Orca Watch: 2023 Report

Orca Watch 2023 Volunteer Observers onboard John o'Groats Ferry. Photo credit: J. McRobbie.

- **223 hours of observation**
- **335 sightings reported**
- **1369 individual animals**
- **7 cetacean species identified**
- **2 seal species**
- **124 surveys**
- **Sightings rate of 1.51 sighting per hour**

Report prepared by:
Claudia Afeltra, Communications and Outreach Officer, Sea Watch Foundation.

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Executive Summary

The region of North Scotland continues to be a hot spot for orca sightings, as observed from both land and sea. This year, as in previous years, the iconic orca was the main focus of attention. Members of the public captured numerous live reports, photos and videos of orca pods travelling throughout the region. Two pods were successfully identified using individually recognisable features captured in photographs.

Over the course of the week, total of 262 sightings of at least seven marine mammal species were recorded, comprising of a total of 1, 043 individuals. These species included orcas, harbour porpoises, Risso's dolphins, bottlenose dolphins, minke whales, grey seals and harbour seals. Approximately 338 hours of dedicated survey were recorded from land watches, the John O'Groats Ferry and other vessels.

A total of 56 orca sightings were recorded during the week, with two individual pods identified - the #65s and the #169s. Orca group sizes ranged from lone individuals to large groups of 15. During the week three young orca calves were observed, one of which was with a pod of three and the other two with a pod of eight. This information adds to our understanding of the distribution and behaviour of the charismatic marine mammals in this region.

1 Results

1.1 Effort

In 2023, 55 official Orca Watch volunteer observers and other casual volunteers spent a total of 223 hours collecting effort-related data (including information on environmental parameters collected at regular intervals throughout each watch) around Caithness and North Sutherland, Orkney and Shetland. 88 land surveys and 36 boat surveys were conducted, the locations of these watches can be seen in *figure 1.*

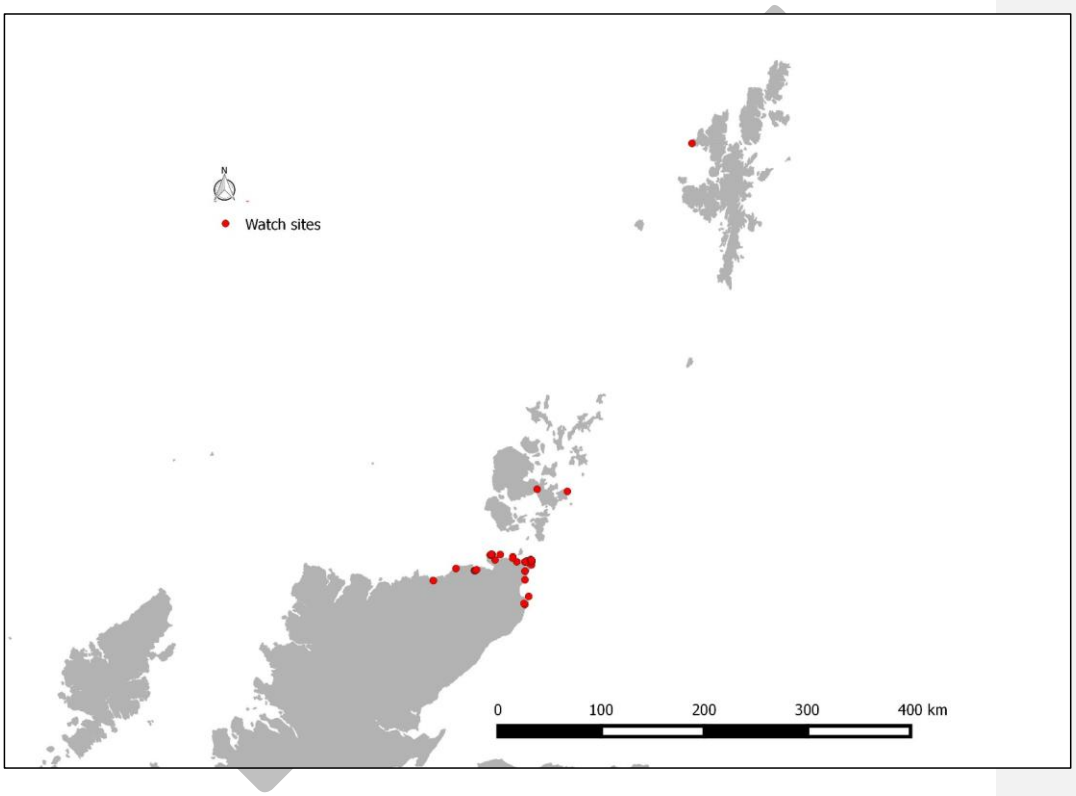


Figure 1: Land and boat survey locations for 2023 (n=124)

124 watches were conducted with an average of 1hr47min of observation recorded for each watch.

