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Marine Mammals Protection Plan

LTooooo09 - Shetland HVDC Link

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LTooooo09 - Shetland HVDC Link

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Abbreviations

Abbreviation	Description
CEMP	Construction Environmental Management Plan
EPS	European Protected Species
HVDC	High Voltage Direct Current
JNCC	Joint Nature Conservation Committee
MMO	Marine Mammal Observer
MMPP	Marine Mammal Protection Plan
NM	Nautical Mile
PAM	Passive Acoustic Monitoring
SAC	Special Area of Conservation
SBP	Sub-Bottom Profiler
SHE Transmission	Scottish Hydro Electric Transmission
STW	Scottish Territorial Waters
USBL	Ultra-Short Baseline System

1 Introduction

Shetland is not presently connected to the UK mainland electricity transmission grid and as such is solely reliant on island-based generation. This generation is in the majority derived from fossil fuels with the support of onshore wind.

There is currently approximately 600 MW of consented renewable energy generation on the Shetland Isles, which will require connection to the UK mainland transmission network once these projects are constructed. Scottish Hydro Electric Transmission Plc (SHE Transmission) is the licensed Transmission Owner in the north of Scotland and as such has a requirement to provide connection to the UK's network when requested by a generator.

In order to meet the dual requirement of the provision of reliable transmission level supply and export of surplus renewable generation, SHE Transmission is planning to install a single circuit 253 km long, 600 MW High Voltage Direct Current (HVDC) link between Weisdale Voe in Shetland and Noss Head in Caithness ('Shetland HVDC Link' or 'the Project'). The marine cable infrastructure will consist of a single bundle comprising two conductor cables and one fibre optic communications cable, to allow control of the substation and HVDC converter station. Marine cable solution provider, NKT, will be responsible for the manufacture and installation of the subsea cable.

The Project has been awarded the following licences:

- Works Licence number 2020/011/WL was awarded by Shetland Islands Council in June 2020 and applies to Weisdale Voe out to 12-nautical miles (NM) from the Shetland Islands;
- Marine Licence number 07203/20/0 was awarded by Marine Scotland's Licensing Operations Team in July 2020 and applies to waters within 12 NM; and
- Marine Licence number 07357/20/0 was awarded by Marine Scotland's Licensing Operations Team in July 2020 and applies to waters outwith 12 NM.

This Marine Mammal Protection Plan (MMPP) relating to the marine cable installation works to be carried out as part of the Shetland HVDC Link is submitted to discharge:

- Condition 5 of the Shetland Islands Council Marine Works Licence 2020/011/WL;
- Condition 19 of the Marine Licence number 07203/20/0; and
- Condition 18 of the Marine Licence number 07357/20/0.

Table 1.1 below sets out the details of these conditions and how they are addressed, with more detail on the structure of the document provided in Table 1.2:

Table 1.1: Relevant licence conditions

Relevant Licence Condition	Relevance to this Plan
Shetland Islands Council Marine Works Licence 2020/011/WL (5) Prior to the works commencing a Marine Mammal Protection Plan (MMPP) will be submitted to the Planning Authority and agreed in writing. The Planning Authority will consult Scottish Natural Heritage for advice before such Plan is approved.	Addressed through provision of this document, and through measures set out

Relevant Licence Condition	Relevance to this Plan
<p>In order to reduce the risk of injury and disturbance to marine mammals resulting from use of Sub Bottom-profiler (SBP). This will be aligned to JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys. It is noted that the SBP is not capable of performing a soft-start, and hence this procedure is not included. Measures likely to be included are use of the Scottish Marine Wildlife Watching Code, deployment of a Marine Mammal Observer (MMO), deployment of Passive Acoustic Monitoring (PAM) system when beginning operations in hours of darkness or reduced visibility, adoption of receptor-specific mitigation zones, and reporting.</p> <p>Reason: To protect seal species and the integrity of the Yell Sound Coast Special Area of Conservation (SAC) and the Mousa Coast Special Area of Conservation (SAC) and marine mammals/megafauna.</p>	within this document
<p>Marine Licence 07203/20/0 (19) Mitigation and management measures outlined in Section 15 and Table 6.2, within the Shetland HVDC Link Marine Environmental Appraisal (Document Number: A-200409-S00-REPT-003), Version A02, submitted to the licensing authority on 12 December 2019.</p>	Requirement in Shetland HVDC Link Marine Environmental Appraisal for Marine Mammal Protection Plan addressed through provision of this document
<p>Marine Licence 07357/20/0 (18) Mitigation and management measures outlined in Section 15 and Table 6.2, within the Shetland HVDC Link Marine Environmental Appraisal (Document Number: A-200409-S00-REPT-003), Version A02, submitted to the licensing authority on 12 December 2019.</p>	

