

# Restoring bogs

for water quality and wildlife:  
the positive effects on moorland birds



Working together to give nature a home





Bare peat in the SCaMP area in 2005, before restoration

## What's the story?

United Utilities (UU) owns more than 56,000 hectares (216 square miles) of water catchment land across the north-west of England, providing water for 6.7 million people. The Sustainable Catchment Management Programme (SCaMP), working with Natural England and tenant farmers, was set up in 2005, covering UU catchment land in the Peak District and the Forest of Bowland. The aim is to improve the SSSI condition of the land, benefiting wildlife and raw water quality. There has been a long-term decline in the habitat condition across much of the water catchment land, due to

atmospheric pollution, overgrazing and burning. The blanket bog has been eroded, and the vast carbon store in the peat, gathered over millennia, has been disappearing quickly, destroying wildlife habitat and leading to poor water quality.

The UK's blanket bogs and upland heaths are some of our most precious wildlife habitats. Although they are protected under UK law and European Nature Directives, many of them remain in poor condition and under threat. A healthy blanket bog protects a vast carbon store, and accumulates more carbon in the

form of peat. When lost from the peatland, the carbon has climate change impacts, increasing carbon dioxide emissions and the carbon discolours the water, leading to higher water treatment costs.

Since 2010, the RSPB has worked in partnership with UU at Dove Stone in the Peak District, to manage land to benefit water quality and wildlife. The pioneering work of UU is one of the finest examples of how landscape-scale habitat restoration can result in multiple benefits for wildlife and people.

## The importance of the uplands for moorland birds

The uplands comprise the UK's largest area of semi-natural habitats. They provide a home for a wide range of birds: ring ouzels, peregrines, short-eared owls and wading birds including golden plovers, dunlins and curlews.

Golden plovers are the most common wading bird of the blanket bog.

Across the SCaMP area, we carried out moorland bird surveys in 2005 before the start of the major restoration work, and then in 2007, 2009 and 2014.



The uplands give a home to birds such as curlews

# Landscape-scale habitat management – what has been achieved?

Tenant farmers, supported by agri-environment funding, have reduced sheep numbers to allow vegetation to recover.

Together with UU, we adopted a policy of “no burning” on peat, and undertook major work across the landscape to revegetate bare peat in the Peak District. This involved

applying heather brash, a grass seed mixture to act as nurse crop, and fertiliser and lime to increase the pH of the acidic peat. This enabled plants to establish and grow more easily.

Following this, we blocked gullies to restore the high water table in the peat. This work has transformed the

eroding peatlands into wetter, more diverse habitats. We are re-introducing sphagnum moss, a key feature of blanket bog, which is slowly re-colonising naturally. It will take many years to fully restore the area, but we’re moving towards a natural blanket bog once more.



Jon Bird

**2011: heather and natural cottongrass colonises the revegetated land.**



**2012: heather bales dug by volunteer teams bring the water table close to the surface.**

Dave O'Hara



**2014: re-introduced sphagnum moss begins to establish in the blocked gully.**

Jon Bird

## Improving water quality

Monitoring by UU shows that the SCaMP restoration has quickly contributed to reducing particles of

peat in the water, known as turbidity. There has also been a slight, but significant, decrease in water colour,

which shows that dissolved carbon levels are beginning to decrease.



Dippers have increased by 188%

Mark Sisson (rspb-images.com)

**Table 1 Change in bird species populations and comparison with English upland trend 2005–2014**

Selected species	% Change in population recorded by SCaMP (63 km <sup>2</sup> )	Breeding Bird Survey trend (61 km <sup>2</sup> )	SCaMP compared to wider upland Breeding Bird Survey
<b>Increasing</b>			
Red grouse	88% increase	Stable	SCaMP better
Golden plover	138% increase	Stable	SCaMP better
Dunlin	775% increase	None on BBS	SCaMP better
Ring ouzel	164% increase	Stable	SCaMP better
Dipper	188% increase	Stable	No statistical difference
Skylark	108% increase	Stable	SCaMP better
Meadow pipit	52% increase	Stable	SCaMP better
Buzzard	282% increase	Stable	SCaMP better
Carrion crow	30% increase	Decline	SCaMP better
<b>Stable</b>			
Kestrel	1% increase	Decline	No statistical difference
<b>Declining</b>			
Curlew*	23% decline	Stable	SCaMP worse
Whinchat**	61% decline	Stable	SCaMP worse

\* Curlew stable since 2007 on SCaMP plots

\*\* Whinchat upland Breeding Bird Survey sample very small; wider national decline

## The effects on moorland birds

The work has shown significant population increases in a range of moorland bird species. Of the 27 breeding species analysed, 14 species increased, 10 species were stable and 3 declined.

