

Manx Marine Environmental Assessment
Ecology/Biodiversity

Marine Mammals - Seals



Grey seals at The Sound. Photo: Howard Peters.

MMEA Chapter 3.4 (b)

October 2018 (2nd edition)

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Manx Marine Environmental Assessment

Second Edition: October 2018

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This document was produced as part of the Manx Marine Environmental Assessment, a Government project with external stakeholder input, funded and facilitated by the Department of Infrastructure, Department for Enterprise and Department of Environment, Food and Agriculture.

This document is downloadable from the Isle of Man Government website at:
<https://www.gov.im/about-the-government/departments/infrastructure/harbours-information/territorial-seas/manx-marine-environmental-assessment/>

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Suggested Citations

Chapter

Howe, V.L. 2018. Marine Mammals-Seals. In: Manx Marine Environmental Assessment (2nd Ed). Isle of Man Government. pp. 21.

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Seals in Manx Waters

Summary

All seals species are protected in the Isle of Man under Schedule 5 of the Wildlife Act 1990.

The Isle of Man is an important area for grey seals, using coastal areas all around the Manx coast. Important haul out sites include the Calf of Man, The Sound, Langness and Maughold. The Calf of Man is an important pupping site for grey seals and pupping also occurs elsewhere around the Manx coast, for example around the south-west coast and at Maughold.

Grey seals using Manx waters are likely to be highly mobile. Tagging studies from elsewhere have shown that grey seals range throughout the Irish Sea, between Wales, Scotland, Ireland and the Isle of Man.

Common seals also occur around the Manx coast in small numbers, but are less well studied.

Current research into seals in Manx waters includes an annual seal pup census around the Calf of Man and the compilation of a photo-identification photography library. In addition, an Isle of Man seal count was undertaken in Autumn 2017, but the findings were not available at the time of writing.

Introduction

The grey seal is the most commonly sighted seal species in Manx waters whereas common seals are more of a rarity. As efficient swimmers, seals are very mobile and capable of deep, long dives and long distance migration, regularly leaving and entering Manx waters. The Calf of Man is an important haul out and pupping site for Manx waters and the wider Irish Sea. The Isle of Man is becoming well known for its marine wildlife and the presence of seals close to shore is good for local recreation and tourism activities.

This chapter provides an introduction to the two key species, the current survey work being undertaken by the Manx Wildlife Trust and the availability of longer term data sets, including records from Manx National Heritage and Department of Environment, Food and Agriculture from the Calf and the Ayres.

For an initial summary of current risks and the potential effects of any future development on marine mammals in Manx waters the reader is directed towards the Cetacean chapter (3.4a). A few key recommendations for survey work and improvements in data accessibility and data sharing are also presented.

This chapter also identifies where significant knowledge gaps exist, which need to be understood to determine how they might impact on future environmental impact assessments for any current and future developments in Manx offshore waters.

Baseline

Seal species in Manx Waters

Grey Seals - *Halichoerus grypus*

Grey seals are widely distributed throughout the Irish Sea, with a population estimate for the whole area of 5,198 – 6,976 (Kiely 2000). As highly mobile animals, they move across the whole Irish Sea, with the Isle of Man being an important haul out and resting location, as well as providing foraging opportunities. There are thought to be around 350-400 individuals (Howe 2017, pers. comm.). It is likely that there are a number of animals that are fairly resident to the Island, with a much higher number of transient individuals visiting the Island. Monthly counts around the Island, recorded on snapshot two day surveys, ranged from 135 to 405 individuals (Sharpe 2007). The south of the Island and the Calf of Man are of particular importance (Duck 1996); although there are other small groups found at several other locations (Sharpe 2007) and individual seals can be seen almost anywhere in Manx coastal waters.

Bruce *et al.* (1963) records the main species of seal in Manx waters as the grey seal with the following entry: "All specimens in Manx waters recorded within the past fifty years, whether as "grey seals" or "common seals" are referable to this species."

Frequently to be seen swimming, at all times of the year, around the S. end of the Isle of Man, where the resident population is roughly estimated at 50 seals. Hauls out, on the falling tide, on to rock-ledges, as a Stroin Vuigh (S.W. coast), on the Calf of Man, and on the Black Rocks, E. of Port St Mary. Breeding: pups seen in Nov. and Dec., and one in July (Duncan 1952).

Common Seals - *Phoca vitulina*

Common seals are a rarity in Manx waters although observed annually in small numbers throughout the year, but more commonly in the summer months. They have been seen around the Sound and Maughold head areas.

Other Species

There is one formal record of a Ringed Seal (*Phoca hispida*) washed up alive in Port Erin in 1940 (Bruce *et al.* 1963). No other pinniped species have as yet been recorded in Manx waters, however other vagrants may occasionally occur, as in other locations around the Irish Sea. Species such as the harp seal, hooded seal and walrus have been known to be seen in British waters (Kiely 2000).

Legal Protection and conservation measures

Seals are protected under the Manx Wildlife Act 1990. They are listed as protected species in Schedule 5 under "Seals (all species) – Pinnepedia".

Under the Act all species in Schedule 5 are protected from being killed, injured or taken. They are also protected from any actions that damage or destroy places used by these species for shelter and protection, or disturbs an animal occupying a place of shelter or protection. The sale and possession of these species is also an offence.

