



# **SALTMARSH PROTECTION PLAN**

**PH003585 Loch Long, Dornie**



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# 1 Introduction

## 1.1 Project Outline

SSEN Distribution frequently operates in areas on and near the coastline where sensitive habitats such as Saltmarsh are occasionally found. Saltmarsh habitat requires special attention and management when maintenance and installation of electrical assets are required in or near it. This document will set out good practice and practical mitigations to avoid and reduce adverse impacts on this sensitive coastal habitat at Dornie during the installation of two subsea electricity cables across Loch Long, between Dornie and Camus-Longart, Ardelve.

The location of the proposed subsea cable installation works falls within Lochs Duich, Long and Alsh Reefs Special Area of Conservation (SAC). Saltmarsh is not a designated feature of the SAC. The saltmarsh at Dornie is not within the SAC but is adjacent to the designated site.

It is currently anticipated that construction will not commence before January 2026 (subject to completion of contractual and statutory procedures) and the overall construction period is expected to be between 1 to 2 months. However, the design of the temporary works, construction methods and programme for the proposed scheme will be the responsibility of the *Contractor*, who will be appointed following a procurement exercise during the Refinement stage of the project in Q3/4 2025. The duration of the construction works that interfaces with the saltmarsh (i.e. installation and burial of the subsea cables) is expected to be only a few weeks within this 1 to 2 month period. Design changes will be subject to environmental review to ensure compliance with environmental commitments and mitigation to safeguard the SAC and other ecological features, including saltmarsh.

## 1.2 Aim of the Saltmarsh Protection Plan

The Saltmarsh Protection Plan outlines the responsibilities of SSEN and the *Contractor* regarding protection of saltmarsh. It also details relevant legislation, survey requirements, general mitigation and restoration measures.

The aim of the Saltmarsh Management Plan is to enable successful recovery of the saltmarsh to its pre-construction state and to avoid compromise of the saltmarsh ecosystem. This will include pre- and post-construction monitoring and identifying points at which intervention may be required. This plan is a live document which will be developed by the *Contractor* prior to construction as part of their Environmental Management Plan (EMP) for the proposed scheme. The EMP will ensure that essential mitigation strategies required for safeguarding protected species and habitats are implemented as part of the contract.

Where saltmarsh habitat has been identified the *Contractor's* Method Statement will be submitted to NatureScot, if required, by SSEN for written approval before works can commence. The Method Statement must follow approved guidance and methodologies for carrying out work. The Saltmarsh Protection Plan and the Method Statement will be included as an Appendix to the Construction Environmental Management Plan (CEMP) which will be developed by SSEN and the *Contractor* prior to construction, in consultation with relevant stakeholders including NatureScot.

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### 1.3 Review and Update Procedure

The Saltmarsh Protection Plan is a live document and it is important that it is updated as the Project develops, in order to capture potential changes to mitigation requirements. The plan will be reviewed at regular intervals by the *Contractor* and SSEN to reflect the progress of works, any changes in environmental requirements and to account for any emerging best practice or updates (from either statutory bodies or *Client/Contractor* best practice).

Any substantive changes to this protection plan must be reviewed and approved by the following:

- SSEN Project Manager;
- *Contractor's* Project Manager; and
- SSEN Environmental Manager.

As a minimum, the Saltmarsh Protection Plan should be reviewed, and where necessary, updated at the following Project milestones:

- Award of Marine Licence;
- Following completion of pre-installation surveys and detailed route engineering; and
- Following any substantive change to Project design or cable installation methods.

## 2 References

The documents detailed in Table 2.1 - Reference Documents, should be used in conjunction with this document.

**Table 2.1 - Reference Documents**

Title
The Conservation (Natural Habitats &c.) Regulations 1994 (as amended in Scotland)
EC Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive)
The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007
The Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019
Environment Agency Saltmarsh Management Manual R&D Technical Report SC030220, 2007.
Highland Council Nature Biodiversity Action Plan 2021-2026
Rodwell, J.S. (2006) National Vegetation Classification User's Handbook. Joint Nature Conservation Committee, Peterborough.
Scottish Biodiversity List (Scottish Government 2013)

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Title
UK Biodiversity Action Plan: Priority Habitat Descriptions. JNCC, 2011.