Table 1.2: Structure of the document highlighting where specific requirements of the licences are met

Section of this Document		Contents	Addresses Requirement
Section 1	Introduction	Purpose of the document	Works Licence number 2020/011/WL Marine Licence number 07203/20/0 Marine Licence number 07357/20/0
Section 2	Marine Mammal Occurrence within the Working Area	Summary of marine mammal occurrence in the area	
Section 3	Legislation	Legislation relevant to cetaceans, phocid seals, basking sharks and marine turtles	
Section 4	Marine Mammal Mitigation	Information used to develop the plan/protocols e.g. JNCC guidance Marine Mammal Observer (MMO)/Passive Acoustic Monitoring (PAM) operator standards, recording and reporting Mitigation protocols	
Section 5	References	References used throughout document	

2 Marine Mammal Occurrence within the Working Area

There are 21 marine mammal species found to occur in the waters surrounding the proposed Cable Corridor. However, only seven species (harbour porpoise (*Phocoena phocoena*), bottlenose dolphin (*Tursiops truncatus*), white-beaked dolphin (*Lagenorhynchus albirostris*), white-sided dolphin (*Lagenorhynchus acutus*), grey seal (*Halichoerus grypus*), harbour seal (*Phoca vitulina*) and minke whale (*Balaenoptera acutorostrata*) are considered to regularly occur within the vicinity of the proposed Cable Corridor; the others are considered transitional or occasional visitors.

Several designated haul-out and breeding sites for harbour seal are within the vicinity of the proposed Cable Corridor including Sanda and Scores Islands, Aa Skerry, and Effirth Voe and Bixter Voe with approximate distances of 150 m, 2 km and 5 km from the cable route respectively.

Basking sharks (and to a lesser extent marine turtles) are also considered occasional visitors to the Project area. The mitigation specified for marine mammal species is also considered to be relevant/appropriate for these species. Otters are also present within the working area but have been considered within the onshore Shetland HVDC Land Cable CEMP and are not therefore included here.

3 Legislation

3.1 Cetaceans (and Marine Turtles)

All species of cetacean (whales, dolphins and porpoises) and marine turtles in waters around the UK are considered European Protected Species (EPS) under Annex IV of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (known as the **Habitats Directive**) which covers animal and plant species of community interest in need of strict protection.

The need to consider EPS in waters off Scotland comes from two articles of legislation:

- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (known as the **Habitats Regulations**) which transpose the Habitats Directive into national law. This legislation covers waters within the 12 NM limit (known as Territorial Waters); and
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (known as the **Offshore Regulations**) which transpose the Habitats Directive into UK law for all offshore activities. This legislation covers UK waters beyond the 12 NM limit.

Both of these Regulations provide for the designation and protection of European sites (in this case Special Areas of Conservation (SACs)) and the protection of EPS.

The Offshore Regulations state in section 45, that it is an offence to:

- Deliberately capture, kill or injure any wild animal of a EPS, as listed under Annex IV of the Habitats Directive;
- Damage or destroy, or cause deterioration of the breeding sites or resting places of a EPS; and
- Deliberately disturb EPS (in particular disturbance which is likely to impair the ability of a significant group of animals of that species to survive, breed, rear, or nurture their young, or which might affect significantly their local distribution or abundance).