Grey seals and commons seals are also listed under Appendix III of the Bern Convention, which the Isle of Man is a signatory to via the UK. The Bern Convention requires the conservation of wild flora and fauna and their natural habitats, especially those requiring the cooperation of states, and with emphasis on endangered or vulnerable species. Contracting parties are required to have regard for wild fauna and flora in consideration of planning and development, pollution, and education and for their habitats in planning and development and appropriate sites for migratory species listed in Appendix III should receive protection.

Seals are protected year round in Manx waters and culling or licensed killing of seals does not occur. The main threat to seals in Manx waters comes from disturbance of haul out sites and pupping sites. Peters (2007) carried out a study of seal disturbance at The Sound, observing levels of disturbance of seals hauled on Kitterland, the Isle of Man's main seal haul out site. Peters (2007) observed significant disturbance of hauled out seals on 57% of the observation days, mainly by recreational vessels passing through The Sound. Since that study, the Department of Environment, Food and Agriculture, the Manx Wildlife Trust and the Isle of Man Constabulary Wildlife Crime Officers have worked to raise boat users' awareness of seals and other marine protected species. Many vessel skippers have also attended the WiSe wildlife safe boat operators courses organised by the Department of Agriculture, Fisheries and Forestry in 2006, 2008, 2009 and 2018.

For further information about WiSe see: <http://www.wisescheme.org/>

Seals are vulnerable to contamination and pollution of coastal waters by toxic substances and litter. In the Irish Sea, seals have been found to have high concentrations of pollutants such as organochlorines in their bodies (Law et al. 1991, 1992), often as a legacy of historical industrial activities. We are not aware of any specific research that has been carried out on contaminant levels in seals in Manx waters. However, recent biopsy samples from dead stranded cetaceans has been collected by Manx Wildlife Trust and tested for heavy metal and PAH contamination. The contamination levels are within acceptable limits. Seal samples have not been collected yet as dead seal strandings are usually too badly decomposed.

Re-suspension of marine pollutants from historic activities e.g. former mining or as a result of marine practises no longer in operation, but still with a legacy around the Island e.g. the use of TBT in anti-fouling paint, and the dredging of historic material from harbours, such as Peel marina, may have detrimental effects on marine mammals. Please refer to MMEA Chapter 2.4 (Marine Pollution).

Known Pupping & Haul-out Sites

Grey seal pupping season usually occurs between September and November with moulting December to March. At other times the seals haul-out to rocky locations known as haul-out sites such as those around the Calf of Man. The Calf of Man is thought to be the main

pupping site in the Isle of Man, but there are other important pupping sites. The Maughold coast (Port Lewaigue to Cornaa) is thought to be important for pupping and seal pups have also been observed along the coast between Bradda Head and *Stroin Vuigh* (Sharpe 2007). Pupping season for the common seals is generally earlier (June-July) with their moulting occurring July/September, however of the few common seal pups known to have been born recently round the Island, none have been observed to survive to weaning.

Seals on the Calf of Man

The Calf of Man has long been acknowledged as an important site for seals in the Irish Sea, both as a pupping site and a haul out site (Duck 1996). Since 2009, the Manx Wildlife Trust have carried out a dedicated grey seal study at the Calf of Man in the autumn, to coincide with the pupping season. Although 2009 was only a pilot study, this has been extended to cover the main six weeks of the season.

The study initially consisted of three parts; a pup census of the Island, a behavioural study of the adults and photo identification of adults. However, the behavioural study was stopped in 2015 due to it being too time-consuming. Pups are counted from the land only, so it is likely that the actual number born is higher, as they are in locations that cannot be seen from the land.

Table 1: Total number of pups observed on Calf of Man (2009-2016). Manx Wildlife Trust.

Year	Number of Pups	Number of sites
2009	27	11
2010	36	11
2011	36	9
2012	42	12
2013	50	13
2014	52	13
2015	63	12
2016	84	13

Location & number of pups born in 2009-2016.

Code	Location
CL	The Cletts
FP	Fold Point
GH	Grant's Harbour
CH	Cow Harbour
WC	West of Cow
GI	Gibdale
BF	Bay Fine
AM	Amulty
BO	Bay yn Ow
GL	Ghaw Lang
KC	Kittiwake Cave
SC	Smugglers Cave
CP	Caigher Point
LE	The Leodan
MG	Mill Giau
PU	The Puddle
SH	South Harbour

