

Strategic Gas Emergency Reserve – Moored Devices Survey Activity Risk Assessment for Annex IV Species

RSK General Notes

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Author	_	Technical reviewer	
Signature Date	06 September 2024	Signature Date	06 September 2024
Project manager		Quality reviewer	
Signature		Signature	
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1 Introduction

Cetaceans, marine turtles, and otters are afforded protections under Annex IV of the Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna). The EC (Birds and Natural Habitats) Regulations 2011-2021 (hereafter referred to as "the Regulations") transpose the Habitats Directive (92/43/EEC) into Irish law.

Regulation 51 of the Regulations sets out the system of strict protection for animals; under this regulation it is an offence to:

- deliberately capture or kill any specimen of these species in the wild
- deliberately disturb these species particularly during the period of breeding, rearing, hibernation and migration
- deliberately take or destroy eggs of these species in the wild
- damage or destroy a breeding or resting place of such animal, or
- keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive.

It is therefore an offence to capture, kill or disturb deliberately a single cetacean, marine turtle or otter in Irish waters, or to damage/destroy an otter or marine turtle's breeding or resting place in Ireland, without a derogation licence first obtained from the Minister in accordance with Regulation 54 of the Regulations.

2 Description of the Works

During 2022 and 2023, the Department for the Environment, Climate and Communications (DECC) reviewed a range of Ireland's energy security policies and subsequently published 'Energy Security in Ireland to 2030 – Energy Security Package' in November 2023.

Analysis showed that Ireland must enhance its resilience in the event of a disruption to the country's national gas supplies. Policy makers decided that a disruption to Ireland's supplies of gas is an unlikely, but high impact event, and a disruption would lead to unacceptably high economic and social costs.

Action 17 of the Energy Security Package seeks to address the risk to the security of Ireland's gas supply through the implementation of a state-led Strategic Gas Emergency Reserve.

In line with the Government decision to develop a Strategic Gas Emergency Reserve, and as a final part of the review of Ireland's energy security, the Department of Environment, Climate and Communications, in consultation with the gas transmission system operator (GNI), is completing further studies to support this review.

The implementation of a Strategic Gas Emergency Reserve is on a transitional and temporary basis for use in the event of a disruption to natural gas supplies. GNI is undertaking a rigorous assessment, and a number of solutions are currently under consideration, some of which may include the potential for onshore and offshore facilities. The information collated and gathered from this assessment will be returned to Government to help inform the decision-making process.

To finalise the proposal for the Strategic Gas Emergency Reserve, the Department for the Environment, Climate and Communications has instructed GNI to acquire additional information and data which it cannot obtain through publicly available sources.

2.1 Overview

The results of these surveys may be used as part of the site-selection process, as well as providing baseline data for any subsequent Environmental Impact Assessment Report (EIAR) and Appropriate Assessment Natura Impact Statement (NIS) should the development be taken forward to the planning/consenting stage. As such, deployment and retrieval of both static acoustic monitoring (SAM) devices and ADCPs within the study areas is considered necessary. The proposed programme of works is presented in Table 2.1.

It should be noted that all locations shown are indicative and may be subject to a degree of change onsite. The following drawings have been prepared in support of the Maritime Usage Licence application to the Maritime Area Regulatory Authority (MARA):

- Maritime Usage License application area (Figure A1.1, Figure A1.2 and Figure A1.3)
- indicative device deployment map (Figure A1.4, Figure A1.5 and Figure A1.6).

These figures are included in Appendix 1 of this report.

Each moored device is likely to consist of:

- Two mooring weights (circa 20 kg each)
- An acoustic release system.
- One or two hydrophones (SAM devices) / one ADCP
- Multiple subsurface buoys.

