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Killer whales of Iceland 2006-2015. Report of the Marine and Freshwater Research Institute

Samarra FIP, Tavares SB, Miller PJO and Víkingsson GA

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Upplýsingablað

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Rannsókna- og ráðgjafarstofnun hafs og vatna

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Ágrip:
Killer whales have long been known to occur in the coastal waters of Iceland, often found in large aggregations in herring grounds in the winter and summer. Through the use of photographs it is possible to identify individual whales using natural markings in their dorsal fin and saddle patch. Here we present a photo-identification catalogue for killer whales found in Icelandic waters between 2006 and 2015. It compiles photo-identifications collected through dedicated research or provided by colleagues, whale-watching guides and naturalists, and members of the public that have kindly donated their pictures. The catalogue aims to provide an overview of identified individuals as well as provide current information about the biology and behavior of this population.

Lykilorð:
Killer whale, Orca, Photo-identification, Population Biology, Háhyrningur

Undirskrift verkefnisstjóra:	Undirskrift forstöðumanns sviðs:
Filipa Samarra	Þorsteinn Sigurðsson

Killer whales of Iceland

2006-2015

Killer whales of Iceland

2006-2015

Compiled by

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Table of contents

Introduction	4
Sampling regions	7
Methodology	8
ID key	10
Acknowledgments	11
Catalogue	14
Individual information	62
Further reading	76

Introduction

Photo-identification of killer whales began with the pioneering research of Dr. Michael Bigg and colleagues in the 1970s in the Northeast Pacific and revolutionised our knowledge of this species. Realising that individual whales could be identified through natural markings in their dorsal fin and saddle patch, this research has made it possible to uncover aspects of the whales' life history, population dynamics and behaviour with unprecedented detail.

In Iceland, killer whales have been observed in coastal herring grounds for decades, often in the winter and summer months when the herring overwinter and spawn. As a result, killer whales have been long thought to specialize on herring and follow its migration year-round. It was in the herring overwintering grounds of East Iceland that the Marine Research Institute instigated research on this population in the 1980s (see Further reading section for a list of publications). The primary purpose was to use photo-identification to provide an assessment of population size, but early research also delved into their acoustic behaviour.

Despite similar acoustic and foraging behaviours as well as genetic proximity, photographic matches were never found between Iceland and Norway, suggesting that these are separate populations. Unique acoustic signals such as herding calls and low-frequency sounds produced in Iceland but not in Norway further supported the separation between these populations.

Much was learned from this early research, however, long-term dedicated studies did not start until 2008 when the Icelandic Orca Project began in Vestmannaeyjar, a herring spawning ground in the South of Iceland. The aim of this project was to monitor the population, as well as investigate its social, foraging and acoustic behaviours.

Combining photo-identification from different locations and chemical analysis of diet markers, present in small skin samples, has revealed that some Icelandic killer whales are indeed herring specialists, following its migration between overwintering and summer-spawning grounds. Some, but not all! In fact, it appears that there are different movement patterns and diet preferences within this population.

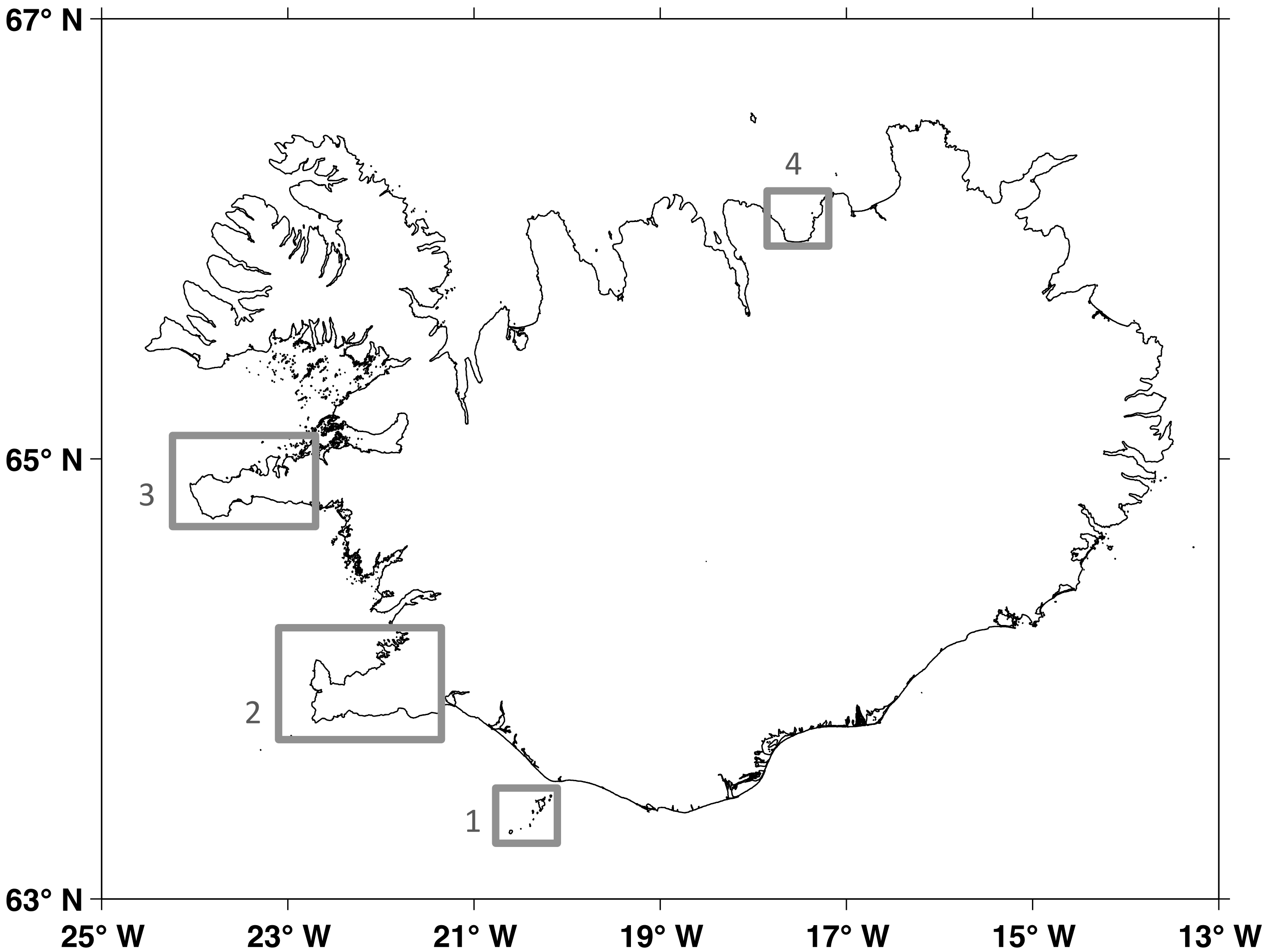
Thanks to citizen scientists sharing sightings of whales in social media, one intriguing discovery was that some whales regularly travel between Iceland and Scotland. To date, 11 whales have been found taking this journey and some have been confirmed predating seals when they are in Scotland, suggesting that they change their diet between fish and marine mammals. Chemical tracers once again supported these observations. Although these whales are seen regularly in Icelandic herring grounds and appear to feed on herring, they also exploit other higher trophic level prey that could include other fish, such as cod, or marine mammals.

