



Berwick Bank A Limited

# Geophysical Survey - Berwick Bank Export Cable Corridor

## Technical Note

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## ACRONYMS

ACRONYM	DEFINITION
2D	Two-Dimensional
AfL	Agreement for Lease
BBWFL	Berwick Bank Wind Farm Limited
CES	Crown Estate Scotland
DP	Dynamic Positioning
EDR	Effective Deterrence Range
EPS	European Protected Species
IAMMWG	Inter-Agency Marine Mammal Working Group
ICES	International Council for Exploration of the Sea
JNCC	Joint Nature Conservation Committee
GW	Gigawatt
kHz	Kilohertz
km	Kilometre
km <sup>2</sup>	Kilometres Squared
m	Metre
MBES	Multibeam Echosounder
MD-LOT	Marine Directorate - Licensing Operations Team
MMMU	Marine Mammal Management Unit
MMO	Marine Mammal Observer
MPA	Marine Protected Area
MU	Management Unit
nm	Nautical Mile
NMPi	National Marine Plan interactive
PMF	Priority Marine Feature
PTS	Permanent Threshold Shift
SAC	Special Area of Conservation
SBP	Sub-bottom Profiler
SCANS	Small Cetaceans in European Atlantic Waters and the North Sea
SPA	Special Protection Area
SSS	Side Scan Sonar
TCE	The Crown Estate



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ACRONYM	DEFINITION
te	Tonne
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
USBL	Ultra Short Baseline
USV	Uncrewed Surface Vessel
UXO	Unexploded Ordnance



# 1 INTRODUCTION

## 1.1 Document Purpose

This technical note has been prepared to inform consultation associated with a Two-Dimensional (2D) geophysical survey in the Scottish offshore region, south-west of the Berwick Bank Wind Farm turbine array area. The survey has an expected start in 1<sup>st</sup> March 2025 at the earliest and is expected to last for maximum 21 survey days (14 days in absence of weather delays). To account for unforeseen mobilisation, operational and/or weather delays, it is expected that the proposed geophysical survey activities will now be completed by 30<sup>th</sup> November 2025. The original completion date was provisionally scheduled for 30<sup>th</sup> September 2025, but an extension is required due to unforeseen delays. The aim of the survey is to obtain data on seabed/ sediment conditions and to identify potential geohazards in the potential alternative export cable corridor for the Berwick Bank Wind Farm.

Following the requirement to extend the duration of the survey from September to November 2025, the content of this technical note has been reviewed and updated to account for new fisheries data in Section 3.3. The conclusions of the note regarding impacts on the environment and other sea users remain valid despite the survey duration extension.

## 1.2 Project Background

Berwick Bank Wind Farm Limited (BBWFL) is developing the Firth of Forth Offshore Wind Zone and wish to progress with surveys to support the development of the Berwick Bank Wind Farm located off the east coast of Scotland. The site is located approximately 21 kilometres (km) from the East Lothian coastline (see Figure 1-1). The Berwick Bank turbine array area covers 1,010.2 square kilometres (km<sup>2</sup>) and has the potential to deliver around 4.1 gigawatts (GW) of installed capacity, making it Scotland's largest wind farm. On 31 July 2025, the Scottish Government granted marine licences and a Section 36 consent under the Electricity Act 1989 to proceed with the development. The proposed 2D survey area for the potential alternative export cable route is 73 km<sup>2</sup> in extent, including the 2.5 km vessel turning buffer.

The Berwick Bank Wind Farm site was awarded exclusive development rights by The Crown Estate (TCE) for the Firth of Forth Zone during the United Kingdom's (UK's) Offshore Wind Lease Round 3.

Figure 1-1 below illustrates the proposed survey area, with an added 2.5 km buffer which will be required to facilitate the vessel turning while towing the survey equipment while the equipment is switched on. While the entirety of the main survey area is within the Scottish offshore region, a small part of the 2.5 km turning buffer is located within the Scottish inshore region. An additional conservative 5 km Effective Deterrence Range (EDR) buffer has been added to show the potential area of noise disturbance resulting from the geophysical survey equipment.





