

Sesswick Eel Screen

*Shadow Habitat Regulations
Assessment (HRA) Stage 2:
Appropriate Assessment*



Client:

Seven Trent Water

Report Reference:

RSE_5278_R4_V2_sHRA_Stage 2

Issue Date:

August 2023

PROJECT

Client: Seven Trent Water

Project: Sesswick Eel Screen

Reference RSE_5278_R4_V2_sHRA_Stage 2

Report Title Shadow Habitat Regulations Assessment (HRA) Stage 2: Appropriate Assessment

DOCUMENT CONTROL

Originated:	JC MSc BSc MCIEEM CEcol	Principal	18/07/2023
-------------	----------------------------	-----------	------------

Technical Reviewed:	MO MCIEEM, CEnv	Associate Director	04/08/2023
---------------------	--------------------	--------------------	------------

Issued:	AD GradCIWEM, Msc Bsc	Assistant Ecologist	04/08/2023
---------	--------------------------	---------------------	------------

Revisions:

DISCLOSURE:

The information provided within this report has been prepared and provided as true and in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. It is intended for the sole use of the Client and their agents in accordance with the agreement under which our services were performed. Unauthorised communication, reproduction or usage of this report by any party other than the aforementioned is prohibited. No warranty, express or implied, is made as to the advice in this report or any other service provided by RammSanderson Ecology Ltd. This report has been prepared by an ecological specialist and does not purport to provide legal advice. RammSanderson is a trading name of RammSanderson Ecology Limited, as registered in England & Wales (Company No.: 8999992).

East Midlands : West Midlands : Yorkshire

Switchboard 0115 930 2493 info@rammsanderson.com www.rammsanderson.com



CONTENTS

1	INTRODUCTION AND BACKGROUND	4
1.1	TERMS OF REFERENCE	4
1.2	THE SCHEME	4
1.3	SCOPE OF THE APPROPRIATE ASSESSMENT	4
1.4	SUMMARY OF STAGE 1 OF THE IMPACT ASSESSMENT	5
2	APPROPRIATE ASSESSMENT	8
2.1	INTRODUCTION	8
2.2	LIKELY SIGNIFICANT EFFECTS	8
2.3	LAND TAKE	8
2.4	WATER POLLUTION AND SILTATION	9
2.5	RECREATIONAL/HUMAN DISTURBANCE	9
2.6	MOVEMENT/REPRODUCTION OF DESIGNATED SPECIES	9
3	SUMMARY OF STAGE 2	11
4	REFERENCES	12

TABLES

TABLE 1: SUMMARY OF STAGE 1 IMPACT ASSESSMENT	6
TABLE 2: SUMMARY OF RESIDUAL EFFECTS POST MITIGATION	11

1 INTRODUCTION AND BACKGROUND

1.1 Terms of Reference

- i RammSanderson Ecology Ltd (RS) were commissioned by Seven Trent Water (herein referred to as the Applicant) to undertake an assessment of the potential impacts to the River Dee Special Area of Conservation (SAC) from the proposed development located south of Waterworks Road, Sesswick (central grid reference: SJ 386463) and adjacent to the SAC, herein referred to as the Site.
- ii The original proposals put forward by the Applicant regarding development of the Site were (RS, 2023):

"The installation of an eel screen onto one of the existing inflows to the pumphouse on Site. The installation of a screen will require construction of supporting structure into the riverbed, and a hydrolox or wire mesh screen being installed upon it. In addition, construction of a debris boom is also required on the banks."

- iii The Conservation of Habitats and Species 2017 (as amended) Regulations set out the process for assessing potential adverse effects on such sites, known as Habitats Regulations Assessment (HRA). Stage 1 in the process required by the regulations is to determine whether the project is likely to have a significant effect on the SAC (known as Screening). If a likely significant effect will arise, then an Appropriate Assessment is required.
- iv The Stage 1 report (RS, 2023) did identify a potential significant effect from various impact pathways. Therefore, this document is for Stage 2: Appropriate Assessment and should be read in conjunction with the Stage 1 report.
- v Since the completion of the Stage 1 HRA was completed, the methodology of the proposals has been confirmed in more detail, so no development that will impact the riverbed itself will take place. Instead, a screen will be suspended in the river via steel cantilever arms which will suspend the screen within the water. This will ensure a limited amount of works need to take place in the river themselves and thus the ecological impact is expected to be reduced.
- vi These proposals are herein referred to as the Scheme.

