

Habitat management news

Compiled by Conservation Management Advice, RSPB

The Swindale Beck Restoration Project

Swindale Beck is an upland tributary of the River Eden which runs through Swindale Farm, in the eastern Lake District. Here, the RSPB is working in partnership with the landowner, United Utilities (UU), to demonstrate sustainable land management. Like a great many watercourses across the UK, Swindale Beck has been heavily modified. It was straightened at least 160 years ago to create meadows which, at the time, allowed the valley's people to farm more effectively.

Rock-armoured on both sides, a straight route with almost no variation in width, depth or flow, the beck lacked the in-channel habitat features which a river of this type should support, with no gravel bars or deep pools and very few riffles. Historic management had resulted in the creation of levees running along a 2km length through the middle of the valley, while grazing had resulted in very limited numbers of trees along the channel.

Decades of natural deposition of gravel from upstream meant that most of the straightened length was perched above the surrounding land. At times of moderately high flow, water would be rapidly carried through the channel, taking small and medium-sized gravel with it and thus leaving little suitable substrate for Salmon or Brown Trout to spawn. The levees would prevent floodwater from flowing back,

so creating stagnant pools on the surrounding SSSI hay meadows.

Restoration project

The aim of the project was to restore natural river processes in order to enhance biodiversity, water quality, flood alleviation and the visual appeal of the landscape. A partnership of RSPB, UU, the Environment Agency (EA) and Natural England (NE) began work on the restoration of the beck in 2015, this forming part of the Cumbria River Restoration Strategy.

Other river-restoration schemes have shown that there is little need for detailed design work. Once a river is connected into a restored channel, natural processes rapidly take over and the desired in-river features – gravel bars, riffles and pools – form spontaneously. This approach was taken and contractors were asked to create

a simple channel profile from a basic plan design developed by EA geomorphologists.

The new channel was to run mostly through an area that was almost permanently wet, with less botanical and agricultural value than other areas of the meadow. There was some expected short-term loss of species-rich grassland but, by reinstating hay meadow, the project aimed to increase the extent of species-rich and agriculturally utilisable meadow. The increase in dynamism was also felt to be a positive factor, with a more natural flooding regime and new niches being continually created for plants to colonise.

Work began in March 2016. Frequent flooding proved challenging at times, as did the discovery of insufficient quantities of gravel in some sections of the new channel; by August, however, it had

Left Swindale Beck restoration in progress. Lee Schofield/RSPB

Right Swindale Beck restored September 2016. J. Whealdon



been fully excavated. Electro-fishing to move fish out of the straightened channel was carried out before the final bunds were breached and the river was connected into its new sinuous route.

Heavy rainfall two days after connection brought down large amounts of gravel and infilled areas that were lacking in suitable bed material, reshaped and increased the size of embryo bars, and formed new bars, riffles and pools, resulting in a new channel that was immediately more diverse than the old, straightened route.

The restored channel is, at 891m in length, 140m longer and around 2m wider than the old route, and without the levees it is better connected to the floodplain. In-channel deposition is visibly occurring in several places, with in-river features changing in response to flow. This enhanced morphological diversity rapidly produced benefits for wildlife, with multiple Salmon redds observed in the new channel in December 2016. There was no suitable spawning gravel in the old channel, so this represents a genuine increase in a key habitat requirement for a species of major conservation concern.

Over the winter of 2016/17, 4,000 trees were planted along the river corridor. As these mature, they will add shade and woody debris to the river as well as creating enhanced habitat. This woodland creation is one of several complementary projects in the Swindale catchment, including large-scale moorland restoration, further tree-planting, a renewed drinking-water intake and fish pass, and plans for two flood-attenuation areas.

The alternative option

The RSPB–UU partnership responsible for the management of Swindale Farm could have opted for a fuller rewilding scenario. All livestock could have been removed, or naturalistic grazing by large herbivores introduced. Land drains could have been blocked in order to reinstate a natural hydrology and create areas of wet woodland and fen alongside the restored river.

An intensive programme of tree-planting, or natural regeneration of trees, could have been planned and the river could have been allowed to find its own way as opposed to the prescriptive approach taken to restore a channel.

It was decided not to follow this 'wilder' approach. This was done in order to balance the benefits of the project with the protection and enhancement of hay meadows and to demonstrate that the enhancing of natural processes can be achieved in a farmed landscape. It is hoped that, by taking this pragmatic approach, this project will have greater relevance to other land-managers and may inspire similar improvements elsewhere.

There is an expectation that natural processes will encourage the channel to 'move' back and forth across the valley. There has already been bank erosion and, while steps could be taken (land drainage, bunding, bank reinforcement) that reduce the likelihood of these impacts, there is a keenness to avoid this if possible. While the aim is to try to integrate rewilding with management, if nature ultimately tells us that this is not possible it will be a valuable lesson learned.

An in-depth report on this project appears in issue 95 of the CIEEM bulletin *Inpractice*. For more information, please contact Lee. Schofield@rspb.org.uk.

Landscape-scale pollinator conservation

Readers of *British Wildlife* will be only too aware of the problems facing pollinating insects and other invertebrates. Those highlighted involve changes in land use as a result of modern farming methods, urban spread and new transport links. Since the 1930s, more than 97% of all flower-rich grasslands have been lost in England, with similar proportions reported elsewhere in Britain. This has resulted in large-scale reductions in the pollen and nectar sources on which our pollinating insects are dependent.

In recent years, pollinator strategies have been produced for England, Wales and the whole of Ireland, with a strategy in preparation in Scotland. Each one outlines the action needed to support and protect the pollinating insects, which contribute to food production and environmental diversity. The B-Lines project, being led by Buglife, aims to create a network of flower-rich pathways, working with farmers, communities, local authorities, wildlife organisations and businesses across the country.

B-Lines link the countryside, towns, and the best of our existing wildlife sites. And over time B-Lines will also include 150,000ha of new wildflower-rich habitat across the UK. The project's five objectives are:

- Help to conserve our native pollinators and a range of other wildlife, contributing towards biodiversity targets
- Help our wildlife to respond to climate change by making it easier for species to move around
- Increase the abundance of insect pollinators and the benefits which these bring to our farming sector (pollination being an important 'ecosystem service')
- Bring nature to people
- Give opportunities for everyone to play his or her part and help to create the B-Lines network

A B-Line hub has been created on the Buglife website to support the work: <https://www.buglife.org.uk/b-lines-hub>. The site contains a range of resources for those wishing to become involved, from farmers, urban greenspace-managers and highways-managers through to communities. For further information, contact Paul Evans (paul.evans@buglife.org.uk).

Anyone with information on the success or failure of any management technique is invited to contact John Day, Land Management Adviser, RSPB Conservation Management Advice, The Lodge, Sandy, Beds SG19 2DL; tel: 01767 680551; fax: 01767 683640; e-mail: john.day.lodge@rspb.org.uk.