These differences in movements and diet, however, do not mean that these whales are socially segregated. When they all gather in herring grounds, they regularly associate and form groups. Indeed, research to date suggests that although killer whales in Iceland have preferences in their associations, their social organization is fluid. Matrilines with stable, coherent group composition have not been clearly observed yet. Continuing photo-identification in the future, particularly during other times of the year when large aggregations of whales might not be as common, will be required to understand the finer details of the social organisation of Icelandic killer whales. Continuing research will also provide further information on the degree of structuring within the population and how different feeding strategies may affect the resilience of this population to ecosystem changes. This information will be crucial to evaluate the population status and inform future conservation and management plans.

This catalogue aims to provide an overview of individual killer whales found in Icelandic coastal waters in recent years, as well as current information about the biology and behaviour of this population. It also serves as a reference document for scientific publications. The catalogue only includes individuals sighted during our own research or in sightings made by colleagues, whale-watching guides and naturalists, and members of the public that have kindly donated their photographs. Other whales occurring in other locations or at other times of year than those we have sampled are not included here. As new whales are identified in future observations, an updated version of this catalogue will be provided. Continuing research will also be incorporated into future versions to provide up to date information on Icelandic killer whales.

The content of this catalogue, including identification images and illustrations, is not to be reproduced without permission. Other information about whales featured in this catalogue can be provided upon request to the Icelandic Orca Project at icelandorca@gmail.com.

Sampling regions



Methodology

Sampling regions

This catalogue includes photographs of killer whales found in the coastal waters of Iceland between 2006 and 2015. The majority of the catalogue is built based upon photographs of whales identified through dedicated research of the Icelandic Orca Project taking place in the summer in Vestmannaeyjar (South Iceland, region 1) since 2008 and in Ólafsvík in 2008 and 2015, and in the winter in Grundarfjörður and Kolgrafafjörður (West Iceland, region 3) between 2013-2015. Photographs from other areas include Faxaflói bay (region 2) and Skjálfandi bay (region 4) that were contributed by colleagues, whale-watching guides, naturalists, and members of the public.

Photograph analysis

Killer whales have conventionally been identified through left-side photographs of the dorsal fin, using its shape and nicks, as well as the saddle patch, an area of lightly coloured skin situated immediately below the dorsal, using its shape and natural markings such as scars (Bigg 1982). In this catalogue only individuals that have been identified using left-side pictures (LS) are included, to avoid duplicates. Whenever available, right-side pictures (RS) are also provided so that both sides of the same individual can be used for identification purposes. Photographs used for identification purposes should ideally include the dorsal fin and saddle patch of an individual, and be of high quality, at optimum angle, light, contrast and focus conditions. However, highly distinctive features can be distinguished even in poorer quality photographs. In this catalogue we have used mainly high quality photographs but kept poorer quality photographs of individuals with sufficient distinguishable features, pending re-sightings that will provide better quality catalogue photographs.

Only adult/subadult males, females and juveniles with sufficiently distinguishable identification features are included in this catalogue. Calves (presumed to be less than 1 year old) are not included. Whenever possible, sex was assigned by the size and shape of the dorsal fin, consistent close association with a calf or determined by genetic analysis. Each individual is classified as male, female or unknown in the Individual information section provided at the end of the photographic catalogue.

Each individual is assigned an ID which consists of an alphanumeric code including IS (for Iceland) followed by a sequential number. Numbers were assigned in the order that individuals were identified, which does not correspond to the chronological order in which they were first sighted. Sequential numbers do not represent associations between individuals. Whenever possible, corresponding ID assignments from other catalogues have been provided to help make different catalogues comparable, including a catalogue of the Marine and Freshwater Research Institute (MFRI)[1], a catalogue for the Snæefellsnes area[2] and a catalogue for Scotland[3]. The corresponding ID is given in the Individual information section as MFRI catalogue ID, Snæfellsnes ID and Scotland ID.

[1]Foote AD, Similä T, Víkingsson GA and Stevick PT (2010) Movement, site fidelity and connectivity in a top marine predator, the killer whale. Evolutionary Ecology 24: 803-814

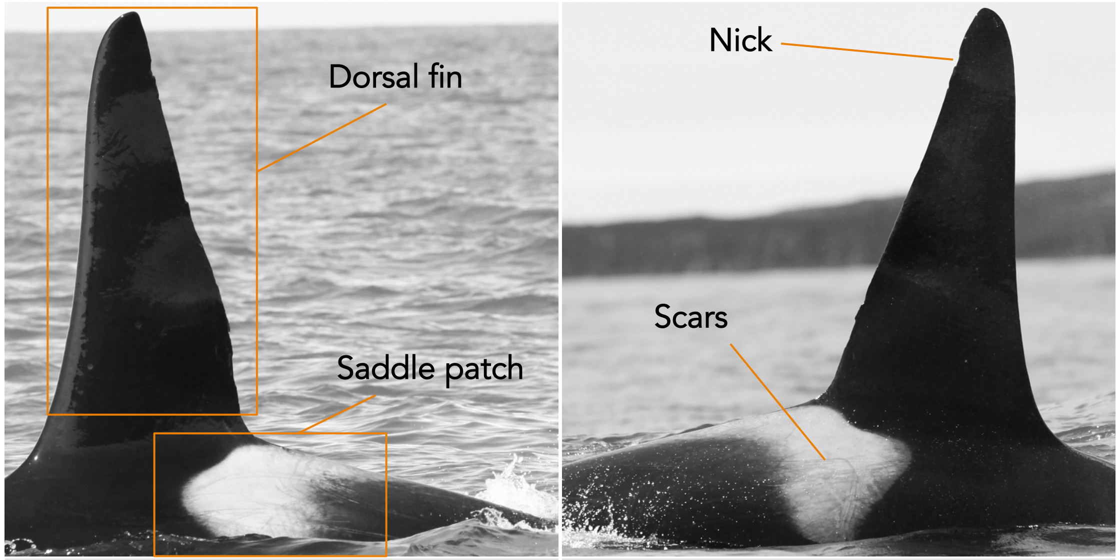
[2]Mrusczok (2016) North Atlantic killer whales of the Snæfellsnes peninsula: photo-identification catalogue – 2016 winter edition

[3]Foote A (2009) 2009 Scottish killer whale photo-ID catalogue

ID key

Each individual ID consists of an alphanumeric code including IS (for Iceland) followed by a unique number. A photograph of the left side is indicated by LS and, when available, a photograph of the right side is indicated by RS.