The number of watches and the number of hours of observation around Caithness, Sutherland, Orkney and Shetland varied widely. The highest amount of effort hours were recorded during land- based watches at Duncansby Stacks, Caithness (48hrs) followed by boat-based surveys on the John o' Groats Ferry (47hrs), then Duncansby Head, Caithness (43hrs), then Dunnet Head, Caithness (42hrs). *Figure 2* indicates the number of watches per site along with the hours of observation.

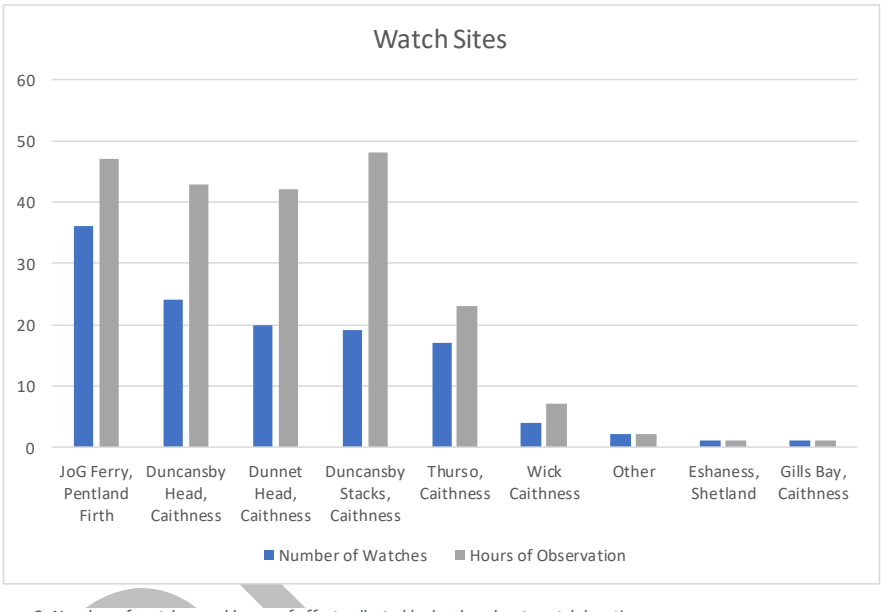


Figure 2: Number of watches and hours of effort collected by land- or boat-watch locations.

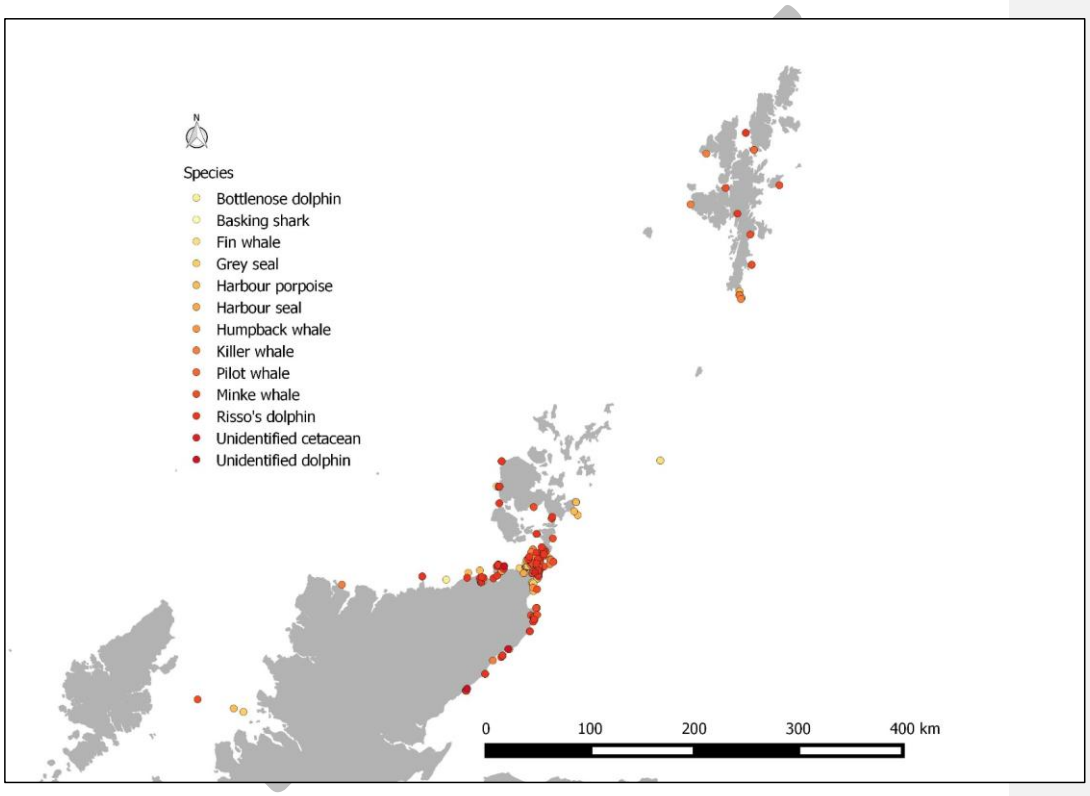
Official volunteers conducting a land-watch
Photo credit: C. Afeltra.