## 3 General Protection Plan

### 3.1 Saltmarsh Habitat

Saltmarsh habitat is normally found in sheltered intertidal locations. Saltmarshes are near-horizontal platforms characterised by a largely continuous cover of salt-tolerant (halophytic) vascular plants (grasses, rushes and shrubs). At the lower (mudflat) transition zones, annual species may dominate the marsh composition while the upper (terrestrial) saltmarsh areas are dominated by perennial plants. The soil is composed of deep mud and peat created over many years with decomposing plant material many feet deep and is easily eroded. These fragile habitats play an important part in the aquatic food web and carbon capture. Saltmarshes are important habitats for breeding, feeding, and roosting birds, many of them migratory, as well as for fish and aquatic/marine invertebrate species.

### 3.2 Baseline Saltmarsh Conditions

The saltmarsh at Dornie covers an area of approximately 700 m<sup>2</sup>. The vegetation communities have relatively low diversity and the marsh is dominated by the saltmarsh community MG11 – *Festuca rubra*-*Agrostis stolonifera*-*Potentilla anserina* grassland (*Puccinellia maritima*), sea arrowgrass (*Triglochin maritima*) and sea milkwort (*Lysimachia maritima*). The upper marsh is constrained by walls, gardens and roads, while the lower marsh is constrained by the presence of rocky shore habitat which is subject to high energy tidal currents. While the saltmarsh at Dornie is relatively species poor and does not contain any species of conservation interest, it is important for maintenance of the habitat on a broader scale.

### 3.3 Potential Impacts

Potential impacts of the works are outlined below. Mitigation of potential impacts is outlined in Section 3.5.

During the cable installation works there will be temporary loss of up to 45 m<sup>2</sup> (two linear sections each up to 30m long and 0.75m wide) saltmarsh habitat under the footprint of the land made available for the construction of cable trenches. On completion of works it is anticipated that all saltmarsh vegetation in this area shall be reinstated.

Where plant/equipment access is required over the saltmarsh, including during cable trenching operations, temporary protective matting shall be laid. This will temporarily cover/shade the saltmarsh. With construction works only being undertaken during daylight hours and low tides, it is anticipated that this protective matting shall be laid daily during falling tide and recovered before each rising tide. This minimises the time which the saltmarsh will be covered/shaded each day.

Construction activities and plant introduce the potential for impacts on the saltmarsh from

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construction site run-off or accidental spillages. Saltmarsh communities are identified as highly sensitive to hydrocarbon pollution as they trap sediments, adsorb oil and occur in sheltered areas where oils persist.

The presence of protective matting and cable trenching works may result in localised changes in hydrology in the saltmarsh which could alter erosion and deposition in the immediate area.

It is anticipated that compression of the sediments under the protective matting may occur and that, upon removal of the protective matting, the ground level in this area may be lower than the surrounding saltmarsh. This may affect the natural recovery of the saltmarsh in this location.

Works are scheduled to take place during February-March 2026 which is out with the growing season. Although it is expected that the growing roots will stabilise the marsh over time, due to the timing of the works there is the possibility that storms may lift turves until full growth has occurred.

### 3.4 Pre-construction Surveys

Prior to construction, surveys will be carried out by ecologists acting on behalf of SSEN to record the cover and species composition of the saltmarsh area under the footprint of the land made available for temporary works and construction and to a distance of 25 m either side. The approach for this will follow that set out in Rodwell (2006):

- Identify homogenous stands of vegetation.
- Conduct five 2m x 2m quadrats in each homogenous stand. Record presence and percentage cover of every species with each quadrat. The percentage cover of bare ground and algal mat within each quadrat should also be recorded.
- Where an area of distinct habitat is too small for the standard protocol, a technique for recording, which enables robust monitoring should be used, such as fewer or smaller quadrats.
- Accurately record the GPS position of each quadrat, including alignment to ensure accurate resurvey.
- Convert percentage cover into Domin values and calculate frequency as a count of how many quadrats (1-5) in which a species was recorded. Use these values to create floristic tables which can be used to determine NVC communities.
- Create location plan showing extent of NVC communities.

The results of this survey, including accurate GPS positions, will be made available to the *Contractor* in the form of a short technical report.

### 3.5 Construction Mitigation

General mitigation items relevant to the saltmarsh include production of an EMP and CEMP, and the

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presence of a suitably qualified ECoW to ensure that all mitigation measures are implemented. Compliance will be monitored by the SSEN Environmental Manager and/or an ecologist acting on behalf of SSEN, and the *Contractor's* Ecological Clerk of Works (ECoW).

