



# The Sundew

## Cumbrian BogsLIFE project newsletter

**Welcome** to the Roudsea Wood and Mosses edition of *The Sundew*. In this issue:

- Holker Estate's support in the restoration work of the peatbog at Roudsea Wood and Mosses.
- Additional funding extends the restoration works in the northern area of the Reserve.
- Reserve Manager Jim Turner on what to expect in spring plus the rare species of sedge found only on the Reserve.
- Bog mats: the secret to moving machinery safely around a peatbog site.
- Information of Cumbrian Bogs LIFE end of project conference, May 7-8 2019

### Bringing Cumbria's Raised Bogs to LIFE



*Dolomedus fimbriatus* – otherwise known as the raft spider and easily found at Roudsea Wood and Mosses.

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### Project Site Locations



Sphagnum moss grow in mats of individual plants which helps support the vast amount of water they retain – more than 8 times their own weight! Like tiny sponges, they absorb water and nutrients through the surface of their leaves, which occur along the branches of their simple stems.



## Holker Estate and Natural England at Roudsea Wood and Mosses NNR: Partnership working in the restoration of a nationally rare habitat

Roundsea Wood and Mosses Nature Reserve is located on land owned by the Holker Estate and leased by Natural England.

The Holker Estate has been supporting the work of the Cumbrian Bogs LIFE project to restore the peat bog, which included the clearance of trees and non-native invasive shrubs from the 210 ha site between Holker and Haverthwaite. By tackling Rhododendrons on land adjacent to the bog, the Estate is helping to reduce the chances of this aggressive plant from continuing to invade this rare habitat.

Rachel Bagshaw, Holker Estate manager, says the project has successfully preserved this important lowland bog ecosystem for the future.

“There were some concerns at first that removing the trees on the site might create some local flooding, but we’ve found that by enabling the peat bog to function as it should, it actually holds water, decreasing the amount going into nearby field ditches.

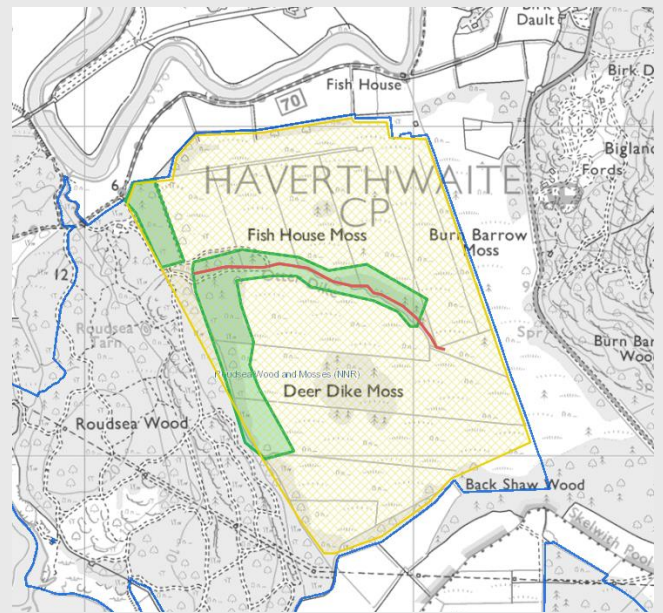
We worked closely with Natural England throughout the project to minimise the visual impact of the works and maintain the beauty of this unique landscape.

We’ve also cleared Rhododendron from woodland adjoining the mosses to reduce the chances of new seeds establishing on the mosses, however, ongoing treatment is required every year to prevent regrowth of this invasive species.

Not only will Roudsea moss capture more carbon in the future, it is now hydrologically functioning so that rare and special species that were once under threat can flourish once more.”



© Holker Estate



**As the Cumbrian BogsLIFE project moves into its final year, we have been able to extend the restoration works by 82 hectares (outlined in yellow in the map above) into the Northern Mosses known as Deer Dike, Otter Dike and Fish House Mosses.**

The works began in December and required closing off part of the board walk at the Reserve. All the works, which have included some tree and rhododendron felling and creation of bunding cells, have been completed in time for the return of the osprey, which have made the Reserve their summer home for the past six years. Their nesting tree has been retained and edge bunding has been built around it.

In addition, we have been monitoring water levels at the Reserve since December 2017 using 6 dipwells that stretch from the centre to the very edge of the bog. The dipwells contain data loggers, which record water levels every hour.

Two dipwells are located at the centre of the bog which has intact vegetation and no restoration work undertaken; two are in areas with tree removal and cell bunding; while the final two were placed near the edge of the bog, where no work was undertaken and where trees are present. Data has shown that the drought in summer 2018 caused a dip in the water levels at all six dipwell sites, but all have recovered.

The greatest measure of fluctuation was noted within the areas of intensive restoration work. This was expected: until the revegetation takes hold within the bunding cells, the mosses won't be able to take on their essential function of retaining and stabilizing water level at the peat surface.

