



Action C8; Innovative improvements at newly identified sites

EcoCo new sites assessment: Skinflats RSPB Reserve

Description (How, what, where and when)

This project will complete the design and consents work required to deliver a managed realignment (creation of intertidal habitat using a breach in the seawall) at RSPB Skinflats Reserve which is on the southern shore of the Firth of Forth and close to the Kincardine Bridge. It will add to the networks already funded by EcoCo in the Inner Forth and effectively extend the network of the adjoining SPA/SSSI. We will assess the impacts of the proposal and identify any required mitigation, as well as completing detailed designs. Additional assessments (EIA and HRA) will be undertaken and consents will be sought. This project will be delivered by RSPB Scotland, with the assistance of external consultants between April 2017 and March 2018. Annex Map 1 shows the project site in relation to the reserve.

Reasons why this action is necessary

The inter-tidal habitats of the Firth of Forth are a spectacular place for nature, providing a home for thousands of wintering and migrating wildfowl and waders. These habitats have been designated as part of the Firth of Forth Site of Special Scientific Interest (SSSI) and Special Protection Area (SPA) and are therefore of international importance. Unfortunately, industrial and agricultural land claim has caused the loss of approximately 50% of the historical extent of saltmarsh and mudflat, and sea level rise due to climate change is likely to put more pressure on the remaining adjoining SPA habitat.

Through this project, new inter-tidal habitat can be created behind existing sea walls, which will provide more space for wildlife and off-set impacts on the SPA due to climate change. Managed realignment (MR) enables this habitat creation however it is relatively unknown in Scotland with only one existing scheme in operation (Nigg Bay on the Moray Furth). However, it is widely used in England. It is therefore necessary to demonstrate the viability of MR on the Firth of Forth through a demonstration site and Skinflats provides the perfect opportunity due to its location and previous work that has been undertaken.

RSPB undertook a regulated tidal exchange (RTE) at the site in 2009, this created new inter-tidal habitat by enabling inundation through a pipe and sluice in the sea wall. After the completion of this project we saw the rapid establishment of saltmarsh habitat and the use of the site by a range of species including curlew, red shank and shelduck. Though the RTE showed that inter-tidal habitat could be created, the technical nature of this solution means that it is difficult for other landowners to implement and, on Skinflats in particular, it did not fulfil its potential due to technical problems with the design of the exchange mechanism.

It is therefore vital to implement a more sustainable and more natural long-term solution on the site and a MR would enable us to achieve that. It will ensure Skinflats reaches its potential and demonstrates a method of inter-tidal habitat creation that other land owners could implement with limited on-going management. The delivery of this project will also enable the creation of fully functioning saltmarsh habitat and provide habitat for a range of breeding bird species including ringed plover and shelduck, helping to contribute to these important Firth of Forth SPA and SSSI breeding populations. A MR at Skinflats would represent a significant step towards our vision of a sustainable network of inter-tidal and wetland habitats throughout the Firth of Forth that enable adaptation to climate change and protect the spectacular nature that already exists in the Firth of Forth.

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| Beneficiary responsible for implementation |
| RSPB Scotland |
| Responsibilities in case several beneficiaries are implicated |
| N/A |
| Expected results (quantitative information when possible) |
| <ul style="list-style-type: none"> • Detailed design and engineers' drawings • Environmental Impact Assessment Report and Appropriate Assessment is produced • Through early stakeholder engagement good joint working with statutory agencies and stakeholders results in early resolution of issues and securing planning permission • Other licenses approved as required • Through community engagement, local people know what we want to do and understand why, resulting in their support for the project <p><u>Final deliverable (currently unfunded and beyond the scope of EcoCo)</u></p> <ul style="list-style-type: none"> • A tidal area of about 14ha will be created • The current islands will be reprofiled • A high tide roost will be created using some of the spoil from the breach • An easily accessible demonstration site for MR will be created. <p>Submission of the planning application and associated reports will be in March 2018, with a response from Falkirk Council during the summer. The earliest we could expect work to happen on the ground would be Autumn 2018 but this is dependent on securing funding and may not happen until early Spring 2019/Autumn 2019. There are a few funders that we would approach for the delivery stage, for example Falkirk Environment Trust.</p> |
| How was the cost of the action estimated? |
| RSPB Scotland are experienced in commissioning studies similar to these and are confident these can be delivered for the budget. We have carried out early stages of feasibility work at this site and therefore have been able to refine and tailor the study brief accordingly. From a recent report by consultants, they have estimated this stage to cost what we had predicted. |
| Permissions/licences required |
| <p>None required for this project. If we move on to delivery we will require:</p> <ul style="list-style-type: none"> • Planning permission from Falkirk Council • SNH consent because the project may impact on a SSSI and SPA • Crown Estate as landowner of intertidal area. • SEPA waste management license • Possibly a Marine Scotland operational license |

