref. or notes to help you identify location on aerial photo)</small>	Patch width <small>(to nearest 25 cm)</small>	Patch length <small>(to nearest 25 cm)</small>	How was the Sphagnum growing? <small>(hummock, lawn, hollow or unknown)</small>	Dominant vegetation type	Photo file Numbers <small>(if using a digital camera)</small>	Sphagnum Species <small>(if known)</small>
1							
2							
3							
4							
5							
Notes <small>Record in here any observations you think we should be aware of e.g. any disturbance that could have affected the presence of Sphagnum along your transect route</small>							

Submitting your records

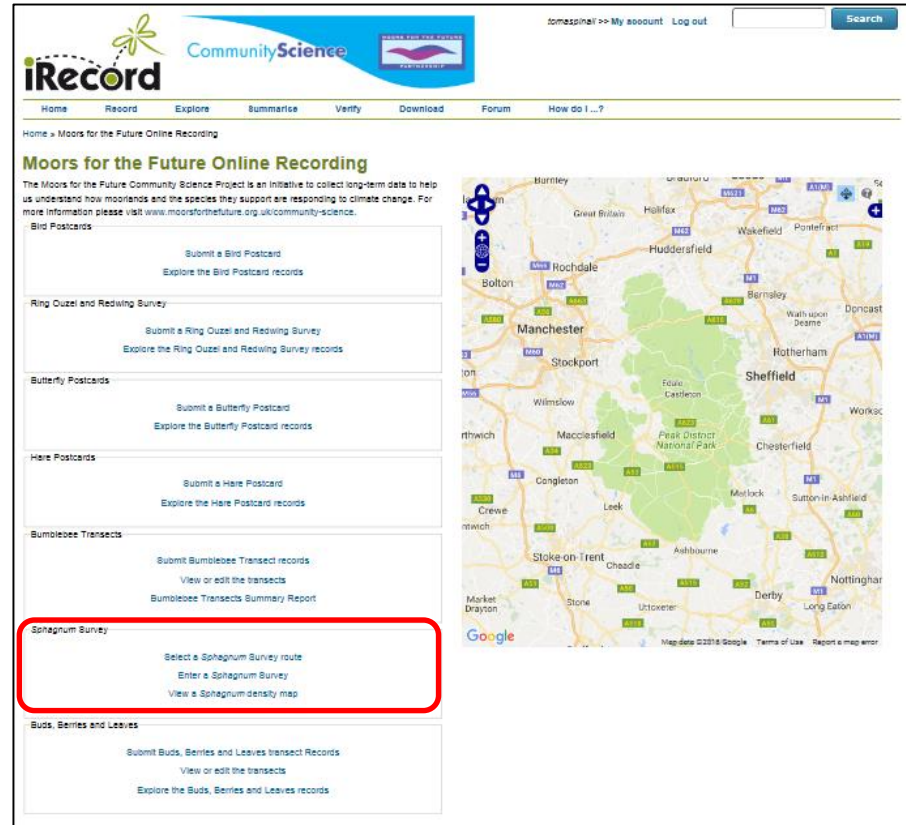
- It is important to submit your records even if you saw no *Sphagnum* along your survey route.
- All data will be put on to the biological recording website iRecord (www.brc.ac.uk/irecord).
- Records are passed on to the Biological Records Centre.
- We encourage all recorders to use this facility by setting up an account.
- Alternatively, you can post the recording form to Moors for the Future – fill in details on reverse.



The screenshot shows the iRecord website's account creation page. At the top left is the iRecord logo, which includes a stylized green dragonfly. To the right of the logo is a search bar with a blue 'Search' button. Below the logo is a navigation menu with links for 'Home', 'Record', 'Explore', 'Summarise', 'Forum', and 'How do I ...?'. The main heading is 'Create new account'. Below this heading are three buttons: 'Create new account', 'Log in', and 'Request new password'. The 'Create new account' button is highlighted. The form fields are as follows: 'Username *' with a text input field and a note below it stating 'Spaces are allowed; punctuation is not allowed except for periods, hyphens, apostrophes, and underscores.'; 'E-mail address *' with a text input field and a note below it stating 'A valid e-mail address. All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail.'; 'Who you are *' with a large empty text area; 'First name' with a text input field and the label 'User's first name' below it; 'Last name *' with a text input field and the label 'User's last name' below it; a checkbox labeled 'Under 16' with the text 'Tick if you are under 16 years old?' below it; 'Date of birth' with a date input field containing '04/02/1999' and the text 'E.g., 04/02/2015' below it.

