

Scottish Hydro Electric Transmission plc
Beauly-Denny Overhead Line Diversion
Environmental Appraisal
Technical Appendices

Appendix B – Species Protection Plan (SPP) -
Freshwater Pearl Mussel

July 2025



TG-NET-ENV-500	Freshwater Pearl Mussel Species Protection Plan		Applies to
			Transmission ✓
Revision: 2.00	Classification: Public	Issue Date: August 2023	Review Date: August 2031

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1 Introduction

Freshwater pearl mussel (FWPM) is one of the most endangered molluscs in the world. Scotland holds some of the largest remaining populations in the world. This Species Protection Plan (SPP) provides guidance and agreed procedures for the protection of FWPM and their habitat during construction works on Scottish & Southern Electricity Networks Transmission (SSEN Transmission) projects. It applies to all projects where FWPM may be present and is issued to *Contractors* as part of the Works Information. It outlines the responsibilities of SSEN Transmission (the *Employer*) and the *Contractor* regarding protection of FWPM. It also details relevant legislation, survey requirements and mitigation measures to protect the species and its environment.

2 References

The documents detailed in Table 2.1 - Scottish and Southern Electricity Networks Documents and Table 2.2 - Miscellaneous Documents should be used in conjunction with this document.

Table 2.1 - Scottish and Southern Electricity Networks Documents

Reference	Title
TG-NET-ENV-511	General Environmental Management Plan (GEMP) - Soil Management
TG-NET-ENV-512	General Environmental Management Plan (GEMP) - Working in or Near Water
TG-NET-ENV-514	General Environmental Management Plan (GEMP) - Working with Concrete
TG-NET-ENV-515	General Environmental Management Plan (GEMP) - Watercourse Crossings
TG-NET-ENV-519	General Environmental Management Plan (GEMP) - Forestry
TG-NET-ENV-523	General Environmental Management Plan (GEMP) - Bad Weather

Table 2.2 - Miscellaneous Documents

Title
Wildlife and Countryside Act 1981 (as amended in Scotland)
NatureScot - Freshwater pearl mussel
NatureScot - SiteLink
NatureScot Licensing
NetRegs - Guidance for Pollution Prevention (GPP) documents
SEPA - The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended): A Practical Guide

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3 Background

- 3.1 Freshwater pearl mussels (*Margaritifera margaritifera*) are freshwater bivalves (a type of mollusc) which filter feed in clean, fast flowing waters.
- 3.2 Fertilised adult females eject millions of tiny larvae in the summer which must successfully attach to the gills of young salmon or trout, which they live on harmlessly, before dropping off onto the riverbed substrate the following spring. The juveniles usually establish themselves in coarse sand or fine gravel, though they are known to be found in finer substrates. It takes around 10-12 years for the young mussels to reach sexual maturity. Adults can live to over 100 years and grow to over 15 cm in length.
- 3.3 They are extremely vulnerable to changes in their environment, such as water pollution (including silt and sediment) and engineering works affecting mussel beds. Populations in Scotland are still illegally fished for pearls; therefore the precise locations of known populations are kept confidential.
- 3.4 Due to the dependency of its larval stages on fish hosts, activities which impact on local salmon and trout populations can potentially also have an impact on FWPM populations.

4 Responsibilities

- 4.1 It is the *Contractor's* responsibility to comply with all the requirements of this Protection Plan where FWPM may be present, and it is both the *Contractor's* and SEN Transmission's responsibility to monitor compliance with the Protection Plan.
- 4.2 It is **essential** that this plan is followed in advance of any works which could impact on FWPM or their habitat. Any river within the SEN Transmission licence area that is not ephemeral (short duration after precipitation or flooding), and which is not entirely bedrock should be treated as having potential for FWPM, unless this has been discounted through other assessments which may include FWPM surveys. Rivers without the presence of salmonids (salmon and trout), due to barriers obstructing the movement of the fish, will not have recruitment of juvenile FWPM due to the dependency the larval stage on attaching to the gills of the fish. This may not rule out the potential for adults which may have established before barriers became established.