Ecological Coherence Assessment

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| 1. EcoCo Partner(s) |
| RSPB Scotland |
| 2. Vision |
| The reserve will come alive and change daily as the tide ebbs and flows in and out of the site. Wintering waders will use the site at high tide to roost and follow the tide as it drops, feeding along the newly exposed mud. In time, more saltmarsh will be created as the land rises and this will become an ever more important area of habitat within the network of wetlands on the Forth. Everyone who lives nearby and visits will understand how the reserve works and will not feel threatened by the tidal river but will act as advocates for the concept of managed realignment. |
| 3. Ecological coherence assessment |
| <i>The following section follows the ecological coherence protocol, assessing each of the elements in turn to give a qualitative assessment of the likelihood of significantly improving ecological coherence in the management zone. The ECP GIS tool has been used, along with detailed reports and surveys, partner organisation local knowledge, open data sources and SNH advice.</i> |
| a) Ecological functionality |
| <p>The project area is not designated but is adjacent to a SSSI and SPA. Map 2 illustrates this. The Firth of Forth SSSI and SPA covers a large coastal area from Alloa to Crail on the north shore and to Dunbar on the southern shore.</p> <p>There has been much focus on the Inner Forth area as somewhere that has potential to create more intertidal habitats and therefore support the nationally and internationally important species and habitats. This is best demonstrated through RSPB's Futurescape project, which has identified a network of coastal sites where habitat enhancement and habitat creation could deliver huge benefits for many of designated features and greatly improve the ecological functionality of the Inner Forth. This project would deliver one more piece of the puzzle, which helps to complement and strengthen the SPA and increase the size of the area that can support a range of priority species and habitats.</p> <p>Map 3 shows that the project area is a level 2 opportunity area under the floodplain creation network.</p> <p>Map 4 shows the project area as being a core part of the lowland wetland network and this likely due to the RTE that was previously installed. Although initially this worked quite well, several technical issues arose with its functioning and now it can only be opened about once a month. Therefore, the quality of this core area could be greatly enhanced by delivering an MR.</p> |
| b) Diversity |
| <p>As a result of the regulated tidal exchange installed in 2009 there was clear evidence collected by Stirling University, that saltmarsh plants colonised the site almost immediately but as this is now not exchanging as much water as we would have liked they are declining.</p> <p>With a managed realignment, a much larger area will be influenced by the sea and as this will receive daily inundation we would fully expect a diverse saltmarsh plant community develop very quickly, which in time would become SSSI quality.</p> <p>Through the design process we would like to provide a high tide roosting area and possibly some islands that would only overtopped in the highest of tides, these features would attract a</p> |

greater number and range of birds to the site.

c) Connectivity

This project is part of a wider network of wetland sites that are being managed along the Inner Forth. For example, RSPB Black Devon Wetlands, near Alloa. SWT's Cambus Pools Reserve, Falkirk Council's Bothkennar Pools along with work by Stirling Council to improve Polmaise Lagoons. We are also working with Scottish Power on restoration plans for Valleyfield and Longannet lagoons.

Map 5 shows how by creating this wetland area the network is extended further inland to the lowland wetlands network.

d) Patch size

The potential new inter-tidal area will be approximately 14ha.

e) Habitats/species of conservation interest

The designated features for the SSSI that are relevant to this site are:

Habitats:

Saltmarsh
Mudflats

Wintering birds:

Pink-footed goose (*Anser brachyrhynchus*)
Shelduck (*Tadorna tadorna*)
Mallard (*Anas platyrynchos*)
Wigeon (*Anas penelope*)
Goldeneye (*Bucephala clangula*)
Oystercatcher (*Haematopus ostralegus*)
Ringed plover (*Charadrius hiaticula*)
Golden plover (*Pluvialis apricaria*)
Grey plover (*Pluvialis squatarola*)
Lapwing (*Vanellus vanellus*)
Knot (*Calidris canutus*)
Dunlin (*Calidris alpina alpina*)
Bar-tailed godwit (*Limosa lapponica*)
Curlew (*Numenius arquata*)
Redshank (*Tringa totanus*)
Turnstone (*Arenaria interpres*)

Breeding birds:

Shelduck (*Tadorna tadorna*)
Ringed plover (*Charadrius hiaticula*)

Part of the SSSI is also designated as a Special Protection Area (SPA) and the above wintering bird species are also listed under this designation as is Waterfowl Assemblage.

