

Lower Ure Conservation Trust

Yorkshire Water Biodiversity Fund



Expanding priority wetland habitats in the Lower Ure valley

Progress update July 2021



1. Summary of Yorkshire Water progress measures

Area of progress	Achievements to date (July 2020 – July 2021)
New area of habitat being created	Contributions to creation of 20 ha of new habitat including 2 ha of priority fen habitat
Volunteer hours delivered	5,000 volunteer hours completed
Training and events	Four volunteer training sessions at seed collection events Two webinars delivered (with total 200 attendees) One volunteer workshop completed
Stakeholder involvement	Five learning visits hosted with a range of organisations, ongoing collaboration and sharing with Yorkshire Wildlife trust

2. Background

The project is building on the initial ground-breaking work of the Well Wetlands Project (funded by Heritage Lottery and North Yorkshire and York Local Nature Partnership in 2019-21) to create more priority wetland habits, particularly species-rich reedbed and fen, leading to direct benefits for priority habitats and species in YWS's operational area. Wider natural capital benefits include carbon sequestration through the establishment of tussocky fen and potentially peat-forming plant communities.

Funding from Yorkshire Water is supporting LUCT to employ a highly skilled project officer for one day a week as well as contributions for capital works – our irrigation system, fencing, and a new standing area along with equipment and a contribution towards communication and administration.

Total funding from Yorkshire Water is £41,500

The project got underway in July 2020 and is due to be completed by July 2022. Alongside Yorkshire Water funding, in December 2020 LUCT was successful in securing a grant for a 15 month project through DEFRA's green recovery challenge fund. This is strengthening our capacity further, particularly in recruiting and supporting volunteers

3. Project Aims

Support from the Yorkshire Water Biodiversity Fund will help to expand LUCT's capacity to propagate local-provenance wetland plants, undertake and monitor habitat creation trials, disseminate findings and support volunteers to get the most from their volunteering experience.

4. Progress to date

3.1 Planting and habitat creation

We have established four planted transects with the location of individual plants plotted using GIS. This enables us to monitor year-to-year survival of over 400 individual plants. The original transects

will have had three growing seasons in summer 2021. Yorkshire Water's funding is supporting this monitoring effort.

Initial results indicate that key species such as Great Fen Sedge, Tufted Sedge and Blunt-flowered Rush show high survival rates when introduced as established plants, with both flowering and vegetative spread within one to two years. Conversely, smaller and especially rosette-leaved forbs (such as Hemp Agrimony and Devil's-bit Scabious) have struggled to survive, probably due to a combination of competition from *Crassula*, sediment deposition and higher than anticipated water levels.

Trail-cam monitoring showed that Greylag Geese grazed unprotected young plants in a way that eradicated even seemingly tough species like Great Fen Sedge, so most new plantings are protected. Planted transects are enclosed by temporary fencing using rigid mesh panels supported by iron rods and secured with re-usable cable ties. Although outlay costs are relatively high, materials are re-usable, quick and simple to erect and avoid the plastic pollution which inevitably occurs with plastic mesh barriers.

Smaller fenced plots in shallow water have shown strong growth of Great Fen Sedge, Common Reed and Bottle Sedge. Once mature and well established, these species are currently surviving well after fencing has been removed. Purple Small-reed has not survived in permanent standing water ca. 30 cm deep.

In spring 2021, two caged plots have been established on exposed silt and planted with tall herb fen species in an area subject to less sediment deposition. A small trial plot has been directly seeded with species typical of Purple Moor-grass fen-meadow. Another small trial plot was sown with hand-collected seed of floodplain meadow (NVC MG4) species in autumn 2020 with small-scale planting of pot-grown plants.

Meanwhile, a narrow but elongate belt of steeper 'beach' has been planted with rush-pasture species such as Blunt-flowered Rush, Long-stalked Yellow Sedge, Carnation Sedge, Marsh Thistle and Kingcup. Three small, rabbit-fenced plots were roughly cultivated and seeded in autumn 2017, using hand-collected seed. Only a small sample of plant species were sown but results show that Meadowsweet, Wild Angelica, Yellow Flag and Blunt-flowered Rush can be established using direct seeding. Some spread outside the enclosures has occurred, particularly of Meadowsweet. The fencing around these plots is now redundant and will be removed shortly.