5 Legislation

- 5.1 FWPM is afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended in Scotland). This makes it an offence to intentionally or recklessly kill, injure, take or disturb FWPM when it is occupying a structure or place used for shelter or protection, or to damage, destroy or obstruct access to any structure or place it uses for shelter or protection. Reckless acts would include disregard of mitigation aimed at protecting FWPM, resulting in killing or injuring FWPM. Knowingly causing or permitting any of the above acts to be carried out is also an offence. The protection of FWPM is a priority in the fight against wildlife crime.

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- 5.2 NatureScot can grant licences to enable certain activities that would otherwise be an offence, to be carried out in relation to FWPM and their places of shelter, subject to the following:
- a) the activity authorised by the licence will contribute to significant social, economic or environmental benefit; and,
 - b) there is no other satisfactory solution
- 5.3 The critically endangered status of FWPM in Europe means that robust justifications and high burdens of proof should be expected to be provided by the applicant for both tests and that there should be no presumption that a licence would be forthcoming. Licences for this purpose will only be issued in exceptional circumstance and where the activities will not compromise the local population viability.
- 5.4 This Plan outlines the planning, assessments and mitigation expected to avoid the need for an application for a licence to undertake development activities.

6 Planning Works Close to or Crossing Freshwater

- 6.1 Activities which have the potential to affect FWPM where they are found include, but are not limited to, crossing watercourses, in watercourse engineering and bank works. The potential for harmful pollutants (including silt from site run off) to travel long distances downstream along water courses means that FWPM populations may be impacted far downstream from the sources of those pollutants.
- 6.2 The approach to FWPM protection will always be based on the ‘avoidance’ of impacts. Unlike other species covered in this SPP series, **‘disturbance’ is not a legal option** due to the sedentary lifestyle of adults and juveniles as this could result in them being killed or injured.
- 6.3 Avoidance of potential impacts on FWPM may be achieved through consideration of location, timing, methods or technology of the proposed works which could avoid impacts on FWPM completely, or at least minimise the likelihood of an offence occurring. Please note that this document presumes that the ‘do nothing’ option has already been eliminated from valid options through the Governance processes and that the need for undertaking works can be robustly defended and withstand scrutiny if required.

7 General Mitigation

7.1 All Works

- Strict adherence to SEPA’s ‘The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended): A Practical Guide’ (which is mandatory to ensure legal compliance), the Guidance for Pollution Prevention documents and any additional best practice in SSEN Transmission’s General Environmental Management Plans should ensure that pollution pathways are eliminated.

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- It should be remembered that water pollution incidents, whether they arise on land (such as site run off) or from works in the water or from directional drill frac-out, can have severe consequences long distances downstream in receiving waters which may contain FWPM.

7.2 Works Within Watercourses

- Any activities proposed in the water course (e.g. vehicular crossings and isolated open-cut trenches) must not be undertaken without an assessment being completed by the *Ecologist / Ecological Clerk of Works* of the potential of that watercourse to support FWPM. If this assessment determines that there is a potential for FWPM to be present at the location of works or within 0.1 km upstream or 0.5 km downstream then a survey must be undertaken which meets the requirements set out in this SPP. The *Ecologist / Ecological Clerk of Works* should also consider activities which may reduce water flow in suitable water courses.

7.3 Works Outwith Watercourses

- Where there are no pathways for pollution or works affecting the beds of watercourses and/or no reductions to water flow and/or no reductions in tree shading of watercourses there is need no need for further assessments.

8 Freshwater Pearl Mussel Surveys

8.1 Field surveys will be required in the following circumstances:

- When working within a watercourse within a designated site for FWPM (Special Area of Conservation or Site of Special Scientific Interest) or otherwise identified as having FWPM populations (candidate Special Area of Conservation or Site of Community Importance) or the catchment of such sites. Such sites can be identified using the NatureScot SiteLink service (<https://sitelink.nature.scot/>)
- Where FWPM have previously identified through desk study or from prior surveys as being 0.1 km upstream or 0.5 km downstream and there is still a potential for a water pollution event even after adhering to the Pollution Prevention Guidelines and any additional best practice in SSEN Transmission's General Environmental Management Plans.
- Where works will take place within a watercourse that is - i) not ephemeral (of short duration after precipitation or flooding), ii) which is not entirely bedrock and iii) where an assessment by an *Ecologist / Ecological Clerk of Works* cannot robustly discount the possibility of their presence. Assessment of suitability may be undertaken as part of the surveys and assessments undertaken for Environmental Impact Assessment or other relevant environmental assessments.

