



Design and Access Statement

Hepple Wetland Implementation

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Draft Report

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The Hepple Estate

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1. Summary

Hepple Estate is striving to increase biodiversity and bio-abundance. Restoring and creating wetlands will help achieve this and assist with the estate's aspirations to provide more opportunities for people to engage with nature. In doing so the estate will be helping to implement NNPA's Natural Environment Vision and NNPA Management Plan.

EcoNorth Ltd was commissioned by Hepple Estate to prepare a Wetland Implementation Plan at the Hepple Estate, Coquetdale, Northumberland. This document comprises the details of the implementation plan for elements of the strategy which require planning permission due to the nature of the works – this entails the creation of 2 wildlife ponds in areas of existing grassland / pasture.

Measures proposed and described within this document include:

- Creation of standing open water in the form of ponds.
- Intervening with existing drainage channels to ensure a good water supply to newly created ponds, slowing the flow of water off the land by diverting in into these newly created ponds.

The wetland features described in this document form part of wider and ongoing suite of wetland restoration and creation measures being undertaken by the estate and are targeted to towards creating wetland habitat features beneficial to breeding waders, amphibians and aquatic invertebrates. Features may also be suitable for water vole should populations recover within the River Coquet catchment.

The measures identified will support Natural Flood Management (NFM) principles and slow historic artificial drainage.



2. Introduction

2.1 Background

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This report:

- Sets out the works location
- Sets out the nature of works including pond size, indicative layout and profile

2.2 Site Context and Location

The proposed pond locations are located within the Hepple estate, Hepple, Rothbury, Northumberland to the South of the Grasslees Burn. All works areas are located within areas of existing species poor neutral grassland. The central grid reference for the proposals is NY9681798630.

Figure 1a and 1b identifies the location and extent of the development site. Figure 1c presents the site layout proposed planning boundary.



Figure 1a: Site Location 1:1,250 (Boundary outlined in red)

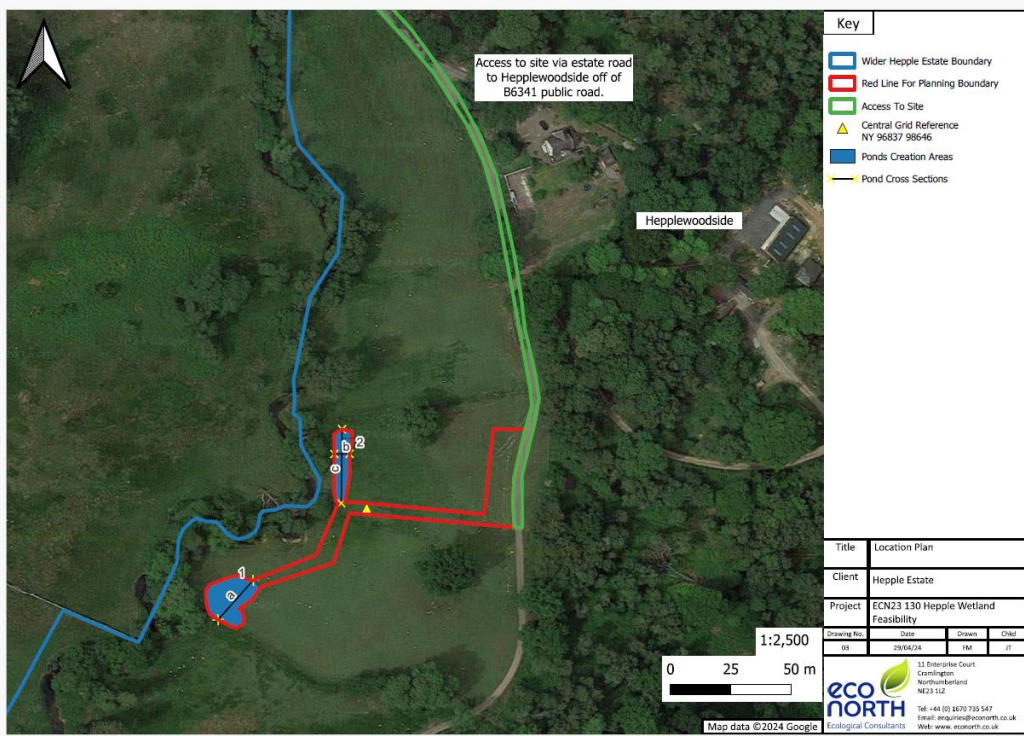


Figure 1b: Site Location 1:1,20,000 (Boundary outlined in red)

