



Identification Catalogue of the Killer whales that frequent inner Vestlandet

Compiled by Eve Jourdain, Vegard Aasen, Olve Vaagø Erdal & Simon Johnsen



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The catalogue aims to create a connection between science and the general public. It also serves as a baseline and reference document for future scientific publications. The content of this catalogue is not to be reproduced or used without permission.

PREFACE

Killer whales (*Orcinus orca*) are wide-ranging mammals with an estimated life span of 50-100 years, meaning that research into their life history and ecology requires long-term studies (Olesiuk et al., 1990). In 1970, a census of the killer whale population ranging in coastal waters of British Columbia, Canada, was initiated by the late Dr Michael Bigg and colleagues. The scientists discovered that individual killer whales could be distinguished using the shape of and nicks in the dorsal fin, along with the pigmentation pattern and naturally acquired markings of the saddle patch (Bigg, 1982). Therefore, by analyzing photographs of surfacing killer whales, it was possible to catalogue individuals enabling an exact count of the population rather than an estimate. This methodology introduced 'photo-identification' as a fundamental tool in modern killer whale research worldwide. Since then, photo-identification has been used to investigate individual- and group-specific patterns in behavior, diet, acoustics, health condition and more (Ford, 1991; Ross et al., 2000; Ford and Ellis, 2014).

Photo-identification studies of Norwegian killer whales were pioneered by Dr Thomas Lyrholm in 1983 (Lyrholm, 1988). The effort was then taken over by Dr Tiu Similä in 1986-2005 and by the team Dag Vongraven and Anna Bisther in 1987-1996. Efforts then mainly focused on northern Norwegian fjords (Tysfjord-Vestfjord) where the Norwegian Spring Spawning stock of the Atlantic herring (*Clupea harengus*) (and hundreds of killer whales!) spent the winter months. After the herring drastically altered its winter distribution from 2002, killer whale groups did not enter the usual fjords any longer and photo-id efforts stopped for several years.

In 2013, Norwegian Orca Survey (NOS) initiated a research effort dedicated to monitoring the occurrence and ecology of killer whales in Norway on a year-round basis. NOS' mission is to generate and make available up-to-date knowledge on Norwegian killer whales using science, and with ultimate goal of helping their protection. As a part of this initiative, NOS has conducted systematic photo-identification surveys in all seasons, with the resulting ID-catalogue being the absolute foundation of all past and ongoing studies (Jourdain et al., 2017; Jourdain et al., 2019; Andvik et al., 2020; Jourdain et al., 2020). The team has mainly been operating in northern Norway (Vesterålen and Troms) during these past years. Thanks to sighting reports and photographs provided by the general public, it was also possible to census and