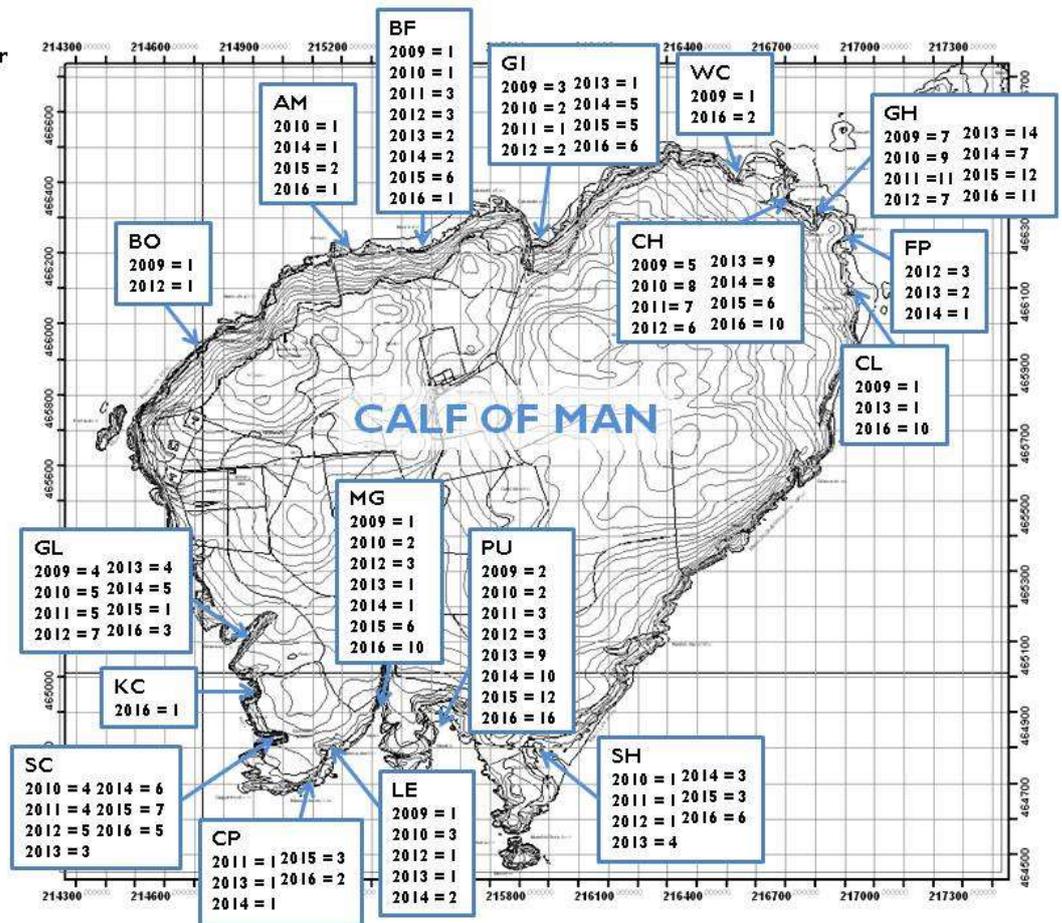


Figure 1. Distribution of seal pups on the Calf of Man, 2009-2016. Manx Wildlife Trust.

Pre-weaning pup mortality appears to be low, with an average 6%. 2014 was the worst year with a mortality rate of 15%. However, this is a reflection of the stormy weather that was seen that year. Preliminary analysis of the 2017 data suggests an even worse year, again due to hurricane Ophelia and storm Brian.

Behavioural observations indicate normal site usage of the pupping beaches, with the most common behaviour observed for both males and females being resting. Photo identification has shown site fidelity of both males and females. 75 females and 13 males have been identified in more than one season. Although the majority of females have returned to exactly the same site for pupping, one female had a pup in the north of the Calf in 2010 and in the south in 2011.

Grey Seal Photo Identification

Graner (1994) carried out a photo identification study of Manx grey seals, fully identifying 24 individual seals and partially identifying a further 18 seals.

More recently, Manx Wildlife Trust has carried out dedicated photo identification of grey seals on the Calf of Man since 2009, as part of their wider pupping study (Stone 2009, 2010, 2011, 2012 and 2013). (Later reports were not available at the time of writing). There are

also a few opportunistic images available from 2008. The focus of the identification has been on the breeding females, although there are also several non-breeding females identified and a few males. The catalogue contains 143 females, fully identifiable from both sides of the individual. Of these, 104 are known to have had at least one pup. There are also a further 119 females for which only poorer quality images are available or where there are only images of one side of the head, of which only 34 have had a pup. There are 42 males in the catalogue, of which 23 are fully identifiable. 75 of the females identified have been seen in previous years – two individuals have been seen in eight seasons. There was also one male who has been identified eight years running and has been seen mating with several of the females.

Grey seals typically show site fidelity to pupping locations, a characteristic which is now becoming apparent on the Calf of Man. However, long term monitoring through photo identification will give a more robust indication of the number of different seals breeding on the Calf as well as an indication of the health of the population and suitability of the Calf as a breeding ground. It would be extremely valuable to extend the photo identification study around the Isle of Man and throughout the year, to get an indication of the extent of the spatial and temporal site fidelity to Manx waters. It is also hoped that the Calf of Man catalogue will be compared with other catalogues from the west coast of Britain, to identify more wide scale movements through the Irish Sea.

For further information please refer to Manx Wildlife Reports (Stone 2009, 2010 and 2011a and b, 2012 and 2013), including a summary in Stone (2011a). More recent reports were not available at the time of writing.

Seal Distributions

Manx Bird Atlas – Seal Survey (1998-2008)

Manx Birdlife, formally the Manx Bird Atlas (MBA), is a charity formed to undertake ornithological research on the Isle of Man. Since starting its research in 1998 it has gathered incidental data on other fauna, including grey seals (*Halichoerus grypus*).

Though informative, the data on grey seals fell short of a structured evaluation of their numbers, favoured haul out sites and pupping beaches. A more detailed understanding of the distribution, abundance and breeding sites for the species was considered to be important to allow their Manx conservation status to be properly assessed.

To start to address this, Manx Bird Atlas undertook a winter boat survey of the Island's rocky coast to census the grey seal population over the 2006-7 and 2007-8 seasons, contracted by the Department of Agriculture, Fisheries and Forestry. The key research objectives was to undertake a monthly count of grey seals (noting any common seals (*Phoca vitulina*)).

Throughout the survey years, seals were noted along much of the Manx coast, though observations revealed that some areas were frequently used as haul out sites, others were used only on occasions, while in some areas animals were only ever seen in the water. Note that the north-west and north-east coasts were not able to be surveyed from sea and are hence not included. Figures 2 & 3 below, show the distribution of hauled and in water grey seals observed during the 2006-7 season (Sharpe 2007).

