

# Water Environment Improvements Project Evidence Form

## Scope & Purpose

This form is to be used by the Water Environment External Governance Group (WEGG) to review, validate and formally approve the length of water environment improved for each project. The form has been completed by the Water Environment Team with support from project partners for presentation to the WEGG. After formal WEGG approval, the km water environment improved will be recorded against the ODI and projects marked as completed on the Water Environment Scorecard and Mapping Portals.

## Project Name

Low Barns Access and Ecology

## Project Lead

| Company/<br>Organisation | Named Lead   | Position             |  |
|--------------------------|--------------|----------------------|--|
| Durham Wildlife Trust    | Mark Dinning | Head of Conservation |  |

## Water Environment Improved

| Year   | Claimed | Proposed | Reason For Any Change |
|--------|---------|----------|-----------------------|
| Year 2 | 2.1     | 2.1      | NA                    |

## Project Assurance

This project has been reviewed internally to ensure it has delivered benefits above and beyond our baseline and regulatory obligations to improve the water environment accessible to customers across at least two out of three aspects. Following our assurance process, the project was approved by both our internal and external groups for review before delivery. This form presents the evidence of project completion and the outputs achieved to request project sign-off by the WEGG.

| Level   | Project Acceptance Date | Project Approval Date | Completed Project Sign Off Date |
|---|-------------------------|-----------------------|---------------------------------|
| Project Team                                  | May 2021                | NA                    | NA                              |
| Water Environment Steering Group (Internal)   | May 2021                | May 2021              | NA                              |
| Water Environment Governance Group (External) | May 2021                | May 2021              | May 2022                        |

## Water Environment Project Timescales

| Candidate Project Approved | Project Initiated | Project Completed |
|----------------------------|-------------------|-------------------|
| July 2021                  | July 2021         | April 2022        |

## Project Summary and Highlights

### Summary

This project at Low Barns Nature Reserve in County Durham has included footpath and signage upgrades to a fully accessible route on the site and the construction of a new education and engagement hub called 'The Den'. The Den overlooks Marston Lake which has also benefited from habitat and biodiversity improvements, this has included desilting areas of the lake and its channels to maintain the habitat for freshwater species and protect island breeding habitat used by wading bird.

Throughout the project, Durham Wildlife Trust has delivered a programme of events to help people connect with nature, learn more about wildlife, and enjoy the various habitats at Low Barns including the water environment. By improving the habitat on-site and having improved facilities with better information and access, we hope to sustain high numbers of visitors and encourage greater participation in various wildlife-related activities.

Highlights include:

- A new bird hide, to be known as The Den was completed in December 2021. The Den will provide additional education space for use by DWT's education team during school's visits, delivering sessions with wildlife clubs for children and young people and general events for volunteers and the general public. The Den is glass fronted and set above Marston Lake offering fantastic views across the lake with good views of the islands and lakeside habitat. The Den is off the ground and is accessed by a ramp. The Den is open all the time for visitors to visit, enjoy the views and watch wildlife.
- Over 36 events have taken place at Low Barns between July 2021 and March 2022.