Typical photographs include the dorsal fin and saddle patch area, so that distinctive features such as nicks, scars and shape of the dorsal fin and saddle patch can be used for identification (see example).



IS038 (LS) IS038 (RS)

For each individual the photograph provided corresponds, whenever possible, to the best and most recent available photograph where both dorsal fin and saddle patch are visible. Larger versions of each photograph can be accessed at our website **www.icelandic-orcas.com**

Acknowledgments

The work presented in this catalogue has been possible due to the help of several colleagues, volunteers and students that have assisted in the field and provided their photos. We would like to thank Ricardo Antunes, Kagari Aoki, Richard Bates, Ralph Baylor, Julie Béesau, Matthew Bivins, Jacopo Bridda, Timothy Carden, José Cervantes-Henriksen, Melanie Chocholek, Graeme Ellis, Alexandra Fennell, Annika Firmenich, David Gaspard, Katherine Gavrilchuk, Sebastien Houillier, Yukihisa Kogure, Leticiaà Legat, Allan Ligon, Simon Moss, Miguel Neves, Anne Piémont, Marianne Rasmussen, Luke O'Connor, Jón Pállson, Annemieke Podt, Gaëtan Richard, Marjoleine Roos, Katsufumi Sato, René Swift, Mogens Trolle, Katja Vinding, Jane Watson, Paul Wensveen, Hannah Williams, Hannah Wood and Hajime Yoshino for their participation and invaluable contribution to our fieldwork. We would particularly like to thank our long-term collaborators Dr. Volker Deecke from the University of Cumbria and Dr. Olga Filatova and Ivan Fedutin from the University of Moscow. The comparison with the MFRI catalogue and the Scotland sightings would not have been possible without the help of our long-term collaborator Dr. Andy Foote from the University of Bangor.

We would also like to thank all the colleagues and whale-watching guides who have generously contributed their photographs that have greatly contributed to this catalogue, particularly Chiara Bertulli and volunteers as well as Elding whale-watching, particularly Megan Whittaker; the International Fund for Animal Welfare, particularly Claire Lacey; Alexa Kershaw and Cathy Harlow from Discover the World; Judith Scott, Baldur Thorvaldsson, Rob Lott, Caroline Weir, Luisa Klotz, Karen Munro, Jack Ball, Robert Stefánsson, Stefán Ragnarsson and Thorsteinn Eythorsson. We would also like to thank all the members of the public who have generously sent us their pictures.

This work was also made possible by the whale-watching and tour companies that allowed us onboard their vessels and shared sighting information. We are immensely grateful to Gísli Ólafsson from Láki Tours in Grundarfjörður and Ólafsvík, Simmi and Unnur from Viking Tours in Vestmannaeyjar, Rib Safari in Vestmannaeyjar and Seatours in Ólafsvík. Work in Vestmannaeyjar would not be possible without the logistical support of the Vestmannaeyjar Research Centre, particularly Páll Jónsson and Georg Skæringsson. We would like to thank our colleague Þorvaldur Gunnlaugsson at the MFRI for useful comments on this report.

To all of you, takk fyrir!

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Catalogue


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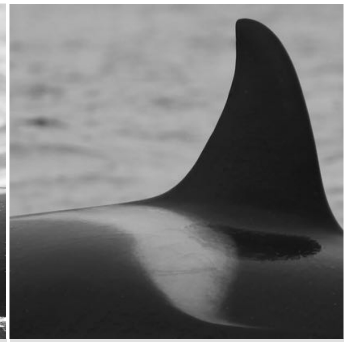
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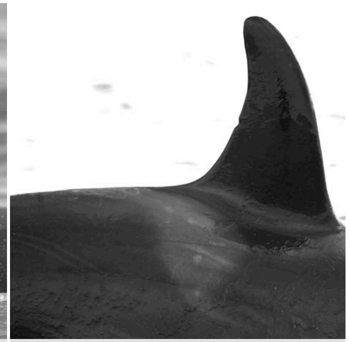
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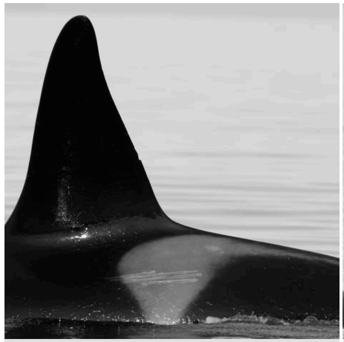
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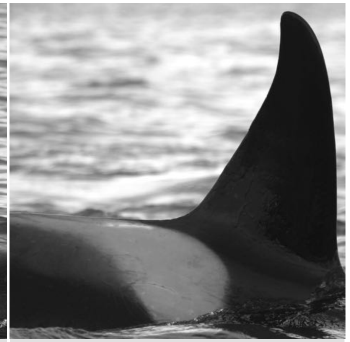
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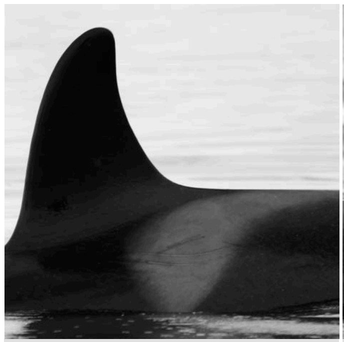
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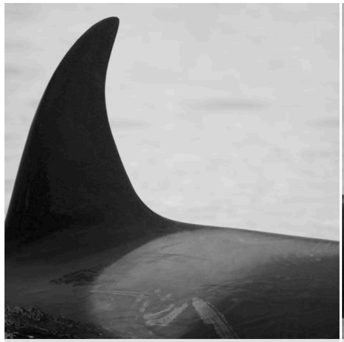
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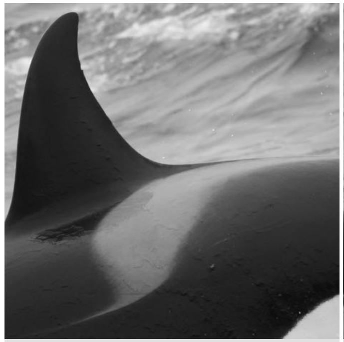
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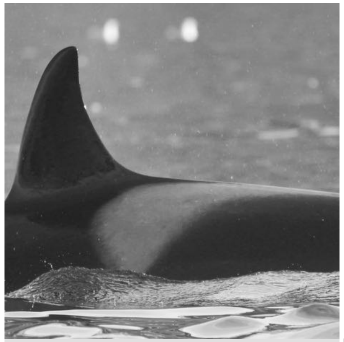