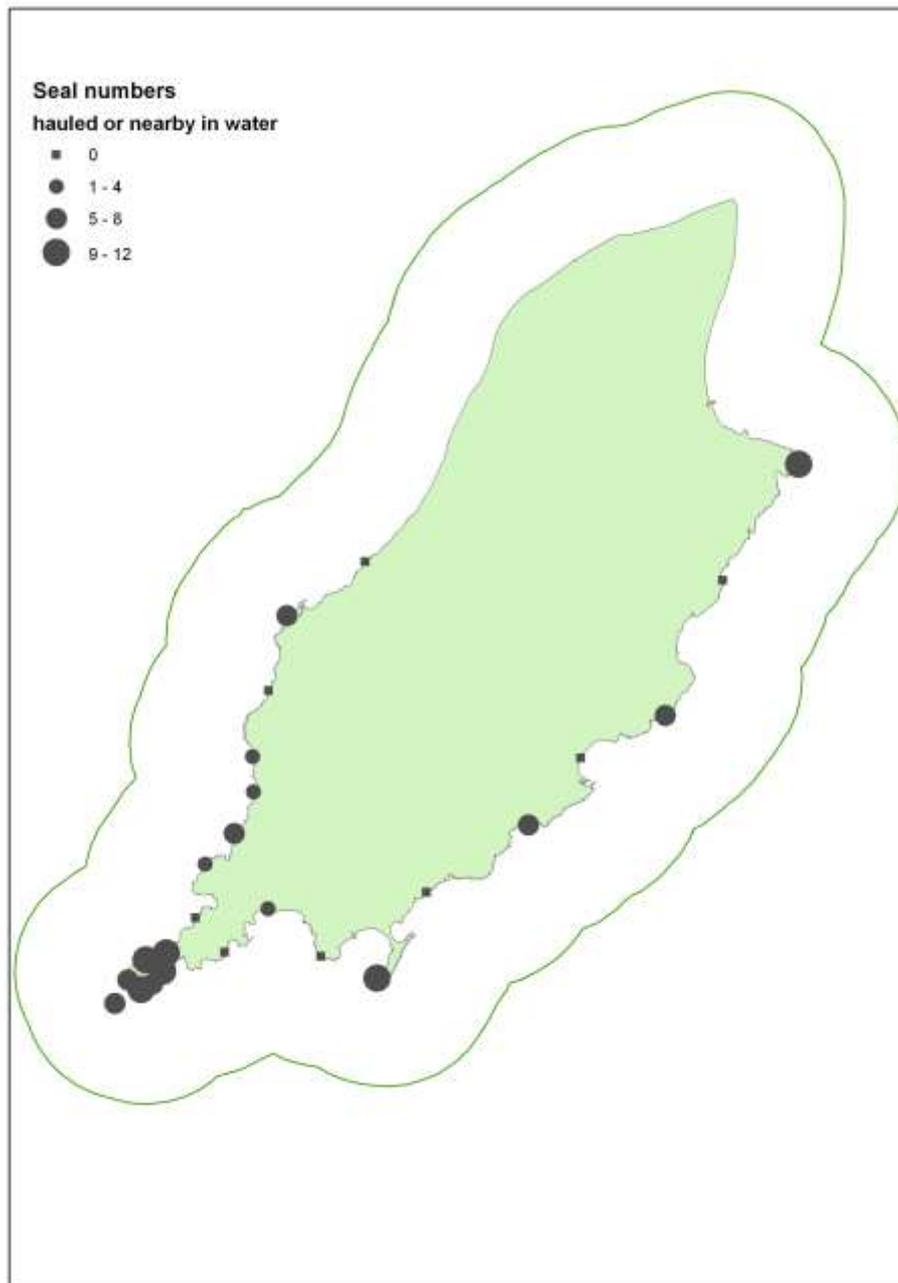


Figure 2. Distribution of grey seals hauled out or nearby in the water, adapted from Sharpe 2007. Note, the location of the marker is the mid point of each section of coast surveyed, rather than an exact position.