The condition assessment for these species range from unfavourable declining to favourable maintained.

4. Ecosystem services assessment

Four of the nine ecosystem services as assessed through the EcoCo project will be delivered by the project, they are: accessible nature, education, green travel and carbon sequestration.

As well as doing the MR, we would like to investigate access options to the reserve, which is most likely going to involve creating a new path from the Kincardine Bridge, along the edge of

our neighbours field and then onto the reserve. The access will have to be sensitively designed to minimise any disturbance to the birds. The extract from Falkirk Council's Core Path Plan 2010 (Map 6) shows that a new path would easily connect into a wider network of paths.

The project will also create an amazing education opportunity and show saltmarsh being actively created and getting across the messages of how important this habitat is and how it is associated with climate change and coastal dynamics.

Saltmarsh has been proven to sequester and lock away significant amounts of carbon, with several hectares of this habitat allowed to develop this will contribute to reducing carbon levels.

5. Opportunity assessment

EcoCo opportunity map

Map 3 shows the proposed site within the Inner Forth management zone highlighted as a floodplain habitat enhancement opportunity area by the ecological coherence protocol mapping tool. This tool assessed factors such as elevation, slope, presence of functional networks etc, to determine and then rank the best places throughout the CSGN to carry out restoration works. This recognition of the management zone through the use of the tool indicates that this is a key focus area for the EcoCo project.

In addition, this site has been identified as part of a suite of project sites for managed realignment on the Inner Forth. This would be the first site for this type of project to occur and is important in expanding the intertidal habitat area, which is a priority habitat for Scottish Government and RSPB.

a) Feasibility

In 2001 the Forth Estuary Forum commissioned a feasibility report of managed realignment at Skinflats and adjacent land. This report concluded that it was feasible. This was reconfirmed in a further feasibility study by RSPB as part of the Inner Forth Futurescapes project undertaken in 2012. SNH coastal geomorphologists's also confirmed this and offer their support. A study is currently underway by ABPmer to consider the impacts of the project on various features but so far findings suggest there are likely to minimal impacts and mitigation for these is possible.

b) Achievability for EcoCo LIFE+

Preliminary studies have already taken place and we know that the project is feasible although it is sensitive. Therefore, we feel that the outputs below are achievable within the remaining timescales of the project. Match funding has already been secured for this stage of the project and we are confident that funding for the delivery stage will be possible.

c) Sustainability

The site is owned and managed by RSPB with the foreshore leased from the Crown Estate, therefore there is a commitment to manage and maintain the project area into the future in accordance with the management plan for the area.