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IS432 (RS)

Individual information

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS001	M	-	-	-	Marjoleine Roos	Annika Firmenich
IS002	M	0103	-	-	Filipa Samarra	Filipa Samarra
IS003	M	0108	-	-	Sara Tavares	Sara Tavares
IS004	M	0123	-	-	Volker Deecke	Filipa Samarra
IS005	F	-	SN095	-	Volker Deecke	Volker Deecke
IS006	M	0306	-	-	Filipa Samarra	Filipa Samarra
IS007	F	-	-	-	Volker Deecke	-
IS008	M	0603	-	-	Sara Tavares	Sara Tavares
IS009	F	-	-	-	Filipa Samarra	Filipa Samarra
IS010	M	-	-	-	Sara Tavares	Filipa Samarra
IS011	M	0701	SN060	-	Filipa Samarra	Sara Tavares
IS012	M	0702	-	-	Sara Tavares	Sara Tavares
IS013	F	-	-	-	Sara Tavares	Sara Tavares
IS014	M	886	-	-	Cathy Harlow	-
IS015	M	993	SN065	062	Sara Tavares	Sara Tavares
IS016	U	-	-	-	Alexandra Fennell	-
IS017	M	8112	-	-	Filipa Samarra	Filipa Samarra
IS018	M	9021	-	-	Sara Tavares	Sara Tavares
IS019	F	-	-	-	Sara Tavares	Sara Tavares
IS020	M	0111	-	-	Hannah Williams	Filipa Samarra
IS021	F	-	-	-	Sara Tavares	Sara Tavares
IS022	U	-	-	-	Hannah Williams	Filipa Samarra
IS023	M	0147	-	-	Hajime Yoshino	Filipa Samarra
IS024	M	-	-	-	Filipa Samarra	Hajime Yoshino
IS025	F	-	-	-	Ralph Baylor	Sara Tavares
IS026	F	-	-	-	Sara Tavares	Sara Tavares
IS027	F	-	-	-	Sara Tavares	Sara Tavares
IS028	M	-	SN083	-	Filipa Samarra	Sara Tavares
IS029	U	-	SN081	-	Sara Tavares	Sara Tavares
IS030	F	-	SN053	-	Sara Tavares	Annemieke Podt

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS031	M	9022	-	-	Cathy Harlow	-
IS032	F	-	SN165	-	Sara Tavares	Sara Tavares
IS033	M	-	SN169	-	Filipa Samarra	Sara Tavares
IS034	M	-	-	-	Allan Ligon	-
IS035	F	-	SN080	-	Sara Tavares	Sara Tavares
IS036	M	-	SN082	-	Sara Tavares	Sara Tavares
IS037	M	9118	SN078	-	Sara Tavares	Sara Tavares
IS038	M	9459	-	-	Sara Tavares	Sara Tavares
IS039	M	9479	-	-	Sara Tavares	Filipa Samarra
IS040	M	-	-	-	Sara Tavares	Sara Tavares
IS041	F	0118	-	-	Sara Tavares	Sara Tavares
IS042	M	9526	-	-	Marjoleine Roos	Sara Tavares
IS043	M	-	-	-	Sara Tavares	Sara Tavares
IS044	M	9530	SN188	-	Sara Tavares	Olga Filatova
IS045	F	-	SN055	-	Kagari Aoki	Sara Tavares
IS046	M	9706	-	-	Sara Tavares	Filipa Samarra
IS047	M	-	-	-	Sara Tavares	Sara Tavares
IS048	F	-	SN056	-	Sara Tavares	Sara Tavares
IS049	F	9702	SN061	-	Sara Tavares	Sara Tavares
IS050	U	-	-	-	Olga Filatova	Olga Filatova
IS051	U	-	SN059	-	Sara Tavares	Sara Tavares
IS052	M	-	SN182	-	Sara Tavares	Filipa Samarra
IS053	M	9912	SN090	-	Sara Tavares	Sara Tavares
IS054	M	-	-	-	Sara Tavares	Sara Tavares
IS055	M	9919	-	-	Sara Tavares	Sara Tavares
IS056	M	9921	-	-	Julie Béesau	Cathy Harlow
IS057	U	-	-	-	Filipa Samarra	Sara Tavares
IS058	F	-	SN155	-	Sara Tavares	Sara Tavares
IS059	M	9933	-	-	Filipa Samarra	Filipa Samarra
IS060	M	9938	-	-	Annika Firmenich	-
IS061	F	-	-	-	Sara Tavares	Sara Tavares
IS062	F	-	SN062	-	Sara Tavares	Sara Tavares
IS063	F	-	-	-	Sara Tavares	Sara Tavares
IS064	U	-	-	-	Sara Tavares	Sara Tavares

