Orca Watch: 2022 Report

Orca Watch 2022 Volunteer Observers getting together to celebrate a successful week. Photo credit: N Parkinson.

- **338 hours of observation**
- **262 sightings reported**
- **1043 individual animals**
- **5 cetacean species identified plus 11 sightings of unidentified cetaceans**
- **2 seal species**
- **195 surveys**
- **UK sightings rate of 3.08 animals per hour of watching**

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Results supplied by:
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2 May 2023

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.

Watching from the John o'Groats ferry. Photo credit: SWF.

1 Results

1.1 Effort

In 2022, 45 official Orca Watch volunteer observers around Caithness and North Sutherland, Orkney and Shetland, and other casual volunteers spent a total of 338 hours collecting effort-related data (including information on environmental parameters collected at regular intervals throughout each watch), stationed at 195 land and conducting 68 boat surveys. (Figure 1).

Figure 1: Land and boat survey locations for 2022 (n=195)

The amount of effort hours spent collecting data around Caithness, Sutherland, Orkney and Shetland varied widely. The highest amount of effort hours was spent on the John o' Groats Ferry (54 hrs), followed by Duncansby Head, Caithness where volunteers conducted land-watch surveys (34 hrs), then Dunnet Head, Caithness (32 hrs) and Duncansby Stacks, Caithness (27 hrs). (See Figure 2).