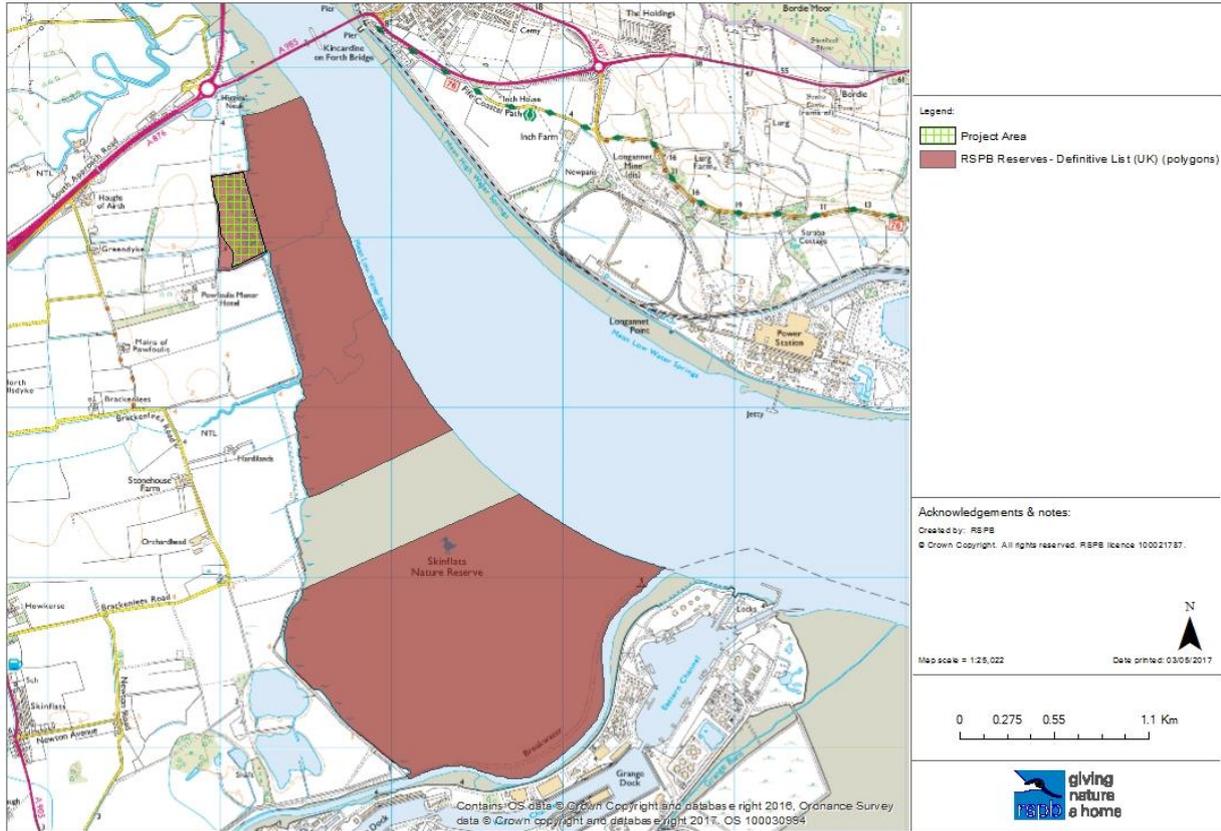
Carrying out a managed realignment at Skinflats is considered the most sustainable way to develop saltmarsh habitat as the existing tidal exchange mechanism that was installed in 2009 is not functioning as designed. Managed realignments are now a tried and tested method of creating new intertidal habitat that are very low in future maintenance and cost. The secondary sea wall is already formed as part of the regulated tidal project.

Outputs (for costings see financial annex)

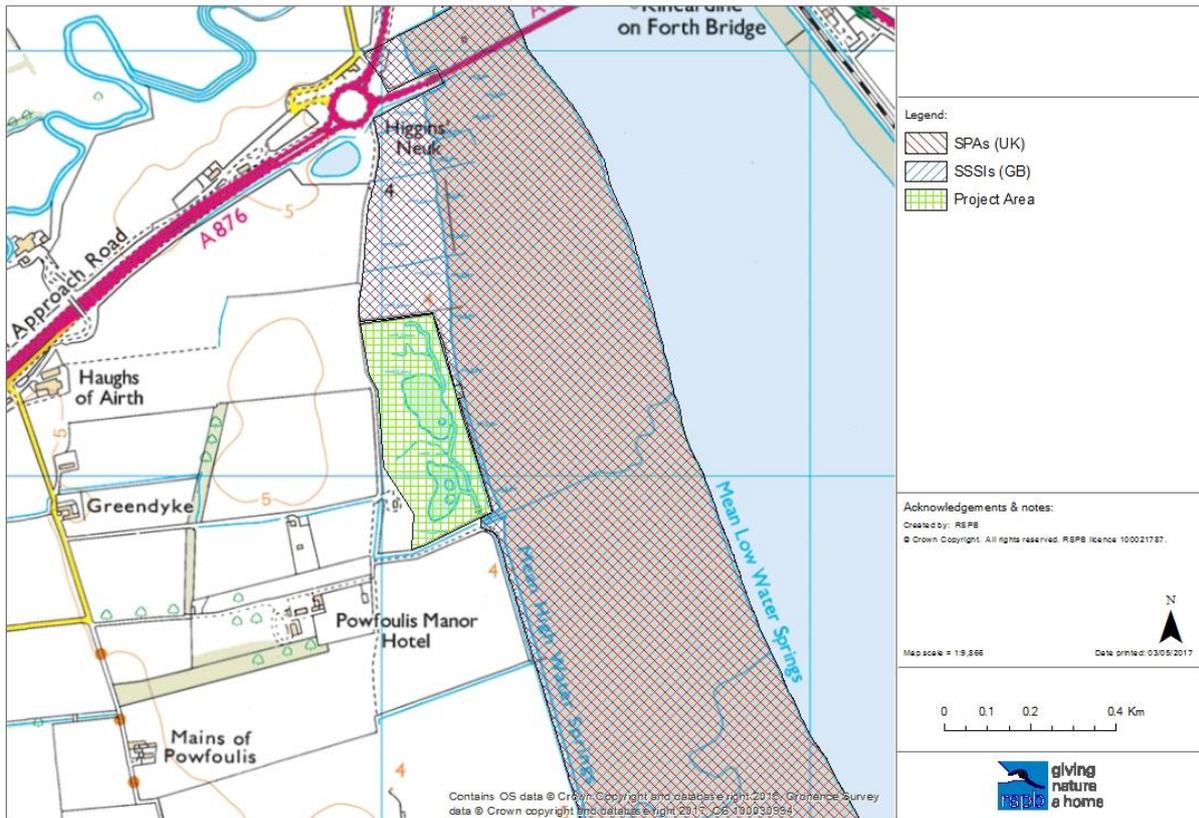
- Impact Assessment Studies as required
- EIA process with Environmental Statement produced
- Information to inform a HRA and Appropriate Assessment
- Planning permission submitted
- The cost for this preparatory work will be met through funds originally allocated for Whitesands Quarry site.

