

**NPWS**

**Duvillaun Islands SAC**  
**(site code: 000495)**

**Conservation objectives supporting document -**  
**Bottlenose Dolphin**

**Version 1**  
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## Introduction

Duvillaun Islands SAC (**Figure 1**) is designated for the Annex II species *Tursiops truncatus* (Common Bottlenose Dolphin, also known as Bottlenose Dolphin or Bottle-nosed Dolphin), a comparatively large dolphin species that occurs extensively in Irish and European waters, both coastally and offshore. The waters of Duvillaun Islands SAC are adjacent to West Connacht Coast SAC (site code 002998) off the west coast of Ireland. A considerable number of records of Bottlenose Dolphin have been gathered within the site and in the adjacent Atlantic waters of Ireland, particularly over the past two decades (Oudejans *et al.*, 2008; Rogan, *et al.*, 2018; Giralt Paradell *et al.*, 2024). This site supports groups of Bottlenose Dolphin that are part of a population inhabiting the west/north-west coast.

Following initial investigations in the 1990s of a distinct resident Bottlenose Dolphin community occurring in the Shannon Estuary, numerous surveys examining the occurrence, distribution, ecology, community structure and size of the population(s) inhabiting coastal waters off the south-west/west of Ireland have been conducted since the early 2000s (*e.g.* Ingram *et al.*, 2001; Ingram and Rogan, 2003; Ingram *et al.*, 2003; Ó Cadhla *et al.*, 2003; Oudejans *et al.*, 2008; DEHLG, 2009; Ingram *et al.*, 2009; O'Brien, 2009; Oudejans *et al.*, 2010; Mirimin *et al.*, 2011; Anderwald *et al.*, 2012; Englund, 2014; Oudejans *et al.*, 2015; Berrow *et al.*, 2021). These localised and regional studies, in combination with research effort in adjacent areas off west and north-west coasts (Nykanen *et al.*, 2015), have facilitated (a) the estimation and monitoring of this genetically-distinct dolphin population (Mirimin *et al.*, 2011) and (b) knowledge of the ecology of the species along the west/north-west coast.

Aspects of the biology and ecology of the Annex II species are provided in **Section 1**. The corresponding site-specific conservation objective will facilitate Ireland delivering on its surveillance and reporting obligations under the EU Habitats Directive (92/43/EC), and the preservation or restoration of the integrity of the Natura 2000 site.

Ireland also has an obligation to ensure that consent decisions concerning operations/activities planned for Natura 2000 sites (also known as European sites) are informed by an appropriate assessment of the likelihood that such operations or activities are having a significant effect on the site, or adversely affecting site integrity. Further ancillary information concerning the practical application of the site-specific conservation objective and its associated targets in the completion of such assessments is provided in **Section 2**.

## Section 1

### Annex II Marine mammals

#### ***Tursiops truncatus* (Bottlenose Dolphin)**

This toothed cetacean species (from the mammal Order Cetacea - whales, dolphins and porpoises) occurs in estuarine, coastal and offshore waters where it carries out breeding, foraging, resting, social activity and other life history functions. As air-breathing mammals, Bottlenose Dolphin must return to the water surface to breathe but they are otherwise wholly aquatic. Individual dolphins of all ages use sound as their primary sensory tool in order to navigate, communicate, avoid predators, or locate and facilitate the capture of prey under water. As a comparatively large dolphin species, it is conspicuous due to its regular occurrence in shallower coastal areas and its willingness to approach vessels and persons at sea. Its distribution extends throughout continental shelf and slope waters, and groups have also occasionally been recorded in waters >2,000m deep. Bottlenose Dolphin is a highly mobile species that demonstrates a complex population structure in European Atlantic waters, including both pelagic and coastal populations (Louis *et al.*, 2015, 2023). Several resident coastal populations are described in western European waters. In Irish waters three distinct populations occur (Atlantic pelagic, west coast of Ireland and Shannon Estuary). However, individuals and/or groups of the species may also range over many hundreds or even thousands of kilometres. Recently there have been records of a few individual dolphins ranging extensively through Irish coastal waters and into Northern Irish, Scottish and southern English waters.

The occurrence of dolphins within a prescribed marine area can be estimated using visual observation, photo-identification (for certain species including *Tursiops truncatus*) and passive acoustic methods in order to deliver an assessment of community or population size (*i.e.* relative abundance or absolute abundance), density and distribution. The size, community structure, distribution and habitat use of Bottlenose Dolphin inhabiting the waters adjacent to and surrounding Duvillaun Islands SAC are quite well understood, although the general picture is somewhat more complex and dynamic than that described by the Lower River Shannon population, from which it is genetically distinct. The West Connacht Coast population of Bottlenose Dolphin is described as resident with groups of dolphins being present in the wider Connemara-Mayo region throughout the year. There is repeated occurrence of known individuals within and between years demonstrating high levels of site fidelity especially over summer autumn period. A fine scale genetic distinction is also evident between members of this coastal population and populations/communities occurring in the Shannon Estuary and offshore. Survey efforts using a photo-ID based mark-recapture technique have so far delivered population estimates to the surrounding West Connacht Coast SAC. This population of Bottlenose Dolphin have been photographed between Duvillaun Islands SAC and the entirety of West Connacht Coast SAC which demonstrates the