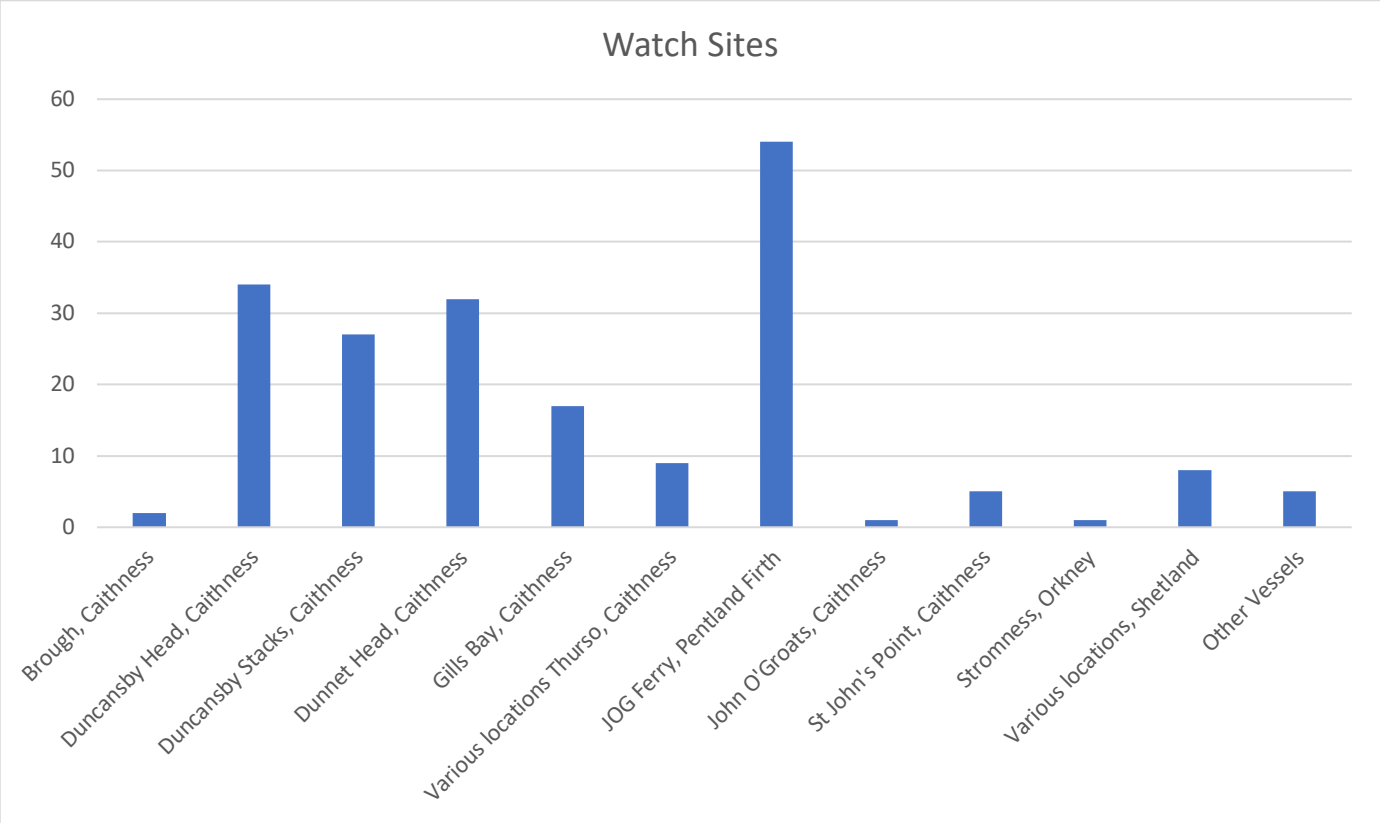


Figure 2: Number of hours of effort collected by land- or boat-watch locations.

Orca Watcher Lindsey Moore.
Photo credit: The Moore Family.

Some of the coastline of the Orca Watch area.
Photo credit: Clare Boardman.

Orca Watchers at Dunnet Head
Photo credit: SWF.

1.2 Sightings

62 sightings of marine mammals totalling 1043 individual animals were reported in 2022

