



# Bottlenose dolphin *Tursiops truncatus*



## Biodiversity Action Plan

### Background

The bottlenose dolphin (*Tursiops truncatus*) is the only regular winter visitor to Manx waters. It is monitored by the voluntarily run charity Manx Whale and Dolphin Watch (MWDW) who have collected data on this and other cetaceans since 2006.

### Description

The bottlenose dolphin is a large dolphin up to 3.5-4m in length around the British Isles, dorsally grey and ventrally white with a distinctive 'bottle' shaped beak. They are gregarious and active dolphins with a catholic diet and can be found worldwide in temperate and tropical waters as coastal or offshore populations. They will often be attracted to and bow ride boats and display other surface active behaviours.

### British Isles Distribution

The bottlenose dolphin is found around almost all coasts of the British Isles though generally absent from the southern North Sea. There are a number of locally semi-resident populations, notably the Moray Firth, Scotland, Cardigan Bay, Wales, Shannon Estuary, Ireland, and along the Cornish Coast, England. These populations are sometimes referred to as resident though all have been shown to have individuals moving outside of their core range, sometimes very long distances.

### Isle of Man Distribution

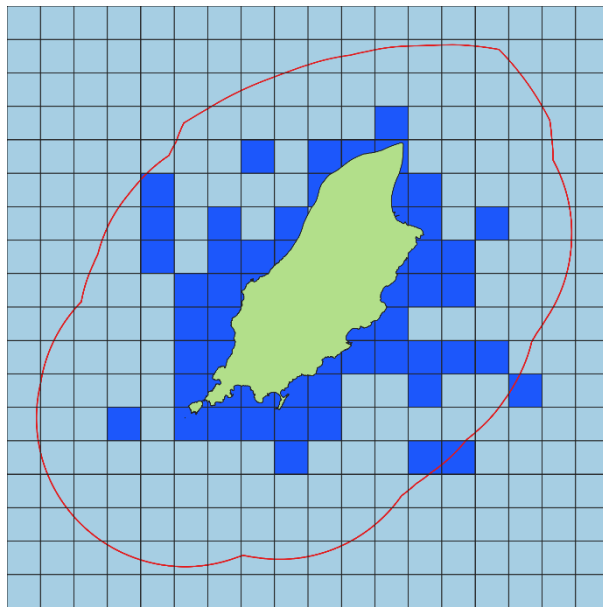


Figure 1: Bottlenose dolphin sighting presence from boat-based sightings and public sightings reported from 2006-2022 in Manx waters.

Through the surveys of MWDW since 2006 it has been established that the bottlenose dolphin is observed every year in Manx waters, typically large pods from October to March along the east coast of the island. Pods are also sporadically seen in the summer months.

There is no robust population estimate for bottlenose dolphins in Manx waters but an indication is possible through photo-identification work. MWDW currently holds 73 well-marked individuals, 10 right, 7 left, and 6 small-nicks giving a minimum of 89 and a maximum of 96 dolphins in the catalogue. Due to predominantly winter presence photo-identification is harder to obtain for bottlenose dolphins. SCANS-III estimates an abundance of 288 animals in the Irish Sea (Hammond et al., 2017).

Anecdotally there is no sign of a dramatic change in bottlenose dolphin numbers using Manx waters each year though since 2012 there seems to have been an increase in the number of summer sightings of pods.

### Habitat Range and Site Fidelity

Photo-identification matches have been made between the Isle of Man and Cardigan Bay, Wales. There is a population of around 200 animals semi-resident to Cardigan Bay in the summer months, some of which seem to use Manx waters in the winter months. Some animals photographed in Manx waters are not recognised from the Cardigan Bay catalogue suggesting dolphins from different regions mix in Manx waters.

In September 2019 an adult bottlenose was sighted in Manx waters with a newborn calf and has been resident since. This animal was matched to the resident population of around 200 animals from the Moray Firth on the east coast of Scotland. This is the first time such a long-distance match has been made to Manx waters but not the first time long-range movements have been observed from the Moray Firth (O'Brien et al., 2009; Robinson et al., 2012).

