Agenda Item 6

Appendix 2

2025/0053/DET

Habitats regulations appraisal

HABITATS REGULATIONS APPRAISAL

Planning reference and proposal information	**2025/0053/DET** Proposed restoration of March Burn including realignment of river channel, removal of lower section of river embankments, infilling and regrading of river channel and river embankment, installation of large wood green bank protection and large wood structures, the formation of an inset floodplain and wetland scrapes, and associated works
Appraised by	Scott Shanks, Ecological Advice Officer (Planning)
Date	13/05/2025
Checked by	Polly Thompson - NatureScot
Date	23 May 2025

INFORMATION

European site details

Name of European site(s) potentially affected

1) **River South Esk Special Area of Conservation (SAC)**

Qualifying interest(s)

1) River South Esk Special Area of Conservation (SAC)

Atlantic salmon

Freshwater pearl mussel

Conservation objectives for qualifying interests

Conservation Objective 2. To ensure that the integrity of the **River South Esk SAC** is restored by meeting objectives 2a, 2b, 2c for each qualifying feature (and 2d for freshwater pearl mussel)

2b. Restore the distribution of **freshwater pearl mussel** throughout the site

2c. Restore the habitats supporting **freshwater pearl mussel** within the site and availability of food

2d. Restore the distribution and viability of **freshwater pearl mussel** host species and their supporting habitats

2a. Restore the population of **freshwater pearl mussel** as a viable component of the Site

2b. Restore the distribution of **Atlantic salmon** throughout the site

2c. Restore the habitats supporting **Atlantic salmon** within the site and availability of Food

2a. Restore the population of **Atlantic salmon**, including range of genetic types, as a viable component of the site

Conservation Objective 1. To ensure that the qualifying features of the River South Esk SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status.

APPRAISAL

STAGE 1:

What is the plan or project?

Relevant summary details of proposal (including location, timing, methods, etc)

Detailed designs have been produced to restore the March Burn, a tributary of the South Esk within Glen Clova, as part of the 'Restoring the River South Esk' programme. The design reach is located between the B955 road and the confluence of the March Burn with the South Esk (OS NGR NO 34137 72071 to NO 34239 71859). Proposed restoration of March Burn including realignment of river channel to follow the sinuous historic channel, removal of lower section of river embankments, infilling and regrading of river channel and river embankment, installation of large wood green bank protection and large wood structures, the formation of an inset floodplain and wetland scrapes, and associated works. The construction work is planned for 8 to 10 weeks during summer 2025.

STAGE 2:

Is the plan or project directly connected with or necessary for the management of the European site for nature conservation?

Yes,

i) Has the effect on all qualifying interests been considered?

Yes. Both freshwater pearl mussel (FWPM) and Atlantic salmon, the qualifying interests (QIs) of the River South Esk SAC, have been considered during the development of this river restoration and habitat improvement proposal. Existing habitat condition, position, and extents of the QIs, as well as their conservation objectives were used to inform the restoration design and proposed construction works (i.e. methodology and timing) to mitigate against impacts on these species. The potential impacts, design measures and mitigation measures undertaken and residual impacts on the QIs are further discussed in Stage 4.

ii) Is the proposal part of a fully assessed and agreed management plan

Yes. This proposal forms part of the 'Restoring the River South Esk' management programme led by Angus Council in partnership with Esk Rivers and Fisheries Trust (ERFT). The programme aims to restore natural geomorphic processes and deliver habitat improvements to the watercourse and its tributaries, such as the March Burn. Helping to achieve the conservation objectives of the SACs' two qualifying interests (i.e. to improve the habitat provision and expand the distribution of FWPM and Atlantic salmon within the River South Esk).

iii) Is there a clear rationale to justify the connection with the conservation objectives?