The Conservation (Natural Habitats, &c.) Regulations 1994 state, under section 39, that it is an offence to:

- Deliberately or **recklessly** capture, kill or injure a wild animal of a EPS, as listed under Annex IV of the Habitats Directive;
- Damage or **recklessly** destroy, or cause deterioration of the breeding sites or resting places of an EPS;
- Deliberately or **recklessly** disturb EPS (in particular disturbance which is likely to impair their ability to survive, breed, reproduce, nurture their young, migrate or hibernate, or which might affect significantly their local distribution or abundance);
- Disturb **any** EPS in a matter that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; and
- **Deliberately or recklessly disturb any dolphin, porpoise or whale (cetacean) through Regulation 39 (2).**

The additional protection afforded by the Conservation of Habitats and Species Regulations 1994 (as amended in Scotland) has been shown in **bold** in the list above. It is therefore an offence to deliberately or recklessly disturb a single cetacean in Scottish Territorial Waters (STW).

In addition, any means of capturing or killing which is indiscriminate and capable of causing the local disappearance of - or serious disturbance to - any population of EPS is an offence.

Licences may be granted which would allow otherwise illegal activities to go ahead.

Three tests must be passed before such a license can be granted:

- The license must relate to one of the purposes referred to in Regulation 44;
- There must be no satisfactory alternative (Regulation 44, 3a); and
- The action authorised must not be detrimental to the maintenance of the population of the species concerned at a Favourable Conservation Status (FCS) in their natural range (Regulation 44, 3b).

Favourable Conservation Status (FCS) is defined in the Habitats Directive as the following:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable element of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis.

The proposed cable route is located both within and outwith the 12 NM limit of STW. Therefore, the proposed works have the potential to affect cetaceans within both Scottish Territorial and UK waters beyond the 12 NM limit. Both the Habitats and Offshore Regulations therefore apply.

3.2 Phocid Seals

Unlike cetaceans, phocid seals are not listed on Annex IV of the Habitats Directive and are therefore not EPS. Both grey and harbour seal are however listed on Annex II of the Habitats Directive (animal and plant species of community interest whose conservation requires the designation of SACs).

Mousa, Yell Sound Coast, and Sanday SACs, which list harbour seal as a qualifying interest feature, are approximately 20 km, 26 km and 40 km from the works, respectively. Faray and Holm of Faray SAC, which lists grey seal as a qualifying interest feature, is approximately 54 km from the proposed works.

The conservation objectives for the SACs are as follows:

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving FCS for each of the qualifying features; and
- To ensure for the qualifying species that the following are established then maintained in the long term:
 - Population of the species as a viable component of the site;
 - Distribution of the species within the site;
 - Distribution and extent of habitats supporting the species;
 - Structure, function and supporting processes of habitats supporting the species; and
 - No significant disturbance of the species.

Grey and harbour seals are also listed on Annex V of the Habitats Directive (animal and plant species of community interest whose taking in the wild and exploitation may be the subject of management measures).

In 2010, harbour and grey seals were afforded protection in Scotland under the Marine (Scotland) Act 2010 which provided a new licence system for killing seals. Under this Act, it is now an offence to kill or take any seals at any time, unless under a licence issued by Marine Scotland.

It is also an offence to “intentionally or recklessly harass” seals at significant haul-out sites identified under the Protection of Seals (Designation of Haul-out Sites) (Scotland) Order 2014.

In addition, harbour and grey seals are UK Biodiversity Action Plan priority species and are classed as Priority Marine Features under the Scottish Nature Conservation Strategy.

3.3 Basking Sharks

Basking sharks are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). For fully protected Schedule 5 species it is an offence to:

- Intentionally or recklessly kill, injure or take fish;
- Possess or sell fish; and
- Intentionally or recklessly disturb or harass fish.

4 Marine Mammal Mitigation

As per the Marine Environmental Appraisal (Xodus, 2019) the only equipment which has the potential to cause injury or significant disturbance to marine mammal species was the ultra-short baseline system and sub-bottom profiler as their operating frequencies overlap with the hearing range of all marine mammal hearing groups. Although termed marine mammal mitigation, the following protocols will also be applied to basking sharks and marine turtles, should they be present.