1.2 The Scheme

- i The aim of the Scheme is to add the new eel screen into the existing system, so that this new screen reduces the potential damage to eel elvers that might otherwise be able to enter the system. The screen will be held in place by a cantilever system which can be suspended from the existing infrastructure.
- ii In order to facilitate this, pre commencement works will commence in January 2024. This will involve maintenance work and closing of the public right of way in order to prepare the site prior to June-July 2024, when the works are set to take place.
- iii A crane will be used to lower the apparatus into place, which will ensure no works take place within the water. The crane will be positioned in an adjacent field situated next to the STW site.
- iv When the work is set to be commenced, the Site will need to be shut down for 5-6 days, to enable the installation of the screen. The works will take place in daytime hours only.

1.3 Scope of the Appropriate Assessment

- i The UK Supreme Court has defined Appropriate Assessment as:

“Appropriate” is not a technical terms. It indicates no more than that the assessment should be appropriate to the task at hand: that the task being to satisfy the responsible authority that the project “will not adversely affect the integrity of the site concerned”.

- ii The European commission further clarifies that the focus is on the specific site in question and integrity relates to the quality or condition of the whole site, having resilience and ability to evolve in ways that are favourable to conservation (Managing Natura 2000, 2018). Therefore, it is necessary to look at ecological integrity in the short, medium and long term and actions that may be required to maintain or restore the conservation objectives. These must not be hindered by the project in order for the requirements of the Habitats Regulations to be satisfied.
- iii The Conservation Objectives for the River Dee SAC are:
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;
 - *The extent and distribution of qualifying natural habitats and habitats of qualifying species*
 - *The structure and function (including typical species) of qualifying natural habitats*
 - *The structure and function of the habitats of qualifying species*
 - *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely*
 - *The populations of qualifying species, and,*
 - *The distribution of qualifying species within the site.*
- iv The river has a high conservation value being designated as two separate Sites of Special Scientific Interest (SSSIs) which are defined by the national boundary between England and Wales. The River Dee (England) SSSI is in England and the Afon Dyfrdwy (River Dee) SSSI is in Wales. In addition the Dee/ Dyfrdwy and Bala Lake are designated a Special Area of Conservation (SAC) (River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid SAC) which covers both English and Welsh sections. Currently most of the SSSIs and SAC are judged to
- v be in unfavourable condition, due to a number of historical and current pressures (Jacobs, 2013).
- vi Therefore, at the nearest stretch of the SAC to the Scheme the conservation objectives will be to restore.
- vii This document is intended as Stage 2 Appropriate Assessment of the HRA process, to be provided to the competent authority to assist their judgement. In absence of a formal HRA being compiled by the competent authority, this document (if deemed appropriate) may be adopted by the competent authority.
- viii The Scheme requires the granting of planning permission and therefore this document is intended to support that decision by undertaking an appraisal of the potential impacts of the Scheme on the qualifying interest(s) of the European site. The appraisal considers the potential impacts on each qualifying interest and their conservation objectives, including the magnitude and duration of effects and any cumulative effects from other plans or projects. The appraisal determines whether any of the conservation objectives could be undermined by the proposal. Mitigation to remove or reduce impacts of the Scheme has been considered at this stage.
- ix It is important to note that Appropriate Assessment has been undertaken with the rigorous application of the precautionary principle. Where uncertainty or doubt remains, an adverse impact should be assumed.

1.4 Summary of Stage 1 of the Impact Assessment

- i Table 1 below summarises the Stage 1 SAC impact assessment (RS, 2023).

Table 1: Summary of Stage 1 Impact Assessment¹

Pathway	Type	Screening Decision in Isolation	Screening Decision in Combination	Justification
Land Take	Direct	In	N/A	Areas that require construction activities may have otter holts and result in destruction of places of rest. Further survey needed. Loss of the 400m ² required for the application is not deemed likely to impact upon the function of the SAC.
Water pollution	Direct	In	N/A	Full details of pollution prevention measures for construction required within a Construction and Environmental Management Plan
Siltation	Direct	In	N/A	Full details of siltation prevention measures for construction required within a Construction and Environmental Management Plan
Drainage	Direct	Out	N/A – no effect in isolation	No additional drainage/change will occur as works are a modification to an existing inflow that will be for the long term benefit of eel and other fish species through changing the mesh size on the screen.
Air Quality	Direct	Out	N/A – no effect in isolation	Localised and temporary works will not increase deposition into the water course. Therefore, changes are di minis and can not act in synergy with other proposals.
Invasive species	Direct	Out	N/A – no effect in isolation	NRW recognise that adherence to existing legislative measures under the Wildlife & Countryside Act 1981 (as amended) to prevent the spread of invasive species into the wild for works on Site will prevent spread (NRW, 2022). Furthermore, STW have invasive non native species policies that they adhere to during works. As a result there will be in no impacts.
Recreational/human disturbance	Direct	In	N/A	Works may be within 50m of otter holts/dens. Further surveys required to prevent disturbance to this species.
Movement and reproduction of qualifying species	Direct	In	N/A	The extension of the screening structure into the water course may impact the flow of the water and the movement of fish species through the water column. Sensitive design in collaboration with NRW required.
Impacts Upon Functionally linked land outside the Site	Indirect	Out	N/A	Works are localised and temporary within the SAC itself. No known functionally linked sites to be