MAPS

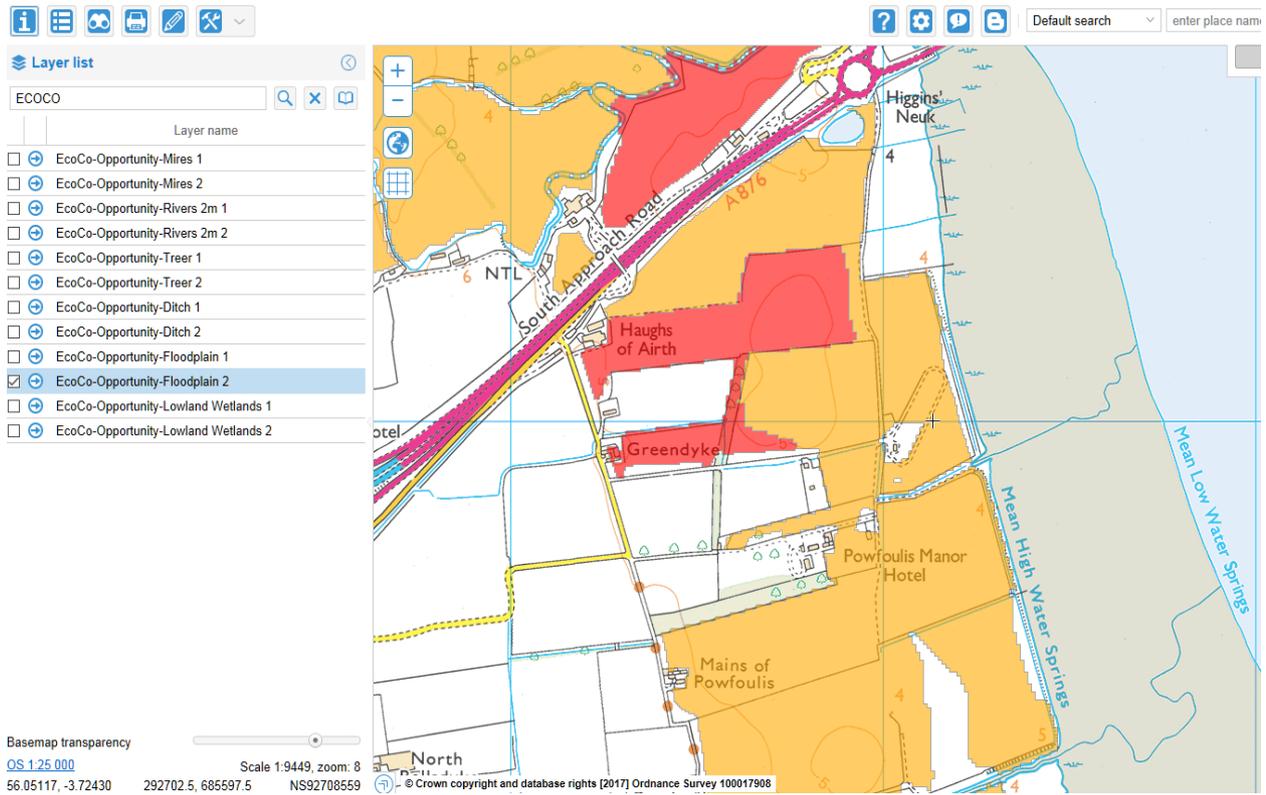
Map 1 Project Area and RSPB Skinflats reserve boundary