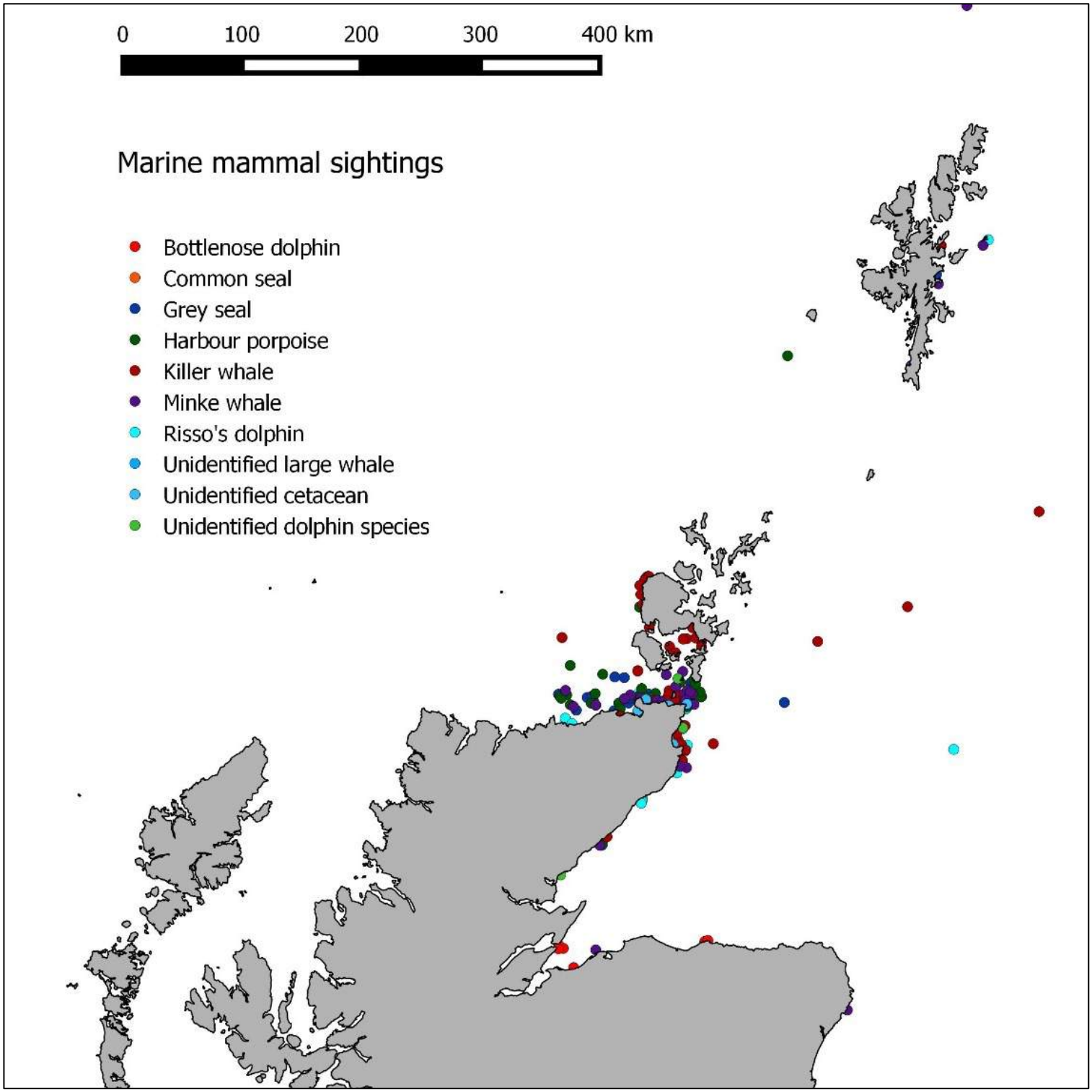


Figure 3: Sightings of marine mammal species during 2022 (n=262)

(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).

The marine mammals with the greatest number of sightings were the Atlantic grey seal (n=69), killer whale (n=56), and harbour porpoise (n=55) followed by minke whale (n=36) and Risso's dolphin (n=26) whilst there were sightings of bottlenose dolphin and one of common (harbour) seal.

Species	No. sightings	Percentage	No. Individuals	Percentage
Bottlenose Dolphin	8	3.05	63	6.04
Grey Seal	69	26.34	517	49.57
Common Seal	1	0.38	1	0.10
Harbour Porpoise	55	20.99	92	8.82
Killer whale	56	21.37	210	20.13
Minke whale	36	13.74	44	4.22
Risso's dolphin	26	9.92	86	8.25
Undetermined dolphin	3	1.15	10	0.96
Undetermined large whale	1	0.38	2	0.19
Undetermined cetacean	7	2.67	18	1.73
Total	262	100%	1043	100%

Table 1: Quantitative description of sightings per species in 2022

Minke whale seen during Orca Watch 2022. Photo credit: SWF.

The distribution of cetacean species observed during Orca Watch 2022 can be seen in *Figures 4-8*

Harbour porpoise

There were 55 sightings of harbour porpoise with 92 individuals seen. The distribution of the harbour porpoise sightings was predominantly around Duncansby Head with one sighting off Shetland. Most of the harbour porpoise sightings were recorded from land.

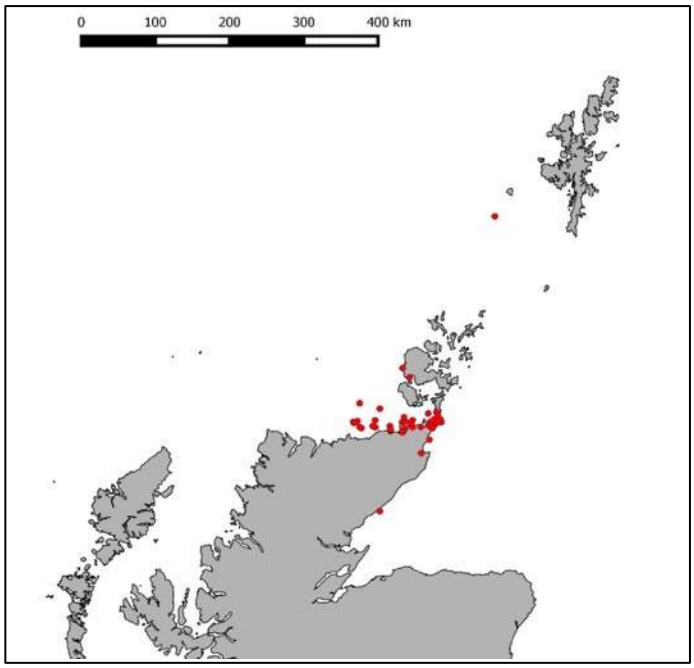


Figure 4: Harbour porpoise sightings 2022 (n=55)

Bottlenose dolphin

There were eight sightings of bottlenose dolphins with 63 individuals seen. The majority of these sightings occurred in Moray, Buckie and Cromarty, and Tain, with one sighting further outside of the Orca Watch area, off Portknockie, Moray.