Yes. The Conservation Objectives for both FWPM and Atlantic salmon seek to improve the population, distribution, and availability of supporting habitats for both protected species. The channel realignment and supporting design features are proposed primarily to restore natural river processes and to improve and diversify the existing in-channel habitat present along the lower March Burn, which is largely homogenous. Increased in-channel morphological diversity has the potential to increase the availability of habitat suited to different stages of the Atlantic salmon life cycle, helping to expand the area of suitable habitat throughout this section of the watercourse. As Atlantic salmon is a host species for the glochidia of FWPM, improved habitat for the former may help with the population growth of the later. Improved morphological diversity and sediment sorting across the channel caused by the inclusion of large woody structures could also benefit FWPM directly by encouraging the deposition of sand between existing cobbles and boulders, expanding suitable habitat for this species.

iv) If there is a clear rationale to justify the connection with the conservation objectives, will any benefits arising from the proposal outweigh any negative impacts?

Yes. Steps have been taken during the scoping and design development to mitigate against impacts to either of this SAC's qualifying interests. As noted in the response at 2ii) the proposed river restoration works on the March Burn have the potential to improve habitat provision and diversity for both QIs, contributing towards improving the condition of the designated site. The final design and construction methodology have been developed with mitigation measures in place to limit negative impacts on the QI. However, during the construction process residual risks remain, such as best practice construction methodologies being ignored or implemented incorrectly, or disturbance of a previously unknown population of FWPM. These mitigation measures and residual risk will be discussed further in Stage 4. Construction supervision is to be undertaken by a member of the river restoration design team and an experienced aquatic Ecological Clerk of Works will be on site during construction to ensure that the construction is undertaken with sensitivity to the QIs.

v) Have any alternative methods of implementing the proposal been explored, including building in any relevant mitigation, to demonstrate that this is a the least damaging option?

Yes. During both the design development and construction planning stages. The Design Method Statement (DMS) outlines silt and fine sediment management measures that must be employed during construction to prevent this material from being mobilised into the channel. The DMS takes account of mitigation measures recommended in Alba Ecology's FWPM survey report (July 2024), as well as outlining the order in which the design elements should be constructed to minimise impacts on the surrounding environment.

vi) Give a Yes/No conclusion in terms of whether the plan or project is considered to directly connect with or necessary to site management for nature conservation.

Yes. The March Burn and river corridor are covered by the River South Esk SAC designation. Therefore, realignment of the lower section of the Burn will directly impact the SAC. However, the proposal aims to reinstate natural geomorphic processes, enhance habitat provision and diversity as well as contributing to natural flood risk management and improving climate change resilience. Therefore, it is deemed that this river restoration work is necessary for nature conservation and should improve suitable habitat diversity and potentially increase distribution of both Atlantic salmon and FWPM within the site.

STAGE 3:

Is the plan or project (either alone or in-combination with other plans or projects) likely to have a significant effect on the site(s)?

1) River South Esk Special Area of Conservation (SAC)

Freshwater pearl mussel: YES, there will be a LSE from short term effects arising during construction including fine sediment released during construction activity that could smother existing FWPM populations downstream of the site, within the River South Esk. Pollution from construction work such as fuel spillages could also enter the watercourse and impact FWPM and host species in the River South Esk SAC. Poor biosecurity measures could result in the spread of disease or invasive on-native species (INNS) that could impact FWPM populations and host species. There could be post-construction effects arising from expansion of suitable FWPM habitat, and host species habitats with potential to increase FWPM abundance and improve distribution and encourage colonisation of the restoration site.

Atlantic salmon: Yes, there will be a LSE from short term effects arising during construction including disturbance of existing habitat within the March Burn through sediment removal for reuse in the re-meandering of the channel, and release of sediment mobilised from banks and riverbed excavations that could smother Atlantic salmon spawning gravels downstream of the site, pollution from construction activity such as fuel spills and disturbance during spawning periods. There could be post-construction impacts from improved habitat diversity across the lower March Burn including improving spawning habitats (no spawning currently occurs within the restoration site), and habitats suitable for all stages of the Atlantic salmon lifecycle.