For 17 species with sufficient data, the population changes recorded by SCaMP were compared to trends

from the upland Breeding Bird Survey in England, using data from 61 km squares.

The diversity of species that have increased is most striking. The increase in the numbers of dunlins, recorded in the Peak District, represents a significant conservation success as they

were in danger of becoming extinct in this area.

This demonstrates that SCaMP management and the landscape-scale approach to restoration in this project has wider benefits for a range of bird species.



Dunlins have increased by 775% and have been rescued from the brink of extinction



70% of breeding pairs of golden plovers fledged young at Dove Stone

## Breeding wading birds – an increase linked to water table restoration

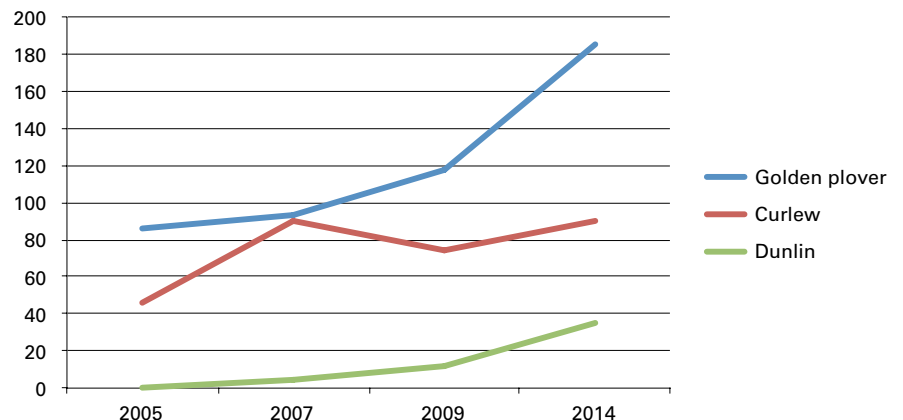
Where large-scale blanket bog restoration has taken place at Dove Stone, numbers of breeding wading birds have increased. This applies particularly to golden plovers and dunlins, the two species of wading bird associated with bog, and there has also been a positive effect on curlews.

### Breeding success for golden plovers

In addition, we ran a study between 2011 and 2013 on the productivity of golden plovers at Dove Stone. We found high nest hatching success, with over 70% of breeding pairs fledging young. It is likely that this success has been aided by the increase in insect food, due to re-wetting and revegetating the dry and eroded peat. The population increase has also coincided with a reduction in the control of predators.

### Increasing populations of red grouse

We found an 88% increase in the numbers of red grouse in the area, compared to stable populations in the wider Upland Breeding Bird Survey. This demonstrates how restoring the hydrology and



**Breeding wading bird population change at Dove Stone (individual birds)**

vegetation diversity of blanket bogs can benefit red grouse – a species which is important to many moorland managers.

### Restoration benefits wildlife, water quality and carbon management

The speed of transformation was quicker than we first expected. Restoring wet bogs has most notably supported increases in moorland breeding waders of conservation concern, and the landscape-scale approach to habitat restoration has benefitted a diverse

range of bird species, from red grouse to buzzards. The SCaMP study provides strong evidence of the potential to transform damaged ecosystems.

Across the wider English uplands, over 200,000 ha of blanket bog is in need of restoration. To achieve this, it has been estimated it will require annual capital costs of around £27 million for six years. With investment, there is the potential to secure future benefits for wildlife, carbon, water and people.



Dave O'Hara

**Wetter, sphagnum-rich bog: habitat restoration for wildlife.**

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### **For further information, please contact:**

Dave O'Hara, RSPB Dove Stone Manager

**tel:** 01457 819888

**email:** [dave.ohara@rspb.org.uk](mailto:dave.ohara@rspb.org.uk)

### **UK Headquarters**

The RSPB, The Lodge, Sandy,  
Bedfordshire SG19 2DL

**Tel:** 01767 680551 Fax: 01767 692365

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