

Yorkshire Water Biodiversity Fund

Expanding priority habitats in the Lower Ure Valley (Tranche 2)

Update: March to June 2023



**LOWER URE
CONSERVATION
TRUST**



A second tranche of funding has been generously provided by Yorkshire Water for the Lower Ure Conservation Trust's work to expand priority habitats, extending from June 2022 to May 2024. This report summarises work undertaken in March to June 2023.

News from the nursery

A much-needed extension to the polytunnel was built in March, providing more working space and shelves to grow seedlings and particularly precious plants, out of reach of the unseen critters who occasionally cause havoc. Needless to say, we've quickly filled the available space!



We've excavated but not yet finished pools for propagating submerged aquatic plants.

Visitors during the past four months have included students from Cundall Manor School; the High Sheriff of North Yorkshire; staff and volunteers from RSPB St Aiden's; and several individuals interested in creating habitats.

On 28th May, we hosted our first Fen Creation Workshop, an opportunity to showcase the results of five years' work and discuss both successes and failures with a wide range of conservation practitioners. The workshop was booked to capacity, with 26 attendees.

We've run identification workshops on grasses and rushes & sedges, attended by both LUCT volunteers and conservation volunteers from further afield.

Rare plant projects

We're working with Yorkshire Wildlife Trust on re-introducing **Water Germander** to their Bolton-on-Swale reserve, the only known historic site for this endangered plant in northern England. YWT successfully applied to Natural England's Species Recovery Fund to cover the cost of a 3-year reintroduction trial and recently received the necessary consents to do this (the reserve is part of Swale Lakes Site of Special Scientific Interest). We are providing the plants, propagated from material collected from Kingfishers Bridge Nature Reserve in Cambridgeshire last autumn.

Propagating rare plants is always a learning curve but both failure and success contribute to understanding the ecology of a species. Around 80% of the stolon segments we planted in plugs or trays died-off over winter, as did our two whole plants. However, cuttings simply placed in containers of water mostly survived and have grown well after potting in spring. We've subsequently found that cuttings from flowering shoots will root, so we're on track to provide at least 100 plants for the first tranche of planting this autumn. To our surprise, we've also had good germination from the small amount of seed we were able to obtain.



Rare Spring Sedge is restricted nationally to a handful of magnesian limestone grasslands in Yorkshire, upland calcareous grassland in Teesdale and a small number of chalk sites in Norfolk. LUCT volunteers monitored the local population at the Yorkshire Wildlife Trust's Burton Leonard Lime Kilns reserve, finding 80 plants on 2nd May. This species appears to be confined to a specific area with very short vegetation, little or no thatch and small bare patches associated with soil creep. Hopefully our observations will help inform reserve management.

With appropriate permissions in place, we returned on 3rd June to collect a small amount of seed, with the aim of establishing a study population at the nursery. This really was meticulous work but we were able to collect several seedheads. Having extracted seed from the utricles (fruits), some was sown fresh and the remainder put in cold storage.



Surveying Rare Spring Sedge



Collecting Rare Spring Sedge seed

Tufted Loosestrife was included in several of the sandbags planted in the ‘sedge bed’ trial plot last year. Although it didn’t flourish in last summer’s dry conditions, it has clearly spread vegetatively and re-emerged extensively outside the footprint of the original planting.

This is an important plant for us: the last native population in England is at Gormire Lake near Thirsk but it formerly occurred at other sites in the Swale & Ure Washlands such as Leckby Carr and Carlton Miniott Carr.

Greater Water-parsnip has been grown successfully from rhizome cuttings sourced from the Lower Derwent Valley. The two largest plants came into flower at the end of June. Some of these plants will be donated to Tees Valley Wildlife Trust for a trial reintroduction at their Coatham Marsh reserve this autumn, a well-documented historic site for the nationally-endangered wetland umbellifer.



Greater Water-parsnip, grown from Lower Derwent Valley root cuttings

Marsh Pea: Discussions suggest that some of the half-a-dozen extremely localised Yorkshire populations of this rare plant may be a single clones – perhaps why most produce little seed. Conserving threatened plants requires balancing the preservation of locally-adapted genotypes against the potentially harmful effects of ‘in-breeding depression’ which can occur in small and isolated populations. We’re hoping to provide a ‘dating service’ for Marsh Pea which may help invigorate Yorkshire populations.