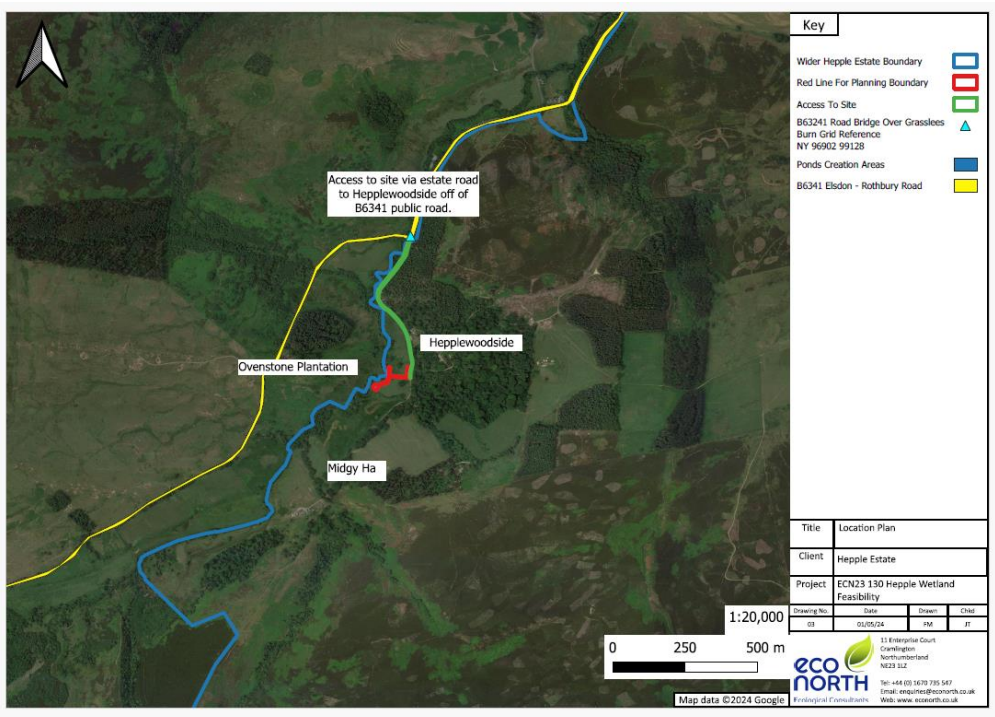
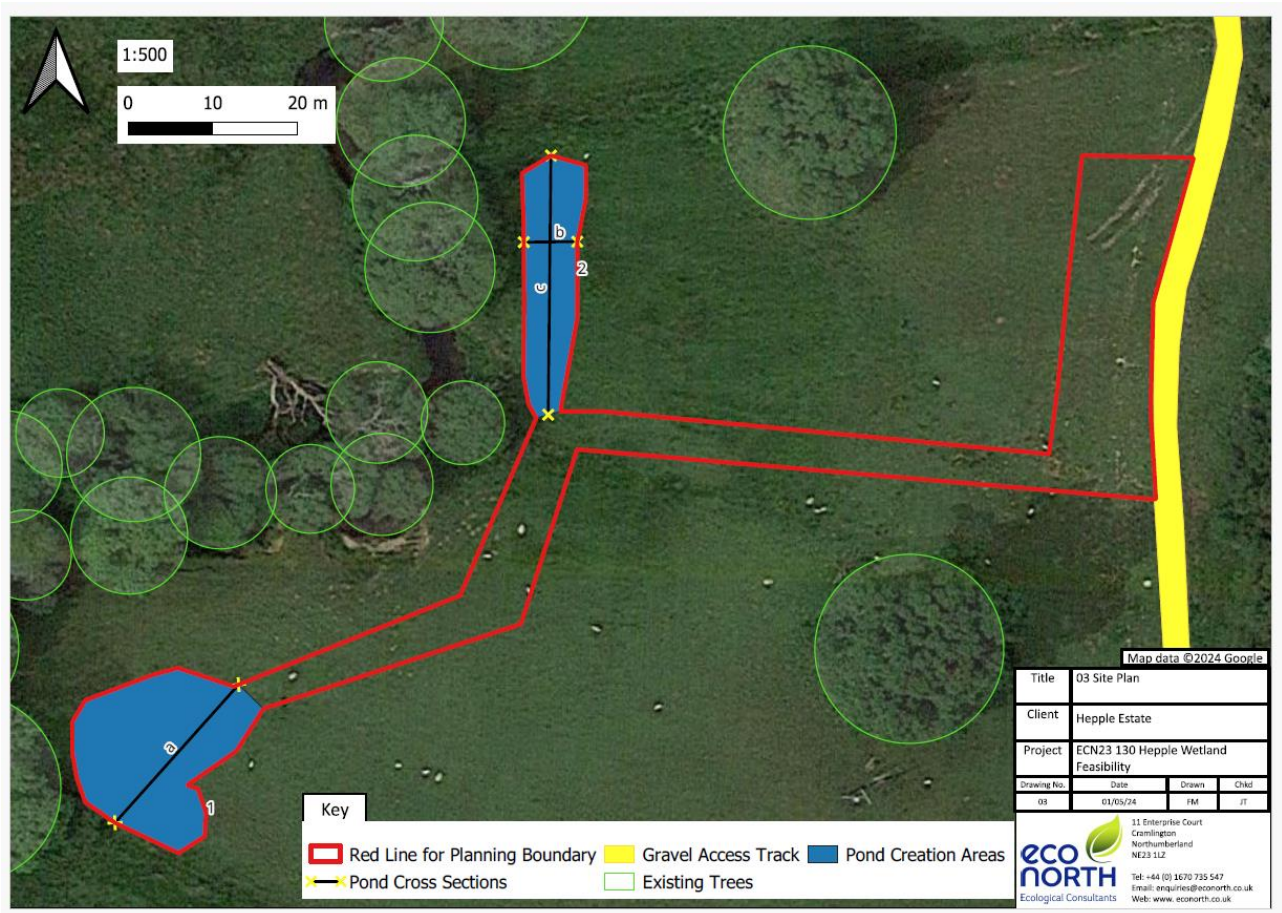