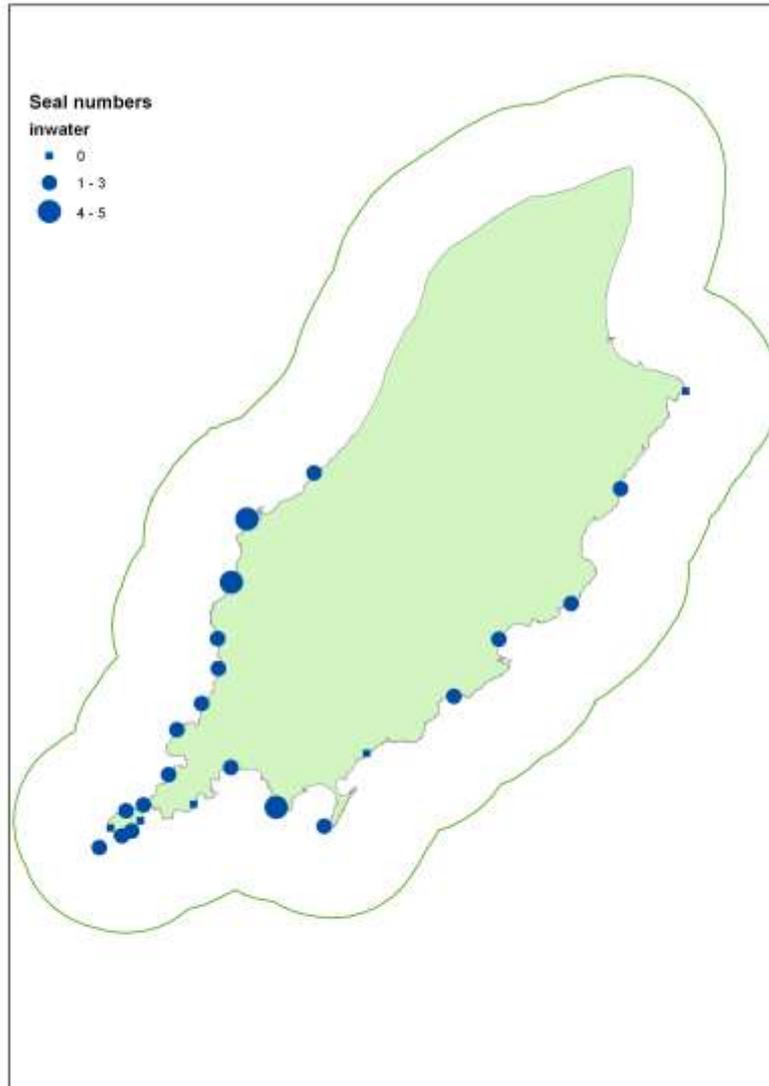


Figure 3. Distribution of grey seals in the water, adapted from Sharpe 2007. Note, the location of the marker is the mid point of each section of coast surveyed, rather than an exact position.

For further information and a summary of survey findings please refer to Sharpe (2007).

More recently sightings have come from the public sighting scheme set up by Manx Wildlife Trust, where members of the public can report their seal sightings. As a result of this scheme additional areas of interest have been identified such as the Point of Ayre, with around 30 sighted in September 2016 and more recent sightings of seals hauled out there.

Manx Wildlife Trust has also undertaken an Island-wide seal survey in autumn 2017 looking at distribution and abundance of seals. The full results were not available at the time of writing, but initial analysis suggests that between 350 and 400 individuals were reported (Howe 2017, pers. comm.). Compared to the earlier survey by Sharpe (2007) numbers are stable or possibly elevated. Distribution is also similar to the earlier surveys with the main haul out sites around the Calf and Sound area, Maughold head and Langness. Fewer individuals were seen on the south west coast than previous, but this could be a result of hurricane Ophelia that passed through the area before the west coast was surveyed.

Foraging Behaviour

Seals are known to feed close to the seabed on demersal fish species and this varies seasonally and regionally depending on availability of food sources. They are opportunistic feeders, taking advantage of a wide variety of prey species and foraging over a large area. Basic analysis of seal scats from Kitterland, near the Calf of Man by the Manx Wildlife Trust have shown the presence of otoliths of the following fish species; whiting, haddock, saithe, greater weever, hake, common goby, cod and other gadoid species. This is from preliminary analysis of a small sample of scats collected on an *ad hoc* basis. (E. Stone pers. obs.).

In 2010, a basic post mortem on a seal carried out by DEFA Marine Biodiversity Officers found the only stomach contents to be two octopus (*Eledone cirrhosa*).

Seals are known to return to the same haul-out sites following foraging activities. Trip duration from a haul-out site varies between local trips (of the order of hundreds of metres) to longer migrations across the Irish Sea to other regions in Wales, Scotland and Ireland. Haul out sites are vital not only for seals to rest, but also for food digestion. Disturbance of seals at their haul out site can impact on seal fitness and breeding success and can lead to seals abandoning the sites (Duck 2010).

Wider Irish Sea Information

Duck (2010) provides a useful overview of current knowledge of seals in UK waters. Ó Cadhla and Strong (2007) provide the results of the first comprehensive nationwide assessment of Ireland's breeding grey seal populations.

Please refer to resource Table 2 below for other information relating to seal survey work undertaken in the wider Irish Sea context:

Hammond *et al.* (2005) recorded the movements of 19 grey seals in the Irish Sea from July to December 2004 using satellite tagging. Figure 4 shows the results of this tagging study, with each individual in a different colour. It shows the wide ranging movements of grey seals across the Irish Sea, including trips to the Isle of Man.