## 2 SITE SURVEY

### 2.1 Overview

Survey equipment selection and deployment is informed by several factors including environmental considerations, weather and sea state, survey requirements and water depth. The survey will be undertaken by the X-Ocean Uncrewed Surface vessel (USV) which will be accompanied by a support vessel. The USV will sail to the site under its own steam accompanied by the support vessel. The USV will carry out Multibeam Echosounder (MBES), Sub-bottom Profiler (SBP), Side Scan Sonar (SSS), and magnetometry surveys. An Ultra Short Baseline (USBL) will also be used for equipment positioning. The geophysical survey equipment will be towed from the USV while the surveys are ongoing and a 2.5 km turning buffer had been added to the survey area to account for this.

#### 2.1.1 Testing and calibration of survey equipment

Prior to survey activities commencing, the survey equipment and sensors will need to be tested and calibrated. It is anticipated that the testing and calibration will take approximately one day to complete and will be carried out at the survey location.

#### 2.1.2 Equipment

The survey equipment listed below may be used during the campaign. It should be noted that the equipment models are provisional and may be subject to change, however the operating parameters presented are typical ranges anticipated to be used during this survey.

##### MBES

A MBES can be used to obtain detailed maps of the seafloor which show water depths. They measure water depth by recording the two-way travel time of a high frequency pulse emitted by a transducer. The beams produce a fanned arc composed of individual beams (also known as a swathe). MBES can, typically, carry out 200 or more simultaneous measurements.

The MBES systems proposed to be used during survey activities will operate at a frequency of 170 – 700 kilohertz (kHz), and have therefore been scoped out of further assessment on the basis that they operate outwith the generalised hearing range for marine mammals (NOAA, 2018), including European Protected Species (EPS) i.e. cetaceans, and other protected species likely to be affected by underwater sound.

##### SSS

SSS is used to generate an accurate image of the seabed. An acoustic beam is used to obtain an accurate image of a narrow area of seabed to either side of the instrument by measuring the amplitude of back-scattered return signals. The instrument is towed by the USV. SSS generally operate at very high frequencies (typically >200 kHz) and outside of the generalised hearing range of all marine species (NOAA, 2018) and other protected species likely to be affected by underwater sound. The higher frequency systems provide higher resolution but shorter-range measurements.

The SSS will operate at a frequency of 300 kHz – 600 kHz, therefore, it has been scoped out of further assessment as it falls outwith the generalised hearing range for marine mammals (NOAA, 2018).



## Magnetometer

Magnetometer surveys are used to detect any ferrous metal objects on the seabed, such as wrecks, Unexploded Ordnance (UXO), or any other obstructions. The magnetometer will be towed by the USV near the seafloor. Near-bottom magnetometers have much better precision accuracy than surfaced surface towed magnetometers, but a narrower range of detection. These surveys use equipment to record spatial variation in the Earth's magnetic field.

The magnetometer does not generate underwater noise as part of its normal operations and therefore is not considered to pose any risk of injury or disturbance to EPS.

## Ultra Short Baseline (USBL)

USBL systems are used to determine the position of towed devices. This involves the emission of sound from a USV-mounted transducer to a subsea transponder, thereby introducing sound into the marine environment. The transducer transmits a sound pulse through the water and the transponder sends a response which is detected by the transducer. The USBL calculates the bearing and time taken for the transmissions to be completed and thus the position of the subsea unit is determined. These systems can either be used continuously or intermittently through the operation they are supporting. The USBL system planned for use includes the Sonardyne Mini-Ranger USBL Transponder and the Sonardyne HPT 3000 USBL Transceiver, with an operating frequency of 19-34 KHz and a source output of 184 to 194 (dB re 1 $\mu$ Pa@1m (beacon and transducer, respectively).

The sound pressure levels and frequencies of the USBL are not of a level where injury is expected, but the equipment has the potential to cause disturbance to marine mammals and other protected species. The disturbance that has been assessed as part of this technical note considers the worst-case noise emitting equipment (i.e. Sub-bottom Profiler (SBP)). Therefore, potential disturbance associated with the use of USBL is not assessed separately.

