



Re-profiling Bodenham Lakes islands – Business case

Problems the project will address

Bodenham Lake is the largest water body in Herefordshire, it was formed through gravel extraction and is steep sided and extremely deep (up to 8m). In 2018 Herefordshire Wildlife Trust (HWT) shallowed over 1 hectare of Bodenham Lake, to make warm shallow waters in which aquatic plants, such as common reed thrive.

Bodenham Lake has 5 islands equating to 1.75 hectares, providing fantastic potential to conserve species such as oystercatcher and snipe (which are on the RSPB Amber list as they have experienced a moderate decline of 25-50% in UK breeding population over last 25 years).

Since gravel extraction finished in the 1980’s there has been little ecological management of the islands, allowing them to form immature woodland which is suitable for very few ground nesting bird species; they require good visibility to spot aerial and aquatic predators approaching the nest.

Outline of timescales

The re-profiling operation should be undertaken in the months of September to October 2019. This is essential to minimise environmental risks particularly avoiding the breeding season for otter, birds, amphibians and fish as well as limiting the risk of low dissolved oxygen occurrences.

Activity	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sept-19	Oct-19
Preparation and planning of procurement									
Invitation to bid									
Submission of bids									
Evaluation of bids									
Award of the contract									
Design work									
Tree and re-profile works									

Table 1; Project gantt chart

Justification for the project

Islands are vital for nesting birds, as they provide increased levels of protection from land-based predators, improving survival of chicks. The aim of the re-profiling work is to increase habitat diversity, to support a wider range of species. Removing trees from 2.5 out of 5 islands will encourage little ringed plover, oystercatcher, lapwing and snipe to nest, helping to conserve these species. Research by the RSPB has shown that several small islands will hold more nesting birds than a single island of the same total area, so we plan to transform 3 islands into 8.

Critical success factors

Critical success factors include;

- Increased surface area of islands and surrounding shallows



- Increased biodiversity
- Enhanced public experience

The estimated costs and budget availability

HWT have determined that the most efficient approach would be for the design works and associated surveys to be carried out by the same contractor that undertakes the re-profiling works. This will ensure a seamless transfer of information between the design and implementation phases. We will procure a contractor for this works through an open procurement process; the most economically advantageous tender will be selected.

Source of funds	Amount
The Hamamelis Trust	£3,000
Herefordshire Wildlife Trust – Nature Reserves Appeal	£7,000
Herefordshire Ornithological Club	£5,000
Environment Agency – reprofile works	£ 7,080
European Regional Development Fund	£134,864
TOTAL	£156,944.00

Table 2: Source of funds for island re-profile project

If the Contractor fails to complete the re-profile Works by the relevant Completion Date (1st March 2020), and they failed to use best endeavours to avoid/reduce the cause/effects of a delay, then the Contractor shall reduce the cost of delivery by £24,000 as liquidated damages, resulting from loss of funding and increased staff costs to HWT.

In the event of *force majeure* works can be carried out in 2020.

Herefordshire Wildlife Trust are VAT registered and so VAT is payable on the project costs. The sources of funds listed below are the total sums available and hence will have to cover the project costs and the associated VAT.

Additional supporting materials secured

Item	Source of materials	Amount
Gravel	Tarmac	180 tonnes

Payment Schedules

- | |
|---|
| <ol style="list-style-type: none"> 1) Delivery of design 2) Commencement payment 3) Substantial completion of re-profiling works 4) Retention percentage very of the design |
|---|

The workforce

The site accommodation will consist of a welfare unit(s) suitable to meet CDM requirements, and as a minimum will consist of office space suitable for holding daily meetings with staff and the client, canteen unit, drying room and toilet block with waste tank. This welfare unit will be positioned on the existing hard standing at Bodenham Lake Nature Reserve, Bodenham, Hereford, HR1 3JT.