Our material came from Inkle Moor near Doncaster. We’ve obtained permission to collect seeds or cuttings from the Lower Derwent Valley in July with the hoping of cross-pollinating plants from the two sources to promote out-breeding.

Marsh Sowthistle has been successfully germinated for a wetland creation project in the Cambridgeshire Fens, with around 25 plants now being grown-on. Some of our Water Germander plants will also be returned to Cambridgeshire as part of the same project.



Marsh Sowthistle, grown from seed

Tower Mustard: Despite plenty of suitable habitat (open, disturbed vegetation on sandy soil), Tower Mustard remains confined to a small enclosure at Nosterfield Quarry where it's protected from attentions of rabbits and deer. This isn't a self-sustaining population but ten plants flowered this year, so some natural regeneration is taking place. So, while we can't claim a successful outcome yet, the trial will continue.

Purple Milk-vetch: Always a difficult plant to grow, we managed to rear a handful of young plants from seed of Cleveland coast origin. We won't be introducing this species to the limestone at Kiln Lake because evidence of its historic occurrence in the Lower Ure Valley is tenuous but we will maintain it in the nursery. A small population has been established from plants we donated to Tees Valley Wildlife Trust last year, which will help fill a gap in this nationally-endangered plant's distribution around Redcar.

Other rare plants we've managed to germinate this spring include Globe-flower and Bird's-eye Primrose.

Lower Ure willow library

As part of the Tranche II project, we committed to establish a 'library' of locally-native willows at the nursery. We see this as a repository of local provenance material which could be used to propagate willows for wet woodland creation or restoration of riparian habitats, to avoid the need to buy-in willows from commercial suppliers. Willows are sometimes seen as generic waterside trees but different species and forms occupy distinct places in the landscape, while some support host-specific invertebrates.

On 12th May, a group of LUCT volunteers visited High Batts Nature Reserve near North Stainley, just a few miles down the River Ure from Nosterfield. The term 'batts' refers to gravel banks or islands which can move from one side of a river to the other as the channel migrates; there are batts on the Tees, Swale and Ure. High Batts unsurprisingly contains a wide variety of naturally-occurring willows. We grappled with botanical keys and their esoteric vocabulary, soon realising that willow identification can be tricky and hybrids are common. Nonetheless, we were able to identify and collect cuttings from:

- *Salix alba* var *alba* – the typical form of White Willow
- *Salix fragilis* var *russelliana* – a common form of Crack Willow, or to be bang up to date with the taxonomy, *Salix x fragilis* (a natural hybrid between White Willow and *Salix euxinia*)
- *Salix viminalis* – Osier
- *Salix x rubens* – a hybrid



These cuttings will join material of Bay Willow *Salix pentandra*, Purple Willow *S. purpurea* and Creeping Willow *S. repens* we already have in cultivation. We have also successfully established North Yorkshire cuttings of the rare upland *sphacelata* subspecies of Goat Willow *Salix caprea*.

FLASKS FEN

Fen meadow plots

These remain drier than ideal, so growth of some species is rather poor. Average water level was around 12 cm below ground in early April, when it should ideally be at or just above the surface in the target plant communities. Consequently, we carried out supplementary planting to allow the development of communities adapted to lower water tables such as Purple Moor-grass fen-meadow and drier versions of Blunt-flowered Rush fen. This involved increasing the amounts of Purple Moor-grass, Carnation Sedge and Marsh Thistle.

Grazing pressure in 2022 meant that few plants had a chance to set seed, with recruitment from seed mainly limited to Marsh Thistle. Nonetheless, improved fencing has meant that far more flowering plants were beginning to appear by mid-summer this year. There has been healthy vegetative spread of several species including Purple Small-reed, Carnation Sedge and Marsh Valerian.

Northern reedfen

In summer and autumn 2022, LUCT volunteers put a massive effort into planting-up the lower-lying areas at the northern end of Flasks Fen. Our objective was to create shallow-water and seasonally-flooded reedfen, including what could become Yorkshire's largest stand of Great Fen-sedge. Around 3,000 plants of Great Fen-sedge and 1,000 of other species were planted.