## SBP

SBP systems are used to identify and characterise layers of sediment under the seafloor. A transducer emits a sound pulse vertically downwards towards the seafloor, and a receiver records the return of the pulse once it has been reflected off the seafloor. The highly directional nature of the SBP sound source means that there is limited lateral spreading of the sound energy, and there is evidence that at distances of >500 metres (m) of the source, SBP sound is barely detectable above background noise (Pace *et al.* 2021).

There are numerous SBP technologies which may be deployed during survey operations, including pingers, chirpers, boomers, and sparkers. These devices can operate across a range of frequencies depending on the purpose of the survey. Higher frequencies of operation provide the highest resolution but are limited in depth of penetration below the sea floor. The high frequency profilers are particularly useful for delineating shallow features. Lower frequencies yield greater penetration but provide lower resolution imagery; lower frequency systems are more general-purpose tools that provide a good compromise between penetration capability and resolution.

The SBP used during the surveys will be the Innomar Medium SES2000 – XO-23', with sound level (SL)(peak of 247-250 dB/1 $\mu$ Pa@1m and SL(RMS) of <243 dB/1 $\mu$ Pa@1m. An SBP works by generating two high-frequency sound pulses (approximately 100 kHz) which will interact to produce a pulse at an operational frequency of 8 kHz. SBP operations have been scoped in for further assessment on the basis that this type of equipment generates sound within the generalised hearing range for EPS and other protected species, which could be affected by underwater sound.



## 3 ENVIRONMENTAL CONSIDERATIONS

### 3.1 Sound Disturbance

#### 3.1.1 Cetaceans

The outer Firth of Forth has a moderate to high diversity and density of cetaceans, with a general trend of increasing diversity and abundance with increasing latitude (DECC, 2016).

The following species have been recorded in the proposed survey area by Reid *et al.*, (2003) and National Marine Plan interactive (NMPi), (2025):

- Low densities of Atlantic white-sided dolphin *Lagenorhynchus acutus* have been recorded in the area during August and September. However, there are no obvious spatial or temporal patterns in abundance or distribution for Atlantic white-sided dolphin (Reid *et al.*, 2003; Evans *et al.*, 2011; Hague *et al.*, 2020) and they are considered to be rare, or occasional visitors to this region.
- Low densities of bottlenose dolphin *Tursiops truncatus* have been recorded in the area during November and are more common in Scottish inshore waters than offshore waters. Small resident or semi-resident populations occupy a few scattered coastal localities throughout Scotland (Cheney *et al.*, 2018; Hague *et al.*, 2020). The Coastal East Scotland Management Unit (MU) describes the distribution of this inshore population. However, the proposed survey area lies in the Greater North Sea MU.
- Low densities of common dolphin *Delphinus delphis* have been recorded in the area during July.
- Low to moderate densities of harbour porpoise *Phocoena phocoena* have been recorded in the area during March and May to November. Harbour porpoise are the only species known to occur in offshore waters year-round in UK waters and are likely to be the most common cetacean species in the proposed survey area.
- Minke whale *Balaenoptera acutorostrata* have been recorded in the area during May to September. Minke whales show a large seasonal variation with much lower densities in the winter months, likely driven by variations in sea surface temperature and chlorophyll concentrations (Hague *et al.*, 2020).
- Low densities of Risso's dolphin *Grampus griseus* have been recorded in the area during September.
- White-beaked dolphin *Lagenorhynchus albirostris* have been recorded in the area during January, February and April to November. White beaked dolphins breed primarily between May and August which is when these species are most sensitive to disturbance (Evans *et al.*, 2011).

Additionally, according to the Small Cetaceans in European Atlantic Waters and the North Sea (SCANS) IV data (Gilles *et al.*, 2023), Berwick Bank is located within SCANS IV survey block NS-D. According to the SCANS-IV survey report, the following species were observed in this survey block: harbour porpoise, white-beaked dolphin, minke whale and fin whale. It should be noted that the cetacean species listed above and in Table 3-1 differ slightly due to these studies recording different cetacean species at the time they collected their data. For instance, common dolphin and Risso's dolphin are not recorded in high enough numbers within the SCANS-IV data for density to be estimated but are recorded in data described by Reid *et al.*, (2003). Fin whale was observed in SCANS-IV but not in data by Reid *et al.*, (2003). Therefore, these three species are detailed below but are not included in Table 3-1.



