



Cyngor Cefn Gwlad Cymru  
Countryside Council for Wales



# Fenn's, Whixall & Bettisfield Mosses

## National Nature Reserve



[www.naturalengland.org.uk](http://www.naturalengland.org.uk)

## How to find us

### By car

To explore Fenn's and Whixall Mosses follow the brown tourism signs from the Ellesmere to Whitchurch (A495), the Whitchurch to Wem (B5476) or Wem to Welshampton roads, to the Morris Bridge car park (SJ 493355) on the Llangollen canal, Whixall. Parking is also available at Roundthorn Bridge (SJ 501357).

To explore Bettisfield Moss, follow the figure of eight track from the World's End Car Park (situated at the end of the second road on the right, west of Dobson's Bridge, Whixall).

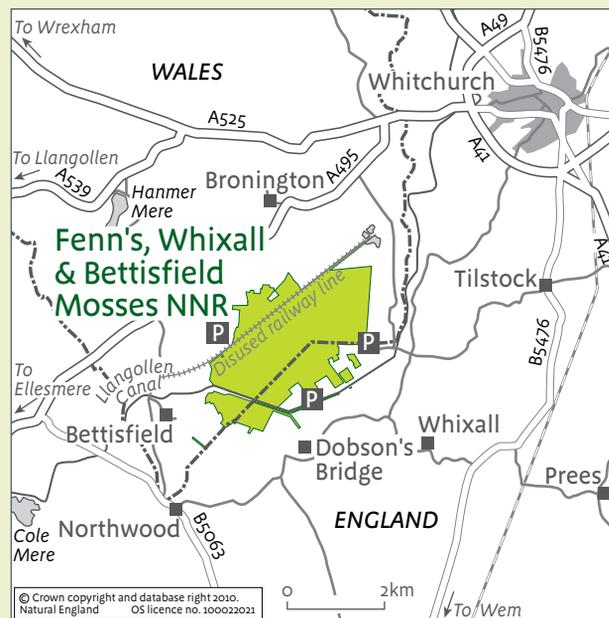
### By public transport

The nearest railway station is at Prees, 4 miles from the Reserve. There are no direct bus services between Prees and Whixall. The nearest bus stop is at Coton, 2 miles from the Reserve.

The Reserve is near Route 45 of the Sustrans National Cycle Network and Regional Cycle Route 31 ([www.shropshirerecycling.co.uk](http://www.shropshirerecycling.co.uk)).

Access tracks are grassy or peaty, with no stiles. They are generally level, with steps to the canal. The firmer tow path is accessible by path/ ramp from the Morris Bridge and Roundthorn Bridge car parks. Disabled visitors can drive along the old railway line by prior arrangement.

There are no toilet or refreshment facilities on site.



Visiting the Mosses

© Natural England 2010  
Catalogue Code: NE271

Natural England publications are available as accessible pdfs from: [www.naturalengland.org.uk/](http://www.naturalengland.org.uk/)  
publications. Should an alternative format of this publication be required, please contact our enquiries line for more information: 0845 600 3078 or email: [enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk)

Printed on Defra Silk comprising 75% recycled fibre.

**Cover photograph: Restored commercial peat cuttings.**

© Natural England / J L Daniels

## The Mosses Trails

Three interlinking circular trails pass through the Reserve and take in the Llangollen canal. Routes start from either Morris's Bridge or the Marl Allotment at Roundthorn Bridge on the canal. (see centre map).

The trails range from 2 km to 4 km long and can be combined to create longer walks of up to 7 km. The routes, marked by a series of arrowed posts, are easy to walk.

**The natural environment can be hazardous. Please:**

- Keep to the way-marked routes. The Mosses are riddled with deep, flooded and partly vegetated ditches.
- Do not smoke on the Mosses at any time of the year. Even small fires can cause extensive damage.
- Watch out for adders. If bitten keep calm and seek medical attention.



© Natural England / William Hankers

Adder

- Do not collect plants or animals.
- Keep dogs on a lead from March to July, and otherwise at heel.
- Watch out for canal mooring ropes, metalwork, projecting roots and branches, tree stumps, holes and tussocks.

Horse riding and cycling are not safe on the peaty tracks.