PREFACE

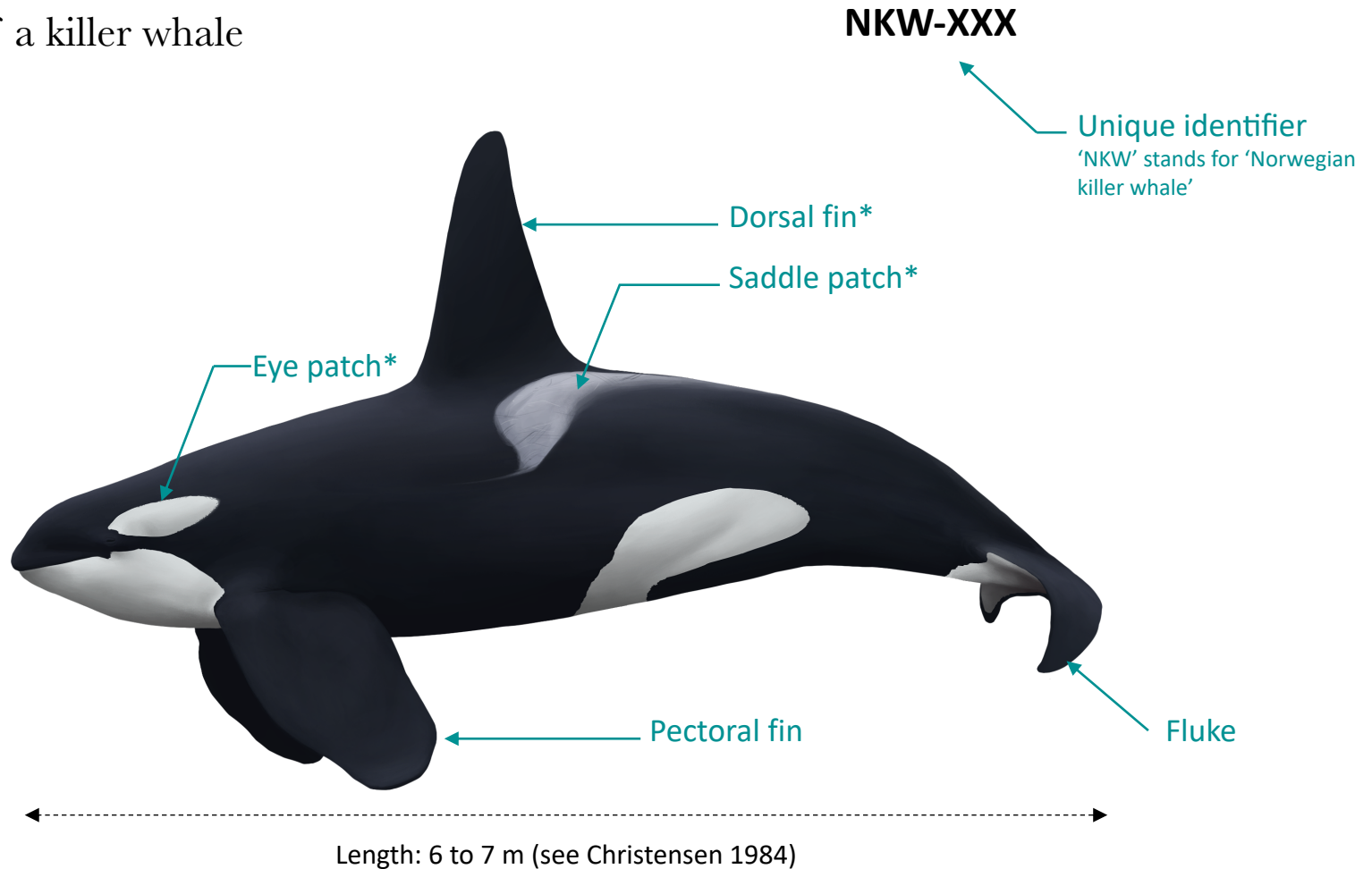
keep track of the killer whales in southern fjords. This approach, known as ‘Citizen-Science’, contributed to building an ID-Catalogue of the two killer whale groups that visit Vestlandet on a regular basis, along with a preliminary understanding of their life history.

In response to a growing interest for killer whales in Vestlandet (e.g., Sognefjord, Hardangerfjord), and also to give ‘something back’ to the public who has contributed so much to this initiative, NOS decided to publish this ID-Catalogue. We hope that this document will help people with identifying ‘their whales’ and generate even more interest in these beautiful animals. We also hope that more people will become aware of the value and importance of photo-identification in the long-term study of the species and will contribute even more to the ID-project in the years to come. Anyone can share their high-resolution photographs of killer whale dorsal fins, accompanied with information on date and location of where the photos were taken. These will be analysed to identify the individuals encountered, and the resulting data (i.e., what whale was seen, where and when) will serve to expand the sighting histories of specific individuals and the overall catalogue. In other words, all photographs taken during encounters with killer whales tell amazing stories about them, starting with who, where, when and with whom. By contributing photographs to the project, people are getting directly involved in this fascinating long-term study and become citizen-scientists.

Of note, this document only provides a catalogue of ID-images of individual killer whales but no data or information about them except for group membership. The reason for this is that scientific knowledge will only be valued if published in international scientific journals or at scientific events. Ongoing studies will feature these killer whales and results, once published, will of course be shared online. Meanwhile, enjoy the company of killer whales and stay tuned!

