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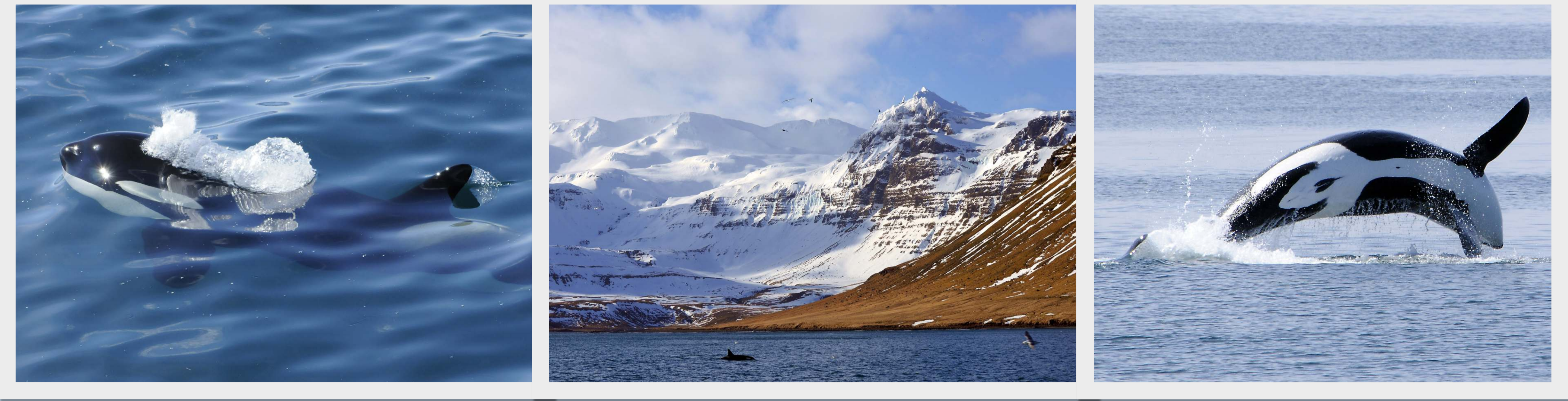
North Atlantic Killer Whale (*Orcinus orca*) Identification and Occurrence along the Snæfellsnes Peninsula



Náttúrustofa Vesturlands

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1. Introduction

Killer whales in Iceland occur in coastal herring grounds in larger aggregations at certain times of the year, whereas they can be observed opportunistically in smaller groups travelling along the Icelandic shoreline year-round. An increase in killer whale sightings along the Snæfellsnes Peninsula in recent years yielded unique opportunities for a study of the population.

2. Methods

Data collection commenced in January 2014 and is ongoing. Photo-identification (fig. 1) and non-invasive GPS location documenting is obtained with the aid of whale watching vessels and by observations from land. Data is collected year-round in order to gather information on as many individual killer whales as possible moving through the coastal waters of the Snæfellsnes Peninsula. About 120.000 identification images have been analysed, of which the best available left- and right-hand side photographs for each individual killer whale documented in Breiðafjörður Bay have been chosen for a photo-identification catalogue (published in April 2017) [2].