## Low Barns Access and Ecology



**Total Length of Bluespaces: 2.1 km**

Figure 1: Map of bluespaces improvements delivered

## Project Outputs, Benefits & Evidence Against Criteria

| Access, Facilities & Recreation  |  |
|--|--|
| Expected Project Outcomes  | Benefits   |
| <ol style="list-style-type: none"> <li>1. A fully accessible route will be established around Marston Lake improving the path gradient at key points and installing additional signage</li> <li>2. Creation of a new enclosed viewing area and education space to deliver environmental educational events and sessions</li> <li>3. Events will be delivered across the reserve to raise awareness of endangered habitats and threatened species</li> </ol>  | <ul style="list-style-type: none"> <li>➤ A1: Increases access to, engagement with and enjoyment of the water environment</li> <li>➤ A2: Benefits health and wellbeing through:</li> <li>➤ A3: Influences positive environmental behaviors</li> </ul> |
| Outputs  |  |
| <ol style="list-style-type: none"> <li>1. There is a circular route around Low Barns, which is approximately 1 mile. Before this project, the directional signage was quite sparse and there was very little information for visitors setting out clearly the distances between various points and how long it is likely to take you to walk between them. A survey of all the existing finger posts has been carried out to identify the gaps and 5 new directional fingerposts with distances and location points have been erected at key points on the circular route around Low Barns. The footpath around Low Barns is very flat and accessible for users in some wheelchairs and mobility scooters. However, during incidences of heavy rainfall, the river has broken its banks and flooded sections of the footpath. This has led to damage on the footpath surface and areas of localised erosion. The conservation team have carried out an ongoing programme of repairing the footpath surface to maintain this fully accessible route.</li> <li>2. A new bird hide, to be known as The Den was completed in December 2021. The Den will provide additional education space for use by DWT's education team during school's visits, delivering sessions with wildlife clubs for children and young people and general events for volunteers and the general public. The Den is glass fronted and set above Marston Lake offering fantastic views across the lake with good views of the islands and lakeside habitat. The Den is off the ground and is accessed by a ramp. The Den is open all the time for visitors to visit, enjoy the views and watch wildlife.</li> <li>3. Throughout the year, DWT have delivered a programme of events for children and young people to help them connect with nature, learn more about wildlife and enjoy the various habitats at Low Barns including the water environment. 36 events have taken place for children and young people between July and March 2021. This has involved 122 children and young people. The regular groups events delivered by DWT's Engagement team include: <ul style="list-style-type: none"> <li>• Muddy Wellies – The weekday group is for pre-school children</li> <li>• Wildlife Watch - This group meets monthly at the weekends and offers sessions for children aged between 7 and 11. These sessions introduce children to wildlife and nature, helping to inspire them and build up their interest and knowledge.</li> <li>• Nature Rangers (11-14) and Young Rangers (14-18) – These groups meet fortnightly and runs a variety of age-appropriate activities. Activities includes practical conservation work such as removing Himalayan balsam and creating wetland scrapes for dragonflies and wildlife surveys and monitoring e.g pond life surveys. These sessions help to give the young people a range of practical skills, increase knowledge and understanding about the water environment and makes them aware of practical actions that they can take to improve conditions for wildlife.</li> </ul> <p>DWT's staff have also run events for adults including guided walks and well-being days for corporate organisations to encourage different audience to experience nature and be more aware of the water environment.</p> </li> </ol> |  |

**Evidence**



**Path resurfacing works**



**The Den overlooking Marston Lake.**



**Children from 3 Towns AAP celebrating Christmas at Low Barns**



**Young Rangers pond dipping in order to survey the small ponds near the visitor centre at Low Barns**

**Wildlife & Biodiversity**

| Expected Project Outcomes  | Benefits  |
|--|---|
| <ol style="list-style-type: none"> <li>1. Desilting of the lake will protect marginal lake habitat and protect the island habitats from sedimentation, improving the area for wildlife and preventing further degradation of the marginal shoreline habitat</li> <li>2. Protection of the island habitat will promote bird nesting on the islands rather than the shore, decreasing the risk of predation on nesting birds (foxes, badgers etc.), providing protection particularly benefiting red-listed wading birds, such as Lapwing</li> </ol> | <ul style="list-style-type: none"> <li>➤ B1: Improves the quantity, quality and connectivity of habitats</li> <li>➤ B2: Improves the conservation status and or abundance or distribution of species</li> </ul> |

**Outputs**

1. In February 2022, Aquatic Solutions spent a week in Marston Lake using specialist aquatic equipment 'Truxor unit' with a 'clamshell bucket' to remove silt on the eastern side of the lake. Silt has been building up and is closing the space between the lakes shore and the lake's islands, and impounding water at the lakes outflow resulting in the islands becoming flooded. The islands provide important refuge and breeding sites for waterfowl and wetland birds.
 

At four specific points, deeper channels were excavated to clear a depth of 300mm of silt to try and halt reed (*Phragmites australis*) encroachment. Sections of 'Nicospan' fencing were installed to retain excavated silt which would provide a barrier to prevent the reeds expanding into more reedbed. At two points on the northeast side of the lake arisings were placed on the lake shoreline to provide marginal mud and areas which will succeed to *Phragmites* reedbed and fen. The 'Nicospan' fencing was used to stop arisings from washing back into the water. The Marston Lake outflow had become choked by *Typhus latifolia*. A channel was created to enable better water level management of the lake. 'Nicospan' fencing was used here to create a defined channel edge and arisings were placed behind this fence to create reedbed in these areas. There will be ongoing management of silt from the channels to ensure that they do not become choked and water flow is maintained.

This element of the project has ensured greater water control management. This will help to maintain open water habitat and favorable habitat condition for SSSI interest features over the lake. In the longer term, the lake sediments will not be disturbed and will ensure Marston Lake continues to act as a carbon sink.
2. The islands in Marston Lake provide important refuge and breeding sites for waterfowl and wetland birds. The desilting has allowed better water control and the protection of these islands from flooding. This will encourage breeding success for bird species using the islands.