### 3.1.2 Pinnipeds

Two species of seals live and breed in the UK, namely the grey seal *Halichoerus grypus* and the harbour seal *Phoca vitulina* (Jones *et al.*, 2015; BEIS, 2022). Both grey and harbour seals are listed under Annex II of the European Union Habitats Directive and are Priority Marine Features (PMFs) (NatureScot, 2020; BEIS, 2022). Approximately 36% of the world's grey seals breed in the UK (of these, 84% breed at colonies in Scotland with the main concentrations in the Outer Hebrides and in Orkney). Approximately 30% of the world's harbour seals are found in the UK; however, this proportion has declined significantly since 2002, especially around eastern Scotland and Orkney (SCOS, 2022). Harbour seals are widespread around the west coast of Scotland and throughout the Hebrides and Northern Isles (Special Committee on Seals, 2022; BEIS, 2022). On the east coast, the distribution is more restricted with concentrations in the major estuaries, including the Moray Firth in Scotland.

Grey and harbour seals feed in inshore and offshore waters depending on the distribution of their prey, which changes both seasonally and yearly. Both species tend to be concentrated close to shore, particularly during the pupping and moulting season. Seal tracking studies from the Moray Firth have indicated that the foraging movements of harbour seals are generally restricted to within a 40–50 km range of their haul-out sites (Special Committee on Seals, 2022). The movements of grey seals can involve larger distances than those of the harbour seal and tracking of individual seals has shown that most foraging probably occurs within 100 km of a haul-out site although they can feed up to several hundred kilometres offshore (Special Committee on Seals, 2022).

The Berwickshire and North Northumberland Coast Special Area of Conservation (SAC) and Isle of May SAC are both designated for the protection of grey seals, among other designated features (JNCC, 2024; NatureScot, 2024). The Berwickshire and North Northumberland Coast SAC is located 18 km southwest of the proposed survey area (including the turning buffer) and the Isle of May SAC is located 32 km northwest of the survey area. SACs with grey seals as a designated feature are principally breeding sites with grey seals congregating for pupping and mating and then dispersing, only being at the site for short periods of the year. While at the breeding sites, grey seals do not tend to make long foraging trips and therefore a 20 km foraging distance from SACs is recommended to be applied when considering connectivity during the breeding season (Marine Directorate, 2016).

As a result, due to the distance of the survey to the Isle of May SAC (>20 km), the proposed survey will not have connectivity to this site and is therefore not likely to have a significant effect on the designated features of the sites. However, the Berwickshire and North Northumberland Coast SAC is located 18 km from the proposed survey activities and therefore there is potential for connectivity to this site during vessel turning.

Harbour seal is one of the designated features of the Firth of Tay and Eden Estuary SAC located 51 km northwest of the survey area, and harbour seals remain local to a relatively discrete area around the SAC all year. A 50 km foraging distance from the SAC is recommended to be applied when considering connectivity (Marine Directorate, 2016). Due to the distance from the Firth of Tay and Eden Estuary SAC (>50 km) the proposed survey will not have connectivity to and is therefore not likely to have a significant effect on the designated features of the sites.

While the proposed survey area will be located in the Scottish offshore region, 21 km from the East Lothian coastline, part of the survey's turning buffer extends to the Scottish inshore region within the 12 nautical mile (nm) limit. It is therefore possible that grey and harbour seals will be encountered from time to time during the surveys while the USV is turning but it is unlikely to be in any significant numbers. This is confirmed by the grey and harbour seal density maps published by Carter *et al.*, (2022), which are provided in the NMPi (2025). The maps report the presence



of grey seals and harbour seals in the survey area to be between 0.01% and 0.1% and 0% and 0.001% of the mean percentage at sea population per 25 km respectively. Due to the relatively low densities of these species, an assessment was not undertaken for seals within the proposed survey location. The information provided indicates that there is a very low likelihood of injury or non-trivial disturbance as a result of the proposed operations.

It should also be noted that there is a designated seal haul-out site at Fast Castle on the southern coastline of the Firth of Forth. This is located 20 km from the proposed survey activities and therefore is not likely to be affected by the proposed activities.