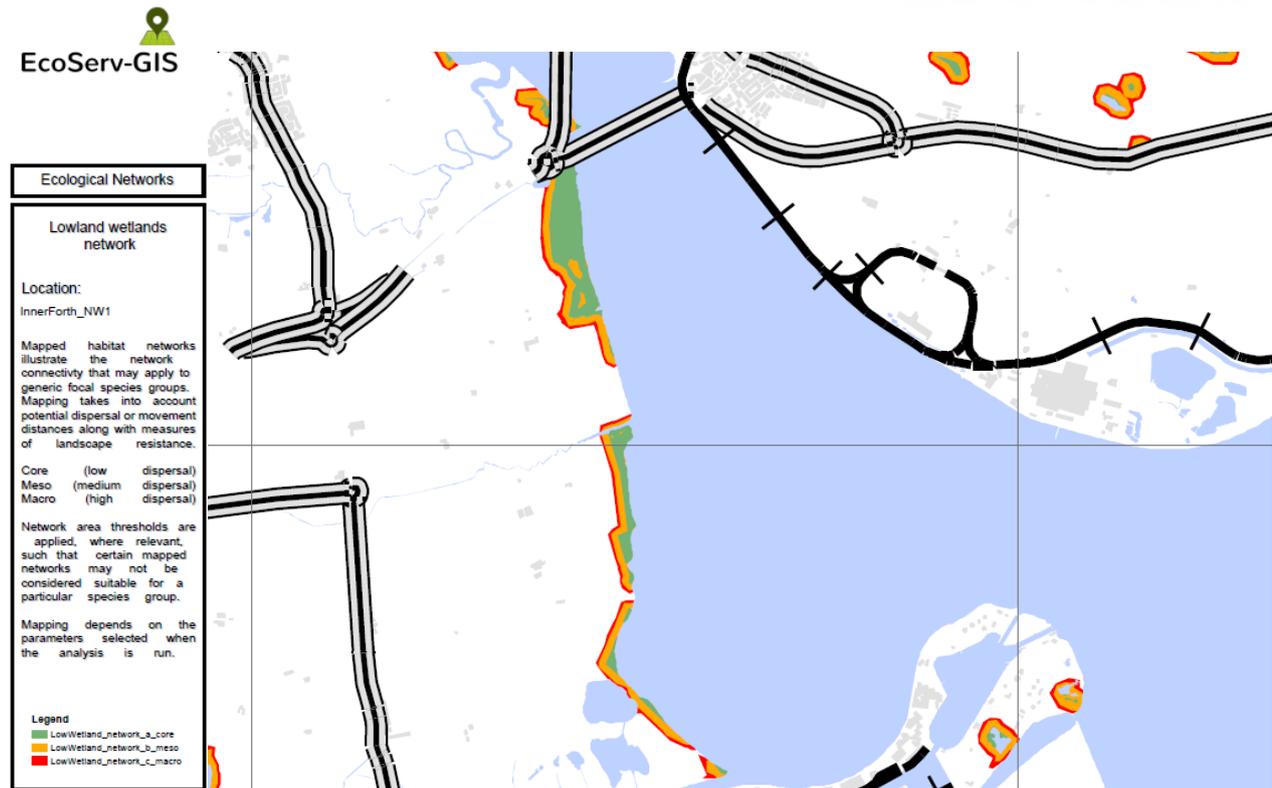
Map 2: Project area in relation to designated sites



Map 3: EcoCo Opportunity areas for floodplain creation within networks EUNIS data



Map 4: EcoCo lowlands wetlands existing core areas network map



Map 5: Effect of creating new adjoining wetland site showing habitat network extending as a result.



Map 6 Extract from Falkirk Council core paths plan.