Planting in summer 2021 will be focussed on in-filling between the transects to create more consolidated blocks of habitat. We are currently focussing on propagating Bottle Sedge, Bladder Sedge and Great Fen Sedge as key species. We are experimenting with planting up hessian sandbags with young plants. These will be grown-on in wet beds to encourage a rhizome mat to develop before planting. Our hope is that this will provide a means of mass planting which is safer and more efficient than planting individual pot-grown plants, avoids the risk of up-lifting and will allow plants to root rapidly into the lake bed while also temporarily suppressing *Crassula* competition until the sandbag biodegrades. We are hosting volunteer community 'work party' days to help with this planting.

In autumn 2020, areas within the newly-regenerated reedbed to the west of Flasks Lake were planted with Great Fen Sedge and other species to diversify habitat structure. Other planting, mainly of Common Reed, will take place along the south-western shore of Flasks Lake and on a spit on the north bank. In spring 2021, tussock-forming sedges were planted on the banks of a newly-excavated amphibian pond adjoining the causeway dividing Flasks and Kiln Lakes.

3.2 Wildlife benefits

If the planting undertaken in 2019-22 is successful, we will have established between 0.5 and 0.75 ha of shoreline fen. It is hoped this will provide favourable habitat for birds such as small grebes, rails and wetland songbirds as well as fish fry and a wide range of invertebrates. It is reasonably expected that Water Rail, Sedge Warbler and Reed Bunting will be regular breeding species by 2025 with the fen providing feeding habitat for other species including Bittern. As well as reflecting the botanical composition of locally-native plant communities, our plots are designed to incorporate structural features such as tussocks, open water and floating vegetation to optimise wildlife benefits. If all goes well, some individual plant communities will exceed the area of surviving remnants within the Washlands (e.g. only around 300 m² of Great Fen Sedge swamp currently survives).

Less systematic planting is also being undertaken in a 0.25 ha basin to the west of the nursery which was previously filled with degraded peaty overburden. This will become a patchy mosaic of Phragmites, Typha, tall sedge swamp and open water adjoining recently-planted willow coppice. Some vegetation has been established for several years here and visiting birds have included Bittern, Water Rail and Jack Snipe while regular visitors include Moorhen, Reed Bunting and, in winter, Common Snipe.

For more detail on Fen creation and monitoring please see attached report.

3.3 Training

Our project officer has delivered informal training for volunteers about plants and plant communities during seed collection events. In addition two webinars were delivered with 100+ attendees at each in January 2021 (also supported by Heritage Lottery) focusing on the landscape history and botanical history of the Swale and Ure Washlands. In recent weeks a workshop has been delivered for volunteers on the practical identification of rushes and sedges.

3.4 Collection of seed/rhizomes/cuttings

Propagation material has been collected (with appropriate permissions) from Askham Bog, Colburn Batts, East Tanfield Quarry, Langthorne New Covert, Marfield Wetlands, Rawcliffe Meadows, Ripon City Wetlands, RSPB Saltholme, Staveley NR, St John's Churchyard at Sharow and Thornborough Middle Henge. Some of these sites are outside (though close to) the Swale and Ure Washlands but have been chosen either as a source of species which cannot be obtained more locally, or where local populations are too small for seed harvesting.

Field surveys have been undertaken at Tanfield Estate, Aldburgh Fen and Foxglove Covert to identify potential future sources of green hay/seeds/cuttings.

3.5 Expansion of wetland plant stock

Numerous additional plant species are now in cultivation include Yellow Loosestrife, Saw-wort, Dyer's Greenweed, Hoary Plantain, Meadow Saxifrage, Great Burnet, Bistort, Greater Bird's-foot Trefoil, Tubular Water-dropwort, Bird's-eye Primrose, Bog Myrtle, Creeping Willow, Bay Willow, Cyperus Sedge, Needle Spike-rush and Lesser Water-plantain.

We are currently attempting to germinate several other species from local sources, including Tawny Sedge, Star Sedge and Marsh Lousewort.

Targeted seed collection in late summer 2021 is to include Fen Bedstraw and Marsh Stitchwort.