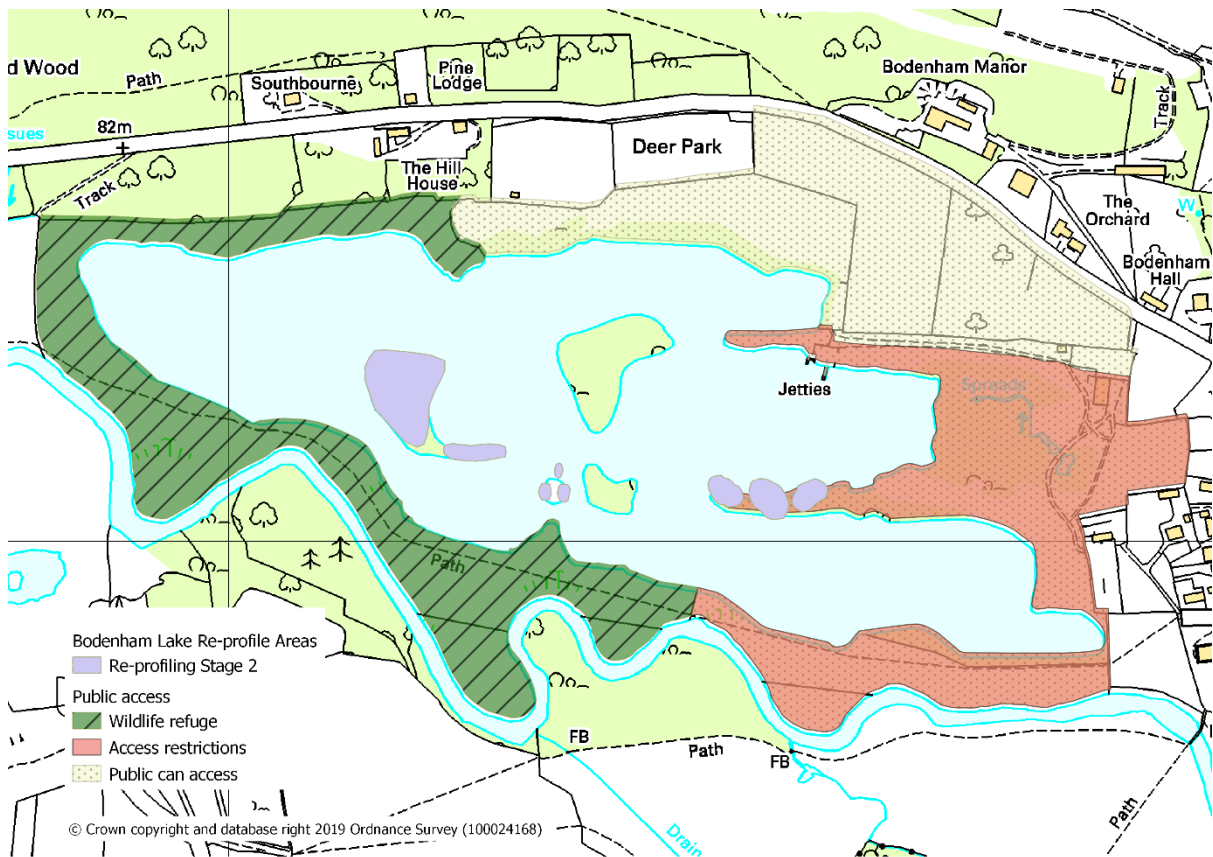


User implications

The Western half the site is closed to the public, as it is a nature refuge. The Eastern half of the site is open to the public, and several permissive paths are regularly used. Figure 1 outlines which paths could be temporarily closed to ensure the safety of the public, staff and contractors e.g. for the duration of time it takes to move plant to or from the location of works.

HWT are running a series of events to inform the public of the changes that are happening on site, this will include information about changes to access. Signs will be put up to suggest alternative routes around the reserve.

Figure 1. Potential access restrictions during re-profile works



Major risks

Major risks are outlined below, for more a more comprehensive analysis of risks refer to the Risk Register and Mitigation Plan.