Production of this Saltmarsh Management Plan was identified as essential mitigation for the project. The following measures must be included in this plan:

- Methodology for restoration of saltmarsh following in-filling of cable trenches and removal of the protective matting;
- Pre and post construction monitoring of saltmarsh habitat, by a suitably qualified ECoW to include photographic record of existing creeks/pans, habitat types and extent, and species diversity; and
- Measures to promote recovery of saltmarsh vegetation.

Construction methods should include:

- The protective layer shall consist of a geotextile layer covered by ground protection matting. This shall be in place when any plant/equipment access is required over the saltmarsh during the construction period, which is expected to last intermittently over 1-2 months. During this time, it is anticipated that all saltmarsh vegetation in this area shall be retained. It is anticipated that protective matting shall be laid daily during falling tide and be recovered before each rising tide.
- The cable trench should be routed through vegetated marsh where possible. Where digging in creek/pans is unavoidable, the erection of temporary support, e.g. using coir rolls or silt fencing against the exposed edges may be required during excavation operations as these areas are susceptible to losing sediment and possibly widening the pan, which could lead to further erosion.
- When removing saltmarsh, the top layer of turf shall be stripped off, retaining the root system. Turves shall be stored carefully, with minimal stacking if possible. Subsequent layers of sediment shall be removed carefully and stored according to its horizons. No materials shall be stored on top of the adjacent saltmarsh unless ground protection measures are in place. Each cable trench is expected to be dug and reinstated within the same day. If turves are stored for more than one day they shall be stored above the tide line and watered during works.
- On completion of works the cable trench shall be infilled with the sediment in the appropriate order, and the turves placed back on top. It is expected that the growing roots will stabilise the marsh over time.

Additional mitigation measures to protect the saltmarsh include:

- Best practice construction methods (CIRIA 2015) will be used including the use of appropriate pollution controls (i.e. Guidance for Pollution Prevention (GPPs)) SSEN General Environmental Management Plans (GEMPs) such as construction drainage,

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strict re-fueling protocol and soil management.

- The footprint of the working area will be minimised as far as possible and vehicles, plant and personnel access will be restricted to this area. The protective matting on the saltmarsh shall be created by the use of a geotextile layer laid below protective matting. Low ground pressure machinery will be used.
- On completion of the works all protective mats will be removed in their entirety from the saltmarsh.
- No works will be undertaken on the saltmarsh outside the footprint of the protective matting.
- During construction the *Contractor's* ECoW will monitor the edges of the protective matting for signs of increased erosion of saltmarsh habitats and creeks/pans. In the event that erosion is evident, specialist advice will be sought and corrective actions taken to minimise any further erosion.

### 3.6 Post-construction

As soon as practicable after removal of the protective matting, the *Contractor* should accurately map creeks/pans to ensure that any filling has been removed and to show that creeks/pans have been returned to their pre-construction size and depth. A photographic and written record should be made.

In order to assist the recovery of the saltmarsh it may be necessary to raise the ground level in the area affected by cable trenching. The following two options for this have been considered:

- deposition of material onto the affected area (recharging or backfilling); or
- installing measures to encourage accretion of sediment.

Due to the availability of locally sourced material immediately removed from the cable trench areas, recharging or backfilling is the preferred option for this site.

The second, and complementary, option for this project (to be agreed in consultation with NatureScot after monitoring), is the use of biodegradable structures to aid the natural accretion of sediments. There are several types of structure suitable for this approach including sediment fences (such as brushwood groynes) and/or biodegradable grids or coir rolls (e.g. Salix bioengineering products <https://www.salixrw.com>). The purpose of these structures is to minimise wave action and slow currents, allowing the fine-grained fraction of the sediment to settle out. The requirement for these methods may be considered if initial reinstatement is deemed unsuccessful after monitoring.

Planting or re-seeding is not proposed for this area. The Department for Environment, Food and Rural Affairs (Defra) and Environment Agency Saltmarsh Management Manual (Environment Agency, 2007) recommends that where surrounding saltmarsh is present, the best approach is to allow natural re-colonisation.



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The Mean High Water Springs (MHWS) height at the location of the proposed scheme is 5.3m above ordnance datum (AOD). In areas above this height sediments accretion is expected to be slower than the lower shore and may result in the formation of saltmarsh pans (ponds). These are naturally occurring habitats on many saltmarshes.