STAGE 4:

Undertake an Appropriate Assessment of the implications for the site(s) in view of the(ir) conservation objectives

1. River South Esk SAC

Conservation Objective 2. To ensure that the integrity of the River South Esk SAC is restored by meeting objectives 2a, 2b, 2c for each qualifying feature (and 2d for freshwater pearl mussel)

2b. Restore the distribution of freshwater pearl mussel throughout the site

The proposed river restoration works will contribute towards achieving this Conservation Objective. There are currently no known FWPM populations within the project site (approximately 250m of the March Burn), and existing geomorphology and habitat diversity within the site are currently considered sub-optimal for FWPM. A population of FWPM are found within the main South Esk channel, and so proposed improvements in the project site geomorphology and habitat diversity will improve suitability for FWPM and host species such as Atlantic salmon. This could increase the probability of colonisation of the site by FWPM.

Mitigation Measures included in the proposal will minimise the construction phase risks of mobilisation of sediments, pollution or disease that could impact FWPM downstream of the project site. FWPM populations within the South Esk will be the closest source of glochida that would facilitate the colonisation of the project site.

2c. Restore the habitats supporting freshwater pearl mussel within the site and availability of food

The proposal will contribute towards achieving this Conservation Objective. The proposed river restoration works will improve habitat diversity for host species of FWPM (such as Atlantic salmon) and encourage the deposition of finer sediments amongst the boulders and cobbles of the riverbed, this will promote the expansion of suitable FWPM habitats and improve the chances of colonisation of this section of the SAC. The proposal will create a more natural cross-section of the watercourse and improve channel to flood plain connectivity, which should facilitate improved nutrient exchange with the floodplain, which will provide organic matter for feeding FWPMs. Inclusion of large woody structures will also facilitate a supply of food for FWPM.

2d. Restore the distribution and viability of freshwater pearl mussel host species and their supporting habitats.

The proposed meandering form of the realigned channel to follow the historic channel, and the installation of large woody structures are both designed to increase the diversity of geomorphic processes within the channel, which will in turn help to create a range of habitats suitable for salmonids (FWPM host species). Deeper pools are predicted to form on meander bends and opposite large woody structures that will be suitable resting areas, or thermal refugia for adult salmonids. The designs should also promote the formation of riffle areas where finer sediments such as gravels and sands will be deposited, which will increase the availability of salmonid spawning habitat. The inclusion of large woody structures in the design will provide localised shading and protection for salmonids. These habitat improvements have the potential to facilitate an increase in the population of the FWPM host species, which in turn will improve the likelihood that they will be encysted by glochia.

Mitigation Measures included in the proposal will minimise the construction phase risks of disturbance during spawning times, mobilisation of sediments that could smother spawning sites, and release of pollution or spread of disease that could impact host species within the March Burn and downstream stretches of the SAC.

2a. Restore the population of freshwater pearl mussel as a viable component of the Site

The proposed river restoration works will contribute towards achieving this Conservation Objective. There are currently no known FWPM populations within the project site (a 250m stretch of the March Burn, a tributary of the River South Esk), and existing geomorphology and habitat diversity within the site are sub-optimal for FWPM. However, FWPMs are found within the main South Esk channel, and so proposed improvements in the project site geomorphology and habitat diversity will increase habitat suitability for both FWPM and host species such as Atlantic Salmon and could increase the probability of colonisation of the site by FWPM.

Mitigation Measures included in the proposal will minimise the construction phase risks of mobilisation of sediments, pollution or disease that could impact the known population of FWPM downstream of the project site. This FWPM population will be the closest source of glochida that would facilitate the colonisation of the project site.

2b. Restore the distribution of Atlantic salmon throughout the site.

The proposed works will contribute towards achieving this Conservation Objective. The restoration of the March Burn will increase habitat availability and diversity for additional lifecycle stages of Atlantic salmon within this section of the SAC. This increase in suitable habitat should in turn promote an increase in the population of Atlantic Salmon within the SAC.