connectivity between SACs but also the wide range of this population. Movements of individually-recognisable individuals are also documented. Overall, studies of community (social) structure undertaken so far of this coastal population describe a very dynamic, changeable model often termed 'fission-fusion' model of social structure but with a high degree of interconnection between all individuals in the population. Based on the available data it is currently considered that the population of dolphins inhabiting the area is more coastal in its habitats and may be specialised in its life history, ecology and habitat use accordingly. While there are indications of important clusters of dolphin records off Mullet Peninsula (Co. Mayo) and Inishkea island group, which could represent high-value habitats used preferentially by the species (*e.g.* foraging or socialising) it should be noted that all suitable aquatic habitat (**Figure 1**) is considered relevant to the species range and ecological requirements within the site and is therefore of potential use by Bottlenose Dolphin.

The species breeds annually in Irish waters and indications are that the birth and early rearing of newborn calves takes place predominantly during the summer and early autumn months (*i.e.* May to September). However, female Bottlenose Dolphin do not produce a new calf each year and instead an average interval of 3-4 years or more between individual calving is described for the species. Newborn dolphin calves depend primarily upon their mother's nutrient-rich milk for at least their first year and are generally weaned before they are two years old. Maternal investment in the growing juvenile typically continues until the birth of a new calf, while successful mating activity appears to take place primarily during the same season that calving is taking place. Group sizes of 2-20 individual dolphins, including calves, have been recorded around these islands.

Bottlenose Dolphin is a successful aquatic predator that feeds on a wide variety of fish (*e.g.* Horse Mackerel, Mackerel, Salmon, eels, gadoids, *Trisopterus* spp., flatfish, dogfish), cephalopods (*e.g.* squid) and occasionally crustacean species occurring in the water column or close to/within the seabed. Foraging areas for Bottlenose Dolphin are often associated with areas of strong tidal current and associated eddies, therefore the occurrence of foraging dolphin close to shore or adjacent to cliffs, islands, prominent headlands and tidal narrows is commonly reported.

## Section 2

### Appropriate Assessment Notes

Many plans and projects of a particular nature and/or size require the preparation of an environmental impact assessment (EIA) of the likely effects of their planned development. While smaller operations/activities (*i.e.* sub-EIA-threshold developments) may not require an EIA, an appropriate assessment is required of any project that may significantly affect the integrity of a Natura 2000 site. The appropriate assessment is to be used as part of the decision-making process, as to whether the project proceeds or not. The assessment should be recorded in a transparent manner, and should assess, in a reasoned manner, the likely effects on a Natura 2000 site of a proposed plan or project. General guidance on the completion of such assessments has been prepared and is available at [www.npws.ie](http://www.npws.ie) and at [https://ec.europa.eu/environment/nature/natura2000/management/guidance\\_en.htm](https://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm).

### Annex II Species

The following technical clarification is provided in relation to the specific conservation objective and targets for the Annex II species identified below in order to facilitate the analysis required for the appropriate assessment process and overall site planning and management:

**Objective** To maintain the Favourable conservation condition of Bottlenose Dolphin in Duvillaun Islands SAC, which is defined by the following list of attributes and targets

<b>Target 1</b>	Species range within the site should not be restricted by artificial barriers to site use
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- This target may be considered relevant to proposed activities or operations that will result in the permanent exclusion of Bottlenose Dolphin from part of its range within the site, or will permanently prevent access for the species to suitable habitat therein.
- It does not refer to short-term or temporary restriction of access or range.
- Early consultation or scoping with the Department in advance of formal application is advisable for proposals that are likely to result in permanent exclusion.

<b>Target 2</b>	Human activities should occur at levels that do not adversely affect the Bottlenose Dolphin population at the site
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- Proposed activities or operations should not introduce man-made energy (*e.g.* aerial or underwater noise, light or thermal energy) at levels that could result in a significant negative impact on individuals and/or the population of Bottlenose Dolphin within the site.

This refers to the aquatic habitats used by the species in addition to important natural behaviours during the species annual cycle.

- This target also relates to proposed activities or operations that may result in the deterioration of key resources (*e.g.* water quality, feeding, *etc.*) upon which Bottlenose Dolphin depend. In the absence of complete knowledge on the species ecological requirements in this site, such considerations should be assessed where appropriate on a case-by-case basis.
- Proposed activities or operations should not cause death or injury to individuals to an extent that may ultimately affect the Bottlenose Dolphin population at the site.

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297pp.

Figure 1. *Tursiops truncatus* - Habitat within Duvillaun Islands SAC