Figure 1c: Site Plan 1:500 (Boundary outlined in red)



3. Proposed Design and Construction

3.1 Design

The scheme comprises of 2 pond features the locations and dimensions of which are set out in Table 1 below. Arisings from the pond construction will be moved to a more elevated located and deposited alongside the existing estate access track. The ponds will comprise uneven edges and variable depths / slope gradients into the features to increase their structural heterogeneity and increase value for wildlife however the maximum length, width and depth parameters which will be applied are set out below.



Table1: Pond Locations and dimensions

Pond Reference	Max Length (M)	Max width (M)	Max depth (M)
Pond 1	22	17	1.5
Pond 2	30	7	1.0

A number of considerations have been factored into the design phase of the works to ensure that the proposals avoid any adverse environmental / ecological effects, and which aim to maximise biodiversity benefit. Detailed consideration in relation to ecological effects are presented in the accompanying Wetland Implementation plan and environmental assessment document submitted with this planning application. Measures include;

- All works and access will be kept out of all designated sites.
- All works and access will be kept out of all areas of priority habitat.
- All works will avoid any potential direct or indirect effects on existing trees or structures.
- All works will avoid other specific habitats capable of supporting protected or notable species such as brash piles / refugia.

Design will follow these principles to maximise benefits to wildlife:

- All pond sides will be shallow slopes, ranging between 1:5 and 1:20 (3°). This will help create wide draw down zones within which water levels fluctuate seasonally.
- Where practicable (Pond 1) ponds will include wide marginal zones consisting of shallow and mid depth zones .as well as deeper areas which will maximise benefit to a range of aquatic species.
- The deepest part of the ponds will be up to 1.5m deep (Pond 1) and 1m deep (pond 2). Where possible, undulations will be created in the deeper areas to provide bars to benefit aquatic plants. Water from existing straightened drain / channel features present will be diverted from their straightened course towards the Grasslees Burn and diverted / meandered into the associated ponds – the line of these minor channel diversions is indicated by blue arrows on Figure 2 below.
- Small scrapes and depressions (which the estate were advised by the NNPA Planning Department as part of pre-application advice for another wetland project as not needing planning permission) will also be created in the locality to further increase the diversity of wetland features creating a more extensive complex of wetland habitat types. This will help to create a complex of water retaining features, many of which will dry out in the summer. Temporary pools are highly valuable to wildlife



and will complement the permanent water of the main ponds which are intended to hold water year round.

The layout of proposed pond locations and associated working areas are highlighted in Figure 2 below. Indicative pond profiles / cross sections are included in Figure 3 below:

Figure 2 – Proposed Pond creation and associated works layout.