Unfortunately, there was considerable in-wash of fine sediment over the winter months, enough to bury some of the new planting and create turbid conditions unfavourable to plant growth. We seem to have lost up to one-third of the Great Fen-sedge planted last year, together with smaller numbers of other plants. This has been an obvious set-back.

We are grateful to Tarmac for changing their silting operation once the problem was identified. Silt is now being diverted away from Flasks shore. In late May we constructed a barrier of straw bales to protect the northern end of the fen and we intend to beef-up the outer dead-hedge later in the summer. Re-planting will take place this summer using larger plants.

Thankfully, well-established 2021 plantings of Greater Tussock-sedge, Tufted Sedge, Yellow Flag and Great Water Dock nearer the shore have survived well and flourished. Cyperus Sedge has grown particularly vigorously, forming large tussocks.

The belt of Lesser Reedmace planted along the outer boundary has also grown back vigorously. We have some reservations about this competitive species but it does seem well-adapted to silty conditions and tolerant of wave wash, so we are planning supplementary planting using the sandbag method in July.



Reedbed Fen

This 0.1 ha strip of species-rich reedfen was planted in February. Inspection in June suggested that tussock-forming sedges had done well but some other species had succumbed to grazing (probably by Greylag Geese). It is difficult to fence this strip effectively but we will carry out supplementary planting when water levels are lowered later in the summer and look at alternative ways of protecting the new habitat.

Wet woodland

Wet woodland plantings at Nursery Marsh and Kiln Lake were checked in April. Survival of local willow cuttings at Nursery Marsh has been excellent and no supplementary planting is required. There have been a small number of failures at Kiln Lake (mainly of Downy Birch), which will be replaced with local-provenance willows in the next planting season. Stands of

tussock-forming sedges planted to form a carr woodland understorey have established well at Kiln.

Off-site fen creation

One of our Tranche II ambitions is to “establish at least 0.5 ha of new fen habitat at another site in the lower Ure Valley”. We’re continuing to work with High Batts NR on plans to create up to 1.5 hectares at Pennycroft, as part of the restoration of Hanson Aggregates’ Ure Valley Quarry near North Stainley. However, progress here is dependent on a number of factors beyond our control, including uncertainty regarding water levels during the working phase of the current quarrying and post-restoration. Some small-scale initial planting has been undertaken and we continue to maintain plant stock for when more extensive habitat creation can commence.

Our friends at the Yorkshire Wildlife Trust report that the fen planting we undertook in 2022 at the Canal Field lagoon at Ripon City Wetlands has been successful, with a flourishing fringe of sedge tussocks around the edge of the reedbed. High water levels limit the potential for further planting at present but we are investigating possible means.

As a result of our involvement in the Lower Ure Nature Recovery Partnership, the tenant of Little Studley Meadows invited us to visit and make recommendations for developing wetland habitats. This is a County Wildlife Site within the city of Ripon, comprising grassland, rush-pasture and standing water. There are exciting opportunities here and we now have the prospect of a series of ‘stepping stones’ linking natural and newly-created fen habitats along 22 km of the Ure Valley. We hope to report more on this in the next update.

Meadow enhancement

The Hay Field is part of Nosterfield Nature Reserve. LUCT volunteers carried out a botanical survey in late May and found that the 'semi-improved' grassland is approaching Lowland Meadow priority habitat quality. This is the result of consistent management as aftermath-grazed hay meadows in recent years, together with spreading of species-rich green hay from St John's Churchyard at Sharow to introduce additional species.

Although a small area of sloping ground near Nosterfield Lane may have been pre-existing grassland, most of the field would have been restored to agricultural grassland after quarrying in the mid-1990s. Like most of the reserve, it would have been sown with a standard ryegrass and white clover seed mix. Given this unfavourable starting point, the Hay Field is now a colourful blaze of buttercups, Germander Speedwell, Yellow Rattle, Red Clover and Bird's-foot Trefoil. Small amounts of Pignut, Eyebright and Glaucous Sedge in the lower meadow have almost certainly arrived through hay spreading, with Common Spotted Orchid colonising naturally.



We'll be carrying out further hay spreading and plug planting later this summer, after the hay is cut.