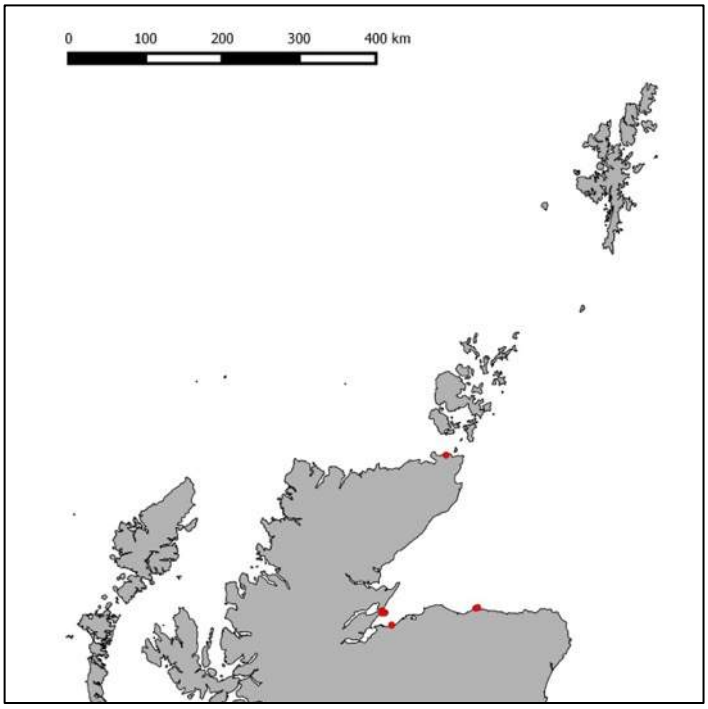


Figure 4: Bottlenose dolphin sightings 2022 (n=8)

Risso's dolphin

There were 26 sightings of Risso's dolphins with 86 individuals seen. The distribution of the Risso's dolphins was mostly around the north coast of Scotland with one sighting off Shetland, another off Orkney and one sighting seen a few miles offshore.

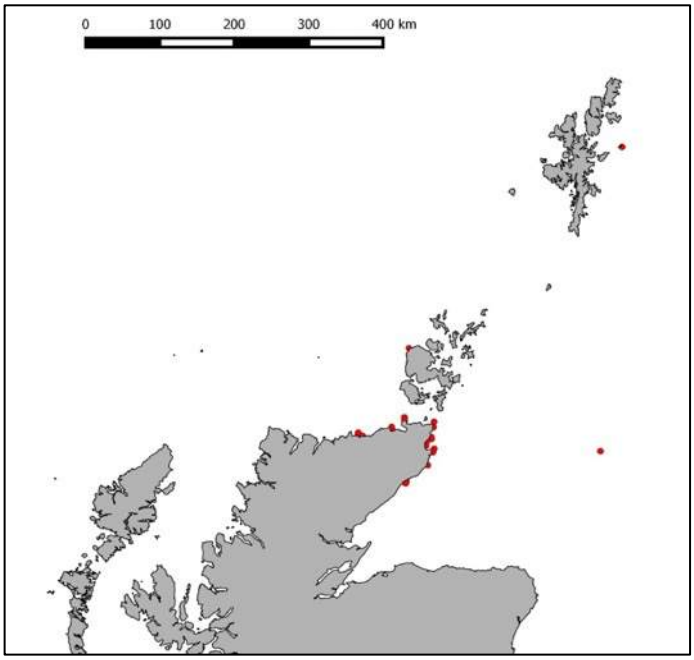


Figure 6: Risso's dolphin sightings 2022 (n= 26)

Killer whale

Killer whales were the most frequently spotted cetacean during Orca Watch with 56 sightings and 210 individuals seen. This year there was only one sighting of killer whale off Shetland and majority of the sightings were seen off Orkney, John o'Groats and Caithness. The unsettled and rough weather on Shetland during Orca Watch week is likely to be the main reason for the atypical lack of sightings around Shetland.