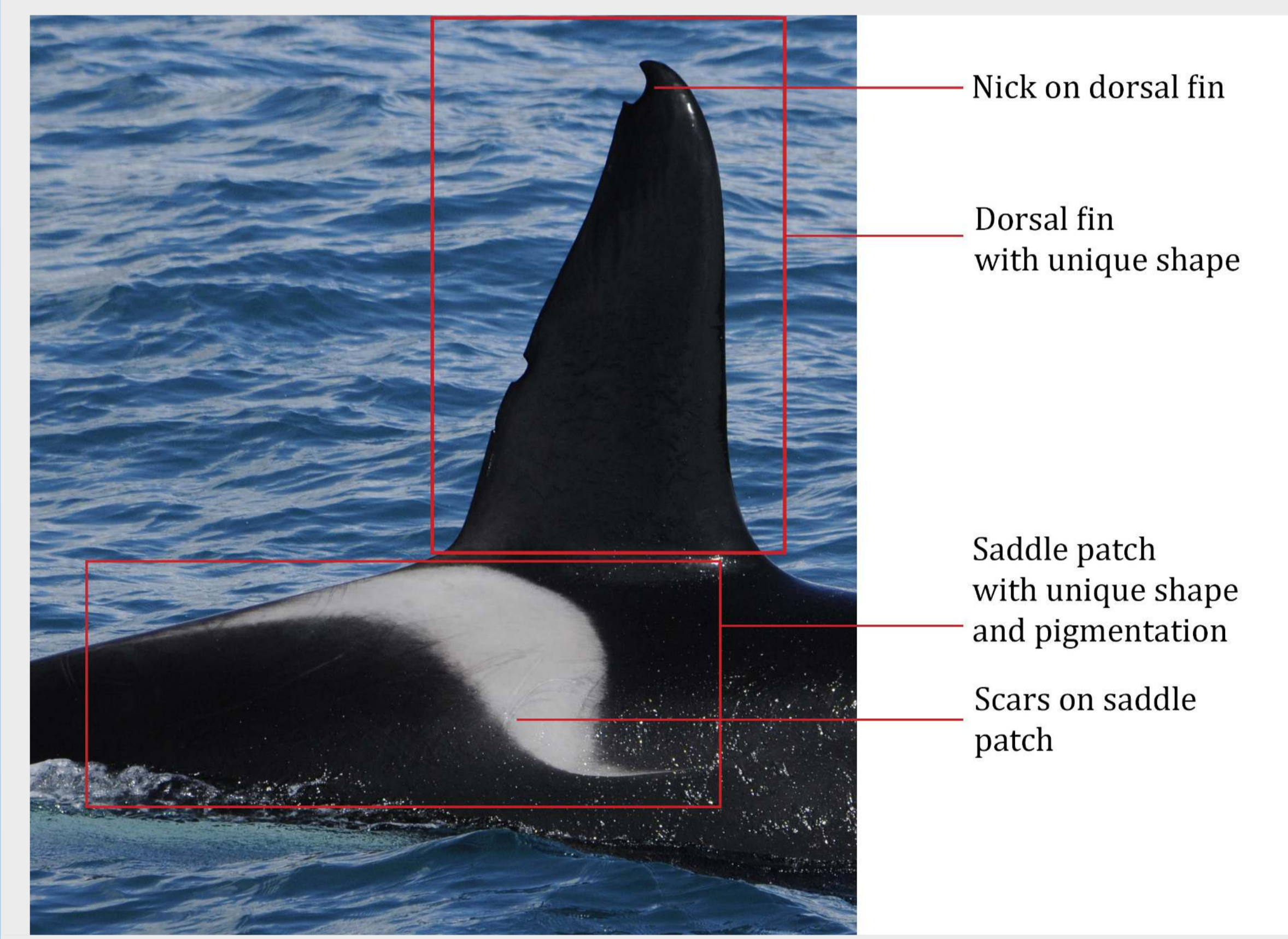


Fig. 1. Right-hand side identification photograph of individual SN021. The features used for photo-identification are the shape and scarring of the dorsal fin, as well as shape, pigmentation and scarring patterns of the saddle patch (brighter skin area below and behind the dorsal fin). The identification technique was developed in 1982 by Michael A. Bigg [1].

3. Results

A total of 322 North Atlantic killer whales have been identified in the waters of Breiðafjörður Bay since January 2014. Preliminary results provide important insights into habitat use, migration patterns, social structure and individual behaviour. An example of this is the identification of preferred feeding grounds for each season and killer whale core group (fig. 2). More examples of results can be found on the Orca Guardians Iceland website, www.orcaguardians.org. In particular we would like to draw attention to the detailed descriptions of individual killer whales available for "adoption".



References

- [1] Bigg, M.A. 1982. An assessment of killer whale (*Orcinus orca*) stocks off Vancouver Island, British Columbia. In: Report of the International Whaling Commission 32, 655-666.
- [2] Mrusczok, M.-Th. 2017. Killer Whales of West Iceland. Photo-Identification Catalogue of North Atlantic Killer Whales Recorded along the Snæfellsnes Peninsula and in Breiðafjörður 2014-2017. Grundarfjörður: Orca Guardians Iceland.
- [3] Ice Whale 2015. Code of Conduct for Responsible Whale Watching. Reykjavík: Ice Whale.

Our special thanks go to Láki Tours Whale Watching for the past and ongoing support. Visit www.orcaguardians.org for more information.