**Evidence**


See the Truxor in action: <https://aquatic-solutions.co.uk/library/truxor-videos/>



Marston Lake showing areas where the channels have been cleared (cleared and secured silt to the left of image)



Channels to the east of Marston Lake where the silt have been cleared and reeds have been cut back to open them out. The red line shows the width of channel

| <b>Water Quality</b>  |   |
|---|---|
| <b>Expected Project Outcomes</b>  | <b>Benefits</b>   |
| <ol style="list-style-type: none"> <li>1. Footpath improvements will reduce the introduction of sediments from erosion and litter into wetland and riverine habitats</li> <li>2. Desilting the lake will increase the capacity of the lake to absorb sediment from upstream tributaries, reducing sediment transfer into the river and improving water quality</li> </ol>                       | <ul style="list-style-type: none"> <li>➤ C3: Improves state and function of water, including naturalisation, visual appearance, litter and odour</li> </ul> |
| <b>Outputs</b>  |   |
| <ol style="list-style-type: none"> <li>1. 100m of footpath at Low Barns has been improved by using additional stone and fine dust which was tampered down, preventing erosion and detritus entering the wetland</li> <li>2. 150m<sup>3</sup> of silt has been removed from three channels at the eastern side of Marston Lake, increasing the capacity of the lake to store sediment</li> </ol> |   |
| <b>Evidence</b>   |   |
|    |   |
| <p><b>Resurfaced path</b></p>   |   |

### Additional & Secondary Benefits

| Expected Project Outcomes   | Benefits   |
|---|--|
| <ol style="list-style-type: none"> <li>1. Site is a key wetland in the mid-wear wetlands area which if expanded and restored will further improve water quality and flood resilience</li> <li>2. Site is a key DWT visitor attraction, improvements through increased access and facilities to draw in visitors will benefit the local community and local economy</li> </ol> | <ul style="list-style-type: none"> <li>➤ D1: Provides resilience and adaptation to climate change and/or reduces the risk of flooding</li> <li>➤ D2: Provides benefits to local communities, the local economy or NWG</li> <li>➤ D3: Supports strategic project or investment into strategic partnership or landscape/regional activity</li> </ul> |

### Outputs

1. Low Barns is a regionally ecologically significant wetland nature reserve due to the mosaic of habitats including open water, seasonal ponds, fen, reedbed, alder carr, woodland, water course and meadow. Low Barns has the potential to hold large volumes of water during extreme weather events which can reduce the risk of flooding further downstream. This will help to increase the flood resilience of the mid-wear, as the wetland habitats are restored, increase in area and sustainably managed so this potential will be realised even further. Having good quality and restore wetlands will help to act as a carbon sink and so mitigate the impacts of climate change.
2. Low Barns is very important to the local communities who live nearby and visit the site regularly. However, many visitors come from further afield and will visit as part of a holiday in County Durham. Low Barns appeals for many different reasons and will attract different audiences in a variety of ways. The site is vital in:
  1. helping people to connect with and experience nature,
  2. providing a venue for education, learning and training about wildlife and habitat management for children and adults
  3. creating a community hub where people can meet and socialise which supports good health and well-being.

During the pandemic, people appreciated and recognised the importance of having good access to greenspaces and natural habitats. Low Barns was really important to local residents and communities, during that period, and there was an increase in the number of people using the nature reserve. By having with improved facilities with better information and access, we hope to sustain high numbers of visitors and encourage greater participation in various wildlife related activities.

### Evidence



**Corporate days with local businesses to introduce them to the water environment.**





**Corporate Wild Wellbeing Day with Northumbrian Water**



**Low Barns volunteers in action.**

## Customer Testimonies & Media

### New base for Rangers and schools at Low Barns

This winter, a new base for the Nature Rangers and Young Rangers will be unveiled at Low Barns. Situated overlooking Marston Lake, this will be an easily accessible glass-fronted hide, only a few yards from the visitor centre. Designed to provide a base for the Ranger groups, and when not in use by the Rangers or schools, also offer visitors a comfortable view of the bird life on the lake throughout the year. The hide is being delivered thanks to funding from Northumbrian Water, Weardale Area Action Partnership, and the Scotto Trust.



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The new Den has been featured in the DWT's website and magazine.

<https://www.durhamwt.com/news/new-base-rangers-and-schools-low-barns>



Poster for Visitors detailing habitat works

## Lead Partner Quotes & Testimonials

### Mark Dinning, Head of Conservation

*"Support from Northumbrian Water has been key in improving visitor access and facilities at Low Barns Nature Reserve, along with delivering crucial management of wetland habitat. This project ensures the site remains a haven for wildlife and offers increased opportunities for visitors to connect with nature and learn more about the water environment"*