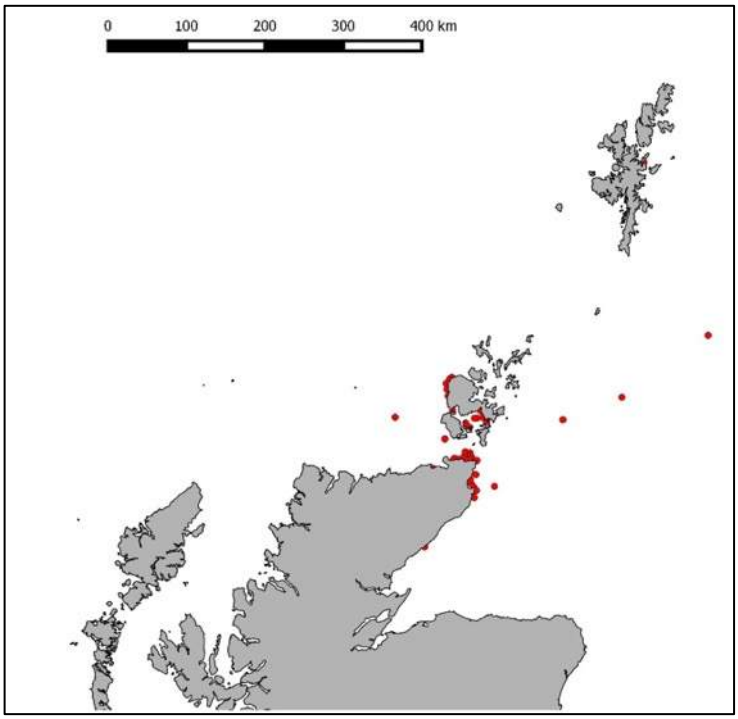


Figure 7: Killer whale sightings 2022 (n=56)

Orca passing by Duncansby Stacks during Orca Watch 2022. Photo credit: Allan Russell.

Minke whale

Minke whales were seen 36 times with 44 individuals spotted. While there were three sightings of minke whales off Shetland, majority of the minke whales were seen between Orkney and mainland Scotland.

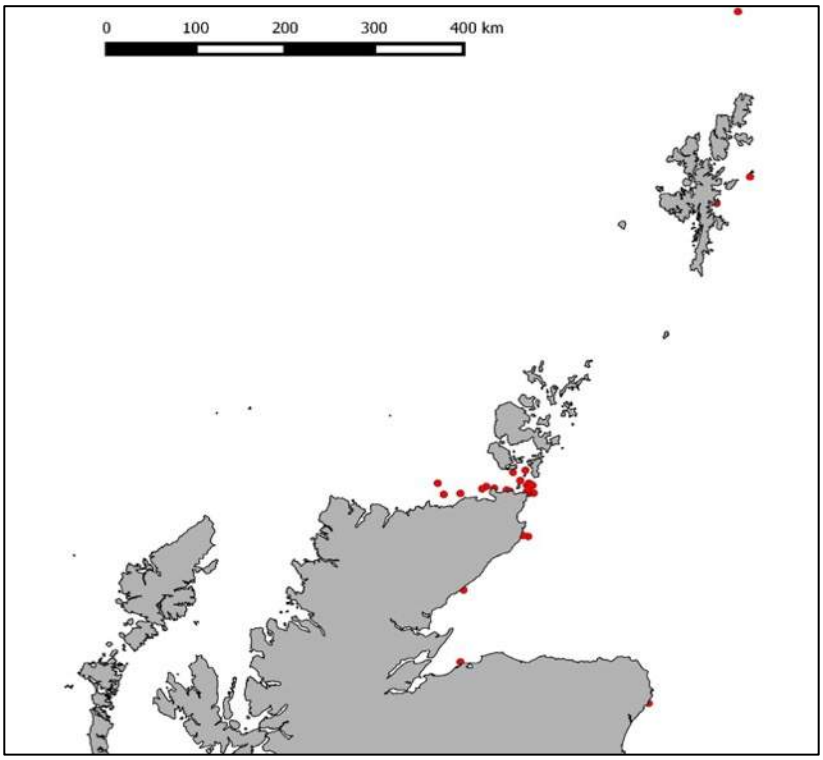


Figure 7: Minke whale sightings 2022 (n=36)

2 Outreach

2.1 School visits

Katie Baker, the Communications and Outreach Officer, undertook two school visits during Orca Watch, at Halkirk Primary and Crossroads Primary schools. She delivered a talk on identifying cetaceans, the importance of Orca Watch, and how she got into this career sector. Activity sheets were also left for after the session.