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS065	U	-	-	-	Sara Tavares	Sara Tavares
IS066	F	-	-	-	Sara Tavares	Volker Deecke
IS067	M	-	-	-	Filipa Samarra	Sara Tavares
IS068	M	0136	-	-	Sara Tavares	Sara Tavares
IS069	F	-	-	-	Sara Tavares	Sara Tavares
IS070	M	IB-5	-	-	Sara Tavares	Sara Tavares
IS071	M	-	-	-	Sara Tavares	Julie Béesau
IS072	F	104	-	-	Marjoleine Roos	Marjoleine Roos
IS073	F	-	-	-	Sara Tavares	Sara Tavares
IS074	F	-	-	-	Olga Filatova	Sara Tavares
IS075	M	-	SN091	-	Hajime Yoshino	Sara Tavares
IS076	U	-	SN054	-	Sara Tavares	Sara Tavares
IS077	F	0120	-	-	Filipa Samarra	-
IS078	M	-	-	-	Sara Tavares	Olga Filatova
IS079	F	-	-	-	Sara Tavares	Olga Filatova
IS080	F	-	SN057	-	Sara Tavares	Sara Tavares
IS081	F	-	SN186	-	Olga Filatova	Filipa Samarra
IS082	F	0302	SN038	-	Julie Béesau	Annika Firmenich
IS083	F	0303	SN190	-	Filipa Samarra	Filipa Samarra
IS084	F	911	-	-	Marjoleine Roos	Marjoleine Roos
IS085	M	-	SN139	-	Sara Tavares	Sara Tavares
IS086	F	997	SN069	019	Filipa Samarra	Sara Tavares
IS087	M	-	-	-	Sara Tavares	Sara Tavares
IS088	F	-	SN086	-	Sara Tavares	Sara Tavares
IS089	F	9707	-	-	Filipa Samarra	Annemieke Podt
IS090	M	-	SN032	-	Sara Tavares	Sara Tavares
IS091	M	-	SN036	-	Carine Zimmermann/Elding Research	Sara Tavares
IS092	M	-	SN018	-	Annika Firmenich	Caroline Weir
IS093	M	-	-	-	Hajime Yoshino	Hajime Yoshino
IS094	M	-	SN019	-	Annika Firmenich	Annika Firmenich
IS095	M	-	-	-	Thorsteinn Eythorsson/MFRI	Annika Firmenich
IS096	F	-	SN173	-	Sara Tavares	Sara Tavares
IS097	F	-	SN030	-	Sara Tavares	Sara Tavares
IS098	F	-	-	-	Sara Tavares	Sara Tavares

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS099	F	-	-	-	Sara Tavares	Sara Tavares
IS100	U	-	SN175	-	Sara Tavares	Sara Tavares
IS101	U	-	-	-	Olga Filatova	-
IS102	M	-	-	-	Annika Firmenich	Annika Firmenich
IS103	U	-	-	-	Annika Firmenich	-
IS104	F	-	-	-	Julie Béesau	Olga Filatova
IS105	M	-	-	-	Annika Firmenich	Mogens Trolle
IS106	F	T-38	-	012	Cathy Harlow	Filipa Samarra
IS107	F	9711	-	-	Sara Tavares	Sara Tavares
IS108	F	9922	SN073	-	Sara Tavares	Sara Tavares
IS109	F	0135	-	-	Filipa Samarra	Filipa Samarra
IS110	F	9926	-	-	Volker Deecke	-
IS111	F	IE-1	-	-	Marjoleine Roos	-
IS112	F	IE-16	-	-	Marjoleine Roos	-
IS113	F	IF-4	SN065	021	Sara Tavares	Olga Filatova
IS114	U	-	-	-	Sara Tavares	Sara Tavares
IS115	M	-	-	-	Filipa Samarra	Filipa Samarra
IS116	F	-	SN084	-	Olga Filatova	Sara Tavares
IS117	M	-	-	-	Sara Tavares	Sara Tavares
IS118	M	-	-	-	Sara Tavares	Sara Tavares
IS119	F	9140/9521/0140	-	-	Annika Firmenich	Annika Firmenich
IS120	M	-	SN187	-	Olga Filatova	Sara Tavares
IS121	U	-	SN185	-	Olga Filatova	Sara Tavares
IS122	M	-	SN102	-	Sara Tavares	Sara Tavares
IS123	U	-	SN112	-	Sara Tavares	Sara Tavares
IS124	F	-	-	-	Olga Filatova	Filipa Samarra
IS125	M	-	SN085	-	Sara Tavares	Sara Tavares
IS126	F	-	-	-	Sara Tavares	Sara Tavares
IS127	F	-	-	-	Sara Tavares	Sara Tavares
IS128	U	-	-	-	Filipa Samarra	Filipa Samarra
IS129	U	-	-	-	Volker Deecke	-
IS130	F	-	SN177	-	Sara Tavares	Olga Filatova
IS131	U	-	-	-	Volker Deecke	Volker Deecke
IS132	F	-	-	-	Annemieke Podt	Sara Tavares

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS133	M	-	-	-	Megan Whittaker/Elding Research	-
IS134	M	-	-	-	Megan Whittaker/Elding Research	-
IS135	M	-	-	-	Morgens Trolle	Annika Firmenich
IS136	M	-	SN063	-	Sara Tavares	Julie Béesau
IS137	M	-	-	-	Luisa Klotz	Luisa Klotz
IS138	M	-	-	-	Thorsteinn Eythorsson/MFRI	-
IS139	M	-	-	-	Sara Tavares	Sara Tavares
IS140	F	-	-	-	Julie Béesau	Marjoleine Roos
IS141	U	-	-	-	Thorsteinn Eythorsson/MFRI	-
IS142	M	-	-	-	Thorsteinn Eythorsson/MFRI	-
IS143	M	-	-	-	Sara Tavares	Sara Tavares
IS144	U	-	-	-	Thorsteinn Eythorsson/MFRI	-
IS145	F	-	-	-	Filipa Samarra	Olga Filatova
IS146	U	-	-	-	Richard McLanaghan/IFAW	Claire Lacey/IFAW
IS147	M	-	-	-	Sarah Lawrence/Univ. Iceland/Faxaflói Cetacean Research	Sarah Lawrence/Univ. Iceland/Faxaflói Cetacean Research
IS148	U	-	-	-	Claire Lacey/IFAW	-
IS149	M	-	-	-	Claire Lacey/IFAW	-
IS150	M	-	SN035	-	Sara Tavares	Sara Tavares
IS151	M	-	SN076	-	Sara Tavares	Sara Tavares
IS152	F	-	SN075	-	Sara Tavares	Sara Tavares
IS153	M	-	SN071	-	Olga Filatova	Olga Filatova
IS154	F	-	SN151	-	Sara Tavares	Sara Tavares
IS155	M	-	SN072	-	Filipa Samarra	Sara Tavares
IS156	M	-	SN098	-	Julie Béesau	Olga Filatova
IS157	M	-	-	-	Julie Béesau	Julie Béesau
IS158	F	-	SN033	-	Chiara Bertulli/Univ. Iceland/Faxaflói Cetacean Research	Sara Tavares
IS159	M	-	SN089	-	Sara Tavares	Sara Tavares
IS160	U	-	-	-	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research	Virginie Wyss/Univ. Iceland/Faxaflói Cetacean Research
IS161	M	-	-	-	Sarah Lawrence/Univ. Iceland/Faxaflói Cetacean Research	-
IS162	M	-	SN051	-	Sara Tavares	Olga Filatova