Tool-Box Talks will be given prior to commencement of work to ensure that all relevant personnel are aware of the mitigation requirements.

4.1 Information Used to Develop Plans

4.1.1 JNCC guidance

JNCC has written a series of best practice guidance documents for offshore activities, including geophysical surveys. It is considered that adherence to the measures outlined in these guidance documents constitutes best practice and will minimise the risk of causing injury or disturbance to marine mammals. The mitigation measures set out in this document have been developed using these guidance documents. It should be noted that additional mitigation measures (or variations to the standard measures) may be implemented for some activities due to the findings of the Marine Environmental Appraisal (Xodus, 2019) or the outcome(s) of relevant EPS Risk Assessments and associated consultation.

4.1.2 Scottish Marine Wildlife Watching Code and Basking Shark Code of Conduct

Although the Scottish Marine Wildlife Watching Code¹ was designed for those actively watching marine wildlife, it is also relevant to 'anyone encountering marine wildlife in the course of their work'. It has therefore been used to develop a protocol for conducting transit watches (where they are required).

Relevant elements of the Basking Shark Code of Conduct², designed to help water users reduce the risk of injuring or harassing basking sharks, have also been used when developing the transit watches protocol.

4.2 Marine Mammal Observer (MMO)/Passive Acoustic Monitoring (PAM) Operator Information

4.2.1 Experience

Where required on the Project, MMOs or PAM operators will be suitably trained and experienced in line with the JNCC recommendations:

¹ <https://www.nature.scot/sites/default/files/2017-06/Publication%202017%20-%20The%20Scottish%20Marine%20Wildlife%20Watching%20Code%20SMWWC%20-%20Part%201%20-%20April%202017%20%28A2263518%29.pdf>

² <https://www.sharktrust.org/Handlers/Download.ashx?IDMF=636dc5fd-29f3-4d8d-a97a-2c47a9ab28c0>

- A suitably trained and experienced MMO will have completed a JNCC recognised course, have some experience of visually spotting marine mammals, and “...have a minimum of 20 weeks’ experience of implementing JNCC guidelines in UK waters over the previous ten years, and preferably within the previous five. Furthermore, they will be experienced at identifying UK marine mammal species and be familiar with their behaviour” (JNCC, 2017).
- A suitably competent and experienced PAM operator will, as a minimum, “...be able to assemble and deploy equipment, configure the software, identify acoustic signals and interpret bearing and range information” (JNCC, 2017).

4.2.2 Recording and reporting

The MMOs/PAM operators deployed for mitigation purposes will be required to record the information they collect using Marine Mammal Recording Forms (<https://hub.jncc.gov.uk/>).

The completed Marine Mammal Recording Forms and an MMO Report will be submitted to SHE Transmission following completion of marine works for onward provision to Marine Scotland. The MMO Report will include all the information detailed in Section 3 and Appendix 2 of the JNCC guidelines on geophysical surveys (JNCC, 2017).

4.3 Protocol for SBP Use

Sub bottom profilers (SBPs) are used to identify and characterise layers of sediment or rock under the seafloor. They may be used during survey work throughout the installation of the Shetland HVDC Link, including pre-construction surveys, monitoring of the installation activities, and ‘as built’ surveys.

At least one dedicated MMO and/or PAM operator will be available to undertake pre-work searches of 30 minutes in length prior to use of the SBP. Visual searches of a 500 m radius mitigation zone centered on the location of the upcoming sound source will be conducted when weather conditions, daylight and sea state allow³. Clear channels of communication between the MMO/PAM operator and relevant crew will be established prior to commencement of any operations. The MMO/PAM operator will be informed sufficiently in advance of any proposed work so that a full pre-work search can be completed prior to work commencing.

The MMO will survey the surrounding area and notify the crew if any marine mammals occur within the mitigation zone. The area will be surveyed primarily using the naked eye, with binoculars being used to confirm presence and identification. A rangefinder or similar may be used to estimate distance.