### **Ecology – Diet**

Stomach contents of bottlenose dolphins from strandings in Scotland showed the principal diet species were whiting (*Merlangius merlangus*), saithe (*Pollachius virens*), and cod (*Gadus morhua*) along with numerous other species in smaller quantities including salmon (*Salmo salar*), haddock (*Melanogrammus aeglefinus*), sand eel (*Ammodytes* spp.) and cephalopods (Santos et al., 2001). Irish stranding stomach contents showed the most common diet species were whiting, blue whiting (*Micromesistius poutassou*), pollack (*Pollachius pollachius*), saithe, and haddock (Hernandez-Milian et al., 2015).

### **Commuting**

As odontocetes bottlenose dolphins are not known to undertake long-distance regular migrations. However, coastal bottlenose dolphins of the British Isles have been shown to travel hundreds of kilometres from their home range (O'Brien et al., 2009; Robinson et al., 2012) and there is current evidence of such with a member of the Moray Firth population currently resident in Manx waters.

### **Breeding**

Bottlenose dolphins have a gestation period of around 12 months, and whilst they can give birth in any month of the year this is typically between April and October. Pods which visit Manx waters are often seen with calves and juveniles.

### **Legal protection**

Under international conventions the bottlenose dolphin is listed on Appendix II of CITES and Appendix II of the Bern Convention. It is also covered by the Bonn Convention under the terms of the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) which was extended to the Isle of Man in 2017.

Bottlenose dolphin, and all cetaceans, are protected by Manx law under Schedule 5 of the Manx Wildlife Act through which it is an offence to intentionally or recklessly kill, injure, take, or disturb any scheduled species.

### **Threats**

Current factors affecting this species may include:

## Physical Disturbance

There is unlikely to be a large effect from net by-catch in Manx waters due to the types of fishery present. There is a pair trawl which operates in Manx waters which does have the potential for by-catch.

## Acoustic Disturbance

Bottlenose dolphins, as all cetaceans, will be sensitive to underwater noise which has the potential to cause injury or disturbance. This can lead to displacement from foraging areas, reduced foraging success, and increased energy expenditure. They are likely to be susceptible to loud noises caused by military and seismic activity as well as activities such as pile driving. Marine mammals can also be affected by temporary or permanent auditory threshold shifts on exposure to loud noise and masking of biologically important sounds (prey and conspecifics) due to chronic noise such as ship traffic. Small odontocetes have shown lateral spatial avoidance to seismic airguns (Stone and Tasker, 2006).

## Chemical Pollution and Marine Litter

Bottlenose dolphins have been known to ingest marine debris (Baulch and Perry, 2014). As some of the very top marine predators bottlenose dolphins are still impacted by PCB levels above toxicity thresholds in European waters (Jepson et al., 2016).

## Habitat Degradation

Any effects of habitat degradation are likely to be felt through consequent changes to prey range, availability, and quality.

## Prey Changes

Cetacean distribution will be strongly affected by prey distribution in any area. It is not specifically known whether large pods of bottlenose dolphins are using Manx waters in the winter predominantly for feeding or socialisation, so it is unknown the extent to which prey changes would alter presence here.

## Climate Change

Climate change may not directly affect dolphin distribution around the Isle of Man, but any effects will likely be felt through consequent changes in prey distribution and abundance as was seen with changes in group size in the Moray Firth in low salmon years following low phase North Atlantic Oscillation years (Lusseau et al., 2004).

## Reason for BAP

As top marine predators cetaceans are good ecosystem indicators. Though only five cetacean species regularly use Manx waters there are aspects of their ecology which are poorly understood and they face numerous threats.

## Aims

The aim of this BAP is to ensure the ongoing monitoring of bottlenose dolphin as an internationally protected species and as part of the Manx cetacean community with ambitions to improve knowledge gaps wherever possible.