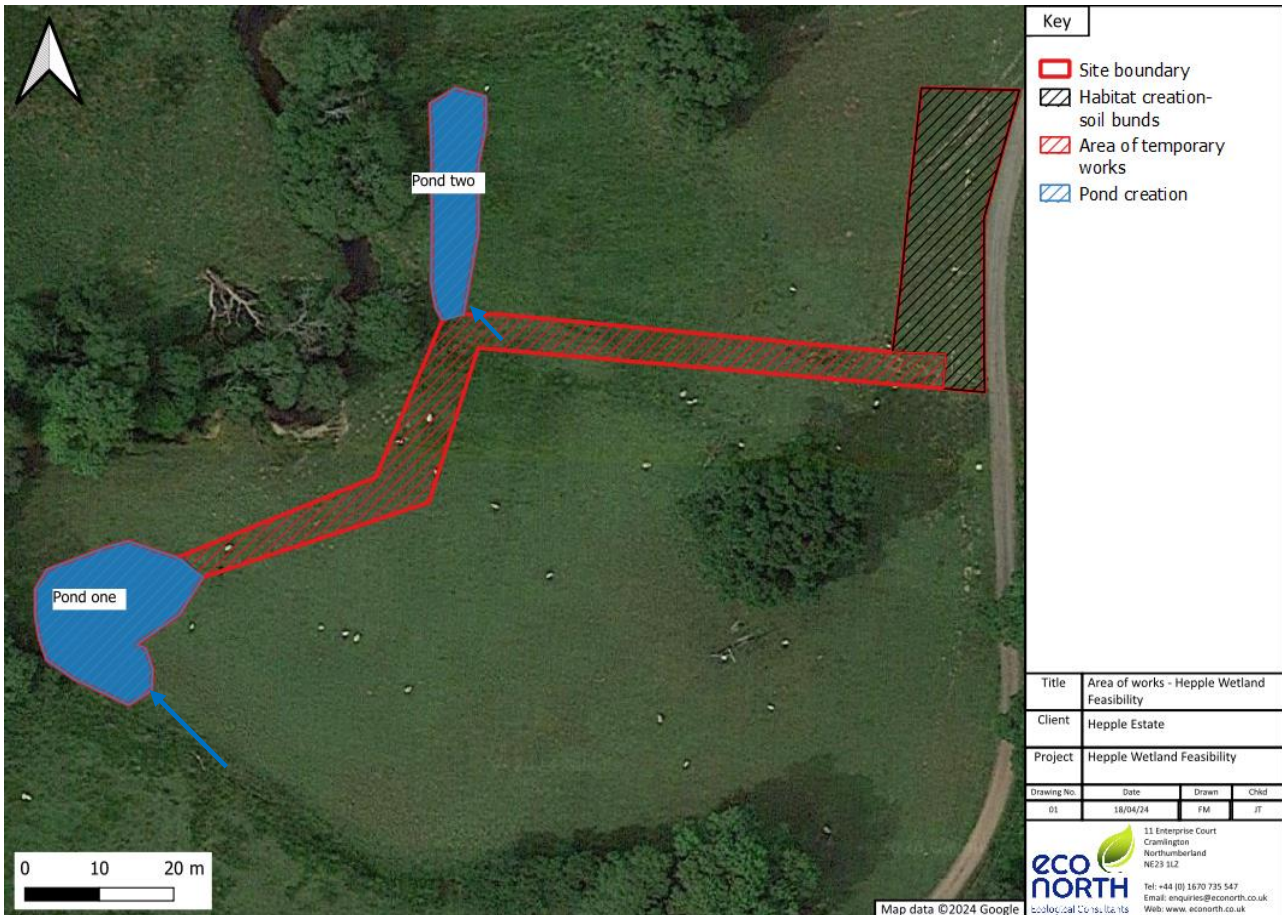
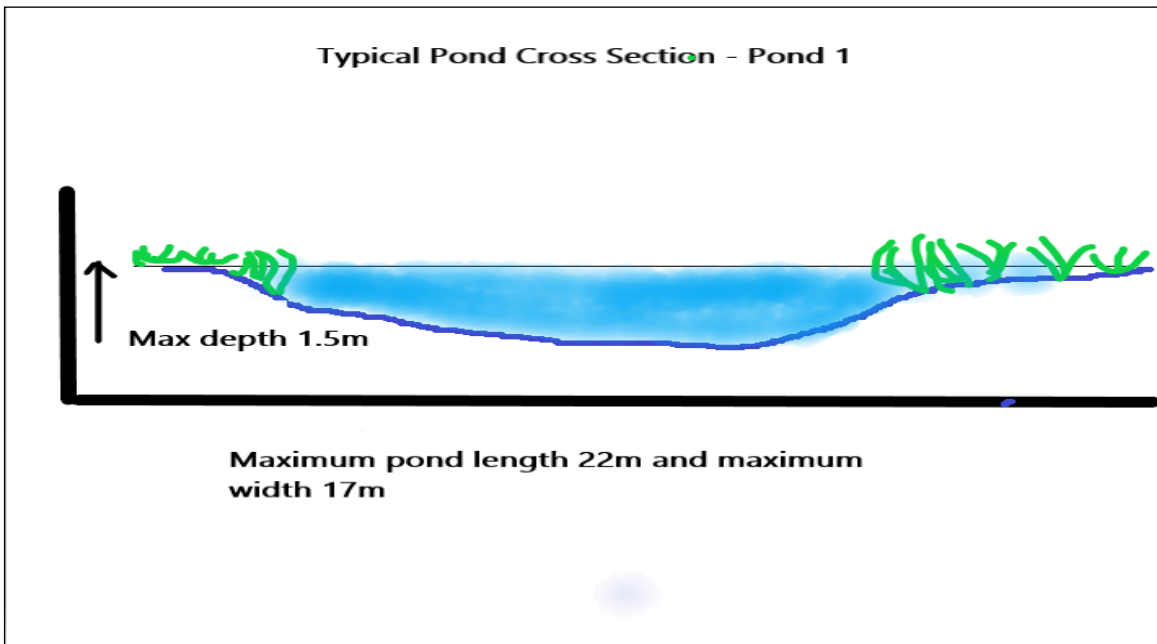