PREFACE

Anatomy of a killer whale



* Features used for identification purposes

Killer whale illustration by Frédérique Lucas for Norwegian Orca Survey

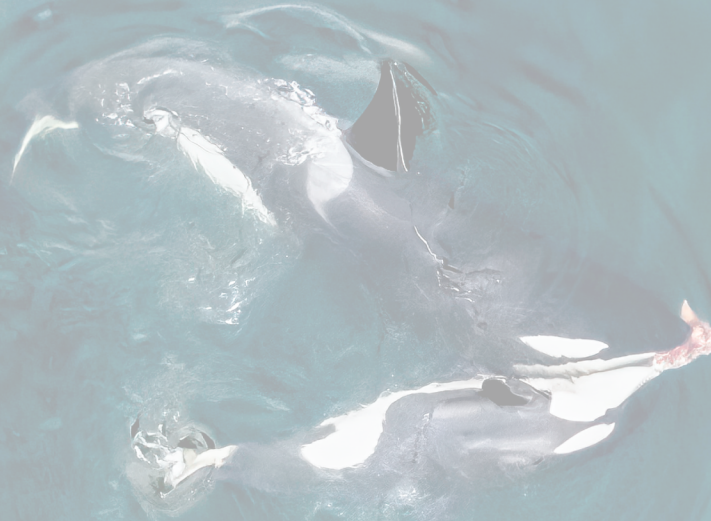
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CATALOGUE