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS163	F	-	SN126	-	Olga Filatova	Filipa Samarra
IS164	M	-	SN044	-	Julie Béesau	Sara Tavares
IS165	M	-	-	-	Sara Tavares	Sara Tavares
IS166	F	-	-	-	Sara Tavares	Sara Tavares
IS167	U	-	SN074	-	Sara Tavares	Sara Tavares
IS168	M	-	-	-	Filipa Samarra	Olga Filatova
IS169	M	-	SN077	-	Sara Tavares	Sara Tavares
IS170	M	-	-	-	Marjoleine Roos	Marjoleine Roos
IS171	F	-	-	-	Julie Béesau	Sara Tavares
IS172	M	-	SN068	-	Sara Tavares	Olga Filatova
IS173	M	-	-	-	Monica Subiranas/Univ. Iceland/ Faxaflói Cetacean Research	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research
IS174	F	-	SN052	-	Filipa Samarra	Sara Tavares
IS175	F	-	-	-	Sara Tavares	Sara Tavares
IS176	M	-	-	-	Sara Tavares	Sara Tavares
IS177	F	-	SN153	-	Sara Tavares	Olga Filatova
IS178	M	-	SN021	-	Sara Tavares	Judith Scott/Láki Tours
IS179	M	-	SN131	-	Sara Tavares	Sara Tavares
IS180	F	-	SN092	-	Sara Tavares	Sara Tavares
IS181	M	-	-	-	Sara Tavares	Sara Tavares
IS182	U	-	-	-	Filipa Samarra	Filipa Samarra
IS183	M	-	-	-	Sara Tavares	Sara Tavares
IS184	U	-	-	-	Sara Tavares	Sara Tavares
IS185	M	-	SN045	-	Julie Béesau	Julie Béesau
IS186	M	-	-	-	Marjoleine Roos	Sara Tavares
IS187	U	-	-	-	Marjoleine Roos	Marjoleine Roos
IS188	F	-	-	-	Olga Filatova	Olga Filatova
IS189	M	-	-	-	Filipa Samarra	Filipa Samarra
IS190	U	-	-	-	Sara Tavares	Olga Filatova
IS191	M	-	-	-	Julie Béesau	Filipa Samarra
IS192	U	-	SN094	-	Sara Tavares	Filipa Samarra
IS193	F	-	-	-	Filipa Samarra	Filipa Samarra
IS194	M	-	SN064	-	Sara Tavares	Olga Filatova
IS195	U	-	-	-	Filipa Samarra	Olga Filatova

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS196	M	-	-	-	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research	Virginie Wyss/Univ. Iceland/Faxaflói Cetacean Research
IS197	M	-	SN079	-	Sara Tavares	Sara Tavares
IS198	M	-	-	-	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research	Virginie Wyss/Univ. Iceland/Faxaflói Cetacean Research
IS199	U	-	-	-	Olga Filatova	Olga Filatova
IS200	U	-	-	-	Olga Filatova	Sara Tavares
IS201	M	-	-	-	Sara Tavares	Sara Tavares
IS202	M	-	-	probably 013	Luisa Klotz	Cathy Harlow
IS203	U	-	-	-	Sara Tavares	Sara Tavares
IS204	M	-	SN150	-	Cathy Harlow	Olga Filatova
IS205	F	-	-	-	Julie Béesau	Sara Tavares
IS206	F	-	SN166	-	Julie Béesau	Sara Tavares
IS207	U	-	-	-	Julie Béesau	-
IS208	F	-	-	-	Sara Tavares	Olga Filatova
IS209	M	-	-	-	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research
IS210	M	-	-	-	Marjoleine Roos	Marjoleine Roos
IS211	M	-	-	-	Sara Tavares	Sara Tavares
IS212	M	-	-	-	Julie Béesau	Marjoleine Roos
IS213	M	-	-	-	Olga Filatova	Filipa Samarra
IS214	F	-	SN040	-	Sara Tavares	Sara Tavares
IS215	U	-	SN037	-	Olga Filatova	Julie Béesau
IS216	M	9543	-	-	Sara Tavares	Filipa Samarra
IS217	U	-	SN046	-	Filipa Samarra	Sara Tavares
IS218	U	-	-	-	Sara Tavares	Filipa Samarra
IS219	F	-	-	-	Sara Tavares	Sara Tavares
IS220	U	-	-	-	Marjoleine Roos	Olga Filatova
IS221	U	-	-	-	Sara Tavares	Sara Tavares
IS222	M	-	-	-	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research	Monica Subiranas/Univ. Iceland/Faxaflói Cetacean Research
IS223	F	-	-	-	Filipa Samarra	Filipa Samarra
IS224	U	-	SN129	-	Olga Filatova	Filipa Samarra
IS225	M	0142	-	-	Olga Filatova	Olga Filatova

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS226	U	-	SN117	-	Sara Tavares	Sara Tavares
IS227	U	-	-	-	Olga Filatova	Sara Tavares
IS228	U	-	SN134	-	Sara Tavares	-
IS229	M	-	SN067	-	Sara Tavares	Sara Tavares
IS230	F	-	-	-	Sara Tavares	Olga Filatova
IS231	U	-	-	-	Sara Tavares	Olga Filatova
IS232	M	-	-	-	Chiara Bertulli/Univ. Iceland/Faxaflói Cetacean Research	-
IS233	M	-	-	-	Olga Filatova	Olga Filatova
IS234	F	T-36/94111	-	-	Cathy Harlow	-
IS235	F	-	-	-	Sara Tavares	Olga Filatova
IS236	M	-	SN029	-	Cathy Harlow	Volker Deecke
IS237	M	-	-	-	Cathy Harlow	Cathy Harlow
IS238	M	-	-	-	Cathy Harlow	-
IS239	M	-	-	-	Virginie Wyss/Univ. Iceland/Faxaflói Cetacean Research	-
IS240	F	-	SN149	-	Filipa Samarra	Filipa Samarra
IS241	M	-	-	-	Kagari Aoki	Filipa Samarra
IS242	F	-	SN147	-	Filipa Samarra	Sara Tavares
IS243	M	-	-	-	Filipa Samarra	Filipa Samarra
IS244	U	-	-	-	Sara Tavares	Filipa Samarra
IS245	U	-	SN127	-	Sara Tavares	Filipa Samarra
IS246	U	-	-	-	Julie Béesau	Cathy Harlow
IS247	F	-	-	-	Sara Tavares	Sara Tavares
IS248	U	-	-	-	Sara Tavares	Sara Tavares
IS249	M	-	-	-	Sara Tavares	Sara Tavares
IS250	U	-	-	-	Sara Tavares	Sara Tavares
IS251	M	-	-	-	Sara Tavares	Sara Tavares
IS252	F	-	-	-	Sara Tavares	Sara Tavares
IS253	F	-	SN013	-	Sara Tavares	Sara Tavares
IS254	M	-	-	-	Sara Tavares	Sara Tavares
IS255	F	-	-	-	Sara Tavares	Sara Tavares
IS256	M	-	SN016	-	Sara Tavares	Sara Tavares
IS257	F	-	-	-	Sara Tavares	Sara Tavares