At Flasks, our two much smaller meadow plots have had varying degrees of success. The first, sown in 2019 using hay and hand-collected seed is now a decent approximation of 'young' floodplain meadow. We're extending this plot by preparing adjoining ground which will be spread with species-rich hay in July.

The second plot, sown in 2021, is on more drought-prone soil and establishment has been more patchy. The vegetation here is more like dry, sandy grassland and we need to consider how best to manage this.



The meadow plot established at Flasks in 2019

Magnesian limestone grassland

In May and June, we surveyed magnesian limestone grassland at High Batts, Quarry Moor, Thornborough Middle Henge, Farnham Lane, Moor Lane (Thornton Watlass) and Moor Lane (Nosterfield). The results will be incorporated into our inventory of this special habitat.

As a result, we're 'adopting' two more road verges. As well as maintaining optimal conditions for the limestone grassland flora and fauna, road verge management provides seeds and seed-rich cuttings to create or restore this rare habitat elsewhere in the Lower Ure Valley. Cuttings from Farnham Lane and both Moor Lanes will be used to seed prepared areas of magnesian limestone at Kiln Lake, for example. Seed is also being collected to repair Middle Henge.

At Quarry Moor, North Yorkshire Council's countryside ranger Shirelle showed us some wonderfully herb-rich calcareous grassland which is suffering from over-grazing by rabbits. We discussed possible solutions and the potential for collaborative working.

Rabbit fencing was repaired and a new gate installed on the magnesian limestone exposure at Kiln Lake (Nosterfield Quarry). Due to the presence of breeding birds, we postponed detailed monitoring of the grassland creation plots here until July. Results will be reported in the next update but a brief inspection in late June showed that the extended enclosures have allowed many species to flower and proliferate. As we'd expect these are mainly pioneer plants or those of ungrazed habitats such as Oxeye Daisy, Viper's Bugloss, Carline Thistle, Blue

Fleabane and Ploughman's Spikenard but grasses like Upright Brome, Sheep's Fescue and Quaking Grass have been able to flower freely.



Management of County Wildlife Sites

Farnham Lane: This roadside bank is another magnesian limestone grassland site, which needs careful management to remove encroaching scrub and to maintain patches of early successional habitat which support a rare butterfly species. We have consulted extensively with Farnham Parish Council, North Yorkshire Council's highways team, Butterfly Conservation Yorkshire and local residents to develop a management programme. Work will begin later this summer.

Thornborough Middle Henge: LUCT is working with English Heritage to restore lowland calcareous grassland on the Neolithic Middle Henge at Thornborough using local seed sources. Physical repairs to rabbit-damaged slopes are being carried out by Tarmac's contractors, under the supervision of English Heritage, who now manage the ancient monument. We have begun the task of growing on 10,000 plants for this project (paid for by Tarmac) and hand-collecting suitable seed from local sources, including the henge itself.

We ran a grass identification workshop at **St John's Churchyard** (Sharow) in June, which provided an opportunity to showcase this wonderful example of Lowland Meadow priority habitat. LUCT will be assisting with management this summer, and using the species-rich hay to introduce local seed to new habitats.



Moor Lane verges (Thornton Watlass): following our initial restoration cut of these under-managed verges, we've been monitoring this important remnant of magnesian limestone grassland – the last remains of the once-extensive Watlass Moor. This is one of just two County Wildlife Sites in the former Hambleton district to support the habitat, with the presence of ancient woodland indicators adding further interest. Further cutting will take place in late summer and autumn, an important aim being to further reduce Dewberry encroachment.

Invasive species control

Building on last year's work, several volunteer work parties in June focussed on pulling Himalayan Balsam along the Ings Goyt, from Well village downstream. Control of invasive Garden Lay's-mantle *Alchemilla mollis* continued on Nosterfield Nature Reserve.

Volunteering

LUCT is committed to delivering at least 7,000 hours volunteering as part of this project. The volunteer hours from 01/03/23 to 30/06/23 total 2,120.5, broken down approximately as follows:

Nursery: 633.5 hrs

Other practical work (inc. planting): 643 hrs

Surveys/monitoring: 207.5 hrs

Trustees: 561 hrs

Admin: 75.5 hrs

This brings the total of volunteer hours delivered so far during the Tranche II project to 6,440.5