



ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report Appendix 5-5: Marine Megafauna: Vessel Code of Conduct

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Acronyms

Term	Meaning
AIS	Automatic Identification System
CTV	Crew Transfer Vessels
DCMNR	Department of Communications, Marine and Natural Resources
DEHLG	Department of the Environment, Heritage and Local Government
NMFS	National Marine Fisheries Service
NPWS	National Parks and Wildlife Service
Zol	Zone of Influence

Units

Unit	Description
kn	Knot
m	Metre
m/s	Metres per second
nm	Nautical mile

1 MARINE MEGAFUNA: VESSEL CODE OF CONDUCT

1.1 Overview

The waters off the west and southwest coasts of Ireland support the greatest diversity and abundance of marine mammals in Irish waters, with further hotspots off the Celtic Deep (to the south of St George's Channel), Dublin Bay and the Isle of Man (NPWS, 2019; Lysaght and Marnell, 2016; Wall *et al.*, 2013). To date some 24 species of whale and dolphin have been recorded, as well as a number of shark and turtle species and in 1991 the Irish Government declared all Irish waters a whale and dolphin sanctuary. Marine mammals, basking shark *Cetorhinus maximus* and sea turtles are internationally protected species. Marine mammals and sea turtles are listed under current National Legislation - S.I No. 94 of 1997, Natural Habitat Regulations, which prohibits the deliberate disturbance of these species, and marine mammals are also protected under the Fifth Schedule of the Wildlife Act, 1976. In 2022, the basking shark was also afforded legal protection under the Wildlife Act.

Marine mammals which were sighted regularly in site-specific surveys included minke whale *Balaenoptera acutorostrata* and grey seal *Halichoerus grypus*, and the most common cetacean species in the vicinity of the Project was harbour porpoise *Phocoena phocoena*. Common dolphin *Delphinus delphis* and harbour seal *Phoca vitulina* were sighted occasionally during site surveys, and whilst bottlenose dolphin *Tursiops truncatus* were not sighted during these surveys, a review of published datasets indicates that bottlenose dolphin may also be occasionally present in the area. Risso's dolphin *Grampus griseus* are likely to occur in lower numbers.

Basking sharks migrate through the Celtic Sea and Irish Sea during summer months, and during site-specific surveys, two basking sharks were sighted in the vicinity of the Project. Tagging studies have also shown that basking sharks have migrated through this area in previous years (Doherty *et al.*, 2017). Historical records show that three species of marine turtle are likely to regularly occur in Irish waters including leatherback (or 'leathery') turtle, loggerhead turtle *Caretta caretta* and Kemp's Ridley turtle *Lepidochelys kempii* (King and Berrow, 2009). Of these species, the leatherback turtle is distributed around the coast of Ireland, including the Irish Sea, and accounts for 80% of all sea turtle sightings (King and Berrow, 2009).

Full details on the distribution, abundance, conservation status and legal protection of marine megafauna species in the vicinity of the Project are presented in volume 2B, chapter 10: Marine Mammals and Megafauna.

The main risks to marine megafauna from vessels associated with the pre-construction and construction phases of the Project are likely to be from collision with vessels and underwater noise from vessels. This Vessel Code of Conduct is intended to offer best practice to be followed in cases of any interaction between vessels and marine megafauna and has been informed by the following guidance:

- Department of Communications, Marine and Natural Resources (DCMNR) (2005) Marine Notice No 15 of 2005 - Guidelines for Correct Procedures when Encountering Whales and Dolphins in Irish Coastal Waters;
- Department of the Environment, Heritage and Local Government (DEHLG) (2009) Conservation Plan for Cetaceans in Irish waters;
- National Parks and Wildlife Service (NPWS) (2014) Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters; and
- National Marine Fisheries Service (NMFS) (2018) Revision to Technical Guidance for Assessing Effects of Anthropogenic Sound on Marine Mammal Hearing. NMFS is a United States Federal Agency.

1.1.1 Collision with vessels

Vessel traffic associated with the Project has the potential to lead to an increase in the number of vessel movements within the Marine Megafauna Study Area. The construction phase includes for 475 vessel round trips during over 15 months. Vessel types include jack-up barges, tug/anchor handlers, cable installation

vessels, scour/cable protection installation vessels, guard vessels, survey vessels, and crew transfer vessels (CTVs).

Baseline levels of vessel traffic in the Marine Megafauna Study Area are likely to be relatively high. A total of 107 vessels were recorded within a 5 nm buffer of the offshore wind farm area and offshore cable corridor over the month of January 2022 with 163 vessels over the month of July 2022 based on AIS data, and comprising of cargo vessels, fishing vessels, service vessels, tankers, recreational vessels and other vessels (see volume 2B, appendix 13-1: Navigation Risk Assessment).