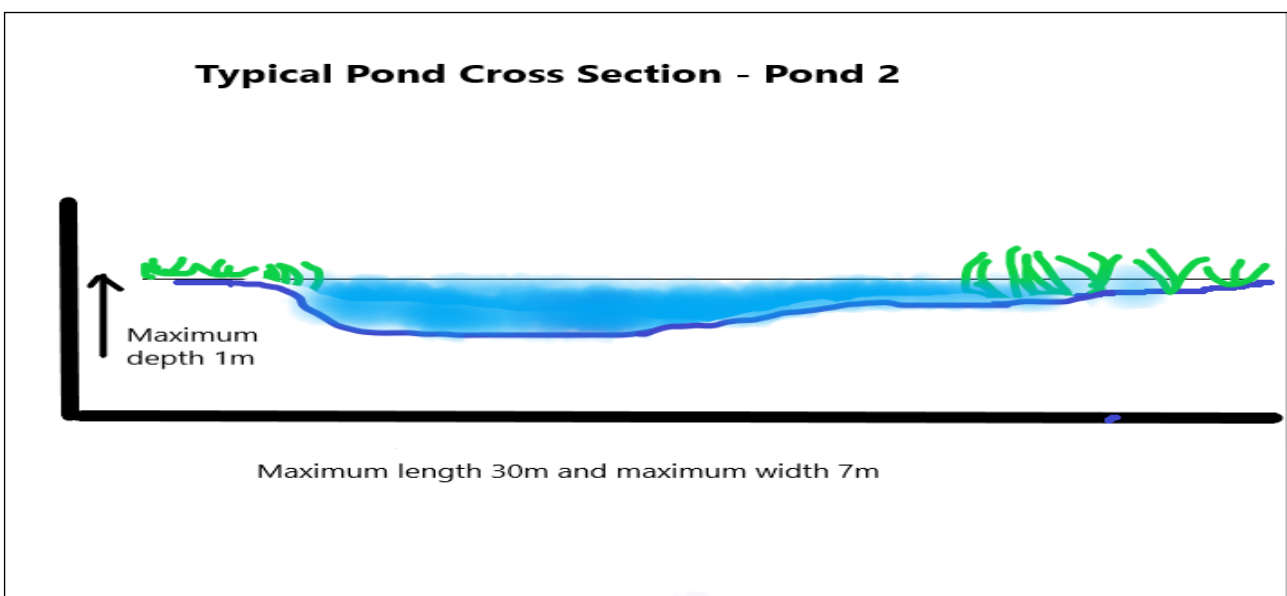