An indicative example moored device setup is shown in Figure 2.1. The exact technical specification of the equipment to be used will not be confirmed until the survey contract has been awarded. The vessel for operational activities or the company contracted is subject to budget, weather, and vessel availability. The start date for the works would preferably be autumn 2024. Descriptions of typical equipment and survey parameters have been used within this report. Predicted time and footprint for the activities are presented in Table 2.2. Moored devices would be recovered every three to four months for maintenance, download of data, and redeployments for at least one year, up to two years.

It is noted that the requirement for additional and more refined works may arise as the site selection and site investigation works progress. This may include moving devices to areas of particular interest.



Figure 2.1

Indicative schematics of moored devices

Table 2.1

Proposed programme of works per study area

Survey	Method	Method detail	Purpose	Sampling Effort
Metocean	Acoustic Doppler Current Profiler (ADCP)	An ADCP is a hydroacoustic current meter used to measure water current velocities over a depth range using the doppler effect of sound waves scattered back from particles within the water column. In the present case ADCPs operating in the range of 600 Khz or 1 Mhz will be used. The instrument emits low amplitude "pings" of sound at a sampling rate of 1-minute average every 10 minutes. These pings will be emitted in a narrow sound beam (typically a few degrees in width) with a typical echo intensity profile of 80 dB (+/- 1.5 dB).	ADCPs may be used to examine wave and current conditions in each study area. This equipment is installed on the seabed and anchored with a suitable mooring structure.	A maximum of 2 ADCP may be used to examine wave and current conditions per study area.
Marine Environmental/ Ecological	Marine mammal acoustic monitoring (i.e., SAM)	SAM devices (CPODS or FPODs) are non- invasive underwater sound recorders used to detect the presence/absence of cetacean species (dolphins, whales, and porpoises). The acoustic signature of dolphins can be distinguished from that of harbour porpoise, the two species most likely to be recorded in the study area. An optional SoundTrap device may be deployed to measure overall background noise levels within the study area.	Marine mammal acoustic monitoring using SAM devices (CPODs or FPODs) deployed on the seabed. SoundTrap hydrophones may be deployed alongside the SAM devices for periods throughout the monitoring campaign. Either 2 permanent locations will be selected, or the 2 devices will be relocated during battery changes. The device locations are subject to consultation with an experienced marine mammal ecologist.	A maximum of 3 SAM devices may be used to study cetacean presence per study area.

Table 2.2

Predicted time and footprint of each survey activity per study area

Survey Activity	Typical time period required	Total number of devices per study area	Total time for activity	Footprint affected per activity (m ²)	Total maximum footprint per activity (km²)
ADCP	4 weeks – 12 months in any one location	1 - 2	1 – 12 months. Deployment will include 1 day to deploy and 1 day to retrieve.	1 - 2m ²	0.000002
SAM	3 months – 2 years in any one location)	2-3	12 – 24 months. Deployment will include 1 day to deploy and 1 day to retrieve.	2 - 3m ²	0.00003

3 Receiving Environment

3.1 Site Locations

The Shannon Estuary forms part of the largest estuarine system in Ireland. The estuary is characterised by large areas of intertidal mudflats and fringing saltmarsh. The sediment in the area is largely coarse sand, with benthic fauna biodiversity increasing in more sheltered area. The area has sheltered conditions and water depths ranging from the intertidal to around 50m below chart datum. There marine study area consists of two study areas to inform baseline for the potential development areas, West Shannon (Area A) and East Shannon (Area B), as described below.

3.1.1West Shannon (Area A)

To inform baseline for the potential development area, the West Shannon marine study area extends the width of the Shannon Estuary from the townland of Ralappane to the townland Tarbert Island and covers an area of 1661.356ha (Figure 3.1).

3.1.2East Shannon (Area B)

To inform the baseline for this potential development area, the marine study area extends across the Shannon Estuary from the townland of Foynes Island to the townland of Ballynacragga, covering an area of 787.526ha (Figure 3.2).