With the children at Halkirk Primary School.
Photo credit: K Baker.

Visiting Crossroads Primary School.
Photo credit: K Baker.

2.2 Evening of Talks

As is now traditional, on the first evening, orca-themed talks were presented at the Pulteney People's Centre (a local community centre) in Wick. Drawing on the success of our online programming in 2021, the event was 'blended', with an in-person audience and livestreamed to a home audience. This also allowed for a wider selection of speakers dialling in to the event.

At the evening of talks.
Photo credit: K Baker.

The evening featured:

- a presentation from SWF director, Prof. Peter Evans, on the importance of Orca Watch
- a chat with OMMRI about Orca Watch on Orkney
- a recorded panel discussion between some of the people behind the Scottish Killer Whale Photo ID project, talking about recent sightings, including newborn calves this year
- a presentation from Julia Sutherland on her work with 'EcoPreds'
- a presentation by Dr Chloe Robinson about her journey from Orca Watch to Ocean Wise
- the world première of "Truluck" - a documentary film following the life-changing events that led window cleaner Steve Truluck to discover his passion for helping others fulfil their dreams of seeing orcas.

The recording of the event, minus the documentary, can still be viewed here, on the Sea Watch YouTube channel. The documentary film, "Truluck" , can be viewed here.

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.

2.3 Workshop

The Communications and Outreach Officer represented SWF in a workshop organised by Mapping Ocean Change Through Art, to tie in with Orca Watch.

SWF's output at the workshop. Photo credit: K Baker.

For more information about the work of Mapping Ocean Change Through Art, follow this link:

https://www.mappingoceanchange.org

2.4 Nature Walk

Our Regional Coordinator for North East Scotland, Clare Boardman, represented SWF on a walk organised by the Highland Rangers to look out for cetaceans. The group was thrilled to spot a pod of Risso's dolphins.

The Highlife Highland Countryside Ranger addressing the watchers. Photo credit: C Boardman.

One of the many Risso's dolphins spotted on the walk. Photo credit: C Boardman.

2.5 Marine Mammal Day, Orkney

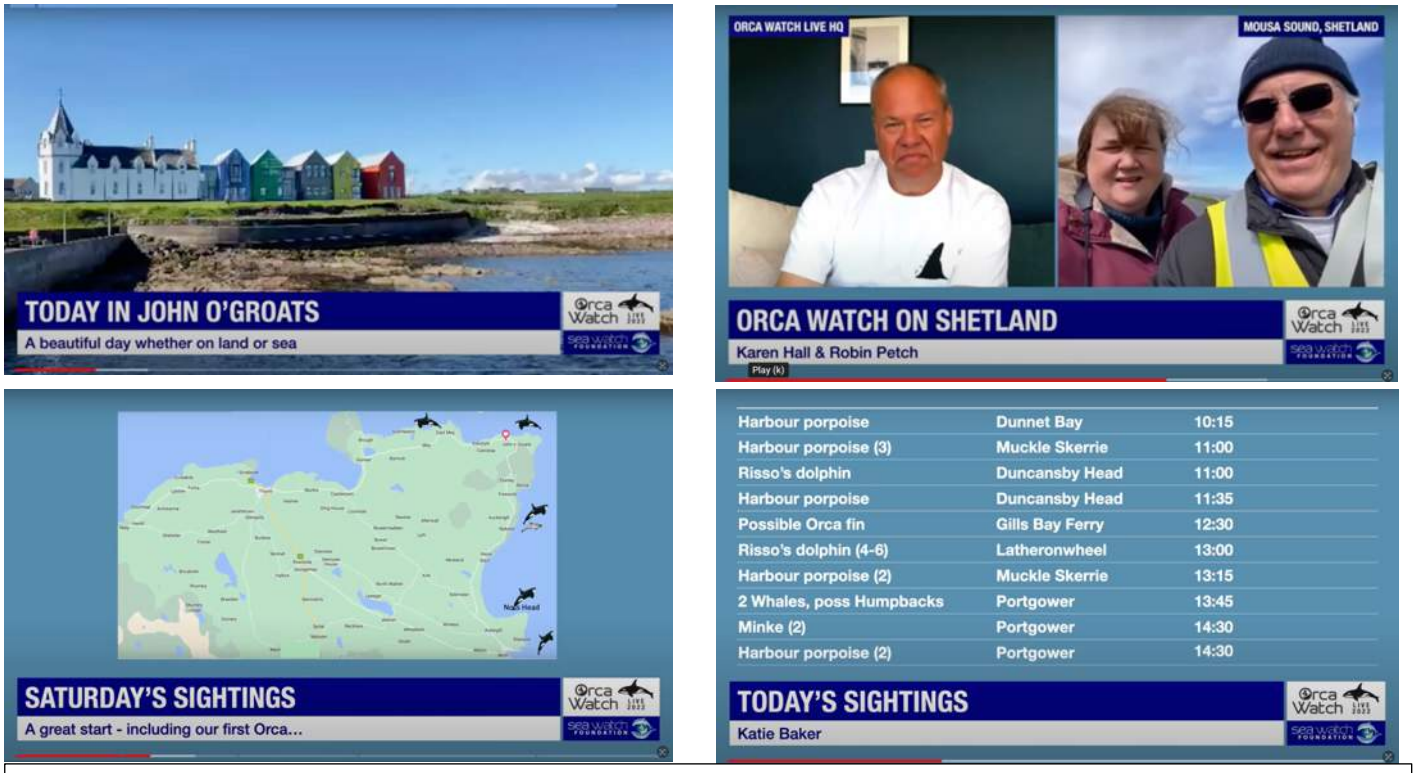
Our regional coordinator on Orkney, OMMRI, invited us to take part in the Orkney Marine Mammal Day, on the first Saturday of Orca Watch. Long-time Sea Watch supporter, Christina Worth, was in Orkney for Orca Watch and represented Sea Watch at the event.