Official volunteer conducting a boat survey
Photo credit: C. Afeltra.

1.2 Sightings

334 sightings of marine mammals and 1 sighting of a basking shark, totalling 1369 individual animals were reported in 2023. The distribution of the animals sighted can be seen in *Figure 3*.

With regards to the distribution of marine mammal sightings in Caithness, Sutherland, Orkney and Shetland, this depends on various factors: the effort spent by each observer, the species distribution, and their sightability (how easily the animals can be detected).



Among the cetacean species observed, the most frequently sighted were minke whale (n=79), Risso's dolphin (n=69), and harbour porpoise (n=59). Following these, orca (n=25). fin whale, humpback whale, bottlenose dolphin, and long-finned pilot whale were each encountered once. Additionally, seals were commonly observed, with a high number of sightings for grey seals (n=79) and harbour/common seals (n=15). A single sighting of a basking shark was also recorded.

Species	**Number of Sightings**	**Percentage**	**Number of Individuals**	**Percentage**
Minke whale	79	23.58	85	6.21
Risso's dolphin	69	20.60	414	30.24
Harbour porpoise	59	17.61	102	7.45
Orca	25	7.46	55	4.02
Fin whale	1	0.30	2	0.15
Humpback whale	1	0.30	1	0.07
Bottlenose dolphin	1	0.30	17	1.24
Long-finned pilot whale	1	0.30	1	0.07
Grey seal	79	23.58	590	43.10
Harbour/ common seal	15	4.48	91	6.65
Basking shark	1	0.30	1	0.07
Unknown dolphin	3	0.90	9	0.66
Unknown cetacean	1	0.30	1	0.07
Total	335	100	1369	100

The distribution of cetacean species observed during Orca Watch 2023 can be seen in *Figures 4-9.*

Harbour porpoise

There were 55 sightings of harbour porpoise with 102 individuals seen. The porpoises were seen most frequently on the ferry from John O'Groats to Orkney. While most of the sightings were off mainland Scotland and around Orkney, there were three sightings of harbour porpoises off Shetland.

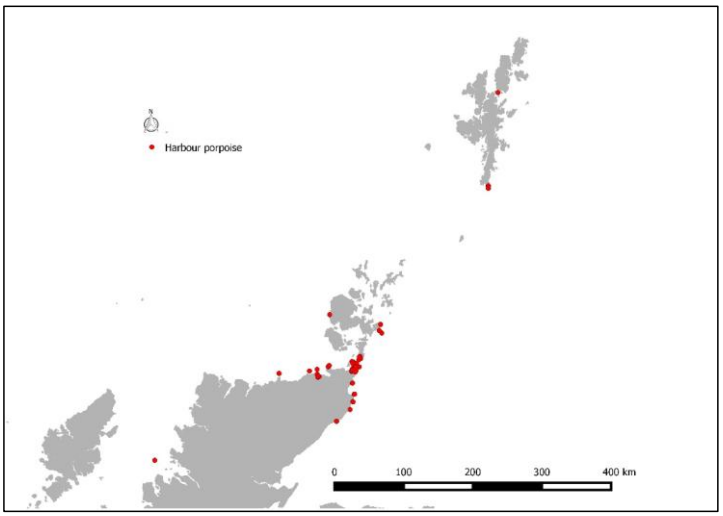


Figure 4: Harbour porpoise sightings 2023 (n=59)