If work is to start during the hours of darkness or in poor conditions (low visibility/high sea state i.e. >3 on the Beaufort scale) when visual surveys would not be effective, a PAM system will be used instead. It should however be noted that:

- PAM is not as accurate as visual observation for determining range, therefore works may be delayed unnecessarily because it may not be possible to determine whether animals detected are within or outwith the mitigation zone.

³ This radius of the mitigation zone will be 500 m for seals, except in the event of a need to avoid critical delay to the Project in which case it will be 100 m (Xodus, 2019).

- Of the marine mammal species likely to be present in the area at this time of year (harbour porpoises, dolphin species (white-beaked, white-sided and bottlenose), minke whales, harbour seals, and grey seals), PAM will not detect minke whales, harbour seals or grey seals.
- Of the species it can detect, PAM will only detect individuals which are vocalising, that are sufficiently loud and close, and where background noise is minimal (Todd *et al.*, 2015). It may not detect individuals which are present (even in the mitigation zone).

During any PAM, an array, rather than a single hydrophone, will be used in order to have the ability to detect individuals belonging to the different hearing groups (mid frequency cetaceans i.e. the dolphin species and high frequency cetaceans i.e. harbour porpoise). The pre-work PAM survey will be conducted for 30 minutes prior to beginning operations. The PAM operator will notify the relevant parties if any marine mammals are detected.

If marine mammals are detected within the mitigation zone during a pre-work search (either visually or acoustically), the start of work will be delayed until their passage, or the transit of the vessel, results in them being outside the mitigation zone. There will be a minimum of 20 minutes from the time of the last detection within the mitigation zone to the commencement of the work.

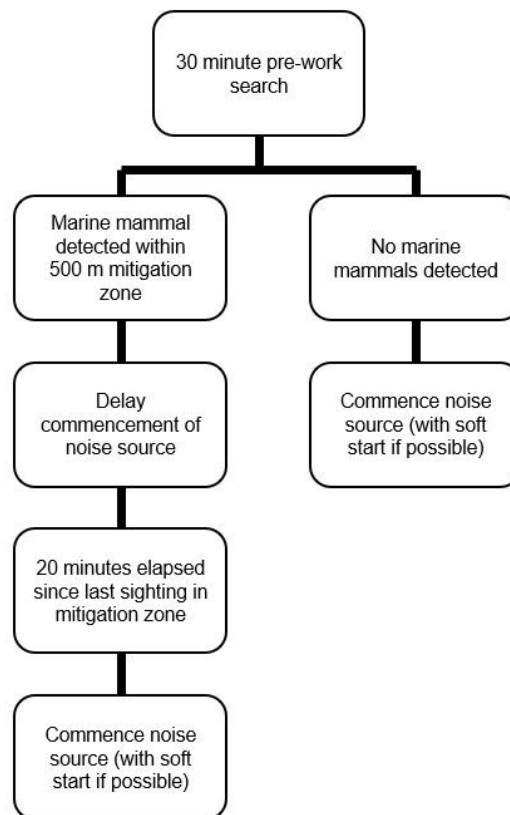


Figure 4.1: Flowchart illustrating the decision-making process of MMO/PAM operative during SBP activities.

As per the 2017 JNCC guidelines, unplanned breaks refer to instances where the SBP ceases pinging unexpectedly during operations. In these instances:

- Work will resume without a pre-work search after unplanned breaks of 10 minutes or less provided that no animals are detected in the mitigation zone during the breakdown period; and
- A full pre-work search will be conducted before work resumes after unplanned breaks of longer than 10 minutes. Any time the MMO/PAM operator has spent monitoring prior to the breakdown period will contribute to the pre-work search time.

The MMO/PAM operator will be given sufficient breaks or, if there is more than one MMO/PAM operator on board, a rotation will be in place to ensure observer fatigue is minimised.