## Our staff talk about a few of their favourite things that make Roudsea Moss and Woods National Nature Reserve so special

Spring on the Roudsea Mosses can be quiet, a late frost creeping over bog pools like black glass and crisping up the cushions of sphagnum with a pale frosting. Or you could be warmed with a spring sunshine that coaxes out early flowers such as the delicate greeny-yellow of bog cotton (you'll need sharp eyes for this, its flowers are a less showy precursor to the white tufts of the seed heads that are so familiar later in the year.) These are the days when sounds of life seem to clamour over the quiet of winter. The familiar calls of chiff chaff and willow warbler begin to return to the woods. Keep an ear out for the sound of a cuckoo over the bogs and you might be lucky and see a returning osprey.

The bogs will look a bit different this spring, a bit less scrub and a bit wetter. This winter we've had diggers clanking away, hard at work restoring our northern bogs natural hydrology. By creating bunds and blocking dykes with the peat, water levels will be kept higher on the bog, making the conditions right for the peat forming sphagnum mosses.

Spring can be a good time to search for lichens with the vegetation just beginning to grow and trees not yet in full leaf. On the bogs, clouds of *Cladonia portentosa* nestle amongst the heather whilst in the woods we have a good range of *Peltigera* or Dog Lichens that are easy to spot, including *Peltigera horizontalis*, which can be found on mossy old stumps and trunks. Roudsea also has one of the best sites in Cumbria for *Peltigera leucophlebia* which is a beautiful vivid green.

The sunshine will also be welcome for some of our reptiles. The bogs are great habitats for both adders and grass snakes. Look out for them basking and soaking up the warmth on sunny days.

### *Peltigera leucophlebia*



© Natural England

### *Carex flava* – a rare botanical gem

Did you know that 98.57% of all Large Yellow Sedge (*Carex flava*) in the UK can be found in Roudsea Wood and Mosses? Part of the Cyperaceae plant family, sedges are an important component to the ecology of wetland habitats.

The species can be found in the northern part of the Reserve between the bog terrain of Deer Dyke Moss and the limestone woodland. It thrives in the peaty soils of this transition zone and can be found in open canopy or light shade.

Last year, NE staff undertook a survey and 2,897 specimens were counted along with 102 *Carex x alsatica*, a hybrid form. The team of five fanned out in a line starting from the limestone edge in order to find the tussock-like clumps, which count as one plant. Reserve Warden Jim Turner said, 'The habitat for this species spreads like a ribbon, sometimes a metre wide but no more than three or four metres wide, and follows the course of the calcareous water flowing off the limestone into the edges of the peat body.'



© Natural England



The *Carex* has longer utricles and beak than other species of the *Carex* family. Judicious thinning of the tree canopy to create a dappled shade have ensured it to thrive.

## Accessing the peatbog environment – one of the serious challenges of restoration

Water comprises 95% of the composition of peatbogs and can be up to 14 meters deep. This makes getting machinery onto site both difficult and extremely hazardous. There have been numerous incidences of diggers becoming trapped in mires, endangering habitats and often unable to be retrieved. The solution is the use of bog mats, which are planks of durable heavy oak, fitted together. Their additional benefit is that they limit impact on the environment by protecting the ground from damage and contamination.



Bog mats are about three metres in length

Each mat is laid out ahead of the excavator machine by using its bucket-swivelling arm to move one mat in front of the other, forming a rolling boardwalk that

disappears as the previous mat from behind is picked up and swung to the front. It's a slow business and moving from one end of the bog to the other this way can take half the day.

However, once the excavator is in situ, it won't be leaving the site before the work is done. Generally, the works begin on the edges of the bog and move towards the centre. The limited access points at the Northern Mosses has meant that tree removal has been limited and where necessary, leaving the material in situ. Smaller vehicles, which are not liable to sinking into the peat, are used to carry diesel to the diggers on site.



Bog mats at the ready on Roudsea Wood and Mosses

**LIFE+** The project is generously supported by the European Union's LIFE+ Nature and Biodiversity Programme, which is the funding instrument for the environment. Funding is awarded to best practice, innovative demonstration projects that contribute to the objectives of **Natura 2000** - a network of the very best areas for wildlife across Europe.

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### Cumbrian BogsLIFE+ Project Conference

7-8 May 2019

Newton Rigg Campus, CA11 0AH

FREE

This conference marks the end of the five year, EU LIFE-funded lowland raised peatbog restoration project, which has taken place over 3 sites in Cumbria including Roudsea Wood and Mosses. The two-day event will explore the challenges and lessons learnt at each site, and what happens after LIFE.

The deadline for registration for the conference and the conference meal is 12<sup>th</sup> April 2019.

See <https://cumbrian-bogs-life-2019.eventbrite.co.uk> or contact [cumbria.boglife@naturalengland.org.uk](mailto:cumbria.boglife@naturalengland.org.uk).

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