### 3.1.3 Potential Sound Disturbance

Marine mammals may potentially be disturbed by the geophysical survey due to the use of the SBP and USBL equipment. The most likely scenario in relation to the disturbance of marine mammals is that individuals will demonstrate a short-term behavioural response but will resume natural (undisturbed) behaviour following the completion of the survey. The SBP device will operate at approximately 250 dBrms re 1  $\mu$ Pa (peak) which is considered the worst-case scenario for underwater noise disturbance during the survey. While the SBP equipment has the potential to cause injury to low frequency cetaceans (i.e., a Permanent Threshold Shift (PTS)), due to the very high directionality of the equipment, the number of mitigation measures in place (see Section 3.1.4) and the limited number of cetaceans in the area injury is not expected to occur.

For some types of SBP (boomers, sparkers, pingers, chirps) used in geophysical surveys, the sources can be relatively loud with high frequency cycles but, on the whole, these are highly directional sources with expected low levels of horizontal sound propagation. Many operate at high frequencies and therefore are subject to high transmission loss (e.g. Crocker & Fratantonio 2016, Crocker *et al.*, 2019). There are several different types of SBPs, and the available evidence so far comes from noise measurements and modelling and not field observations of porpoise responses, hence a 5 km, likely conservative EDR, is recommended (SNCB, 2020).

As previously stated, although the sound source pressure level for an SBP is very high, a study by Pace *et al.*, (2021) using a very similar SBP operating at 247 dBrms re 1  $\mu$ Pa, found the directionality of the sound source means that acoustic energy will be focused in a narrow beam below the transducer, and beyond approximately 500 m of the source (corresponding to the mitigation zone for current survey), the device may not be audible above background noise, therefore reducing its potential to cause disturbance or injury. For the purposes of the assessment, the conservative EDR for harbour porpoise (a species particularly responsive to noise) has been considered for comparison (SNCB, 2020) and has been applied for all marine mammal species.

A worst-case behavioural radius of 5,000 m (5 km) is assumed. This will result in a potential worst case disturbance impact area of 79 km<sup>2</sup> (based on the area of a circle), around the survey equipment.

The number of individual cetaceans in UK waters and the MU in the potentially affected area by the proposed operations are detailed in Table 3-1.



Table 3-1 Estimated Number of Cetaceans Experiencing Behavioural Changes Based on Survey Activities (SCANS-IV Block NS-D) (Inter-Agency Marine Mammal Working Group (IAMMWG), 2022; Giles et al., 2023)

Species	SCANS-IV / III Density Estimates <sup>1</sup> (animals/km <sup>2</sup> )	Maximum Number of Animals within Zone of Behavioural Change at Any One Time (density x area of behavioural change) <sup>2</sup>	Abundance of Animals in the Relevant Marine Mammal Management Unit (MMMUs) <sup>3</sup>	Percentage of MMMU Potentially Impacted Behaviourally at Any One Time (%)
Harbour porpoise	0.5985	47.2815	159,632	0.02962
Bottlenose dolphin*	0.0419	3.3101	1,885	0.17560
White-beaked dolphin	0.0799	6.3121	34,025	0.01855
Atlantic white-sided dolphin**	0.01	0.79	12,293	0.00643
Minke whale	0.0419	3.3101	10,288	0.03217

\*No SCANS-IV density was available for bottlenose dolphin in Block NS-D; therefore, a density estimate from Block NS-C was used.

\*\* No SCANS-IV density was available for Atlantic white sided dolphin in SCANS IV, so density estimates from SCANS III was considered representative.

The assessment indicates that there is a very small likelihood of disturbance and injury to EPS as a result of the proposed survey. However, based on the short period of operations (maximum 21 days), the number of animals likely to be affected and the mobile nature of cetaceans, disturbance impacts at a population level are likely to be very small (<1% of the population for all species), and not require an EPS licence under the Conservation of Offshore Marine Habitats and Species Regulations 2017 as the main survey area is located outwith the 12 nm limit.