Figure 3.1 Shannon MUL licence area: West Shannon (Area A)



Figure 3.2 Shannon MUL licence area: East Shannon (Area B)

3.2 Annex IV Species

3.2.1 Cetaceans

Bottlenose dolphins are a QI of the Lower River Shannon SAC, within which the proposed surveys will occur. Bottlenose dolphins are present throughout the year and are genetically discrete compared to bottlenose dolphins found elsewhere in Irish waters due to geographical and social isolation (Mirimin et al., 2011) and the estuary is an important calving area (MERC, 2021). The population is estimated at around 145 individuals with only 80 adults (Baker et al., 2018 in MERC, 2021). This small, genetically discrete population is vulnerable to even small increases in adult mortality or a reduction in reproduction rates (Blásquez et al., 2021 in MERC, 2021). An overview of existing data on bottlenose dolphin populations in the Lower Shannon Estuary shows that there is a well-known hotspot for the species in the waters off Moneypoint Generating Station (MERC, 2021). Rogan et al. (2000) recorded bottlenose dolphins in the estuary all year round with a peak from May to September and noted the presence of neo-natal calves from July to September as evidence of a well-defined breeding season in the Shannon Estuary.

There have been a total of 18 dolphin sightings within the last 12 months along the Shannon Estuary, concentrated in the area of the Shannon Ferry route, approximately 15 km to the west of the study areas, however none have been sighted directly within these study areas; one dolphin has been sighted within

approximately 1 km of the study areas (IWDG, 2024). Hence, there is potential for them to overlap with survey activities.

Very few sightings of harbour porpoise (*Phocoena phocoena*) have been recorded within the Shannon Estuary with no recorded sightings between November 2022 and November 2023 (IWDG, 2023). There was one sighting adjacent to Moneypoint in 2018 (IWDG), and strandings have been recorded as far up the estuary as Foynes (O'Callaghan et al, 2021). Violent interactions have been recorded between bottlenose dolphins and harbour porpoise (Ross and Wilson, 1996; Gross et al., 2020) and suggested reasons for this aggression include interspecies territoriality, defence of group members, food competition, feeding interference and object-orientated play (Gross et al., 2020). From the lack of recorded sightings of harbour porpoise within the Shannon Estuary, it is likely that they largely avoid the area. A single sighting of harbour porpoise occurred within the past 12 months, located at the entrance of the Shannon Estuary off Aill Na Brun (IWDG, 2024). From the lack of recorded sightings of harbour porpoise within they largely avoid the area.

3.2.2 Pinnipeds

Telemetry data indicates that harbour seal (*Phoca vitulina*) foraging trips in the south-west of Ireland generally extend no further than 20 km from haul-out sites (Cronin et al., 2008). No sightings of harbour seal have been recorded in the Shannon Estuary within the last 12 months (IWDG, 2024). Additionally, the closest European site designated for harbour seal is the Kilkieran Bay and Islands SAC, located approximately 150 km from the proposed study areas in the Shannon. It is therefore considered unlikely that individuals will overlap with the survey activities.

Grey seals (*Halichoerus grypus*) have been recorded undertaking foraging trips over hundreds of kilometres, although the mean distance travelled in a telemetry study carried out in 2011 for NPWS was 50.85 km (Cronin et al., 2011). NPWS-funded aerial thermal-imaging of seal in Ireland (Morris and Duck, 2019) shows very low usage of the Shannon Estuary by both harbour seal and grey seal, indicating that the estuary is not likely to be an important area for hauling out. No sightings of grey seals have been recorded in the Shannon Estuary within the last 12 months (IWDG, 2024). Additionally, the closest European site designated for grey seal is the Blasket Islands SAC, located approximately 112 km by sea from the proposed study areas. It is therefore considered unlikely that individuals will overlap with the survey activities; the proposed study areas are not likely to represent an important foraging ground and as a result SACs with grey seal as a QI are not considered relevant for ex situ effects.

3.2.30tter

Otter (*Lutra lutra*) are a designated feature of the Lower River Shannon SAC and inhabit coastal sites where there is suitable habitat, food availability, and shelter for resting and breeding. The population was estimated to be 140 (+/- 12 individuals) in 2006. The shoreline of the Shannon Estuary, including through the study areas, is designated as potential otter habitat.