For more information on our events programme, volunteering opportunities or to find out how to obtain a long term permit to explore deeper into the Reserve, contact us on 0845 600 3078 or visit [www.naturalengland.org.uk](http://www.naturalengland.org.uk)

**Natural England** is here to conserve and enhance the natural environment, for its intrinsic value, the wellbeing and enjoyment of people and the economic prosperity it brings.

**The Countryside Council for Wales** champions the environment and landscapes of Wales and its coastal waters as sources of natural and cultural riches, as a foundation for economic and social activity, and as a place for leisure and learning opportunities. It aims to make the environment a valued part of everyone's life in Wales.

[www.ccw.gov.uk](http://www.ccw.gov.uk)

**British Waterways** manages the inland waterways system for the benefit of the nation.

[www.britishwaterways.co.uk](http://www.britishwaterways.co.uk)



## Kingdom of Sphagnum where space and time interweave\*

Straddling the English/Welsh border near Whitchurch, Fenn's, Whixall & Bettisfield Mosses National Nature Reserve is a remarkable wilderness. It is not only a Site of Special Scientific Interest, but a European Special Area of Conservation and a Wetland of International Importance.

At nearly 1,000 hectares, the Mosses are the third largest and one of the most southerly lowland raised bogs in Britain.

The Reserve's acidic and waterlogged environment allows an outstanding number of specialist bog plants and insects to thrive. This, along with the fascinating evidence of its former peat workings, means there is much for visitors to enjoy.

\*quote from the 'Echoing Green', a collection of poems by Gladys Mary Coles, Flambard Press 2001.

Formed at the end of the last Ice Age in a shallow hollow flooded by melting ice sheets, the lowland raised bog was a slow-growing dome of Sphagnum bogmoss peat. Bogmoss absorbed and acidified the rain, water-logging the peat surface so only specialised plants and animals survived. Dying plants, together with pollen from vegetation on and around the bogs, became 'pickled' as layers of peat, forming a giant story book of the last 12,000 years.

A Bronze Age axe found in a layer of 3,400 years old Scots pine stumps in the peat, and the discovery of three preserved Bronze Age and Romano-British bog bodies, tell us that people have lived and worked here for a very long time.



A thousand years of peat



Magellanic bogmoss



Hand-cutter on Whixall Moss

## Peat on the Mosses

Raised bog plants are now rare as so many bogs have been drained for peat cutting, agriculture and forestry. Man has used the peat from the Mosses for centuries – first for fuel and distillation, then as bedding for horses and poultry, and for packing. More recently peat has been used for garden compost.

For 500 years, small-scale peat cutting at the edge of the Mosses gradually enabled the outer areas to be turned into fields, sweetened with lime brought along the canal from Llangollen.

The bog was drained after the Enclosure Acts of 1777 and 1823, for the canal in 1804 and then again when the railway was built in 1863. Further large scale drainage for commercial peat extraction in the 1920's completed the collapse of the Mosses' saturated domes.

During the 20th century the Mosses were commandeered for military use during the World Wars, and part was planted with pine forests in the 1960s.

Mechanised commercial cutting of peat began in 1968, but when the rate of cutting quadrupled in 1989, a campaign was launched to rescue the Mosses. The central area was acquired as a National Nature Reserve, and in 1990, large-scale cutting was brought to an end.



Peat cutting destroys the past

## Wildlife on the Mosses

Natural England and the Countryside Council for Wales have been restoring this unique habitat for nearly 20 years. We have cleared forests, trees and bushes, dammed the peat cuttings to restore water levels, and controlled storm water run-off.

As a result, bogmosses and cotton-sedges now cover the Mosses again. Wildfowl, waders and dragonflies have returned, and nearly 2,000 species of invertebrate thrive. Large heath butterflies, white-faced darter dragonflies, bog bush-crickets and raft spiders – back from the brink of extinction – are moving out across the bog from their refuges in the old commercial and hand cuttings.

In the spring, look for yellow four-spot chaser dragonflies and hear the calls of breeding teal, mallards, curlews, skylarks and meadow pipits. In the summer, acrobatic hobbies catch myriad



© Natural England / C Heyes

Bog bush cricket



© Natural England / P Boardman

Four-spot chaser

dragonflies, and 'churring' nightjars Hoover-up clouds of moths at dusk. Listen out for the plop of water voles – but don't tread on any basking adders!

In wetter areas, the Mosses are now covered by peat-forming carpets of 18 Sphagnum bogmoss species and snowy spring-time heads of bright green needle-leaved hare's-tail cotton sedge and red strappy-leaved common cotton-sedge. Cranberries, bog rosemary, bog asphodels, and insect-eating sundews and lesser bladderworts are spreading too.