Bottlenose dolphin

There was only one sightings of bottlenose dolphins during Orca Watch. During this sighting off Thurso, Caithness, seventeen individuals were seen.

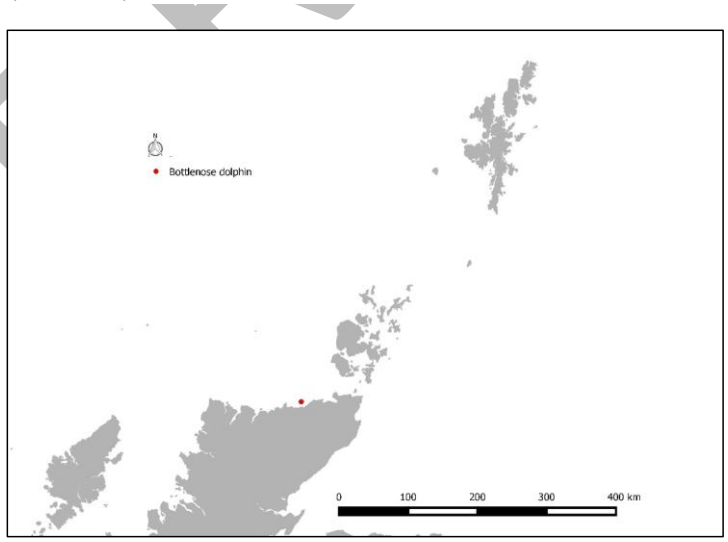
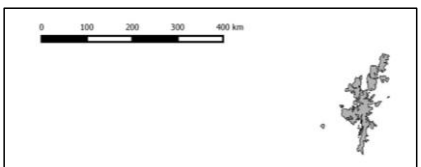


Figure 3: Bottlenose dolphin sightings 2023 (n=1)



Risso's dolphin

There were 69 sightings of Risso's dolphins with 414 individuals seen. The distribution of the Risso's dolphins was mostly around the north coast of mainland Scotland with two sightings off Shetland and eight off Orkney. Risso's dolphins were most frequently seen from the JOG ferry.

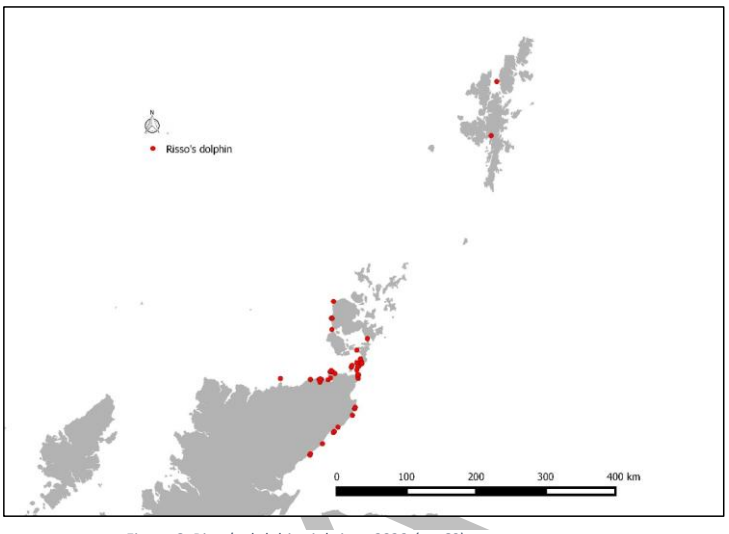


Figure 6: Risso's dolphin sightings 2023 (n= 69)

Killer whale

Killer whales were recorded 25 times with 55 individuals sighted. This year the killer whales were seen most frequently from land from Shetland and Orkney. They were seen from the John O'Groats ferry on two occasions but were predominantly seen from land when sighted from mainland Scotland.