Figure 3: Pond 1 Indicative Profile



Pond 1 illustrated above comprises a broadly rounded shaped pond. The pond edges and overall shoreline will be varied to increase the number of high value ecological niches present, including shoreline habitats. The pond slopes will include a range of gradients and will ensure that extensive shallow and mid depth areas are available as well as reaching more significant depth to ensure pond permanence. Some edges will comprise slopes as steep as 1:5 while other areas will include a gentler gradient with an average gradient of 1:10 expected throughout the pond feature.

Figure 4: Pond 2 Indicative Profile





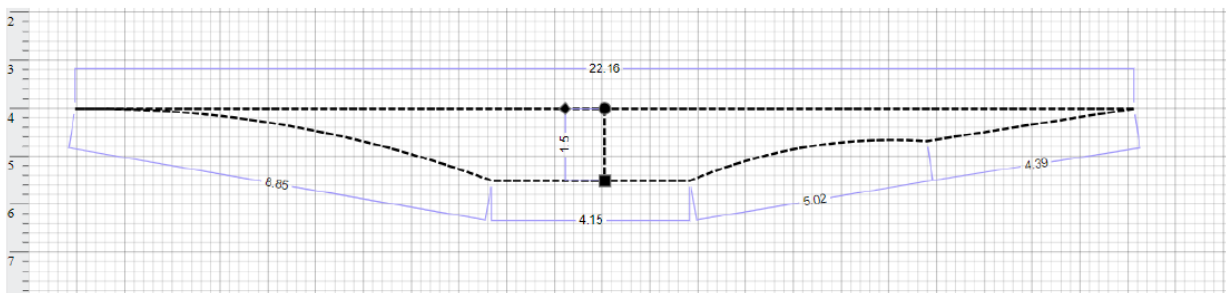
Pond 2 comprises a longer and narrower profile pond. As a result it is anticipated that to achieve the relevant shallow profiles and extent of shoreline, a shallow gradient slope will only be possible on a single side and will be in the region of 1:6 – 1:8. On the opposing side the slope will need to be steeper to fit a pool in which reaches depths of up to 1m and will likely be at a slope of 1:2. The end slopes at the north and south ends of the pool will comprise much shallower gradients of 1:10 or more.