On drier areas, such as the tracks, birch bushes, golden autumn bracken and white winter swathes of purple moor-grass persist.



© Natural England / B Probin

Raft spider

## Saving the world's bogs

Commercial peat cutting rapidly uses up peat that has taken thousands of years to form. So many raised bogs have been drained for peat cutting or for conversion to farmland or forestry that their special plants and animals are now rare.

Peat bogs also trap and hold vast stores of carbon. Cutting the peat releases this carbon into the atmosphere and speeds up the damaging effects of climate change. Restored bogs re-absorb the carbon.

In Britain we have a large proportion of the world's remaining raised bogs. You can help to save our bogs and slow down the rate of global warming by:

- making your own compost;
- buying 'peat-free' or 'peat-reduced' compost;
- choosing plants that are grown in peat-free compost.



© Natural England / J.L. Daniels

Restored hand peat cuttings

## What to see along the Mosses Trails

The text below refers to numbered posts and sculpture plaques along the trails. To help you find your way, follow the symbols coloured to match your chosen trail. There are some spurs off the main trails with additional points of interest. The text for these is given in boxes below.

### Canal-side fen and water

1 2

Great hairy willowherbs, water figworts, marsh woundworts, flag irises, reeds, nettles and marsh cinquefoils fringe the canal, which transported produce and fresh water from the Marches to Ellesmere Port. Watch the banded demoiselle damselflies, butterflies and other insects gathering nectar from wildflowers, and birds of prey hunting bank and field voles. The hawthorn hedge, planted when the canal was constructed, includes regularly spaced oaks to supply timber for use on the waterway. Wet fields harbour fen species which would once have surrounded the natural undrained bog. On the canal, mute swans, ducks and moorhens feed, while over 6,000 boats each year pass under 11 unique cantilever bridges on their way to Thomas Telford's magnificent Pontcysyllte aqueduct.



© Natural England / W. Hankers

Banded demoiselle

## Peat cutting

C

Hand-cut 'potting' peat, ground up and sieved at Albert Allmark's peat milling shed, was sold for horticultural use and 'turf blocks' were sold for fuel.

## Marl Allotment

Common Toad 3 4 5

Whixall's only Common Land, where marl clay was dug for use as agricultural fertiliser. Butterflies abound on the unimproved damp grassland and in glades in the wet alder, willow, birch and oak wood.



## Peaty fields

4 5 C

Drained after the Enclosure Act of 1823, the peat bog here has been converted into fields. Light spring grazing allows curlews and lapwings to nest on the ground, with no danger from agricultural machinery. Until the 1940s, peat-lined houses stood in some of these fields.

## Water voles

Water Vole 5 C

Water voles, 'Ratty' of Wind in the Willows, have been nationally decimated by mink. They still live along the major ditches that drain the Mosses. Spot their burrows in ditch banks and diagonally-cut 5 cm-long pieces of vegetation floating on the water.



## Pollution problems

6

The willow, alder, rushes, bulrushes and bog pondweed here are fed by effluent and mineral-rich water from local houses and farmland. This richness makes the raised bog peat rot away.

## Back from the brink of extinction

White-faced darter b

Dragonflies and damselflies spend most of their lives in water. Draining the Moss eradicates them. The rare white-faced darter dragonfly, which lays its eggs in bogmoss, was almost extinct but has now spread out from its last stronghold: onto the restored commercial peat cuttings.



## Losing the Moss

Adder 6 7 a 8 15

Birch, bracken, pine, heather, and the straw-yellow purple moor-grass are all dry-land plants that race to colonise abandoned drained peat cuttings. Bog plants only survive in the wet bases of the ditches. Look for adders basking on drier tracks and peat baulks and buzzards taking rabbits.



## Restoring the Moss

Raft Spider 7 8 9 11

Once birch and pine have been brought under control, and the ditches have been dammed, rainwater is retained by the bog. This



suppresses dry-land plants and encourages sheets of peat-forming Sphagnum bogmoss. Look for pink-flowered cross-leaved heath, red leaves of common cotton sedge and the needle-like green leaves of hare's-tail cotton sedge. Spot raft spiders stalking peaty pools and the Reserve's 28 species of dragonflies.