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS258	M	-	-	-	Sara Tavares	Sara Tavares
IS259	F	-	-	-	Sara Tavares	Sara Tavares
IS260	F	-	-	-	Sara Tavares	Sara Tavares
IS261	M	-	-	-	Sara Tavares	Sara Tavares
IS262	F	-	-	-	Sara Tavares	Sara Tavares
IS263	M	-	SN142	-	Sara Tavares	Sara Tavares
IS264	U	-	SN043	-	Sara Tavares	Sara Tavares
IS265	U	-	-	-	Olga Filatova	Olga Filatova
IS266	U	-	-	-	Sara Tavares	Sara Tavares
IS267	M	-	-	-	Sara Tavares	Sara Tavares
IS268	M	0127	-	-	Filipa Samarra	-
IS269	U	-	-	-	Sara Tavares	Sara Tavares
IS270	U	-	-	-	Sara Tavares	Sara Tavares
IS271	F	9703	-	-	Filipa Samarra	Sara Tavares
IS272	F	992	-	-	Sara Tavares	Sara Tavares
IS273	U	-	-	-	Sara Tavares	Sara Tavares
IS274	F	-	SN047	-	Sara Tavares	Sara Tavares
IS275	U	-	SN048	-	Sara Tavares	Sara Tavares
IS276	U	-	SN192	-	Sara Tavares	Olga Filatova
IS277	F	-	-	-	Olga Filatova	Olga Filatova
IS278	U	-	-	-	Sara Tavares	-
IS279	F	-	-	-	Sara Tavares	Sara Tavares
IS280	M	-	-	-	Sara Tavares	Sara Tavares
IS281	M	-	-	-	Sara Tavares	Sara Tavares
IS282	U	-	-	-	Sara Tavares	Sara Tavares
IS283	U	-	-	-	Sara Tavares	Sara Tavares
IS284	U	-	SN140	-	Sara Tavares	Sara Tavares
IS285	F	-	SN143	-	Sara Tavares	Sara Tavares
IS286	F	-	-	-	Sara Tavares	Sara Tavares
IS287	U	-	-	-	Sara Tavares	Sara Tavares
IS288	F	-	-	-	Sara Tavares	Sara Tavares
IS289	M	-	SN039	-	Olga Filatova	Sara Tavares
IS290	F	-	SN125	-	Sara Tavares	Sara Tavares
IS291	U	-	-	-	Sara Tavares	Sara Tavares

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS292	U	-	-	-	Sara Tavares	Sara Tavares
IS293	M	-	SN041	-	Sara Tavares	Sara Tavares
IS294	M	-	-	-	Chiara Bertulli/Univ. Iceland/Faxaflói Cetacean Research	Jack Ball/Elding
IS295	M	-	-	-	Chiara Bertulli/Univ. Iceland/Faxaflói Cetacean Research	-
IS296	M	-	-	-	Jack Ball/Elding	Chiara Bertulli/Univ. Iceland/Faxaflói Cetacean Research
IS297	M	-	-	-	Chiara Bertulli/Univ. Iceland/Faxaflói Cetacean Research	-
IS298	F	-	SN003	-	Sara Tavares	Sara Tavares
IS299	F	-	-	-	Sara Tavares	Sara Tavares
IS300	F	-	-	-	Sara Tavares	Sara Tavares
IS301	U	-	-	-	Sara Tavares	Sara Tavares
IS302	U	-	SN042	-	Olga Filatova	Sara Tavares
IS303	M	-	-	-	Cathy Harlow	Volker Deecke
IS304	U	-	SN049	-	Sara Tavares	Sara Tavares
IS305	M	-	-	-	Chiara Bertulli/Univ. Iceland/Faxaflói Cetacean Research	Jack Ball/Elding
IS306	M	-	-	-	Sara Tavares	Sara Tavares
IS307	U	-	-	-	Filipa Samarra	Sara Tavares
IS308	U	-	SN023	-	Sara Tavares	Sara Tavares
IS309	U	-	SN026	-	Sara Tavares	Judith Scott/Láki Tours
IS310	U	-	SN130	-	Sara Tavares	Sara Tavares
IS311	U	-	-	-	Sara Tavares	Sara Tavares
IS312	U	-	-	-	Sara Tavares	Sara Tavares
IS313	M	-	-	-	Sara Tavares	Julie Béesau
IS314	U	-	-	-	Sara Tavares	-
IS315	F	-	-	-	Sara Tavares	Filipa Samarra
IS316	U	-	-	-	Sara Tavares	Marjoleine Roos
IS317	F	0130	-	-	Sara Tavares	Sara Tavares
IS318	U	-	-	-	Sara Tavares	Sara Tavares
IS319	M	-	-	-	Megan Whittaker/Elding Research	Megan Whittaker/Elding Research
IS320	M	-	-	-	Megan Whittaker/Elding Research	-

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS321	F	-	SN124	-	Sara Tavares	Sara Tavares
IS322	U	-	-	-	Sara Tavares	Sara Tavares
IS323	M	-	SN008	-	Sara Tavares	-
IS324	M	-	SN136	-	Judith Scott/Láki Tours	Sara Tavares
IS325	M	-	SN176	-	Sara Tavares	Megan Whittaker/Elding Research
IS326	U	-	SN114	-	Sara Tavares	Sara Tavares
IS327	U	-	SN115	-	Sara Tavares	Sara Tavares
IS328	U	-	SN170	-	Sara Tavares	Sara Tavares
IS329	U	-	SN116	-	Sara Tavares	Sara Tavares
IS330	M	-	SN113	-	Sara Tavares	Sara Tavares
IS331	M	-	-	-	Már Höskuldsson	-
IS332	M	-	SN171	-	Sara Tavares	-
IS333	U	-	SN001	-	Sara Tavares	Sara Tavares
IS334	U	-	SN006	-	Sara Tavares	Sara Tavares
IS335	F	-	SN005	-	Sara Tavares	-
IS336	F	-	-	-	Sara Tavares	-
IS337	U	-	SN172	-	Sara Tavares	-
IS338	M	-	-	-	Filipa Samarra	Filipa Samarra
IS339	U	-	-	-	Olga Filatova	-
IS340	F	-	SN183	-	Sara Tavares	Filipa Samarra
IS341	M	-	-	-	Marjoleine Roos	Marjoleine Roos
IS342	M	-	-	-	Marjoleine Roos	-
IS343	U	-	-	-	Sara Tavares	Sara Tavares
IS344	U	-	-	-	Sara Tavares	-
IS345	U	-	-	-	Sara Tavares	-
IS346	U	-	-	-	Olga Filatova	-
IS347	U	-	-	-	Sara Tavares	Sara Tavares
IS348	U	-	-	-	Cathy Harlow	-
IS349	U	-	-	-	Sara Tavares	-
IS350	U	-	-	-	Marjoleine Roos	-
IS351	U	-	-	-	Olga Filatova	Olga Filatova
IS352	U	-	-	-	Julie Béesau	Julie Béesau
IS353	U	-	-	-	Marjoleine Roos	-
IS354	M	-	-	-	Marjoleine Roos	-