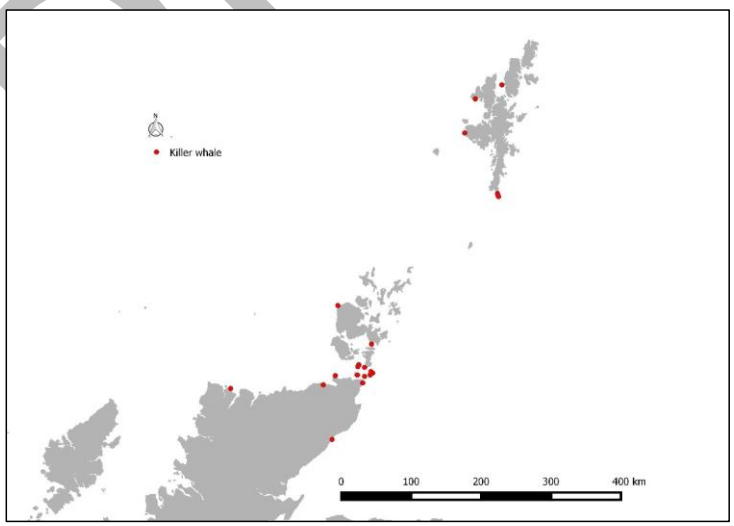


Figure 7: Killer whale sightings 2023 (n=25)

Minke whale

Minke whales were the most commonly seen cetacean species during Orca Watch 2023, they were seen 79 times with 85 individuals spotted. While there were four sightings of minke whales off Shetland, majority of the minke whales were seen between Orkney and mainland Scotland.

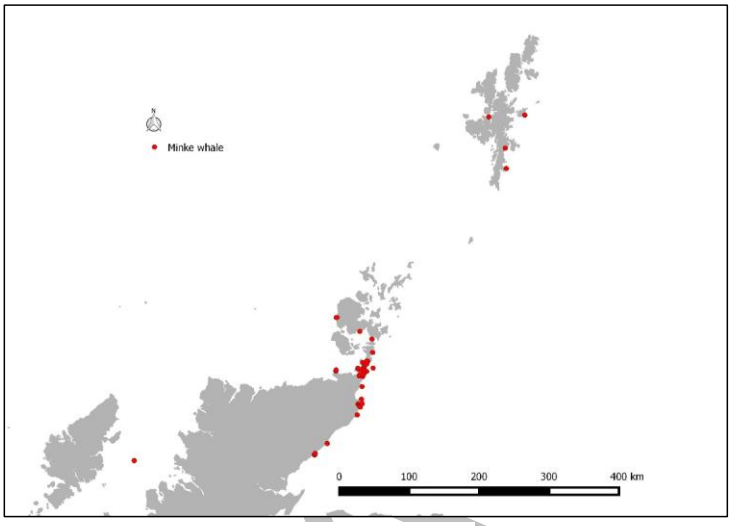


Figure 6: Minke whale sightings 2023 (n=79)

Fin whale, humpback whale and long-finned pilot whale

One fin whale was seen offshore Orkney and could be spotted from land. There were two humpback whale sightings, both off north mainland Scotland, while it cannot be confirmed, it is likely that these were sightings of the same animal. There was one sightings of a long-finned pilot whale from Shetland.

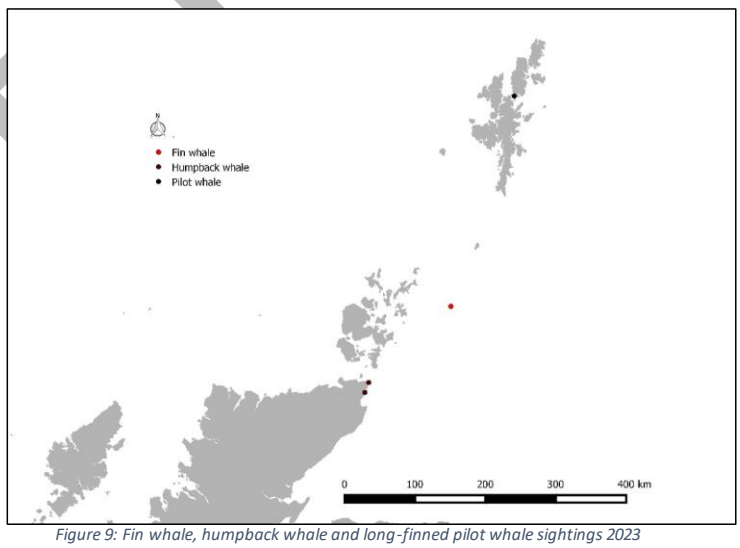


Figure 9: Fin whale, humpback whale and long-finned pilot whale sightings 2023

2 Outreach

2.1 Evening of Talks

As is now traditional, on an evening during the week, orca and wildlife themed talks were presented at the Pulteney People's Centre (a local community centre) in Wick. In 2023, the Evening of Talks was only presented in person.