### Wetland birds about

Snipe & Curlew

7 8 9 11

Rewetting the Mosses has dramatically improved bird life. Curlews and mallards thrive and snipe abound in winter. Teal and shovellers now breed, and peregrines reap this harvest.



Let us know what you see along the trails.

### Lost Mossland

Brimstone

1 C 10 11

When drainage ditches are left open, abandoned fields and peat cuttings on the bog rapidly turn into birch and bracken woodland, or in damper areas to fen meadow with reeds and sallow carr, and the rare bog species are lost. Alder buckthorn bushes host yellow brimstone butterflies, so are kept during mossland reclamation.



### Carr woodland

12 14

A wide range of trees grow along the canal in contrast to on the Moss, where only birch and pine grow. Yellow flag irises, reeds and false fox-sedges grow here in wet alder and sallow carr woodland, with Duke of Argyll's tea-plants, dog roses, bracken,

nettles and brambles in drier places. Look out for kingfishers. Recent steel piling has stopped the threat of the subsiding canal bursting onto the bog.

### The Border and Bettisfield Moss

13 18

The English/Welsh border is just a narrow ditch that was dug in 1826. Across the canal, beyond the fringing alder carr on Bettisfield Moss, invading pine forest has been removed to restore the bog.

### The Tramway

15 16

A two-foot-wide narrow-gauge railway used to take the peat along this track to the Fenn's Old Works. Scattered scrub is kept near the Mosses' edge for beetles, moths and birds like reed bunting.

**CAUTION: Keep well away from the very deep main drain that lies alongside the track.**

### Heathland birds

Wheatear & Stonechat

16

The main drain has made the bog dome collapse to form a valley here. On drained heathery slopes, wheat-ear, stonechats and skylarks breed.



### The Fenn's Old Works

Nightjar

d e

Peat was milled and baled here from 1938 until 1963 when the main-line railway through the Moss was



Fenn's Old Works peat factory

closed. Adjacent woodland gives shelter for insects early in the year.

The fields on rising ground all round mark the limit of the raised mire. Ruabon

Mountain can be seen to the north-west. At dusk, nightjar, with their haunting churr, Hoover-up moths on the marginal scrubby areas.



## The Batters

16 17 18

The Trail follows the raised target bank of one of six First World War rifle ranges on Fenn's Moss. This route was used to bring peat off the Mosses by narrow-gauge railway to the Fenn's Old Works.

## Restored commercial peat cuttings

Hobby

16 17 18

Sheets of cotton sedges and bogmoss now cover the restored commercial peat-cutting fields of Fenn's Moss, which were bare and dry twenty years ago. During spring and summer, dragonflies provide a plentiful diet for the acrobatic hobby. Caterpillars of the Mosses' special large heath butterflies live on hare's-tail cotton sedge and the adults drink nectar from the pink-flowered cross-leaved heath.



## Birds of prey

Short Eared Owl

9 18

Oafs Orchard, the uncut higher centre of the Moss, and other heathery areas are haunts of over-wintering short-eared owls. Look out for other birds of prey over the restored Whixall handcuttings.





© Natural England/B Probyn

Fox Moth (mature larva) / Cwrfyn y cadno (larfa llawn-dwf)



© Natural England/J Robinson

Teal / Corhwyaen



© Natural England/P Beardman

Large heath / Cweirlöyn mawr y waun

## Key to symbols

### Peat-cutting types

- P1 Uncut areas
- P2 Whixall Bible handcuttings
- P3 Old handcuttings by locals.
- P4 Old commercial handcuttings
- P5 Modern handcuttings
- P6 Recent commercial cuttings

### Archaeology

- A1 Pine layer in peat
- A2 Bronze Age palstave found
- A3 Bog bodies found
- Best peat profiles seen in areas P5

### Transport

- T1 Ellesmere to Whitchurch railway, 1862
- T2 Shropshire Union Canal, 1804
- T3 Moss Tramway, 1880s

### Peat factories

- F1 Old Moss Works, 1850s
- F2 Old Shed Yard Works, 1886
- F3 Fenn's Bank Sidings, 1909
- F4 The Old Graveyard, 1916
- F5 Fenn's Old Works, 1938
- F6 Manor House, 1957

### Military Use

- M1 WW1 & 2 Rifle Ranges
- M2 The Batters Rifle Range
- M3 WW2 Bombing Range
- M4 WW2 Strategic Starfish site