Submitting your records

- Once logged in, navigate to the dedicated Moors for the Future recording form at www.brc.ac.uk/irecord/moors-for-the-future and click on 'Enter a *Sphagnum* survey'.
- You can add this form to your 'activities' so that you have instant access to it.



The screenshot displays the iRecord website interface for the Moors for the Future Online Recording project. The page features a navigation menu at the top with options like Home, Record, Explore, Summarise, Verify, Download, Forum, and How do I...?. The main content area is titled "Moors for the Future Online Recording" and includes a brief description of the project. Below this, there are several survey options, each with a "Submit" and "Explore" link. The "Sphagnum Survey" option is highlighted with a red box, showing links for "Select a Sphagnum Survey route", "Enter a Sphagnum Survey", and "View a Sphagnum density map". Other survey options include Bird Postcards, Ring Ouzel and Redwing Survey, Butterfly Postcards, Hare Postcards, Bumblebee Transects, and Buds, Berries and Leaves. A map of the Peak District National Park area is visible on the right side of the page.

Submitting your records

Enter the survey details

- The date of the survey.
- The number of surveyors.
- Change the recorder name if the person who did the survey is different from the person logged into iRecord.
- The start and finish time of your survey.

Enter a Sphagnum survey

First, we'd like you to tell us about the length of path you surveyed. Please tell us about the surveyed area whether or not you found any *Sphagnum* patches along the stretch as it will help us to identify paths that need to be surveyed in future.

Date of survey: *

Number of surveyors:

Recorder Name: *

Start Time (hh:mm):

End Time (hh:mm):



Submitting your records

Mark your survey route

- On the map, zoom into the area where you did your survey.
- To enter the route you walked, select **Draw new path**.

Communityscience >> My account Log out Search

iRecord

Home Record Explore Activities Summarise Forum Help

Home > Enter a Sphagnum survey

Enter a Sphagnum survey

First, we'd like you to tell us about the length of path you surveyed. Please tell us about the surveyed area whether or not you found any *Sphagnum* patches along the stretch as it will help us to identify paths that need to be surveyed in future.

Date of survey: *

Number of surveyors:

Recorder Name: *

Start Time (hh:mm): *

End Time (hh:mm): *

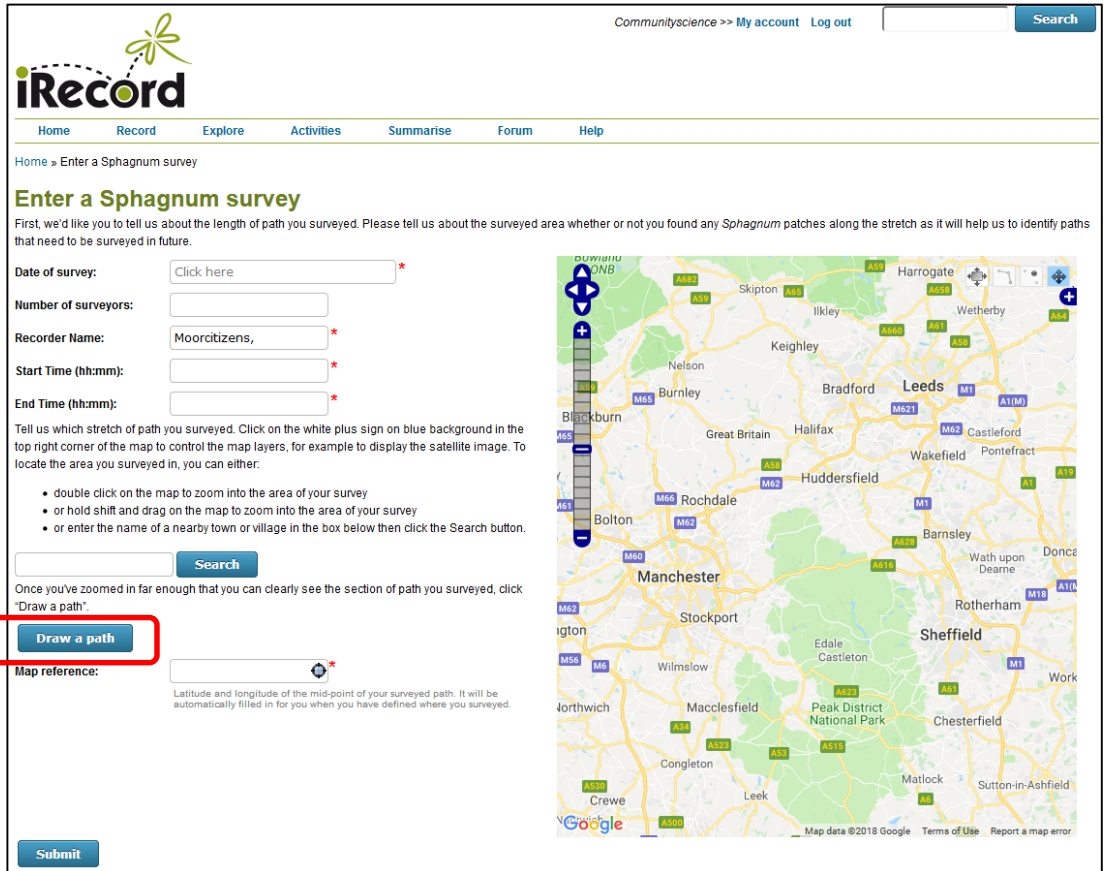
Tell us which stretch of path you surveyed. Click on the white plus sign on blue background in the top right corner of the map to control the map layers, for example to display the satellite image. To locate the area you surveyed in, you can either:

- double click on the map to zoom into the area of your survey
- or hold shift and drag on the map to zoom into the area of your survey
- or enter the name of a nearby town or village in the box below then click the Search button.

Once you've zoomed in far enough that you can clearly see the section of path you surveyed, click "Draw a path".

Map reference: *

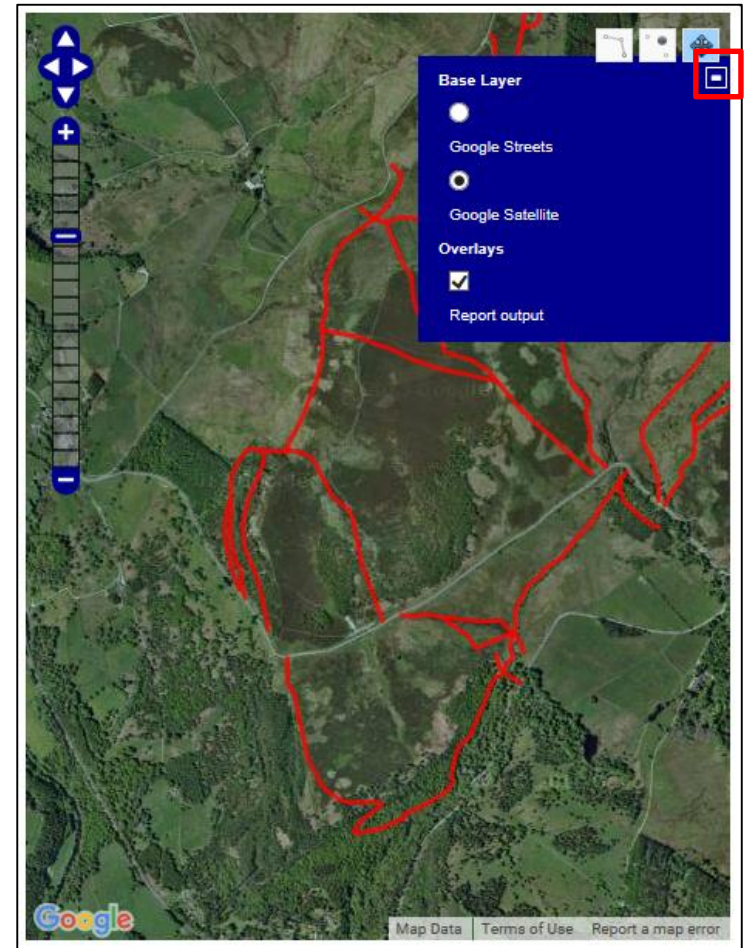
Latitude and longitude of the mid-point of your surveyed path. It will be automatically filled in for you when you have defined where you surveyed.



Submitting your records

Mark your survey route

- To make marking your route easier and more accurate switch to the satellite map view.
- Click on the white plus sign on blue background in the top right corner of the map and select the button above Google Satellite.



Submitting your records

Drawing a new path

- Click on the map at your starting point.
- Click every time the route changes direction.
- Double click at the end point of the survey route.
- If you make a mistake, click **draw a new path** again to start over.

Enter a Sphagnum survey

First, we'd like you to tell us about the length of path you surveyed. Please tell us about the surveyed area whether or not you found any Sphagnum patches along the stretch as it will help us to identify paths that need to be surveyed in future.