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8.2 Detailed guidance on a survey methods to inform development and deep water survey methods can be found on the NatureScot website and require a licensed FWPM surveyor to undertake them, so are not repeated.

- 1) Survey work must be undertaken in periods of low water flow. **This generally limits the survey season to between April and September.** Planning of works should allow sufficient time for a FWPM survey to be carried out and a report prepared.
- 2) The length of watercourse requiring to be surveyed will be dependent on the nature of the works and their potential impacts. The surveyor will adhere to the published survey guidance on the NatureScot website to identify extent of river to be surveyed and the techniques used.

9 Review of Survey

- 9.1 The locations of any FWPM detected should be treated with the strictest confidentiality and only be released to the relevant competent authorities (SEPA, NatureScot and local planning authority) in reports or annexes clearly marked as sensitive.
- 9.2 The *Ecologist / Ecological Clerk of Works* will review the survey report to determine whether the proposed activities are likely to have a significant impact on any FWPM identified through the assessments.
- 9.3 If it is determined that there is a potential for negative impacts on FWPM then the *Contractor* should work with the *Ecologist / Ecological Clerk of Works* to identify any changes which can be made to the proposed works which will mitigate the risks to FWPM.
- 9.4 The approach to resolving any potential conflicts with FWPM protection identified will always begin with identifying options for 'avoidance'. Avoidance solutions may be identified through consideration of alternatives with regards to location of the activity, timing (which may relate to water levels), materials, methods or technology used. This SPP presumes that detailed consideration will already have been given to the necessity of delivering a particular outcome and that the 'do nothing' option will no longer be available.
- 9.5 If the *Ecologist / Ecological Clerk of Works* is not able to agree sufficient mitigation with the *Contractor*, or there is reasonable doubt about the sufficiency of the proposed mitigation, then the *Employer* should be informed before the *Ecologist / Ecological Clerk of Works* contacts NatureScot Licensing Team for further guidance.

10 Emergency Procedure

- 10.1 The following procedure will be followed if FWPM are encountered unexpectedly:
 - 1) An emergency procedure will be implemented by site workers if FWPM are encountered. All work within 0.1 km upstream and 0.5 km downstream on the water course will cease, and the *Ecologist / Ecological Clerk of Works* will inspect the site and define mitigation (if required) in line with this SPP.

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- 2) Works within the area halted will not recommence until the *Ecologist / Ecological Clerk of Works* has agreed the mitigation with the *Contractor* and provided written approval.
- 3) An exceptional circumstance procedure will be implemented should mitigation not prove satisfactory in a particular case. Works will be halted whilst an appropriate course of action is determined (under consultation with NatureScot Licensing Team if required). If the *Ecologist / Ecological Clerk of Works* determine that FWPM are at risk then the *Contractor* and the *Employer* should be informed immediately and this should be prior to SEPA and the local wildlife crime officer being contacted.

11 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	n/a	1.00	R Baldwin
02	1.1: Replaced reference to CEMD with 'Works Information'. 9: Shortened title to 'Emergency Procedure'. Footnotes 3 and 5: Update of Scottish Natural Heritage hyperlinks.	TG-NET-ENV-500 (Rev 1.00)	1.01	R Baldwin
03	Rev 1.01 migrated into TEM-NET-GOV-505, which inserted new section 2 References, Footnote text from 1.01 has now be integrated into the main text following the sentence which contained the footnote in 1.01. References to SNH have been replaced by references to NatureScot 'Generic Environmental Management Plan' corrected to 'General Environmental Management Plan'. References to SHE Transmission have been replaced by Scottish & Southern Electricity Networks Transmission/ SSEN Transmission. 1 Introduction: SSEN Transmission defined as the <i>Employer</i> . 2 References: New references added which were not otherwise contained in text of 1.01, relating to specific GEMP documents, Guidance for Pollution Prevention, Wildlife & Countryside Act 1981 and NatureScot Licensing. 7.1 reference to <i>Pollution Prevention Guidelines (which are currently under review)</i> has been replaced with <i>Guidance for Pollution Prevention</i>	TG-NET-ENV-500 (Rev 1.01)	2.00	R Baldwin