However, as the 2.5 km buffer and 5 km EDR extend to the Scottish inshore region, the number of individuals within the potential disturbance range is >1. However, with the mitigation outlined in Section 3.1.4 in place, any potential disturbance of EPS within 12 nm can be mitigated, resulting in no likely or deliberate disturbance to the species. It is therefore not considered that an EPS licence under the Conservation (Natural Habitats, &c.) Regulations 1994 is required for the surveys as any potential disturbance is negligible.

<sup>1</sup> Density estimates from Gilles et al., (2023). Survey activities are located in SCANS-IV area NS-D.

<sup>2</sup> Based on 5 km behavioural radius, the potential area of behavioural change is 79 km<sup>2</sup>.

<sup>3</sup> This is the UK MMMU within which the survey area sits (North Sea as delineated by the UK EEZ) as per IAMMWG (2022).



### 3.1.4 Mitigation

The Joint Nature Conservation Committee (JNCC) guidelines for minimising the risk of disturbance and injury to marine mammals from geophysical surveys (JNCC, 2017) are summarised below. Compliance with these guidelines is considered to constitute best practice and will in most cases, reduce the risk of deliberate injury to marine mammals to negligible levels. Whilst guidelines do not deal with disturbance directly it is considered that the mitigation measures as recommended will also assist in reducing the potential for disturbance.

#### **Marine Mammal Observers (MMO)**

The USV usually sails to the survey site under its own steam or is towed to site via the support vessel which accompany the USV on site throughout daylight survey operations. As part of the proposed survey, an MMO will be used during daylight hours and they will be located on the support vessel. The USV will be close to the support vessel during the pre-source start search. The MMO on board the support vessel will monitor for the presence of marine mammals, during a 30-minute pre-source start search and soft-start and will advise delays in the commencement of SBP and USBL activity should any marine mammals be detected within the 500 m mitigation zone. The USBL and SBP will not be started during night time or in low visibility when it is not possible to detect marine mammals in the 500 m mitigation zone. The USBL and SBP can be used during night time but only when the operations have been undertaken for more than 40 minutes without disruptions. The equipment can be started without an MMO watch only when the operations have been paused for less than 40 minutes.

#### **Pre-Start Search and Mitigation Zone**

The MMO watch will be undertaken during a pre-shooting search of 30 minutes i.e. prior to the commencement of any use of the SBP and USBL equipment in water depths of < 200 m. The search will determine if any marine mammals are present within the 500 m mitigation zone from the centre of the device deployed. If marine mammals are detected in the mitigation zone during the pre-shooting search, then operations will be delayed until their passage, or the transit of the vessel, results in the marine mammals being outside of the mitigation zone. Either way there will be a minimum of a 20-minute delay from the time of the last sighting within the mitigation zone and the commencement of the soft-start and / or start of operations, to allow animals unavailable for detection to leave the area.

#### **Soft-Start**

A soft start will be conducted every time prior to the use of SBP and USBL equipment.

Regardless of duration, where possible power should be built up gradually, in uniform stages from a low energy start-up. Surveys should be planned to avoid unnecessary firing at operational power before commencement of an acquisition line and to time operations to commence data collection as soon as possible once full operational power is achieved.

Survey operations are planned to avoid unnecessary time at operational power before the commencement of an acquisition line and to time operations to commence data collection as soon as possible once full operational power has been achieved.



## Line Changes

In line with the JNCC guidelines, where line turns are expected to take longer than 40 minutes:

- Sound source is to be terminated at the end of the survey line;
- A pre-source start search will be undertaken during the line change;
- The soft start procedure is to be delayed if marine mammals are sighted within the 500 m mitigation zone during pre-shooting; and
- A full 20-minute soft-start will be undertaken before the start of the next data acquisition line.

## 3.2 Seabed Disturbance

The proposed location of the geophysical survey coincides with the Firth of Forth Banks Complex Marine Protected Area (MPA) (see Figure 1-1). The Firth of Forth Banks Complex MPA is in offshore waters to the east of Scotland, and includes the Berwick, Scalp and Montrose Banks and the Wee Bankie shelf banks and mounds (JNCC, 2021). Protected features and the feature type within the MPA are presented in Table 3-2.