Date of survey:

Number of surveyors:

Recorder Name:

Start Time (hh:mm):

End Time (hh:mm):

Tell us which stretch of path you surveyed. Click on the white plus sign on blue background in the top right corner of the map to control the map layers, for example to display the satellite image. To locate the area you surveyed in, you can either:

- double click on the map to zoom into the area of your survey
- or hold shift and drag on the map to zoom into the area of your survey
- or enter the name of a nearby town or village in the box below then click the Search button.


Once you've zoomed in far enough that you can clearly see the section of path you surveyed, choose "Trace path" if you have surveyed along one of the highlighted routes, or choose "Draw a new path" if you surveyed along an alternative route.

Now, click on the path to mark the start of your surveyed route stretch, then click a second time to mark the end of your surveyed route. The section of path you surveyed should then be highlighted. If you make a mistake, just repeat the procedure until you get it right.

Now, click on the map to mark the start of your surveyed route stretch, then click at each point along the path where the path changes direction. Double click at the end of the path to finish. If you make a mistake click 'Draw new path' again to start over.

Map reference:

Latitude and longitude of the mid-point of your surveyed path. It will be automatically filled in for you when you have defined where you surveyed.



Submitting your records

Patch details

- Select centre point of patch on map or enter grid reference. Zoom in to select a more accurate location.
- Patch width to nearest 25cm to max 200cm.
- Patch length to nearest 25cm.
- Enter the growth form: hummock, lawn or wet hollow.

Sphagnum patch details

 Use these pages to fill in the details of any *Sphagnum* patches you saw. Fill in the details of one patch on each page and press Save. Once you have entered details of all the patches you saw click Save and then the Finish button. If you did not see any *Sphagnum* patches on your walk, just click the Finish button now.

Select the location of the centre point of the *Sphagnum* patch on the map. Zoom in further to select a more accurate location. If you have GPS coordinates, enter these in the box below to navigate to the location on the map.

Map reference:

Patch width:

Patch length:

How was the *Sphagnum* growing?

Species	Add photos
<input type="text"/>	<input type="text" value="Select a species first"/>

You can enter more than one species here if there were several in the patch. Enter just "Sphagnum" if unsure.



Submitting your records

Patch details

- Enter the species of *Sphagnum* present, if known or just enter *Sphagnum*.
- Add photos, if available.
- Select dominant vegetation type.
- Enter notes about factors that might affect *Sphagnum* growth e.g. path widening.

Map reference:
SK1220286382
Click on the map where you saw the *Sphagnum* to automatically set the map reference.

Patch width:

Width in cm to nearest 25cm, up to a maximum of 200.

Patch length:

Length in cm to nearest 25cm.

How was the *Sphagnum* growing?

Species **Add photos**
Select a species first

You can enter more than one species here if there were several in the patch. Enter just "Sphagnum" if unsure.

Dominant vegetation type:

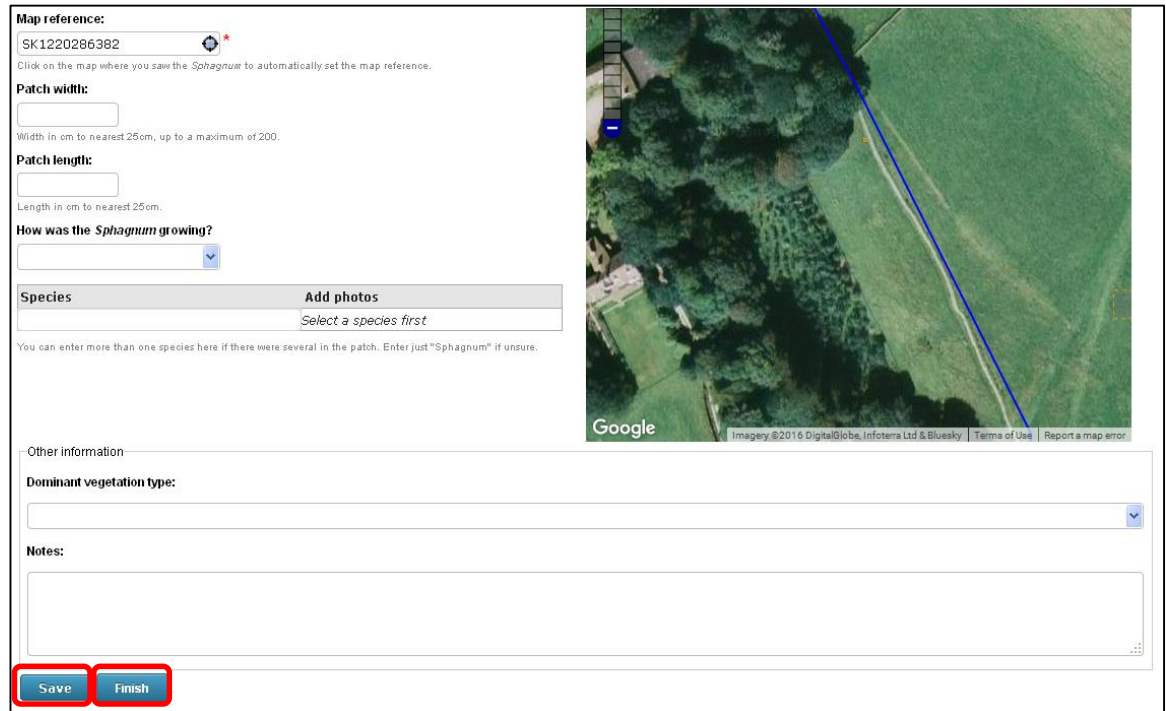
Notes:

Save Finish

Reviewing your records

Finishing off

- Click **Save**.
- If you saw another patch, complete another record page.
- Once you have entered details of your last patch, click **Save** again and then click **Finish** to submit your records.
- If you didn't see any patches, just press **Finish** on the first page.



Map reference:
SK1220286382
Click on the map where you saw the *Sphagnum* to automatically set the map reference.

Patch width:

Width in cm to nearest 25cm, up to a maximum of 200.

Patch length:

Length in cm to nearest 25cm.

How was the *Sphagnum* growing?

Species **Add photos**
 Select a species first

You can enter more than one species here if there were several in the patch. Enter just "Sphagnum" if unsure.

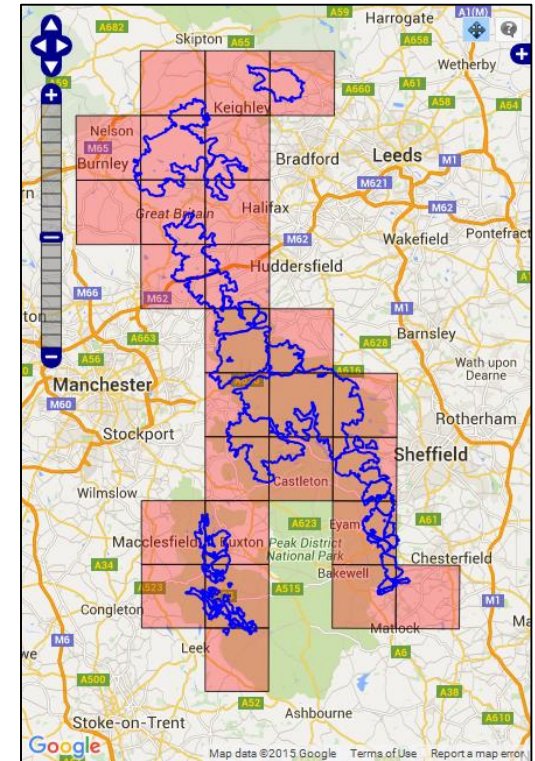
Other information
Dominant vegetation type:

Notes:

Save **Finish**

What will your data tell us?

- *Sphagnum* presence and absence in the project area.
- What affects *Sphagnum* presence or absence – habitat, elevation, management?
- Over time, is *Sphagnum* distribution increasing or decreasing? Is it moving uphill, northwards or westwards?
- What might be causing these changes? Changes in climate, management?
- How might *Sphagnum* distribution change in the future? If we know how climate affects this, future climate change projections could be used to project potential future distributions of *Sphagnum*.



Other surveys



The image shows a 'Community Science' survey form and a smartphone displaying the survey interface. The form is titled 'Help us to understand how moorlands are being affected by climate change' and includes a table for recording sightings. The smartphone screen shows a 'Select An Animal' screen with photos of rabbits and a 'Keep up to date with everything Science' section.

Date	Time	Location	Number of sightings	Number of photos taken	Notes

SEI **LOTTERY** **HERONS**

White (Great) Hare Brown Hare Rabbit



Supporting you

www.moorsforthefuture.org.uk/community-science

We are here to help you and our website offers all the support you should need including:

- **A downloadable PDF of this presentation**
- Further information and guidelines
- Updates on which transects need surveying
- Survey forms, transect guides and maps for download
- Help on submitting your records online
- How to establish new transects

You can also contact us via:



Thank You



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