### 3.7 Monitoring

Monitoring of the method employed to assist recovery of the saltmarsh will be required. This is essential to measure the efficacy of the mitigation and determine if any further interventions are required. Monitoring should be undertaken by suitably qualified personnel employed by SSEN and any interventions should only be carried out after consultation with NatureScot.

An outline monitoring programme is detailed in Table 3.1.

**Table 3-1: Suggested Monitoring Programme**

Monitoring Purpose	Frequency	Method	End Point	Potential Interventions
To monitor development of vegetation communities.	Twice per year (in late spring and late summer).	Using the fixed quadrats set-up for pre-construction surveys.  Additional quadrats as required as new vegetation types develop. Vegetation to be recorded using standard NVC approach.	Stable saltmarsh vegetation communities have developed.	Seeding or transplanting if vegetation does not develop.
To monitor state of sediment accretion mitigation measures (if used).	Immediately post-installation of measures, then late spring and late summer. Further monitoring as required, e.g. after storms.	Visual assessment of mitigation structures.	Ground levels have returned to those of the surrounding saltmarsh.  Vegetation has begun to establish across the affected area.	Consideration of alternative structures or methods if sediment accretion is not occurring or erosion is evident.  Maintenance of structures.

The saltmarsh is expected to grow back and infill over time. It is anticipated that following the first full growing season (spring and summer) after construction, the re-establishment of vegetation will be apparent on the site and the establishment of vegetation will aid accretion and stabilise the sediment. Once vegetation has begun to re-establish, the focus of the monitoring will shift to recording the vegetation communities.

The approach for monitoring vegetation should follow the NVC protocol used for the pre-construction surveys and visits should be made at the beginning and end of the growing season (late spring and late summer) to capture the development of both annual and perennial vegetation. The same quadrat positions as the pre-construction surveys should be re-visited on each occasion, recording species presence and percentage cover at each location. This allows assessment of

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development of vegetation rather than potential variations across the site. Additional quadrat locations may be required where different vegetation stands have developed that are not covered by existing quadrat locations. The number of additional quadrats should be in multiples of five in each vegetation stand to facilitate the use of frequency data to create NVC compatible floristic tables.

During these visits any erosion/slumping should be recorded. The site should also be visited after any large storm event which may have dislodged turves or caused slumping, to assess vegetation loss and erosion and keep a written and photographic record. If utilised in consultation with relevant stakeholders, the state of any structures introduced to aid sedimentation should be visually assessed during each visit and, where required, maintenance should be undertaken.

Aerial imagery or LiDAR may also be useful tools for monitoring the early development of the saltmarsh, measuring both the topography and ground cover of the area remotely.

Monitoring should continue until stable saltmarsh communities have developed, i.e. two successive monitoring visits have recorded the majority of quadrats (>75%) to consist of mid or upper marsh communities as defined by Rodwell (2000). Annual or pioneer communities are not considered to be stable saltmarsh communities in this location. SSEN shall be responsible for the implementation of saltmarsh mitigation and for a period of monitoring until stable communities have developed.

### 3.8 Reporting

SSEN shall prepare written reports for SSEN (and statutory bodies as requested) to document the saltmarsh recovery process. The reports will include:

- botanical (quadrat) information including locations;
- ground level details;
- creek/pan size and locations;
- information on any structures used to aid natural accretion, including material, number, and positioning; and
- details of any maintenance required or changes to the approach.

SSEN shall prepare a final written report for SSEN (and statutory bodies as requested) to document the saltmarsh protection process. The report shall include a description of pre-construction conditions, mitigation measures employed during construction and a summary of post construction monitoring. A final site map should be provided to SSEN (and statutory bodies as requested) showing mapped saltmarsh communities and creek locations at the end of the monitoring period.

### 3.9 Responsibilities

It is the *Contractor's* responsibility to comply with all the requirements of this Protection Plan, and it is both the *Contractor's* and SSEN's responsibility to monitor compliance with the Protection Plan.

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### 3.10 [Legislation](#)

Atlantic salt meadow (*Puccinellietalia maritima* salt-marsh communities) is listed on Annex I of the European Union Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive). Coastal saltmarsh is included on the UK Biodiversity List (BRIG, 2011) and the Scottish Biodiversity List (Scottish Government, 2013) and as a priority habitat in the Highland Council Biodiversity Action Plan (Highland Council, 2021).