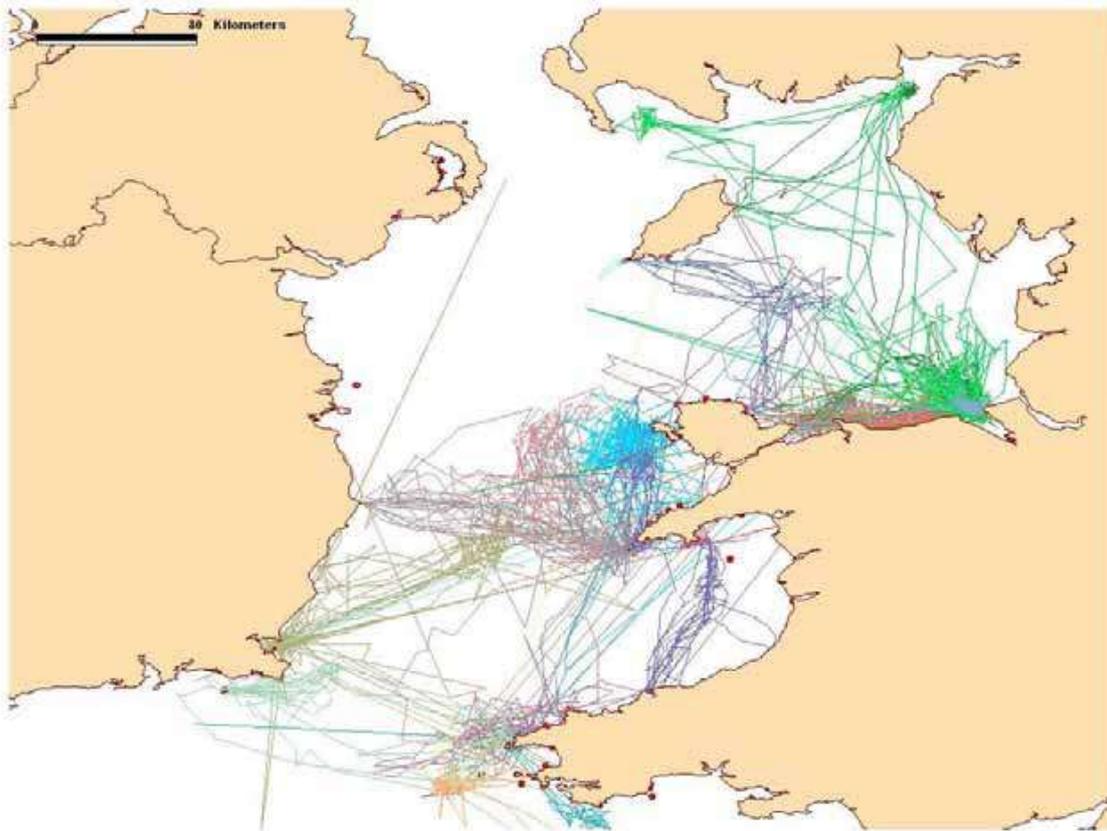


Figure 4. Satellite tracks of 19 grey seals tagged in Wales in 2004. Reproduced with permission from Hammond et al. (2005).

More recent work by SMRU (Russell and McConnell 2014) has shown harbour seals movements from around the UK and Northern Ireland. The research shows individuals from Strangford Lough have travelled into Manx waters and to key haul-out spots such as The Sound.

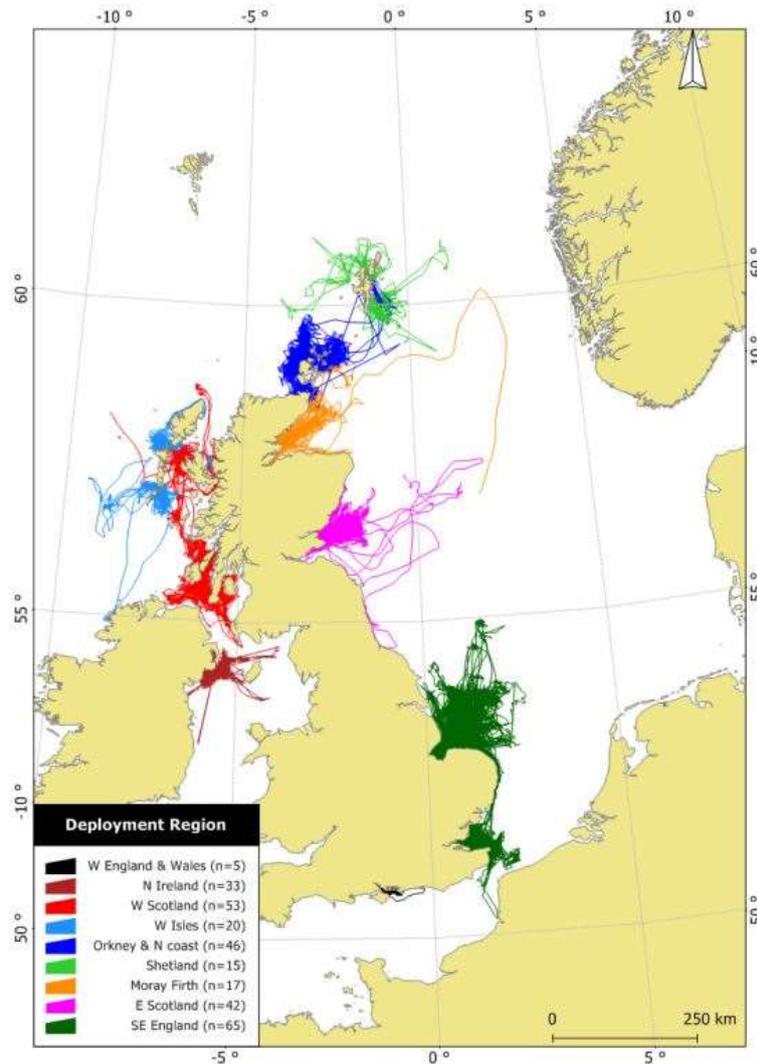


Figure 5. Telemetry tracks by deployment region for harbour seals aged one year and older.

Seals Strandings

Occasionally, marine animals are stranded dead or alive on Manx shores. Live stranded seals, including pups, are dealt with by the Manx Society for the Prevention for Cruelty to Animals (ManxSPCA). Each year they take in a small number (2-3) of injured or abandoned pups, which they care for and release back into the wild. The public is also regularly reminded not to disturb pups or adults and that a pup on a beach may appear abandoned, but it is probably being cared for by a mother, likely to be nearby. The ManxSPCA also occasionally deal with adult seals that have been injured. A code of conduct is to be developed in early 2018 to educate members of the public about behaviour around seals, in and out of the breeding season.

