



Minke whale *Balaenoptera acutorostrata*



Biodiversity Action Plan

Background

The minke whale (*Balaenoptera acutorostrata*) is the only whale species which regularly visits 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

Minke whales are a small baleen whale species of around 7-9m with an almost black dorsal colouring, white ventral, distinctive white bands on the pectoral fins, and a small hooked dorsal fin. They are widespread across all oceans and latitudes and are usually observed singly or in small aggregations.

British Isles Distribution

Minke whales are widely found along the Atlantic side of the British Isles, as well as the northern and central North Sea with absence from the southern North Sea and the eastern English Channel.

Isle of Man Distribution

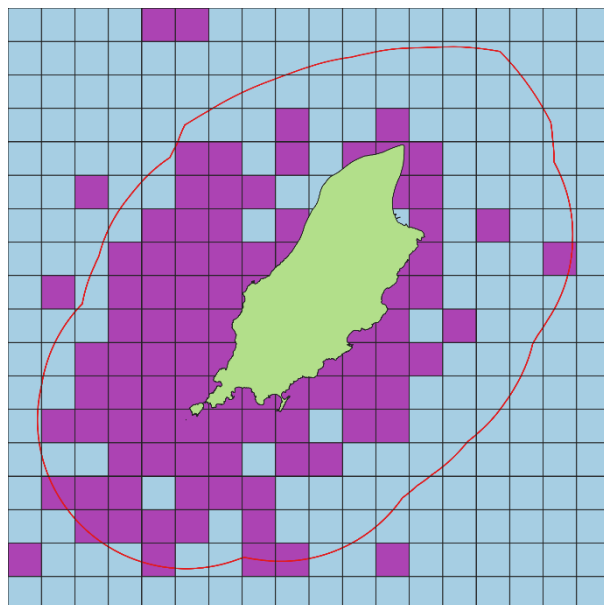


Figure 1: Minke whale sighting presence from boat-based sightings and public sightings reported from 2006-2022 in Manx waters.

Through the surveys of MWDW since 2006 it has been established that the minke whale is the only species of baleen whale seen regularly in Manx waters. There is no indication of a change in the minke whale status around the Isle of Man whilst being studied by MWDW. The species is observed every year, typically further off the west coast through the spring, moving around the southwest through the summer, and close to the east coast through the autumn.

There is no robust population estimate for minke whales and Manx waters. The SCANS-III survey gives an abundance estimate of 600 animals for the Irish Sea (Hammond et al., 2017). Anecdotally there is no sign of a dramatic change in minke whale numbers using Manx waters each year.

Habitat Range and Site Fidelity

North Atlantic minke whales spend the summer on feeding grounds ranging from the Bay of Biscay to Iceland, and around the British Isles including the Irish Sea. Migration patterns are not fully understood but the species is believed to move to winter breeding grounds at lower latitudes. There appears to be no strong genetic differentiation between North Atlantic stocks recognised for management purposes, and Anderwald et al., (2011) suggest the species disperses across the North Atlantic from two breeding populations. As yet we have not made any photo-identification matches of minke whales between years

in Manx waters, however site fidelity has been observed for this species in some areas (Gill and Fairbairns, 1995).

Ecology - Diet

Stomach content analysis of minke whales stranded in Scotland identified sandeels (*Ammodytidae*), herring (*Clupea harengus*), sprat (*Sprattus sprattus*), mackerel (*Scomber scombrus*), Norway pout/poor cod (*Trisopterus spp.*), and gobies (*Gobiidae*) with two thirds of the diet comprising sandeels (Pierce et al., 2004). Minke whales from the North and Norwegian seas were also shown to have eaten whiting (*Merlangius merlangus*) (Olsen and Holst, 2001).

There have been no diet studies in Manx waters, so it is unknown the relative importance of the prey species here though species availability should be similar to Scotland. Sightings of minke whales on the east coast coincide with the timing and location of herring spawning in Manx waters, suggesting this may be an important food source.

Commuting

Like most mysticetes it is believed at least part of the population will migrate to winter breeding grounds at lower latitudes. As no winter aggregations have been identified they may disperse over a large area. Minke whales are seen seasonally in Manx waters, typically from May to November each year and will move from further offshore on the west and south through summer, to close inshore on east in the autumn.

Breeding

Minke whales likely breed out of Manx waters at lower latitudes, though it is unknown where this occurs. There have been some observations of young calves in British and Irish waters (Kavanagh et al., 2018), including one in Manx waters (MWDW pers. obs. unpublished) suggesting that some females may calve at higher latitudes. Juveniles, independent but smaller than adults, are often seen in Manx waters.

Legal protection

Under international conventions the minke whale is listed on Appendix I of CITES and Appendix III of the Bern Convention. It is not covered by the Bonn Convention under the terms of ASCOBANS as this only covers Odontoceti (toothed whales). Minke whales are covered by the International Whaling Commission (IWC) of which the UK is a member.