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS355	F	-	SN096	-	Cathy Harlow	Olga Filatova
IS356	F	-	SN181	-	Paul Wensveen	Paul Wensveen
IS357	U	-	-	-	Filipa Samarra	-
IS358	U	-	-	-	Cathy Harlow	Cathy Harlow
IS359	F	-	-	-	Sara Tavares	Sara Tavares
IS360	U	-	-	-	Filipa Samarra	-
IS361	F	-	-	-	Sara Tavares	-
IS362	U	-	-	-	Cathy Harlow	-
IS363	U	-	-	-	Sara Tavares	Julie Béesau
IS364	U	-	-	-	Marjoleine Roos	Marjoleine Roos
IS365	U	-	-	-	Filipa Samarra	-
IS366	F	-	-	-	Sara Tavares	Sara Tavares
IS367	U	-	-	-	Filipa Samarra	-
IS368	U	-	-	-	Julie Béesau	Olga Filatova
IS369	U	-	-	-	Cathy Harlow	-
IS370	U	-	-	-	Olga Filatova	-
IS371	F	0105	-	-	Sara Tavares	Sara Tavares
IS372	F	-	-	-	Sara Tavares	Sara Tavares
IS373	U	-	-	-	Cathy Harlow	Cathy Harlow
IS374	F	-	SN017	-	Annika Firmenich	Caroline Weir
IS375	U	-	-	-	Filipa Samarra	-
IS376	U	-	-	-	Marjoleine Roos	-
IS377	U	-	-	-	Marjoleine Roos	-
IS378	M	-	-	-	Sara Tavares	Sara Tavares
IS379	F	-	-	-	Sara Tavares	Sara Tavares
IS380	U	-	SN093	-	Sara Tavares	Filipa Samarra
IS381	U	-	SN180	-	Sara Tavares	Filipa Samarra
IS382	U	-	-	-	Sara Tavares	Volker Deecke
IS383	U	-	SN087	-	Sara Tavares	Sara Tavares
IS384	U	-	-	-	Sara Tavares	Sara Tavares
IS385	U	-	-	-	Sara Tavares	Sara Tavares
IS386	U	-	-	-	Sara Tavares	Sara Tavares
IS387	U	-	-	-	Sara Tavares	-
IS388	U	-	-	-	Sara Tavares	Sara Tavares

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS389	U	-	-	-	Sara Tavares	-
IS390	U	-	-	-	Sara Tavares	-
IS391	U	-	-	-	Sara Tavares	-
IS392	U	-	-	-	Sara Tavares	Sara Tavares
IS393	U	-	-	-	Filipa Samarra	Sara Tavares
IS394	U	-	-	-	Sara Tavares	Sara Tavares
IS395	U	-	-	-	Filipa Samarra	Sara Tavares
IS396	U	-	-	-	Sara Tavares	-
IS397	U	-	-	-	Sara Tavares	Sara Tavares
IS398	U	-	-	-	Sara Tavares	-
IS399	U	-	SN100	-	Sara Tavares	Sara Tavares
IS400	U	-	-	-	Filipa Samarra	Filipa Samarra
IS401	U	-	SN138	-	Sara Tavares	Sara Tavares
IS402	U	-	-	-	Sara Tavares	Sara Tavares
IS403	U	-	SN015	-	Sara Tavares	-
IS404	U	-	-	-	Sara Tavares	Sara Tavares
IS405	U	-	-	-	Sara Tavares	Sara Tavares
IS406	U	-	-	-	Sara Tavares	Sara Tavares
IS407	U	-	-	-	Sara Tavares	-
IS408	U	-	SN070	-	Olga Filatova	Olga Filatova
IS409	U	-	SN014	-	Sara Tavares	-
IS410	U	-	-	-	Sara Tavares	-
IS411	U	-	-	-	Julie Béesau	Julie Béesau
IS412	U	-	SN179	-	Sara Tavares	Sara Tavares
IS413	U	-	-	-	Sara Tavares	Sara Tavares
IS414	U	-	-	-	Sara Tavares	Julie Béesau
IS415	U	-	SN108	-	Sara Tavares	Olga Filatova
IS416	U	-	-	-	Sara Tavares	Sara Tavares
IS417	U	-	-	-	Julie Béesau	-
IS418	U	-	-	-	Sara Tavares	-
IS419	U	-	SN014	-	Olga Filatova	-
IS420	U	-	-	-	Sara Tavares	-
IS421	U	-	-	-	Sara Tavares	-
IS422	U	-	-	-	Julie Béesau	-

ID	Class	MFRI catalogue ID	Snæfellsnes ID	Scotland ID	LS photographer	RS photographer
IS423	U	-	SN152	-	Sara Tavares	Sara Tavares
IS424	U	-	-	-	Sara Tavares	-
IS425	U	-	SN002	-	Sara Tavares	Sara Tavares
IS426	U	-	SN004	-	Sara Tavares	Sara Tavares
IS427	U	-	-	-	Sara Tavares	-
IS428	U	-	SN174	-	Sara Tavares	Sara Tavares
IS429	U	-	-	-	Sara Tavares	-
IS430	U	-	SN031	-	Sara Tavares	Sara Tavares
IS431	M	-	-	-	Austin Taylor/ www.austintaylorphotography.com	Austin Taylor/ www.austintaylorphotography.com
IS432	U	-	-	-	Austin Taylor/ www.austintaylorphotography.com	Austin Taylor/ www.austintaylorphotography.com

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