Table 3-2 Protected Features in the Firth of Forth Banks Complex MPA

Feature	Type of feature
Ocean quahog aggregations	Low or limited mobility species
Offshore subtidal sands and gravels	Habitat
Shelf banks and mounds	Large scale feature
Moraines representative of the Wee Bankie key geodiversity area	Geomorphological feature

However, as the survey equipment is mounted to the USV or towed by the USV, there will not be any interaction with the seabed. In addition to this, the USV and support vessel will utilise Dynamic Positioning (DP) and will therefore not require anchors; thus, no disturbance is expected from the use of the vessel and USV. Therefore, there will be no impact on the protected features of the Firth of Forth Banks Complex MPA.

## 3.3 Other Sea Users

The Berwick Bank Wind Farm is primarily located in the International Council for Exploration of the Sea (ICES) area 41E8. This area was primarily targeted for shellfish fishing from 2019 to 2023. A total of 545,648 tonnes with a value of £ 800,550,253 was landed in the UK in 2023 (Marine Directorate, 2024). The average tonnes and value landed per ICES rectangle in 2023 was 3,118 tonnes and £ 4,574,573 respectively, meaning the ICES rectangle 41E8 catches were below average for both landings and value when compared to overall United Kingdom Continental Shelf (UKCS) (Marine Directorate, 2024). In addition, the level of landings and value in the area of the proposed survey activities is relatively low when compared to adjacent ICES rectangles which are of greater importance to fisheries (NMPi, 2025). The USV and support vessel is expected to be on site for a maximum period of 21 days. The presence of the vessels is not expected to result in any significant effect on shipping and navigation, other than the fact that the USV



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will be slow-moving. The proposed survey area boundary overlaps with some shipping routes with average yearly density ranging throughout the site, the highest of which is 250-500 vessels per year in certain areas (refer to Figure 3-1) (EMODnet, 2020).

When considering that the area used for fishing activity is low, shipping densities is moderate and that the survey vessel and USV will be marked with sufficient lighting to show its position, significant impacts on other users of the sea are not anticipated. A Notice to Mariners will be issued two weeks prior to the survey works beginning.





## 4 CONSULTATION

### 4.1 Licence and Permit Requirements

#### 4.1.1 EPS Licence

As discussed in Section 3.1.3, in consideration of the biogeographical population located in UK waters and the wider abundance of animals in the entire MU, the likelihood of behavioural changes based on numbers of mammals, is <1% of the population for all cetacean populations present.

Due to the extremely limited nature of potential disturbance to marine mammals, this document has been submitted to confirm the requirement that no EPS Licence is required under the Conservation of Offshore Marine Habitats and Species Regulations 2017 as no disturbance or injury to any populations of EPS will be caused from the survey.

Under the Conservation (Natural Habitats, &c.) Regulations 1994, there could be potential for disturbance to >1 individual. However, given the limited extent of the surveys in the Scottish inshore region, the conservative nature of the EDR and the mitigation in place, this disturbance is likely to be incidental.

#### 4.1.2 Other Licence and Permit Requirements

With regards to other required permits / permissions, the following is assumed:

- No statutory sanction is required from the Northern Lighthouse Board; and
- No Crown Estate Scotland (CES) Small Works Licence is required under BBWFL's Agreement for Lease (AFL).

### 4.2 Stakeholder Consultation

This technical note aims to satisfy the requirements of the Conservation of Offshore Marine Habitats and Species Regulations 2017 and The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (the Habitats Regulations). Consultation will be undertaken with NatureScot for confirmation that an EPS licence is not required.

Organisation	Consultation details / responses
Marine Directorate - Licensing Operations Team (MD-LOT)	Distribution of this document to: <ul style="list-style-type: none"><li>• Confirm an EPS Licence is not required.</li></ul>
NatureScot <sup>4</sup>	Distribution of this document to: <ul style="list-style-type: none"><li>• Confirm that an EPS Licence is not required.</li></ul>

<sup>4</sup> No consultation has been undertaken with Joint Nature Conservation Committee (JNCC) as they delegate the provision of advice on offshore renewables projects to NatureScot.



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Organisation	Consultation details / responses
CES	Distribution of this document to notify works being undertaken in accordance with BBWFL's Afl.



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