Minke whales, 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

Minke whales are still the target of commercial whaling (Norway and Iceland) and subsistence hunting (Greenland) making the population more vulnerable to anthropogenic threats in other north Atlantic locations. Current factors affecting this species may include:

Physical Disturbance

Entanglement in creel (pot) fisheries was estimated at 300 minke whales over a 10 year period (Leaper et al., 2022) around Scotland which is far more than the five officially reported by the UK to the IWC, suggesting entanglement is being under reported and may be a significant problem. As with any large whale species minke whales are at risk from ship strikes, though there is no evidence of this occurring in Manx waters.

Acoustic Disturbance

As with all cetacean species which rely on sound minke whales are sensitive to underwater noise. Less is known about the hearing capabilities of baleen whales as it is not possible to measure audiograms, however they have been shown to respond to acoustic signals at the expected upper end of their hearing sensitivity (Boisseau et al., 2021). Minke whales have also been seen to react to military sonar by either ceasing calling or leaving the area (Martin et al., 2015).

Chemical Pollution and Marine Litter

Minke whales have been known to ingest marine debris (Baulch and Perry, 2014). Minke whales, as baleen whales, tend to feed at lower trophic levels than toothed whales so may carry lower levels of persistent organic pollutants. However, they can still suffer negative health and reproductive effects and placental transfer of toxins has been shown (Andvik et al., 2023). A single minke whale stranded on the Isle of Man has been tested for heavy metals and polycyclic aromatic hydrocarbons (PAHs) with no indication of elevated levels in the samples tested (Fox and Howe, 2016).

Habitat Degradation

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

Prey Changes

In Icelandic waters there was an observed shift in minke whale diet from sandeels to herring and haddock which coincided with increased sea temperatures and changes in fish distribution (Víkingsson et al., 2014). Changes in prey density and distribution will likely affect minke whale distribution in Manx waters.

Climate Change

Climate change may not directly affect minke whale distribution around the Isle of Man, but any effects will likely be felt through consequent changes in prey distribution and abundance.

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 minke whales 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*

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

Harbour porpoise – <i>Phocoena phocoena</i>	Sand eels – <i>Ammodytes/Gymnammodytes spp.</i>
Bottlenose dolphin – <i>Tursiops truncatus</i>	Herring – <i>Clupea harengus</i>
Common dolphin – <i>Delphinus delphis</i>	Cod – <i>Gadus morhua</i>
Seals (grouped) – <i>Halichoerus grypus</i> and <i>Phoca vitulina</i>	Whiting – <i>Merlangius merlangus</i>
Basking shark – <i>Cetorhinus maximus</i>	

Delivery Options	Active	Challenges
Land-based surveys <ul style="list-style-type: none"> 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 	Yes	Staff funding
Boat-based surveys <ul style="list-style-type: none"> Ad-hoc surveys in Manx waters since 2007. Dependent on suitable weather, the availability of a boat skipper and staff and volunteers 	Yes	Staff funding Boat fuel funding Boat skipper availability
Public sightings scheme <ul style="list-style-type: none"> Collation of sightings reported by members of the public into an online database 	Yes	Staff funding
Acoustic surveys <ul style="list-style-type: none"> MWDW does not currently undertake any acoustic surveys in Manx waters but owns a towed-hydrophone to introduce these when possible 	No	Staff funding Boat fuel funding Boat skipper availability
Photo-identification study <ul style="list-style-type: none"> MWDW undertakes photo-identification of minke whales when possible though the species can be hard to photo-identify 	Partial	Staff funding
Strandings <ul style="list-style-type: none"> 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 So far one minke whale strandings have been tested for heavy metal and polycyclic aromatic hydrocarbon (PAH) contamination. 	Yes No	Funding for sample testing
Annual review and update of this document	June 2024	

Delivery Plan	
Action	Lead
Land-based surveys	MWDW

<ul style="list-style-type: none"> Ongoing use of the same survey sites to allow continuity of data collection and possible detection of any long-term population changes 	
Boat-based surveys <ul style="list-style-type: none"> Continuation of ad hoc surveys whenever possible Re-introduction of line-transect surveys throughout Manx territorial waters to generate population estimates 	MWDW
Public sightings scheme <ul style="list-style-type: none"> Continued collection of public sightings to maintain long-term dataset, and increased awareness of species identification and reporting 	MWDW
Acoustic surveys <ul style="list-style-type: none"> Introduce towed-hydrophone surveys alongside transect surveys to generate population estimates 	MWDW
Photo-identification study <ul style="list-style-type: none"> Continue compilation of a Manx catalogue and investigate resightings 	MWDW
Strandings <ul style="list-style-type: none"> Continued monitoring of strandings More sample collection for contaminant analysis and stomach content analysis where possible 	MWT/DEFA

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