¹ Where no reasonable/appreciable impact was deemed likely as a result of the Scheme, these were screened out (with justification given in table). Where further information is required to reduce uncertainty and move beyond all scientific doubt, pathways were screened in as yellow. For those where an impact was deemed likely in the absence of mitigation, these were screened in as orange (no “Red” pathways that were likely to require Stage 3 HRA were identified).

Pathway	Type	Screening Decision in Isolation	Screening Decision in Combination	Justification
				impacted by construction or operation and as impacts are nugatory cannot act in combination.

2 APPROPRIATE ASSESSMENT

2.1 Introduction

- i Under Regulation (Reg) 9(3) of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (as amended)

“a competent authority, in exercising any of its functions, must have regard to the requirements of the Directives so far as they may be affected by the exercise of their functions”

- ii Under Reg 63 it is the responsibility of a competent authority (i.e. the Local Planning Authority or statutory body such as the Environment Agency), that:

before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site,

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.

- iii While no longer within the EU, those sites designated/classified prior and post 31st December 2020 remain 'European Sites' within the UK. Domestic and EU caselaw prior to 31st December 2020 is also retained.
- iv S6(3) of the EU (Withdrawal Act) 2018 (as amended) *“requires retained EU law (such as the Conservation of Habitat and Species Regulations 2017) to be interpreted in line with “retained caselaw” which includes retained EU caselaw”.*
- v The Scheme requires the granting of planning permission and therefore this document is intended under Regulation 63 and Regulation 70 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 to assess effects upon the Conservation Objectives for the European Site and determine:
 - Test 2: identify under Appropriate Assessment, a means of mitigation to result in Neutral Impact. - Where this cannot be achieved, further Stage 3 Derogation documentation is required (which is beyond the scope of this document).

2.2 Likely Significant Effects

- i The Stage 1 appraisal in respect to LSE of the Scheme on the Conservation Objectives of the European Site River Dee SAC identified potential impact pathways. In the case of this Scheme, an LSE was identified for Land Take, Siltation, Water Pollution, Movement/Reproduction of Qualifying Species and Human Disturbance. It is proposed that a Construction and Ecology Management Plan (CEMP) is produced in order to consider construction phase impacts upon the River Dee SAC in more detail. This should regard the use of the crane and detail procedures that will reduce the environmental risk of the works.

2.3 Land Take

- i To support the assessment of potential impacts to the River Dee SAC and its qualifying features, otter surveys were undertaken by RS. Both banks of the river were surveyed from a boat, covering a distance of 150m upstream and downstream of the Site.
- ii The first otter survey, conducted on 27th April 2023 recorded a potential resting place c. 54m from the Site boundary. This was located under the trees which was noted as a potential resting area, no vegetation was

present around this potential resting place at the time of the first survey. No other potential resting or breeding sites were recorded during the survey.

- iii A second survey was conducted on the 6th July 2023; this potential resting place was found again on the second survey however, there was no indication that mammals were using this bank and furthermore no evidence of otter presence (such as spraints, prints or feeding remains) was found in this area during the survey. Therefore, this in culmination with the distance of the potential resting place to the scheme, the Scheme will not impact any otter resting or breeding sites.

2.4 Water Pollution and Siltation

- i The risk of water pollution and sedimentation will primarily come from plant used to instal the eel screen. In this case, the major risk is in the form of the crane used to lower the screen and fixing system into place. Due to the nature of this machinery suggested, the use of the crane may infer additional pollutants. Used engine oil or “waste crankcase oil” (WCO) is a major pollutant in both terrestrial and aquatic environments. Large volumes of WCO enter aquatic ecosystems through water runoff and it is a complex mixture of thousands of chemicals with largely unknown biological activity; however, it is both mutagenic and carcinogenic to aquatic life. On top of this, its expected agitation of the ground could lead to the mobilisation of slit and sediment which can further damage the surrounding ecosystem. Detrimental impacts of siltation on flora riverine communities are well documented (e.g. Hatton-Ellis TW & Grieve N (2003)). To reduce the impact of both water pollution and siltation to a negligible level, the below process will be adopted during the works:
- Pad: The crane will be situated on a stable pad above the ground. This will reduce the chance of groundwater pollution.
 - Location: The crane will be placed as far away from the river as is feasible to carry out the works. This will reduce the chance of polluted water entering the system.
 - Silt traps/interceptors: Interception devised will be river side of the crane to intercept any polluted water/silt that is headed for the river. Interceptors will consist of barriers or absorbent pads which can soak up any runoff from the works.
 - Weather: Where possible, heavy rain will be avoided as to reduce the chance of surface water runoff.
- ii Taking these mitigation measures into account, impacts to the River Dee SAC from increased water pollution or siltation would be negligible.