Cross Sections of ponds

Proposed Pond Profiles – All Ponds drawn at a scale of 1:100 (1cm = 1m)

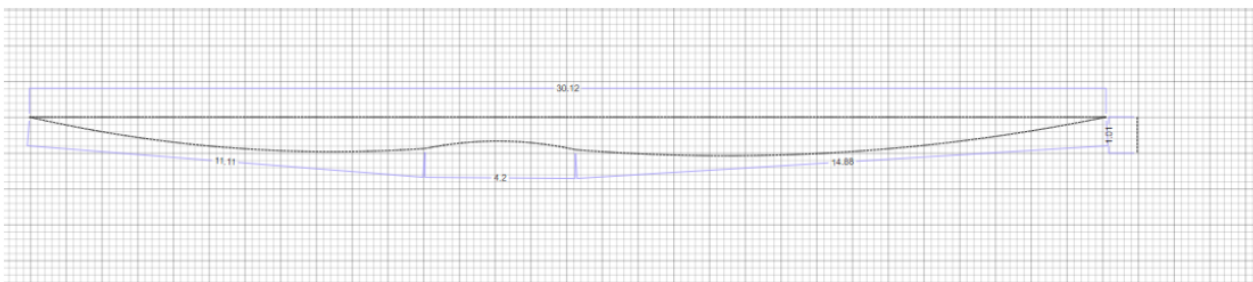
Pond 1 – Planned Profile Cross Section A-A

Estimated earthworks volume based on an anticipated mean depth of 1m = 22 x 17 x 1 = 374m³



Pond 2- Planned Profile Cross Section C-C

Estimated earthworks volume based on an anticipated mean depth of 0.7m = 30 x 7 x 0.7 = 147m³



Combined maximum volume = approx. 521m³



Existing conditions

The existing habitat conditions are comprised of species-poor neutral grassland which is grazed seasonally. The locations of the proposed ponds are situated on low lying flat ground and are therefore suitable as pond locations. Images of proposed pond locations are included below.

Pond 1 – Existing Conditions



Pond 2 – Ground Conditions



3.2 Construction

Construction will only involve excavation of soil. No materials will be imported onto the site. From site visits with potential contractor we are confident that the ground will hold water which will also be topped up by water moving in from the land up slope.

All plant used during construction will low ground pressure to minimise any potential ground disturbance or compaction on access routes. Expected plant requirements include low ground pressure 360 excavator and low ground pressure dumper. Construction is expected to take no more than 10 days.

Surface vegetation will be scraped back and put to one side prior to excavating the ponds. This turf will be used to help landscape and revegetate the soil after the ponds have been dug out – this process will be applied both surrounding the pond features and those areas identified for landscaping with arisings from pond construction.

Any existing field drains in the area being excavated will be cut through and the section of pipe removed to increase the amount of natural water feeding into, and held in, the ponds. All the surrounding land is managed organically with no artificial inputs. The excavator will create gently sloping shallow margins to maximise wildlife value. Maximum depth will vary with ground conditions but won't exceed 1.5m in depth (1m in pond 2).

Arisings from pond excavation will be transported using a low ground pressure dumper. All arisings will be permanently stored outside of EA flood risk zones 2 and 3 and no introduction of new materials or elevated contours will take place in the flood plain.

3.3 Access

Access to the site will be via the minor estate road shown on the eastern extent on Figure 1a above. To access the estate road the limited construction plant and traffic movements required over a short term construction period will access the site via the B6341.

This track is not a right of way and there are no public rights of way running through the field in which the ponds are proposed. Visitors may be shown the ponds as part of guided visits. Constraints

A series of environmental constraints have been considered in detail in the accompanying wetland implementation plan and environmental assessment. This considers;

- Potential flood risk effects
- Historic environment effects
- Ecological effects
- Landscape effects

3.4 Other Consents

As both pond features interact with and require minor diversions of existing artificial minor field drains it is anticipated that the works will require Land Drainage Consent from the relevant authority which on these minor channels is expected to be Northumberland County Council. LDC is currently being applied for.

The land on which the proposed work would be carried out is in Countryside Stewardship and written approval formalising the verbal approval already given will be obtained from Natural England before any work is undertaken.

There are no Historic Environment features located within or close to the proposed pond creation sites.

4.0 Consultation

The Estate Conservation Manager, Mary Gough, has consulted with Natural England local team (Amy Christie, Marjorie Davy, Mike Gardner) and national wetland specialist (Iain Dyack) and local Environment Agency officers Alistair Laverty and as part of wider discussions on wetland restoration plans for the estate. Staff from both agencies are hugely supportive of the proposals to restore the natural hydrological processes and function and create additional areas of standing open water habitat which are lacking in the catchment.