3.6 Widening of genetic base

Fresh propagation material has been obtained of several species which had previously been sourced from single locations. These include Bottle Sedge, Bladder Sedge, Greater Tussock Sedge and Common Club-rush. This widens the genetic base of our stock and ensures we are not propagating single clones.

Bona fide Lesser Reedmace seed has been sourced from RSPB Saltholme after all local material found to be hybridised.

3.7 Monitoring

Annual monitoring of the original planting transect has been completed, providing data on survival of 226 individual plants of 17 species over three years. Importantly this provides evidence of which species are most suitable for further planting in this location. By implication, these are also species likely to be suitable for similar sites in the North Yorkshire lowlands. More informal monitoring has been undertaken for the other fen trial plots.

Please see separate report.

3.8 Species reintroduction scoping

Tower Mustard was once a widespread plant of sandy banks and waysides in the Swale and Ure Washlands. It's now classed as Endangered in Great Britain and was last seen in North Yorkshire at Tanfield in 1989. Seed was obtained from its last stronghold in the Norfolk Brecks and germinated successfully. Initial planting at Nosterfield Quarry resulted in successful establishment and flowering of ca. 30 plants but rabbit grazing limited seed production. A further cohort of first year plants has been planted. It is possible that under present conditions, rabbit pressure may thwart the establishment of a self-sustaining population.

Water Germander is another nationally Endangered plant. It was well known from Bolton-on-Swale in the 19th century, and many specimens from there are preserved in museum herbariums. This was its only site in northern England. Once on the brink of extinction in Britain, Water Germander was introduced to an 'ark' site at Kingfisher Bridge NR in Cambridgeshire. It has flourished there, with millions of plants now present, raising the possibility of reintroduction to North Yorkshire.

Subject to Natural England licensing (Water Germander is legally protected), agreement has been obtained from the manager of Kingfisher Bridge to obtain seeds and cuttings. If we master propagation of the species, we would then consult on the potential for reintroduction to the wild at or close to its historic location.

3.9 Work with partners

Although visits and outreach have been curtailed by Covid, the nursery has hosted visits by East Keswick Wildlife Trust, Yorkshire Wildlife Trust (site managers and senior management team), North Yorkshire County Council Heritage Services, Tophill Low NR and academics from the University of York.

We have collaborated closely with the Yorkshire Wildlife Trust, advising on and providing plants for Potteric Carr and Ripon City Wetlands. This has enabled the creation of a fen fringe to newly-established reedbeds at the latter site, bolstering the network of wetland habitats in the Lower Ure valley. In return, the YWT has facilitated the collection of seed and cuttings from its reserves.

This ongoing collaboration with YWT includes a current attempt to grow Fibrous Tussock Sedge from Askham Bog seed. If successful, this will enable reinforcement of the very small population there, one of just two remaining sites for the species in Yorkshire.

Plants have also been provided for a community nature garden project.

3.10 Volunteering

LUCT wouldn't be able to achieve what it does without its core team of dedicated and skilled volunteers who volunteer on a weekly basis. An estimated 5,000 hours of volunteer time have been delivered in the past year. We had hoped to increase this number through more community work days and new volunteer recruitment, but our volunteering programme has had to deal with the challenge of adapting to Covid-19 restrictions, always with the health and safety of our volunteers at the forefront of our minds.

For us to achieve our long term ambitions for habitat restoration and welcoming more people to Nosterfield in the future we want to focus on 'skilling up' our volunteers who can pass on their skills to an increasing number of new volunteers.

Although Covid 19 has had a significant impact we have seen an increasing number of people express an interest in getting involved in volunteering and requests for more information via our social media accounts from visitors.

Looking ahead

Despite a very challenging year, funding provided by Yorkshire Water through the Biodiversity Fund has supported LUCT to continue making significant progress in habitat creation, learning and research as we strive to recreate and care for some of North Yorkshire's most vulnerable, rare and precious habitats.

Our ongoing challenge is to resource our long term plans for sustaining this work. As we look ahead we hope to continue our partnership with Yorkshire Water and ensure we have the capacity to sustain our progress, share our learning and build and manage a stronger volunteer base.