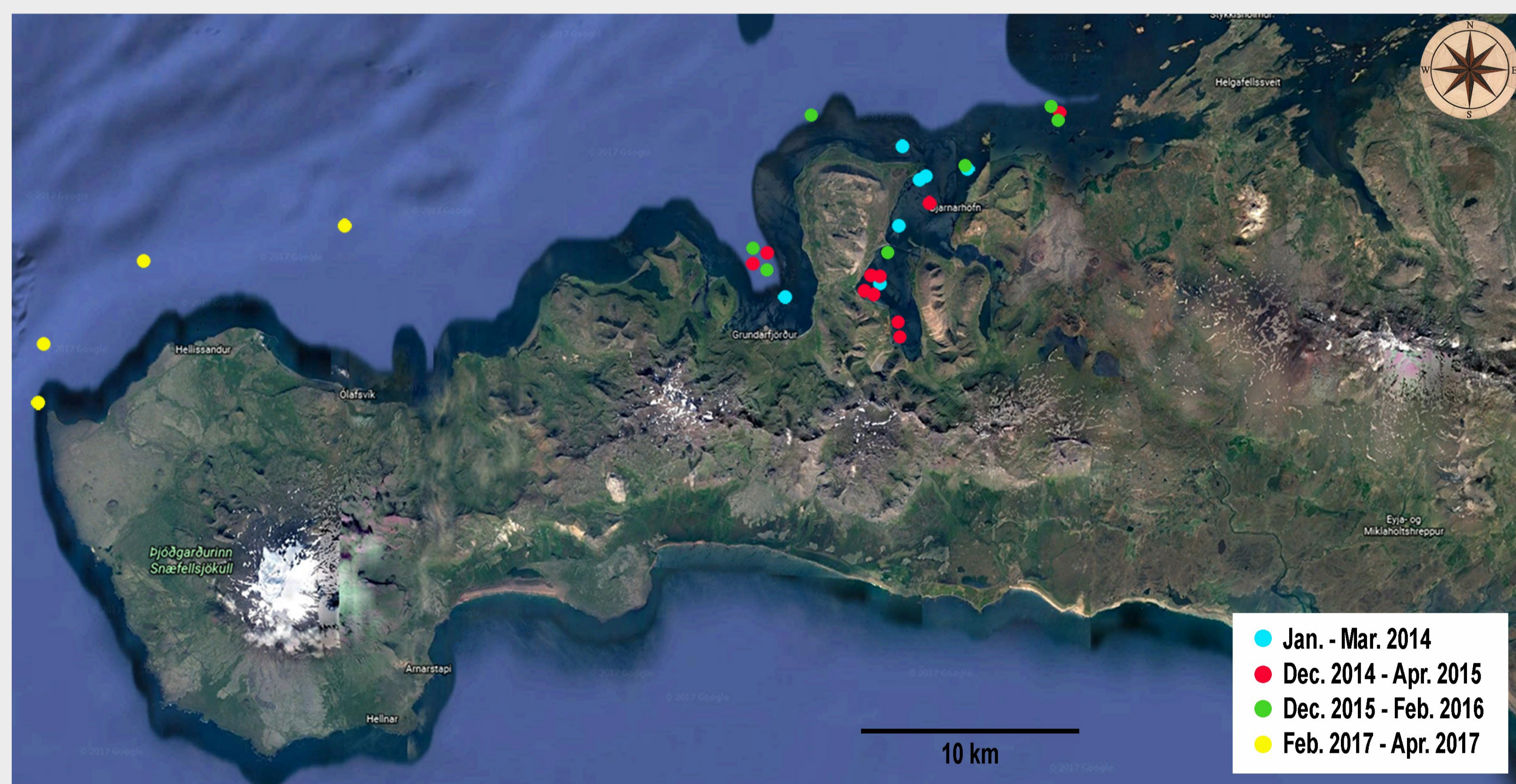


Fig. 2. Excerpt of sightings data of core group SN053 from January 2014 to April 2017. A core group is defined as stable association of individuals sighted over 30 times between 2014 and 2017. Core group SN053 is one of the most regularly sighted groups along the north side of the Snæfellsnes Peninsula, and currently consists of 9 individuals (SN053-SN060, and SN198). Encounters with this group largely coincided with the occurrence of herring in the area.

4. Discussion and Conclusion

Non-invasive methods can be used to obtain a wide variety of information on killer whales, and whale watching boats provide good opportunities for data collection.

Knowledge on the behavioural ecology of killer whales is crucial for raising public awareness regarding the species and for taking appropriate conservation measures. Our ongoing long-term monitoring of the population will hopefully aid in both.

Ethical Statement

Orca Guardians Iceland (www.orcaguardians.org) is an independent conservation non-profit organization, dedicated to the protection of orcas in Icelandic waters and their habitat. Any research conducted by Orca Guardians Iceland is critically monitored for its non-invasive character and application of the precautionary approach. Data collection by vessel was carried out under strict compliance with the Ice Whale Code of Conduct for Responsible Whale Watching [3].