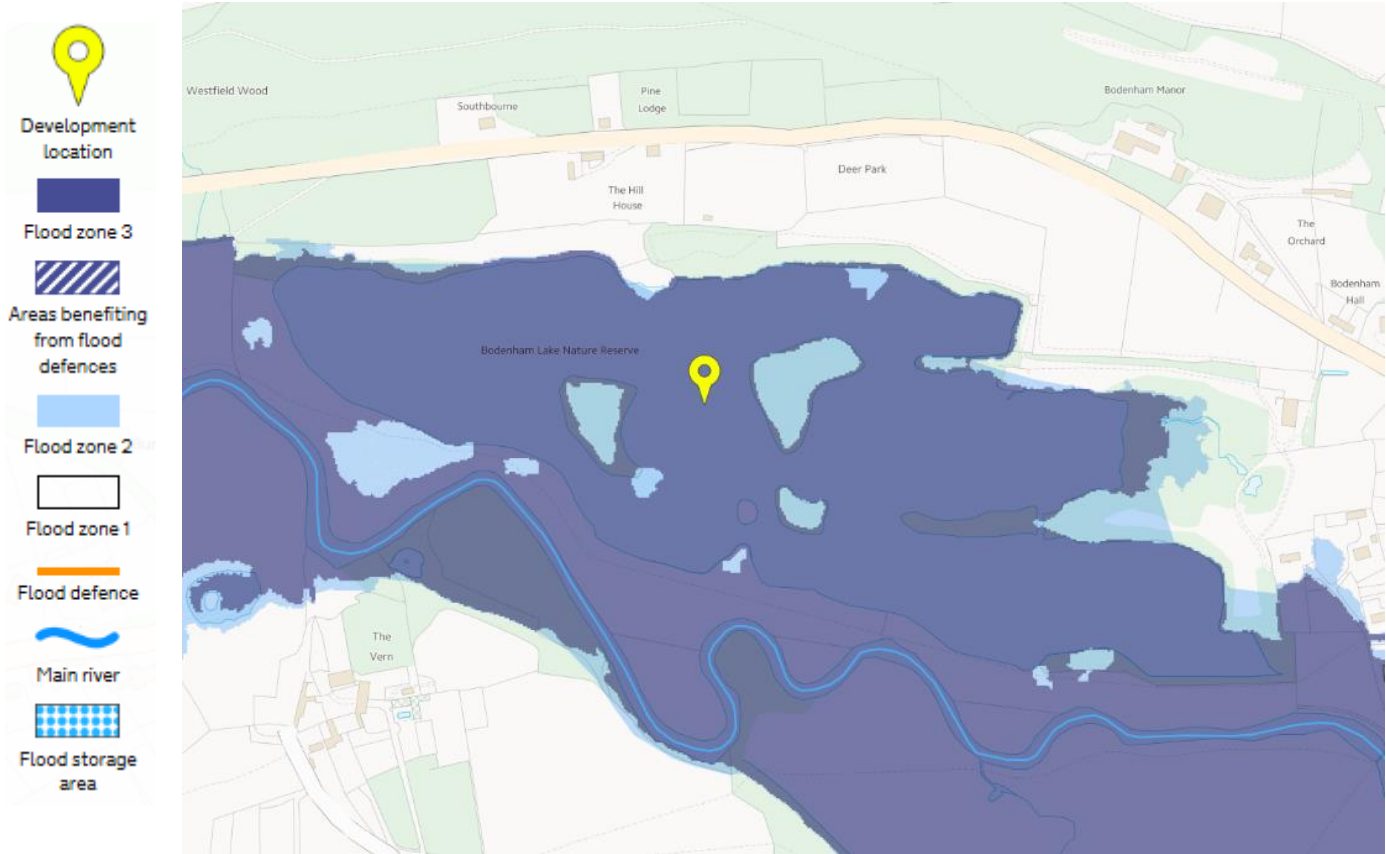
1. Flooding

- Bodenheim Lake is in Flood Zone 3 of the River Lugg and therefore has a high probability of flooding. Monitoring of weather forecasts and flood alerts must be carried out throughout the duration of the works. Should flood risk increase, all machinery must be removed to



the main site compound (the hard standing of the Lake car park) away from the river. Movements of plant for this purpose must be appropriately risk assessed to minimise risk to public and personnel.

Figure 2; River Lugg Flood Zones, where floodzone 3 has the highest probability of flooding



2. Damage to key designated species

- Otter surveys have shown that otter actively use the river corridor and the lake. Should an otter be seen during the day, all work will cease until it has passed safely through the site.
- Work will be restricted to daylight hours when otters are at their least active and the generator at the main compound will be on silent mode should energy be required in the hours of darkness.
- The timing of the works, September to October, limits the impact on breeding otter.
- The re-profiling work will involve the removal of some trees, however the species removed will primarily be young alder and willow, which are typically unsuitable for bat roosting as there are few cracks and crevices in the bark.
- Construction work will begin in September and will be completed in 5-7 weeks to minimise the impact on foraging bats. The reedbed created after re-profiling will provide invertebrate habitat and improve foraging opportunities for bats.



3. Major injury/death

- Contractors must provide a works-based risk assessment and be able to demonstrate that staff have the required level of skill and qualifications to conduct works in accordance with the risk assessment.
- All plant movements should be directed by site supervisor or banksman.
- Methods of transporting plant machinery to the islands must be assessed by contractors to ensure that they are suitable to bear the load of the plant.
- Work must cease in adverse weather to minimise risk of plant slipping.