Dead stranded marine animals are the responsibility of the Department of Environment, Food and Agriculture (DEFA). The Manx Wildlife Trust, on behalf of DEFA, record all stranded protected marine species (seals, cetaceans, basking sharks and turtles). As much information as possible is gathered about the stranded animal, including species, various morphometric measurements, any obvious trauma or cause of death and photographs. Where possible, a basic post mortem is carried out either in situ, or at the DEFA laboratory, with assistance from a local vet with a specialism in marine mammals. As yet, no seal necropsies have been carried out, as seals tend to be too badly decomposed for such work. Details for cetaceans are submitted to the UK Cetacean Strandings Investigation Programme

(CSIP) and seal records are held by DEFA and Manx Wildlife Trust. Officers attending strandings also look out for signs of seal disease such as phocine distemper virus.

Figure 6 shows the distribution of the stranded seals recorded between 2008 and 2016. Seals are the most commonly stranded marine animals with 68 dead strandings recorded since 2013. Of these records, four are unknown and the remainder were thought to be grey seals, and 20 were classed as pups.

No confirmed cases of wildlife crime against seals have been recorded since formal recording of strandings began. One accidental capture of a grey seal in a gill net was reported in 2008. The 120cm grey seal carcass was fresh and a post-mortem revealed stomach contents of two octopus, but no fish.

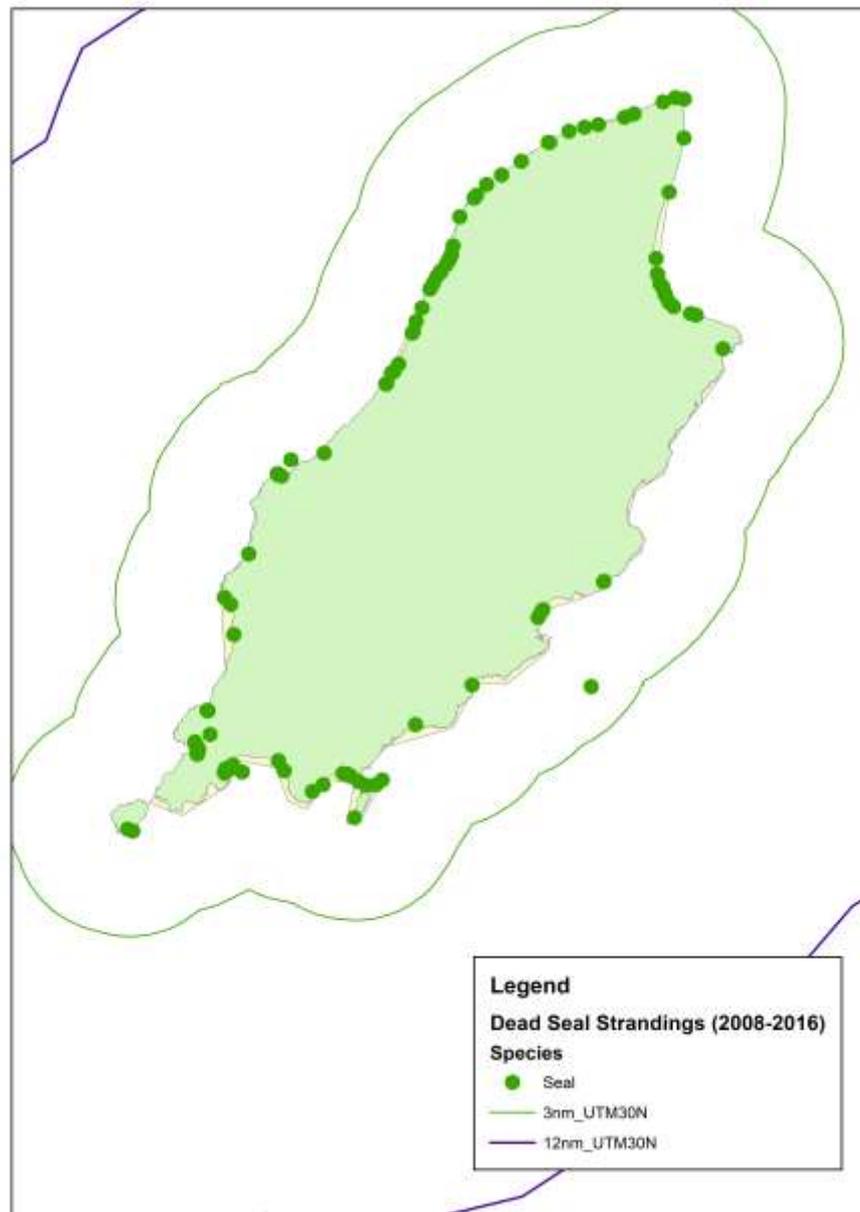


Figure 6: Locations of dead stranded seals recorded by DEFA between 2008 and 2016.

Data availability

There is currently no single source for the information relating to seals in Manx waters although all relevant research and conservation organisations are members of the Manx Biological Recording Partnership and are willing to share information.

For more information about the Manx Biological Recording Partnership please refer to: www.manxbiodiversity.org.

Table 2. Example sources of local baseline information.