During hours of darkness and/or in poor conditions when the MMO cannot monitor for the presence of seals, the SBP will not be started within 100 m of any SAC designated for seals or designated seal haul-out site (Figure 4.2). The SBP will be started outwith this distance and moved into position once it is sounding (Xodus, 2019).

4.4 Protocol for USBL Use in Weisdale Voe

Ultra-short baseline systems (USBLs) are used to determine the position of subsea survey items including ROVs, towed sensors etc. They are used during a wide variety of offshore work including survey, route preparation, cable installation and cable protection work.

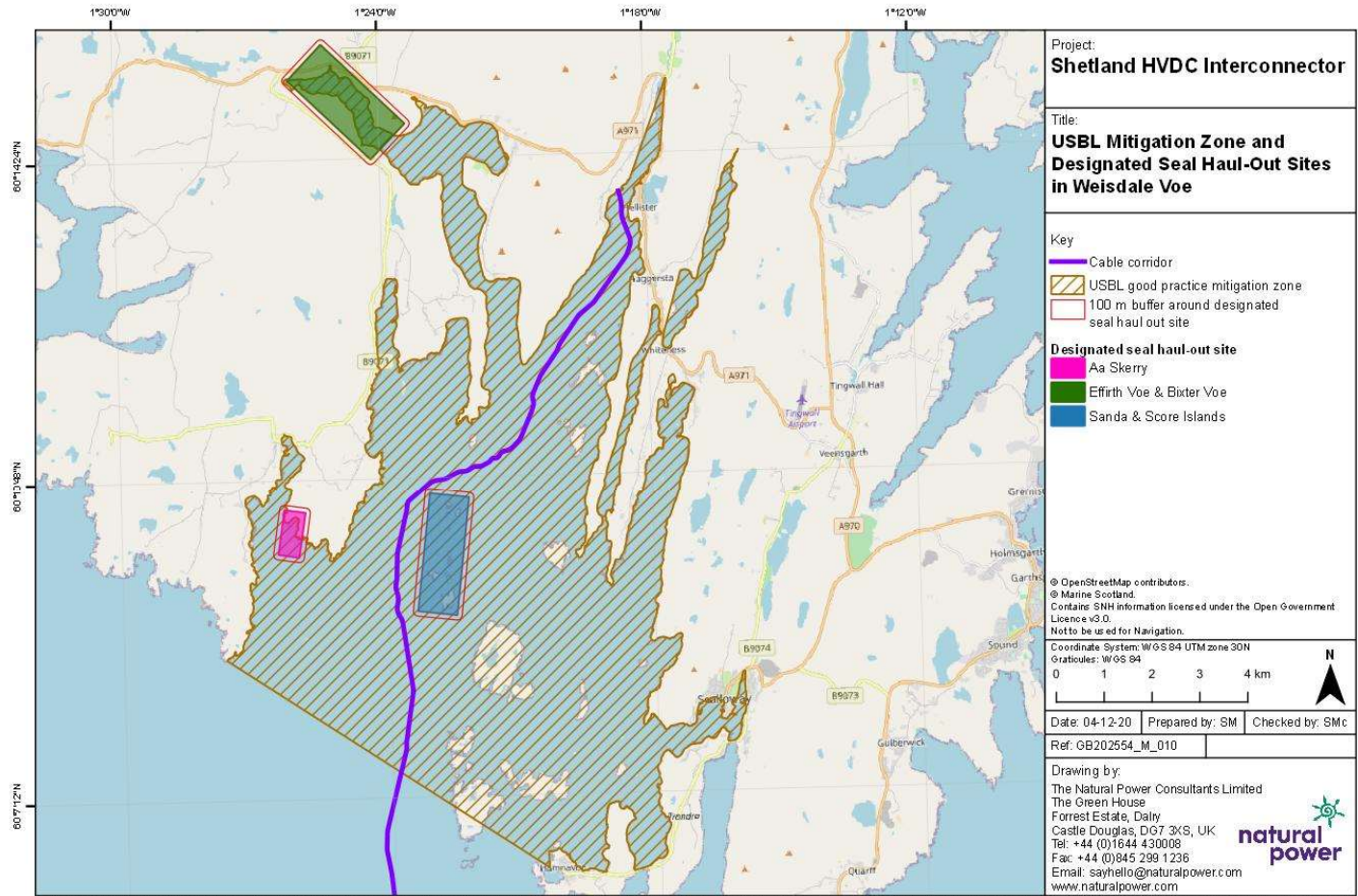
Good practice measures regarding USBL use will be implemented in Weisdale Voe (inshore of a line between the headland SSE of Silwick and Hamnavoe; Figure 4.1) due to:

- Consultee concerns regarding large groups of harbour porpoise in the area during the autumn/winter period; and
- The proximity of the cable corridor to designated seal haul out sites.

The following good practice measures regarding USBL use will be implemented in Weisdale Voe:

- A 15-minute pre-start scan for marine mammals will be undertaken prior to commencement of the USBL. This scan may be carried out by a member of the ship's crew;
- If a marine mammal is observed during the pre-start scan, the start of the survey will be delayed until the animal has not been sighted for a minimum of 15 minutes;
- Where possible, work will commence in the nearshore area and move out towards deeper water⁴; and
- The USBL will be operated at the lowest useful sound level and for the shortest possible time period.

⁴ Reciprocal lines may be run if they are started in a timely manner and there is no break in acoustic activity (of the USBL).



Notes: a) Information on this plan is directly reproduced from digital and other material from different sources. Minor discrepancies may therefore occur. Where further clarification is considered necessary, this is noted through the use of text boxes on the plan itself. b) For the avoidance of doubt and unless otherwise stated, this plan should be used for identification purposes only, unless otherwise stated in accompanying documentation. 2. The Natural Power Consultants Limited accepts no responsibility for the accuracy of data supplied by third parties. 3. The Natural Power Consultants Limited accepts no liability for any use which is made of this plan by a party other than its client. No third party who gains access to this plan shall have any claim against The Natural Power Consultants Limited in respect of its contents.

Figure 4.2: USBL Mitigation Zone and Designated Seal Haul-Out Sites in Weisdale Voe

4.5 Protocol for Working within 1 km of a Designated Seal Haul Out Site

Marine Scotland guidance describing how to behave responsibly around seal haul out sites (Marine Scotland, 2014) will be highlighted during Tool-Box Talks for work being undertaken in Weisdale Voe.

In addition, no equipment testing which can be conducted elsewhere will be conducted within 1 km of any designated haul out site (Figure 4.1) in order to reduce the risk of disturbing seals which are hauled out (Andersen *et al.*, 2012; Calambokidis *et al.*, 1991; Jansen *et al.*, 2010).

4.6 Protocol for Transit Watches

An observer on the bridge of all vessels will keep watch for marine mammals, turtles and basking sharks during all transits to and from the work sites. Any sightings will be communicated to the Officer on watch as soon as is practicable and the following actions implemented:

- The Officer on watch will ensure that marine mammals and basking sharks are avoided where safe and possible to do so; and
- The Officer on watch will minimise high powered manoeuvres or rapid changes of course where this does not impair safety.

The observer may be the Master of the vessel, a member of the bridge crew, another member of the ship's crew or the MMO as appropriate. Observers will be briefed on the Scottish Marine Wildlife Watching Code and Basking Shark Code of Conduct.

4.7 Protocol for use of silt curtains in Weisdale Voe

Silt curtains may be used around nearshore excavation work to allow sediment to settle naturally preventing spread with the tide to aquaculture sites in the Voe (see Construction Method Statement).

Prior to and during placement (using anchors) of the silt curtain around the working perimeter, the area will be monitored to ensure than no animals are present. The potential for animals to be entrapped within the silt curtain will therefore be negated.

Once the curtain is installed, it will form a continuous barrier. Therefore, risk of an animal becoming entrapped within the curtain is considered to be low. However, the waters within the silt curtain will be routinely inspected by onshore ECoW (or nominated deputy) to ensure no mammals are present.

5 References

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Table of Modifications

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A	2020-12-08	Foster,Andrew	First issue of document
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