2.5 Recreational/Human Disturbance

- i There will be no disturbance to otter holts or resting places during the works. Works will take place over a period of six days only and will be undertaken during daylight hours only. Any otters present locally would continue to be able to commute through and forage within the river at this location during the hours of darkness.
- ii Following these steps, otters would not be subject to any disturbance and therefore no further mitigation is required.

2.6 Movement/Reproduction of Designated Species

- i The River Dee SAC lists Atlantic salmon as a primary reason for designation, with sea lamprey, brook lamprey, river lamprey, bullhead and otter as qualifying species for the designation.
- ii A fish suitability assessment was carried out along the Dee for approximately 150m either side of the works. This was undertaken on 27th April 2023 and 6th July 2023 to determine provision of spawning habitat. Using a viewfinder, the gravel matrix was investigated, showing the bed consisted of compacted consolidated bed material, with vortices within the gravel mostly filled with a mix of silt and sand. Despite this, aerated, fast

flowing sections of the bed could still present useable spawning habitat. However, due to the location of the Site within the lowland section of the Dee, it is considered that Salmonid species and lamprey species would spawn further upstream and therefore the area surveyed is sub optimal as breeding habitat for these species. Suitable habitat for bullhead is present approximately 100m upstream, however, it is still expected that bullhead could be present around the location of works while feeding/moving through the river.

- iii Due to the nature of the works, the bed will remain undisturbed, it is subsequently thought the impact to fish will be negligible. Therefore, it is not proposed any further mitigation is required prior to the works.

3 SUMMARY OF STAGE 2

- i Effects on the River Dee SAC from potential land take, water pollution from runoff, siltation, disturbance or movement or reproduction of species will be mitigated to neutral levels through the provision of design changes since the Stage 1 HRA or management of pollutants and siltation through a CEMP
- ii A summary of residual effects following Appropriate Assessment are provided in table 2.

Table 2: Summary of Residual Effects Post Mitigation

Impact	Impact in Isolation Post Mitigation	Impact in Combination Post Mitigation	Residual Impacts
Land Take	Negligible – no otter holts or resting sites recorded within 150m of the Site.	N/A	None
Water Pollution and Siltation	Negligible – control of potential pollution and siltation through CEMP	N/A	None
Recreational/ Human Disturbance	Negligible – no otter holts or resting sites recorded within 150m of the Site.	N/A	None
Movement/ Reproduction of Designated Species	Negligible – no impacts to otter or fish movement or reproduction.	N/A	None

4 REFERENCES

- i BS 42020:2013 Biodiversity – Code of Practice for Planning and Development 2013: The British Standards Institution.
- ii David Tyldesley and Associates, 2012 River Dee Special Area of Conservation Water Quality Management Plan Developer Contribution Scheme.
- iii Department of Communities & Local Government, 2012. National Planning Policy Framework, London: DCLG.
- iv Environment Agency (2011). River Dee SAC Water Quality (Phosphate) Management Plan
- v Hatton-Ellis TW & Grieve N (2003). Ecology of Watercourses Characterised by *Ranunculus fluitantis* and *Callitriche-Batrachion* Vegetation
- vi Institute of Environmental Assessment, 1995. Guidelines for Baseline Ecological Assessment. London: E & FN Spon.
- vii Jacobs (2013) River Dee/ Afon Dyfrdwy SSSI Restoration Technical Report. B1867400
- viii Johannesson, L. T. *et al* (2003). The influence of an urban stream on sediment geochemistry in Göteborg Harbour, Sweden. Environmental Earth Sciences: 02/01.
- ix Natural England (2011). River Dee SSSI/SAC Restoration Plan.
- x Natural England (2022) Development Proposals within the River Dee Catchment: Interim Advice for Local Planning Authorities.
- xi Office of the Deputy Prime Minister, 06/2005. Government Circular: Biodiversity and Geological Conservation - Statutory Obligations and their impact within the planning system. London: ODPM.
- xii Ssempebwa *et al* (2004). Waste Crankcase Crank Oil: An Environmental Contaminant with Potential to Modulate Estrogenic Responses. Journal of Toxicology and Environmental health 67:1081-1094.