3.2.4 Basking Shark and Reptiles

Basking shark (*Cetorhinus maximus*) have been sighted several times in proximity to the Shannon Estuary over the past 12 months, with recordings concentrated to Aill Na Brun and Derrynadivva (IWDG, 2024).

Given the lack of sightings within the estuary itself, it is unlikely basking sharks will be present within the study areas during the survey activities.

Four Annex IV turtle species known to occur in Ireland include the leatherback turtle (Dermochelys coriacea), Kemp's Ridley turtle (Lepidochelys kempii), loggerhead turtle (Caretta caretta) and hawksbill turtle (Eretmochelys imbricata). Leatherback turtles have been recorded along the west coast of Ireland and within the Lower Shannon Estuary (at Ballylongford (1970) and at Kilkee (IWDG 2024)); however no sightings have occurred in the marine study areas within the last 12 months (IWDG, 2024). Kemps Ridley have been recorded along the west coast at Banna Strand in Co. Kerry (approximately 40 km south-west). This is beyond the marine study areas with no suspected impacts from the proposed survey; there have additionally been no recorded sightings in the Shannon Estuary within the last 12 months (IWDG, 2024). Loggerheads are also recorded along the west coast of Ireland; one was recorded beyond the Shannon Estuary at Loop Head (approximately 31 km west of the proposed study area boundaries), none have been recorded within the Shannon Estuary within the last 12 months (IWDG, 2024). Therefore, no significant impacts are expected. One record of hawksbill has been recorded in the south of Ireland at Cork Harbour as bycatch, no records have been noted along the west coast or in close proximity to the proposed study areas. Of the turtle species noted in Ireland, Leatherback turtles have the potential to utilise the Lower River Shannon Estuary based on historical records, but as these counts only amount to one or two individuals across many years it is unlikely that they will be present within the study areas during the proposed works.

4 Article 12 Assessment

All species of cetaceans are protected in Ireland along with sea turtles and otters under Annex IV of the Habitats Directive. The potential for impact on protected species from the proposed maritime usage related to the vessel operations during deployment, maintenance, and retrieval of the moorings includes collision risk and visual and acoustic disturbance.

Considering the current vessel activity levels in the Shannon Estuary, the addition of a single vessel is assessed as not having a significant effect. Therefore, potential impacts on protected species as a result of vessel operations for the deployment, maintenance, and retrieval of moorings is considered very low.

While in place, the moorings will be non-invasive. SAM devices will not generate any sound or vibrations. The ADCP devices do produce some lower frequency sounds that are within the hearing range of high-frequency marine mammal species, such as harbour porpoise. The proposed ADCP device installation will be temporary in nature and will emit a narrow sound beam (typically a few degrees in width) with a typical echo intensity profile of 80 dB (+/- 1.5 dB). Therefore, the potential impact on protected species is considered to be very low. As such, the possibility for impacts on protected species from underwater noise associated with survey equipment can be excluded from further consideration. As such, there is no potential for impacts on marine mammals or other protected species from the devices while deployed.

The moorings will be sub-surface, with an acoustic release, resulting in no surface buoy or rising line, which will minimise risk of entanglement within the water column for any protected species.

5 Conclusions

Due to the small scale and temporary nature of the proposed maritime usage, it is concluded that the project will not result in any disturbance, injury, or mortality of Annex IV species, nor will it cause deterioration or destruction of any breeding or resting sites.

6 References

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7 Appendix 1



Figure A1.1 Shannon MUL licence area



Figure A1.2

West Shannon MUL licence area (Area A)



Figure A1.3 *East Shannon MUL licence area (Area B)*



Figure A1.4 Shannon study areas



Figure A1.5

West Shannon Study Area (Area A) with indicative device locations

Figure A1.6

East Shannon Study Area (Area B) with indicative device locations