The evening featured:

- Juliet Maxted- Overview of the 2022 Orca Watch Report
- Emma Naeve-Webb - OMMRI Responsible Watching
- Steve Truluck - The Power of Orca Watching
- Milly Revill Hayward - Local Bird Diversity
- Julia Sutherland - EcoPreds

The in-person event also allowed Orca Watchers to meet each other, buy souvenirs etc, and attracted some locals who came in to find out all about what we were up to.

Steve Truluck at the Evening of Talks.
Photo credit: C. Afeltra.

2.2 The Orca Watch base

The library at the John O'Groats Inn served as a permanent base throughout the event, allowing all visitors to find out what was going on, as well as meeting the team and discovering more about the work of Sea Watch Foundation. Additionally, it acted as a focal point for the official Orca Watch volunteer observers to keep in contact with the team and each other. A selection of orca-themed merchandise was also available to buy from the base. We were grateful for and humbled by the generosity of visitors who purchased merchandise.

Inside the Orca Watch base. Photo credit: C. Afeltra.

The base from the sea.
Photo credit: HM Parkinson.

3 How effort and sightings data are used

3.1 Sightings data

Sightings are important because they give us information about where and when species occur, from which we can identify important areas and habitats, as well as determine changes in their status and distribution. Such knowledge helps provide better informed conservation measures. The sightings are incorporated into the SWF national database. More than 3,500 people have contributed sightings to this database that currently comprises over 100,000 records, making it one of the largest and longest-running sightings schemes in the world.

Sightings can be plotted, and maps can also be used on a finer scale at a regional level, in order to identify specific localities important for a particular species, and how these may vary seasonally or yearly.

Species identification and group size estimation can be challenging so training is necessary to make sure that volunteers become familiar with how to recognise and count whales, dolphins and porpoises in the wild. A possible source of bias that exists is how watches are undertaken, whether additional optics such as spotting scopes are used to search for animals, how behaviour is described, and environmental conditions such as sea state assessed.

This year we sought to reduce these biases by conducting two online training sessions before the event for the official Orca Watch volunteer observers. The aim of these sessions was to allow observers to practice their cetacean ID skills and counting skills, as well as taking them through the protocol for conducting watches so that they are standardised. We also organised our official volunteer observers into teams and allocated them watches of a uniform duration. Finally, each team had at least one experienced observer in it.

3.2 Effort data

The amount of time in the case of land watches from a particular site or the distance travelled on a boat survey, are extremely important metrics for assessing sighting rates. Obviously, the longer one watches or greater the area covered, the more chance there is of having a cetacean encounter. For this reason, we favour recording observation effort (and environmental conditions) even if watching has revealed no sightings.

Besides seasonal changes, systematic observations from both land and offshore can reveal longer-term trends in abundance of a species. Although difficult to generalize using information from a single site, when a wider network of sites is covered providing information on a regular basis, it becomes possible to draw more general conclusions about status changes, bearing in mind that if those sites are all coastal, one is only seeing the animals inhabiting that coastal zone. This is the reason why it is important to also monitor populations further offshore, with survey vessels.

3.3 How the results inform and influence conservation measures

The collation of information on abundance and distribution of whales, dolphins and porpoises is valuable in many ways. Besides increasing our general knowledge of the cetacean fauna that inhabits the seas around the British Isles, it can inform us of important areas and times of year for particular species, enabling better decision making on the risk of harm to local populations from certain human activities. It may also indicate where dedicated research should be directed or draw attention to possible status changes on a wider basis.