Mitigation Measures included in the proposal will minimise the construction phase risks of disturbance during spawning time, mobilisation of sediments that could smother spawning sites, disturbance and temporary loss of parr habitat, and release of pollution or spread of disease that could impact Atlantic salmon within the March Burn and downstream stretches of the SAC.

2c. Restore the habitats supporting Atlantic salmon within the site and availability of Food.

The prosed works will contribute towards achieving this Conservation Objective. In channel habitats within the study site are currently dominated by cobble boulder bed material which is best suited to parr. The proposed works will increase morphological diversity within this section of the SAC, promoting the development of habitats suitable for different life stages of Atlantic Salmon.

Mitigation Measures included in the proposal will minimise the construction phase risks of disturbance during spawning time, mobilisation of sediments that could smother spawning sites, disturbance and temporary loss of parr habitat, and release of pollution or spread of disease that could impact Atlantic salmon within the March Burn and downstream stretches of the SAC.

2a. Restore the population of Atlantic salmon, including range of genetic types, as a viable component of the site

The proposed works will partly contribute towards achieving this Conservation Objective. The restoration of the March Burn will increase habitat availability and habitat diversity suitable for additional life stages of Atlantic salmon within this section of the SAC. This increase in suitable habitat should in turn promote an increase in the population of Atlantic salmon within the SAC. However, the proposed works will not influence the range of genetic types within the

SAC.

Mitigation Measures included in the proposal will minimise the construction phase risks of disturbance during spawning time, mobilisation of sediments that could smother spawning sites, disturbance and temporary loss of parr habitat, and release of pollution or spread of disease that could impact Atlantic salmon within the March Burn and downstream stretches of the SAC.

Conservation Objective 1. To ensure that the qualifying features of the River South Esk SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status.

As the proposed works will contribute towards achieving this Conservation Objective by improving the geomorphic form and function of the March Burn, this will in turn promote diversity and improve habitat availability for both FWPM and Atlantic salmon across the site. Mitigation measures included in the proposal will reduce the construction phase, and post-construction phase risks of disturbance and impacts from sediment mobilisation, construction pollution and the spread of disease to a minimum level. Whilst this site represents only a small part of the River South Esk SAC, this project combined with other restoration projects across the SAC could contribute to both QI achieving favourable conservation status.

In conclusion, the proposed mitigation measures (which include timing of the construction work to avoid spawning of Atlantic salmon; the channel realignment being mainly constructed 'off-line' to limit the length of time that existing Atlantic salmon habitats are impacted; the employment of an experienced aquatic ECoW to check for previously undetected FWPMs during construction; implementation of sediment and silt management measures during the construction phase; refilling fuel only in the site compound, spill kits to be readily available and machinery stored with drip trays in place when not in use; and implementation of strict biosecurity measures to prevent the spread of disease or invasive non-native species) **if implemented, will reduce the potential effects to a minimal level, so that all conservation objectives can be met for the River South Esk SAC.**

STAGE 5:

Can it be ascertained that there will not be an adverse effect on site integrity?

Provided the mitigation measures included in the planning application are secured by condition and implemented, then the conservation objectives will be met and therefore there will not be an adverse effect on site integrity for the River South Esk SAC. The mitigation measures that require to be secured by condition are:

- Timing of the works to avoid the Atlantic salmon spawning season (October to February)- to minimise impacts on qualifying interests of the River South Esk SAC.
- Mitigation measures detailed in the March Burn Restoration Design Method Statement, Version 1 (dated 30/01/2025) should be implemented in full. In particular, the pollution prevention and control measures to prevent excess silt and sediment entering the River South Esk during construction. The reason for this condition is to avoid pollution or mobilised sediments negatively impacting Atlantic salmon and the population of FWPM downstream of the site, within the River South Esk SAC.