Whilst a broad range of vessel types will be involved in the Project, vessels travelling at higher speeds pose a higher risk because of the potential for a stronger impact, and vessels travelling at 7 m/s (13.6 kn) or faster are those most likely to cause death or serious injury (as per the NMFS (2018) definition) to marine mammals, basking sharks and sea turtles (Laist *et al.*, 2001; Wilson *et al.*, 2007). Vessels involved in the construction phase are likely to be travelling considerably slower than this, or stationary, for significant periods of time and survey vessels are likely to be travelling below 5 kn, as dictated by survey operations. In addition, noise emissions from vessels involved in the construction phase are likely to deter animals from the potential Zone of Influence (Zoi).

The risk of collision with vessels will be reduced by the implementation of a project-specific mitigation protocol (see appendix 5-4: Marine Megafauna Mitigation Plan). As a minimum, the project-specific mitigation protocol will adhere to international best practice, which is likely to include NPWS (2014) guidance.

1.1.2 Noise emissions from vessels

Marine mammals, particularly cetaceans, are capable of generating and detecting sound (Bailey *et al.*, 2010) and are dependent on sound for many aspects of their lives (i.e. prey-identification; predator avoidance; communication and navigation). Increases in anthropogenic noise may consequently lead to a potential effect within the marine environment (Bailey *et al.*, 2010).

Elasmobranchs such as basking shark detect sound using inner ear end organs: they do not have a swim bladder or any other air-filled cavity, therefore they can only sense sound as pressure through their lateral line system (McFarlane *et al.*, 2008). They do use hearing to detect prey, however as a filter-feeding shark, this is less true of basking sharks.

At present, sea turtles are known to sense low frequency sound (Popper *et al.*, 2014), however, little is known about the extent of noise exposure from anthropogenic sources in their natural habitats, or the potential impacts of increased anthropogenic noise exposure on sea turtle biology (Samuel *et al.*, 2005). Sea turtles likely use sound for navigation, locating prey, avoiding predators, and environmental awareness.

There is potential for a small number of harbour porpoise, basking shark and sea turtles to experience a recoverable auditory injury at any one time as a result of vessel noise. Other marine mammal species are not predicted to be affected this way, although vessel noise is expected to increase disturbance to marine mammal and megafauna species.

Avoidance behaviour, displacement or masking of vocalisations is likely to occur only where increased noise from vessel movements are greater than the background ambient noise level. There are existing levels of vessel traffic in the vicinity of the Project, and therefore ambient noise levels are expected to be relatively high.

1.2 Vessel Code of Conduct

The following guidelines are intended to offer best practice to be followed in cases of any interaction between vessels and marine megafauna (such as those described in section 1.1) within Irish waters:

- If marine megafauna are sighted at a distance, continue forward progress maintaining a steady course, ensuring that vessel speed does not exceed 7 kn as soon as the vessel is within 1 km of any marine megafauna. Do not change course to head directly towards them;

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- Do not respond to marine megafauna by sudden or erratic changes of course or speed: slowing down or stopping suddenly can confuse and alarm animals as much as sudden acceleration. Attempt to steer a course parallel to the direction marine megafauna are taking;
- Do not attempt to pursue marine megafauna, drive directly towards them, or encircle them. In the case of dolphins, they may approach vessels and may engage in “bow-riding”. If they choose to bow-ride, maintain a steady speed and course;
- Allow groups to remain together. Avoid deliberately driving through, or between, groups of marine megafauna and avoid close approach to individuals with young. This may risk disrupting mother-offspring bonds and expose inexperienced young to stress and possible boat strikes;
- Do not corral marine megafauna between vessels and always provide an escape route. Maintain a distance of at least 200 m between any other boats in the vicinity and successive boats should follow the same course;
- Maintain a distance of at least 100 m from all animals, and, if possible, alter course in a controlled manner to avoid collision;
- In the vicinity of seal haul-outs, vessels should travel at ‘no wake’ speeds (i.e. less than 5 kn). When seals are disturbed into entering the water they can seriously injure themselves or disturbance may occur before the seal has sufficiently recovered oxygen supplies or energy since last exiting the water. Particular care should be taken during the pupping season when seals pups are present in the vicinity of haul-out sites;
- Possible sources of noise disturbance can be avoided by ensuring speeds are never greater than 7 kn, and by keeping the engine and propeller well-maintained;
- Do not throw rubbish or food near or around marine megafauna and do not attempt to feed them; and
- Do not attempt to enter the water or swim with any marine megafauna.

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