## Linked BAPS

It is advised that this action plan is taken forward in conjunction with species action plans for other marine megafauna species:

Risso's dolphin – *Grampus griseus*

Minke whale – *Balaenoptera acutorostrata*

Harbour porpoise – *Delphinus delphis*

It may also be of relevance to link species action plans for fish species of known prey importance for the bottlenose dolphin:

Whiting – *Merlangius merlangus*

Cod – *Gadus morhua*

Common dolphin – <i>Delphinus delphis</i> Seals (grouped) – <i>Halichoerus grypus</i> and <i>Phoca vitulina</i> Basking shark – <i>Cetorhinus maximus</i>		
Delivery Options	Active	Challenges
<b>Land-based surveys</b> <ul style="list-style-type: none"> <li>Surveys at locations around the Isle of Man since 2006. Dependent on suitable weather conditions and the availability of staff and volunteers with transport to reach sites</li> </ul>	Yes	Staff funding
<b>Boat-based surveys</b> <ul style="list-style-type: none"> <li>Ad-hoc surveys in Manx waters since 2007. Dependent on suitable weather, the availability of a boat skipper and staff and volunteers</li> </ul>	Yes	Staff funding Boat fuel funding Boat skipper availability
<b>Public sightings scheme</b> <ul style="list-style-type: none"> <li>Collation of sightings reported by members of the public into an online database</li> </ul>	Yes	Staff funding
<b>Acoustic surveys</b> <ul style="list-style-type: none"> <li>MWDW does not currently undertake any acoustic surveys in Manx waters but owns a towed-hydrophone to introduce these when possible</li> </ul>	No	Staff funding Boat fuel funding Boat skipper availability
<b>Photo-identification study</b> <ul style="list-style-type: none"> <li>MWDW currently conducts photo-identification of bottlenose dolphins and compiles a catalogue for Manx waters</li> </ul>	Partial	Staff funding
<b>Strandings</b> <ul style="list-style-type: none"> <li>Strandings are monitored on behalf of DEFA by Manx Wildlife Trust (MWT), with data being fed to the Cetacean Stranding Investigation Programme (CSIP) in the UK. Strandings are reported by members of the public to MWDW and MWT and communicated to an MWT managed stranding volunteer network</li> <li>No bottlenose dolphins have yet been further sampled due to infrequency of strandings and limited funding</li> </ul>	Yes  No	Funding for sample testing
Annual review and update of this document	June 2024	
Delivery Plan		
Action	Lead	
<b>Land-based surveys</b> <ul style="list-style-type: none"> <li>Ongoing use of the same survey sites to allow continuity of data collection and possible detection of any long-term population changes</li> </ul>	MWDW	
<b>Boat-based surveys</b> <ul style="list-style-type: none"> <li>Continuation of ad hoc surveys whenever possible</li> </ul>	MWDW	

<ul style="list-style-type: none"> <li>○ Re-introduction of line-transect surveys throughout Manx territorial waters to generate population estimates</li> </ul>	
<p><b>Public sightings scheme</b></p> <ul style="list-style-type: none"> <li>○ Continued collection of public sightings to maintain long-term dataset, and increased awareness of species identification and reporting</li> </ul>	MWDW
<p><b>Acoustic surveys</b></p> <ul style="list-style-type: none"> <li>○ Introduce towed-hydrophone surveys alongside transect surveys to generate population estimates</li> </ul>	MWDW
<p><b>Photo-identification study</b></p> <ul style="list-style-type: none"> <li>○ Continue compilation of Manx catalogue, undertake matching to other British Isles catalogues, and produce a publicly available photo-identification catalogue</li> </ul>	MWDW
<p><b>Strandings</b></p> <ul style="list-style-type: none"> <li>○ Continued monitoring of strandings</li> <li>○ Sample collection for contaminant analysis and stomach content analysis where possible</li> </ul>	MWT/DEFA

## References

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