Source of Information	Examples of available information
Department of Environment, Food and Agriculture – Fisheries	Marine Strandings information. Data from 2004 to current, in collaboration with Manx Wildlife Trust and other local volunteers. Ad hoc strandings information prior to 2005. Peters (2007) study of seal disturbance at The Sound. Travers (2005) study of conservation status of seals and other species.
Manx Birdlife	Non-avian surveys – 1998-2005, monthly seal survey data 2006-7 and 2007-8.
Manx Wildlife Trust	Marine strandings information. Conducting surveys from 2013 to 2017. The Calf of Man Annual Reports (MNH/MWT) have documented grey seal numbers since the 1950s and information from these observations require spatial and temporal analysis. Public sightings scheme from 2015 to current.
Manx National Heritage (MNH)	The Calf of Man Bird Observatory lists observations since at least 1998, which includes seal counts. Warden observations/seal counts (1950-1952) – Duncan (1952).
ManxSPCA	Records of live seal pup strandings, releases and survival.
Port Erin Marine Laboratory	An assortment of documents, publications and journals including student theses, were retained by DEFA and MNH on the closure of the marine laboratory in 2006. e.g. Graner (1994) study of grey seal photo-identification. Historic data and references within the annual reports of the Port Erin Marine Laboratory e.g. Farmer and Roberts (1971).

Although items are identified and listed below they may not yet be available for the Manx Marine Environmental Assessment, and the data itself may not yet be available for local use. Information may not yet be available to third parties.

Table 3. Example sources of information on seals in the wider Irish Sea.

Source of Information	Examples of available information
UK – Department of Energy and Climate Change	UK - Strategic Environmental Assessment – SEA No. 6 (Irish Sea, Hammond <i>et al.</i> 2005) includes: Modelled at-sea usage for grey seals and predicted at-sea usage. DECC Offshore Energy SEA: URL: http://www.offshore-sea.org.uk/site/scripts/consultation_download_info.php?downloadID=253
Countryside Council for Wales	Atlas of the Marine mammals of Wales (Baines and Evans 2009 and 2012): http://www.ccg.gov.uk/landscape--wildlife/managing-land-and-sea/marine-mammal-atlas.aspx
JNCC	Protocol for minimising the risk of disturbance and injury to marine mammals from piling noise. See JNCC (2010).
Sea Mammal Research Unit (SMRU), University of St Andrews, UK	Satellite Telemetry data from pinniped tagging programmes. Not specific for Manx waters although tagged seals found to visit Manx waters. - http://www.smru.st-andrews.ac.uk/default.aspx Seal at-sea distribution, movements and behaviour. March 2014. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/346304/OESEA2_SMRU_Seal_distribution_and_behaviour.pdf
Irish Whale and Dolphin Group	Sightings reports and other reports: http://www.iwdg.ie/index.php
Special Committee on Seals UK (SCOS)	Reports – scientific advice documents to UK Government including abundance estimates. http://www.smru.st-andrews.ac.uk/pageset.aspx?psr=411
Crown Estate	Aerial survey data. Marine mammal sightings recorded during bird survey work. Commissioned survey 2009 as part of the Round 3 Offshore Wind Farm (OWF) enabling actions. http://www.thecrownestate.co.uk/energy/case-studies/enabling-actions/
Marine Scotland	http://www.scotland.gov.uk/Topics/marine/marine-environment/species/19887/20814
Other industry in the Irish Sea – external to Manx waters:	Survey reports and findings from assessments to inform Environmental Impact Assessments and post construction Monitoring. -Visual sightings survey -Acoustic Survey -Technical reports e.g. http://www.offshore-wind.de/fileadmin/offshore/documents/Naturschutz/Voegel/Effects_of_offshore_wind_farm_noise_on_marine-mammals_and_fish.pdf e.g. DONG Energy (2010a) and (2010b).
Bardsey Grey Seal Photo-ID Surveys	Satellite telemetry data – one seal came into Manx waters. See: Hammond et al (2005)
Other: Strangford Lough Survey	Satellite Telemetry Data – including seals visiting Manx waters. http://www.snh.org.uk/pdfs/sgp/A303239.pdf

Knowledge Gaps

Limited information is available on the population status of seals in Manx waters and how they relate to the wider Irish Sea population. There is a lack of long term systematic survey work or monitoring (other than on the Calf) to estimate seal distributions and use of Manx territorial waters (spatial and temporal). There is also a lack of information on foraging locations or diet patterns of seals within Manx waters.

There is a lack of reliable information on the effects of current pollution, environmental changes or current industries (e.g. fishery interactions).

Initial considerations for future marine development

For an initial summary of current risks and the potential effects of any future development in Manx waters, the reader is directed towards the Cetacean chapter 3.5 as many of the risks and suggested mitigation measures are broadly the same for all marine mammals at a general level. Although the nature, location and scope of any future development is currently unknown a few potential effects for future discussions may include the following:

- Direct injury by collision or other direct impact.
- Piling or percussive underwater noise.
- Disturbance to breeding and haul-out sites.
- Behavioural effects.
- Noise impacts
 - prey species
 - hearing

Exploratory prospecting for offshore oil has been undertaken previously in Manx waters, but production has not occurred. A new round of hydrocarbon exploration is expected early 2018. The impacts of oil-related developments on marine mammals has been reviewed in several peer reviewed publications elsewhere (not Manx waters). Seals are susceptible to contamination from spilled oil, but such occurrences are expected to be rare if appropriate mitigation is undertaken to avoid risks.

Changes in fishery activities may have a positive or adverse affect on seal populations depending on the nature, scope and locations of any proposed changes. Changes in fishing practices may affect rates of accidental capture, food supplies including sprats, herring, and sandeels.

Any future developments of sea cage farming or other aquaculture would require appropriate assessment to assess effects on seals to minimise conflicts.

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