Group 1

Group 2

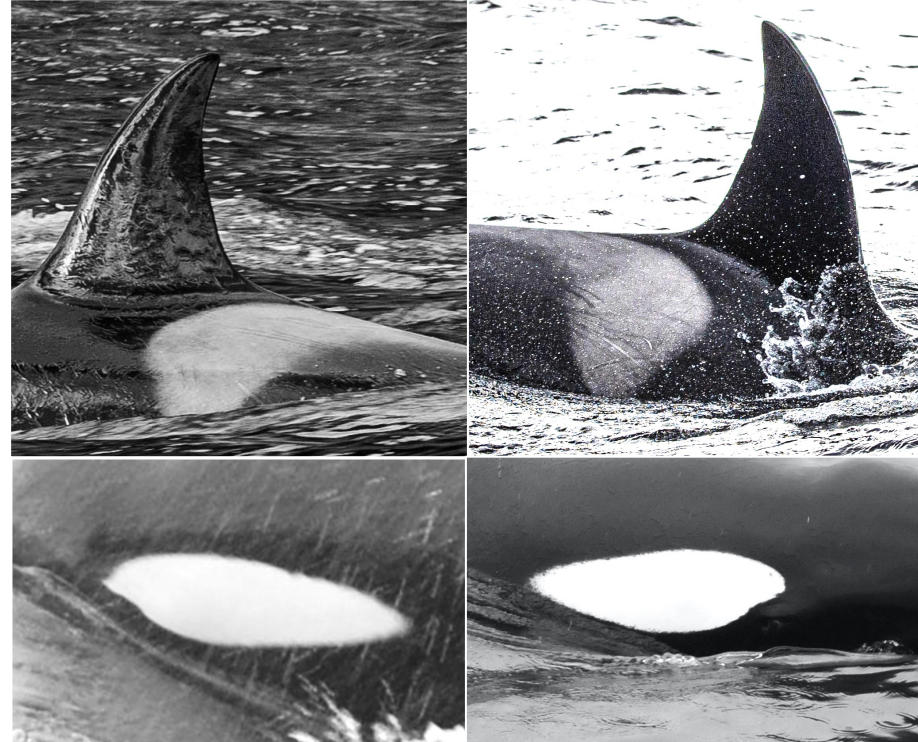


Group 1: NKW-280s

NKW-269 - Male



NKW-280 - Female

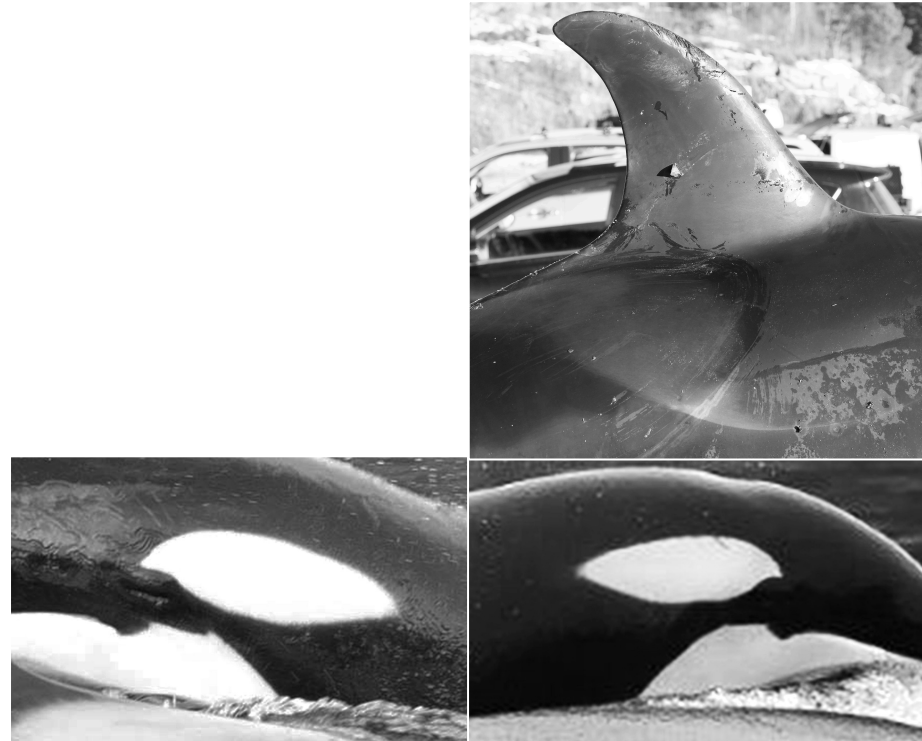


Group 1: NKW-280s

NKW-280a – Sex unknown



NKW-280b – Female



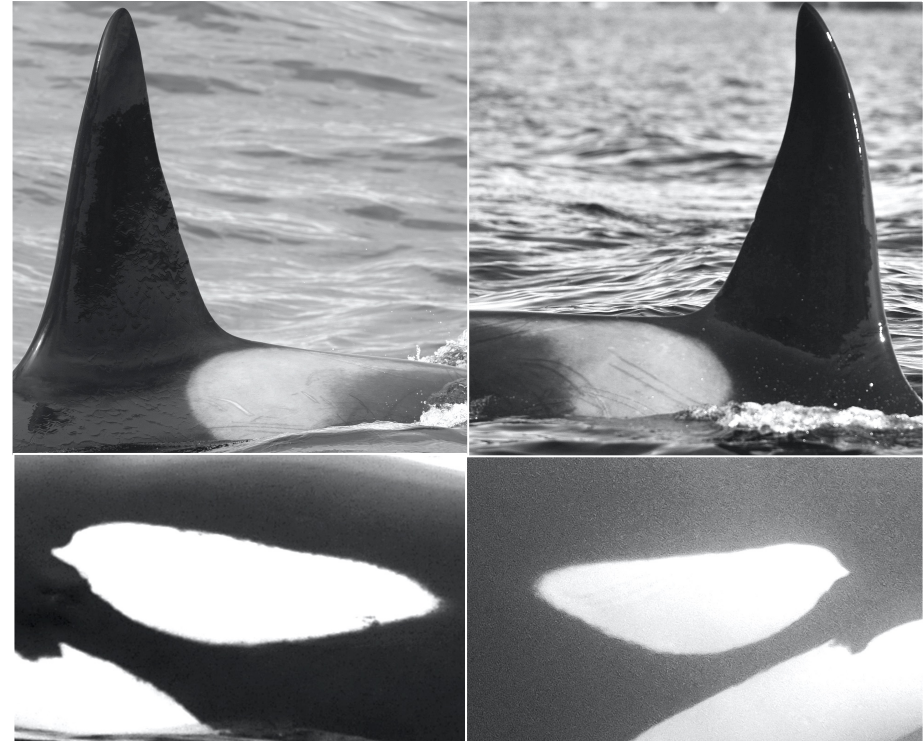
Found dead in Hyllestad in Desember 2021