We are grateful to Emma Neave-Webb and her colleagues at OMMRI, for the opportunity. You can find out more about OMMRI here.

Marine Mammal Day, Orkney. Photo credit: Christina Worth.

3.3 Supplemental Online Programming

Again, following the success of our online programming in 2021, the decision was taken to produce regular evening roundups of the sightings made each day for those not able to attend the event in person. These can be viewed here on the Sea Watcher YouTube channel.



Screenshots from the evening roundups. Clockwise from l-r - live interview with Shetland observers, the daily sightings table, the first day of sightings, the weather forecast. Photo credits: SWF.

3.4 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 and helped to raise c.£700 to support our future work.

Inside the Orca Watch base. Photo credit: A Boyer.

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 2022 would not have been possible without the generous participation of a group of unpaid volunteers, in particular (in alphabetical order): Clare Boardman, Anne Boyer, George Boyer, Karen Hall, Hugh Harrop, Steve Marquis, Emma Neave-Webb and her colleagues at OMMRI, Neil Parkinson, Robin Petch, Steve Truluck and Christina Worth, 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.

Thanks are also due to volunteers, Lauren Eyles and Antonia Salter, who obtained independent funding to make a promotional film at Orca Watch, showcasing Orca Watch as an example of Sea Watch Foundation's Citizen Science activities. The film can be viewed here, on the Sea Watch YouTube channel. And to Lindsey Moore and her family who made and donated a supply of wooden orca pendant necklaces for sale in the base (and back at New Quay).

The following organisations and businesses also generously supported Orca Watch 2022: 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.

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 Claudia Afeltra, Monitoring Officer Katrin Lohrengel, and the period 2 interns, for their help and support behind the scenes, especially in collating and entering the data; to Katie Baker, Communications and Outreach Officer, who supported the event up at John O'Groats, and helped to ensure we all kept on track; and to Kirsten Hintner for sourcing and supplying some birdfeeders for us to sell, made by talented craftsman and Sea Watch supporter Phil Carrigan.

Finally, a special mention to our funder for Orca Watch 2022 - Caithness and North Sutherland Fund, and to Philip Barnes, who once again was our producer of our online programming (including the livestream of the Evening of Talks) which helped bring Orca Watch to a wider, home audience.

Sunset at the end of Orca Watch 2022. Photo credit: K Baker.