The Sea Watch Foundation provides information on cetaceans to a variety of governmental and non-governmental organisations in the UK, including the Department for the Environment, Food and Rural Affairs (DEFRA), the Joint Nature Conservation Committee (JNCC, the Government's advisers on nature conservation), the national statutory conservation agencies (Natural England, Natural Resources Wales, and NatureScot), the Environment Agency, Wildlife Trusts, World Wide Fund for Nature (WWF), Marine Conservation Society, International Fund for Animal Welfare, RSPCA, Greenpeace UK, Whale and Dolphin Conservation Society, Institute of Zoology, London Natural History Museum, and British Divers Marine Life Rescue, as well as to a wide spectrum of other users of the marine environment from recreation, commerce and industry.

Sea Watch, and its predecessor the Mammal Society Cetacean Group, contributed to the creation of the most important European Legislation to date for the protection of cetaceans - the Agreement on the Conservation of Small Cetaceans in the Baltic and North Seas (ASCOBANS), and had input to the UK Wildlife and Countryside Act, EU Habitats and Species Directive, and UK Biodiversity Action Plan for Cetaceans. The charity currently provides information for Environmental Impact Assessments (e.g. for port construction, offshore renewable energy developments, seismic activities) and offers briefs to the media publicising its work and informing on matters relating to cetacean conservation. Training aids, survey and monitoring methodologies and computer software developed by Sea Watch have been made

available for use worldwide. Cetacean Status Reviews using both casual and effort-related sightings data have been commissioned by all the UK statutory conservation and environmental agencies., as well as intergovernmental bodies such as the European Commission and United Nations Environmental Programme.

Sea Watch contributes to the Joint Cetacean Data Programme (JCDP), established by the Joint Nature Conservation Committee, and previously worked with them to publish a European Cetacean Distribution Atlas (Reid, J.B., Evans, P.G.H. and Northridge, S.P. 2003 Atlas of Cetacean Distribution in North-West European Waters. Joint Nature Conservation Committee, Peterborough 76pp) and more recently, produced maps of distribution for all the cetacean and seabird species occurring in NW Europe, as part of the NERC-Defra funded Marine Ecosystems Research Programme (Waggitt, J.J., Evans, P.G.H. *et al*. 2020. Distribution maps of cetacean and seabird populations in the North-East Atlantic. *Journal of Applied Ecology*, 57: 253-269. doi: 10.1111/1365-2664.13525).

Sea Watch staff have participated in the following committees and specialist groups: UNEP/ASCOBANS Advisory Committee, European Cetacean Society Advisory Committee, ICES Working Group on Marine Mammal Ecology, ICES Working Group on Bycatch of Protected Species, UK Wildlife and Countryside Link Groups, BBC Wildlife Advisory Panel, the External Advisory Panel of Association of Oil and Gas Producers, and Advisory Panel of the World Society for the Protection of Animals (WSPA).

4 Acknowledgements

Orca Watch 2023 would not have been possible without the generous participation of a group of unpaid volunteers, in particular (in alphabetical order): Harry Clark, Karen Hall, Hugh Harrop, Christy Judd, Juliet Maxted, Emma Neave-Webb and her colleagues at OMMRI, Hannah Parkinson, Steve Truluck and Connor Williams, plus all the Official Volunteer Observers. Many other citizen scientists watched from various locations and vessels, and reported their sightings to us, for which we are very grateful.

The following organisations and businesses also generously supported Orca Watch 2023: John O'Groats Ferries, RSPB wardens at Marwick Head, Orkney Marine Mammal Research Initiative, HighLife Highland Countryside Rangers, The Cabin at John O'Groats, NatureScot, Shetland Wildlife, John O'Groats Development Trust, Dunnet and Canisbay Community Council, and our accommodation partners - The Crofter's Snug, The Highland Haven, Northern Sands Hotel, Pentland Lodge House, Seaview Hotel and Windhaven Cafe, B&B and camping.

Commented [ca1]: Were these all actually involved?

Special thanks go to Zoe at Together Travel Central Office, and Steph and her team at the John O'Groat's Inn and Lodges, not only for supporting us as an accommodation partner, but also for allowing us to take over the library at the Inn as our Orca Watch base. And to the Pulteney Centre, Wick, for their support with the Evening of Talks.

And thanks are also due to the staff at Sea Watch - our director Prof. Peter Evans, Sightings Officer Simone Evans, Monitoring Officer Katrin Lohrengel, Research Assistant Thomas Jones and the period 2 interns, for their help and support behind the scenes, especially in collating and entering the data.