Group 1: NKW-280s

NKW-281 - Male



NKW-565 - Male



Group 1: NKW-280s

NKW-1215 - Female

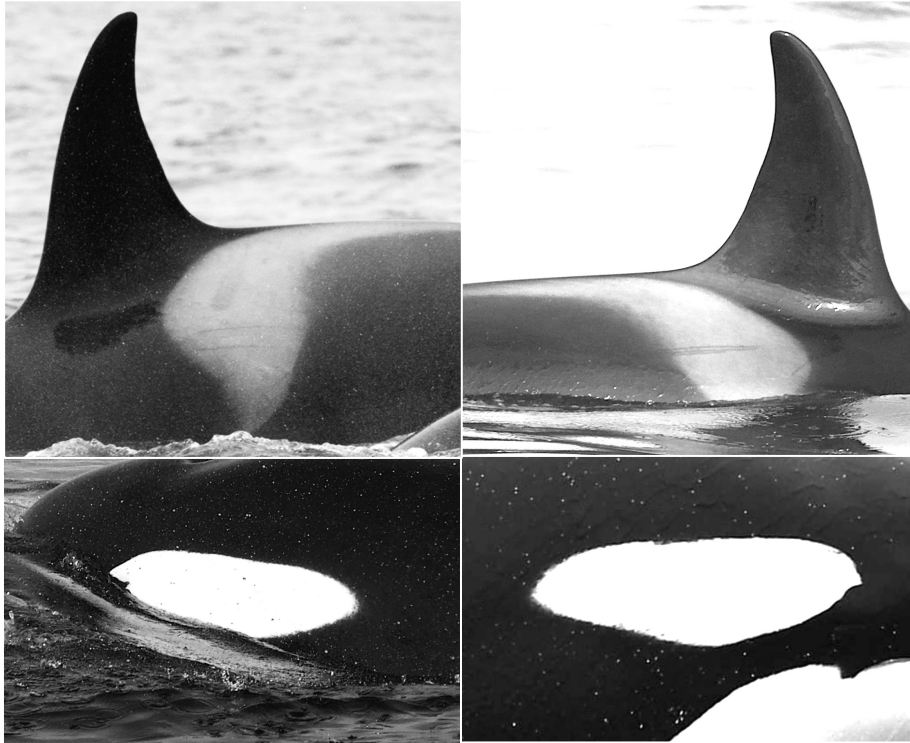


NKW-1215a – Sex unknown



Group 2: NKW-704s

NKW-366 - Female



NKW-366a – Sex unknown



Group 2: NKW-704s

NKW-704 - Female



NKW-704a – Sex unknown



Group 2: NKW-704s

NKW-877 - Female



NKW-877a – Sex unknown



Group 2: NKW-704s

NKW-877b – Sex unknown



The 'spots' visible on this whale are likely to be due to some temporary skin condition and to disappear overtime. Therefore, they should not be considered as a reliable identification feature.

Group 2: NKW-704s

NKW-878 - Female



NKW-878a – Sex unknown



PHOTO CREDITS

WHALE	Left dorsal fin	Right dorsal fin	Left eye patch	Right eye patch
NKW-269	Arild Lokøy	Silje Grønnevik Refsdal	Olve V. Erdal	Olve V. Erdal
NKW-280	Olve V. Erdal	Olve V. Erdal	Kristin Skahjem	NOS
NKW-280a	Tore Friele Lie	Tore Friele Lie	Arne K. Mala	Olve V. Erdal
NKW-280b	-	NOS	Olve V. Erdal	Olve V. Erdal
NKW-281	Øyvind Auke	Olve V. Erdal	Olve V. Erdal	Olve V. Erdal
NKW-565	Marten Bril	Steinar Bauge	NOS	Vegard B. Aasen
NKW-1215	Marten Bril	Marten Bril	-	Marten Bril
NKW-1215a	Olve V. Erdal	Marten Bril	Marten Bril	Marten Bril
NKW-366	NOS	NOS	NOS	Marten Bril
NKW-366a	Olve V. Erdal	NOS	NOS	Marten Bril
NKW-704	NOS	NOS	NOS	Olve V. Erdal
NKW-704a	NOS	NOS	Olve V. Erdal	NOS
NKW-877	NOS	NOS	NOS	Olve V. Erdal
NKW-877a	NOS	NOS	NOS	NOS
NKW-877b	Olve V. Erdal	Olve V. Erdal	NOS	-
NKW-878	Olve V. Erdal	NOS	NOS	NOS
NKW-878a	Olve V. Erdal	Olve V. Erdal	NOS	NOS

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