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Appendix A Freshwater Pearl Mussel Decision Flowchart

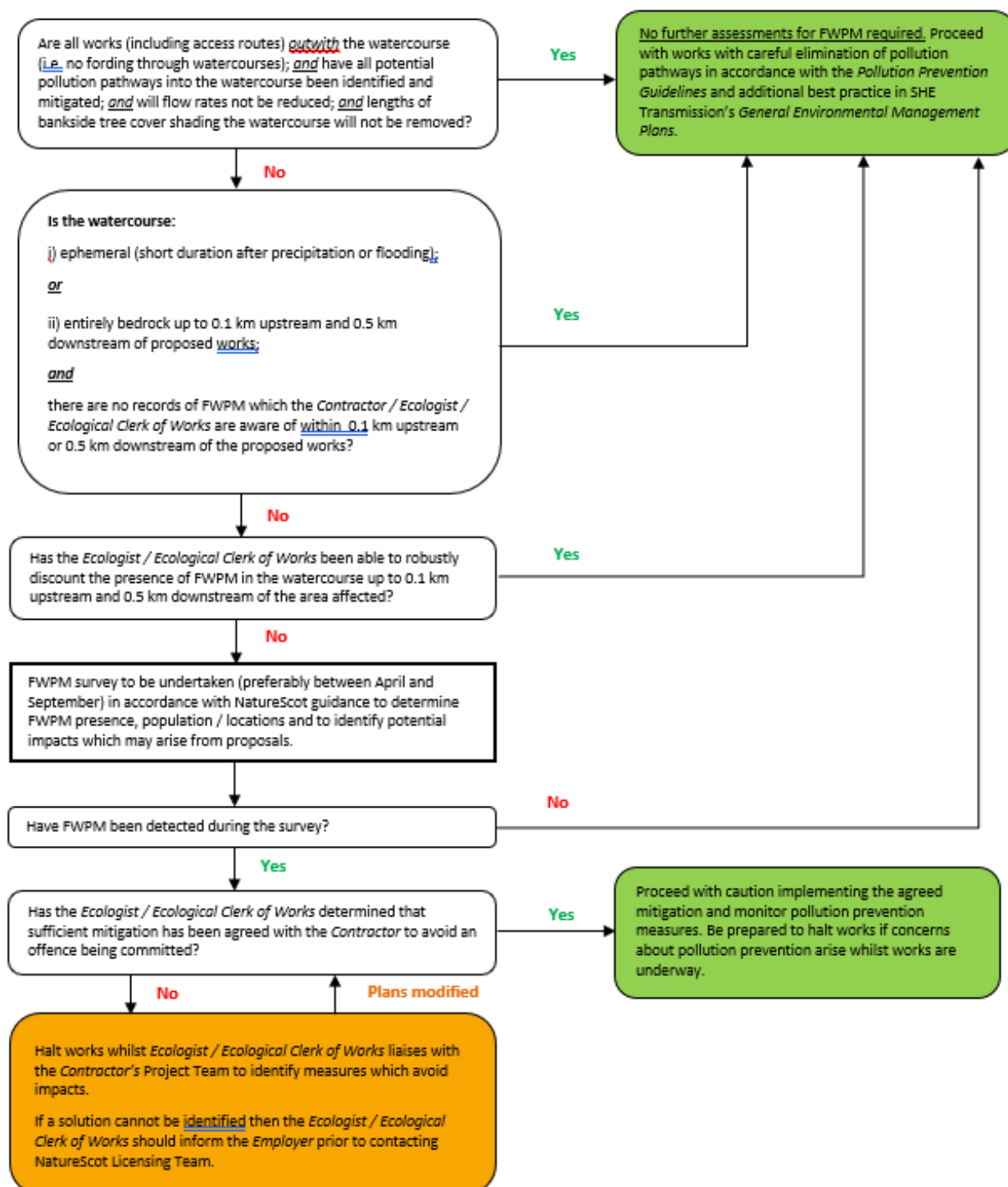


Figure A-1