



Happywhale – Marine Mammal Photo Identification



Background

Happywhale <https://happywhale.com> is a platform for gathering marine mammal photos from citizen scientists from all over the world, serving the research community as a data source for photo identification (photo ID) studies of many whale and seal species. Photo ID has been used for decades by scientists, where unique individually identifiable markings on animals allow them to be tracked through time and space. Photographs from citizen scientists can become high value data if the image is of good quality and has a verifiably correct date and location. We are able to track individuals over lifetimes working with researchers and citizen scientists around the world. This helps scientists study important ecological questions, such as lifespan and survival, population health, migration patterns, and even social dynamics like family structure.

In the Southern Ocean, large whale species such as the blue, fin and humpback whale were hunted down to just a few thousand, for some species even a few hundred individuals by 20th century commercial whaling. Most commercial whaling ended in the 1980s and the great news is that the majority of whale populations are recovering. But science is starved for good data from Antarctic waters.

We have a unique opportunity to change this through collecting photos of species of interest during our voyages: humpback, blue, sei, fin, southern right whale, killer whale, rare whales, Weddell seals and leopard seals and submitting them to Happywhale. Images are then shared with scientific organizations engaged in photo ID studies. For humpback whales, Happywhale will attempt to identify your whales; the best part is that all contributors can follow individuals, like a social media platform for your favorite whales.

How can you/guests participate?

Taking part in Happywhale is easy, fun and very engaging. Antarctic travelers can participate throughout the entire trip by photographing characteristic markings of the marine mammal species of interest, such as the underside of humpback whale tails, the dorsal fins and saddle patches of killer whales, the dorsal fins of blue/fin/sei whales, etc. (see resource material below).

- Photograph the identifiable features on marine mammal species that you see, being sure to follow responsible marine mammal watching guidelines (do not disturb wildlife to obtain ID photos).
- Upload photos to <https://happywhale.com> or deliver them electronically to project director Ted Cheeseman (see contact info below). The project is most successful when there is a way to gather images aboard; despite the best of intentions, guests often fail to upload photographs after they disembark.

Make sure your company has its own Happywhale page. If not, contact Ted to have this set up. All sightings from your company will be connected to that page and you can then share this page with your guests. Non-photographing guests can participate as well, through "following" the voyage, or individual whales (both options can be selected via the company's Happywhale website), to receive identification notifications.

ANTARCTIC HUMPBACK WHALE CATALOG

HAPPYWHALE.COM AND ALLIED WHALE

CATEGORY 1: 0% - 10% Black

 <small>AHWC-0077 Photo by Robyn Woodward</small>	 <small>AHWC-0456 Photo by Richard White</small>
 <small>AHWC-1212 Photo by Richard White</small>	 <small>AHWC-1632 Photo by Ted Cheeseman</small>
 <small>AHWC-2907 Photo by Richard White</small>	 <small>AHWC-3027 Photo by Richard White</small>
 <small>AHWC-3042 Photo by Alain Bidart</small>	 <small>AHWC-3042 Photo by Joël Frediani</small>
 <small>AHWC-3042 Photo by Joël Frediani</small>	 <small>AHWC-3042 Photo by Joël Frediani</small>

TAKE WHALE PHOTOS HELP SCIENCE

www.happywhale.com

Do you enjoy whale watching and photography? Scientists need track and learn more about these amazing creatures. It's simple. Take photos of whales – we want humpbacks, blues, southern rights, all whales, any rare whales, and leopard and Weddell seals. Upload your photos to Happywhale.com. We'll tell you what we find and share the data with scientists. **Participating is as easy as 1-2-3:**

- 1 Set.** Set your camera to the local date and time. Turn on GPS if you're able!
- 2 Shoot.** Center the photo on the whale's tail or dorsal fin. You can clearly identify the whale's color or dorsal fin.
- 3 Submit.** Go to happywhale.com and upload all files for each whale. If you are a new contributor, your account will be created for you.

Don't harvest whales. Please be sure to follow all whale watching guidelines and never and do not use photography to harm or harass whales. Participation to disturb whales. **Always respect the whale!**

How Many Photos Do I Need? Photos are used to document whale populations and track the health and movements of whale populations over time. There is no limit to how many humpback whales and their photos you can submit. **What are we all for?**

IAATO vessels travel Antarctica more widely and thoroughly than any scientists. Our access and capabilities are unique, providing waters that are poorly known to science. By this, we have the opportunity to contribute to research through photography of marine mammals. Happywhale.com was developed for this purpose, to create a better record of the mammals. Happywhale.com was developed for this purpose, to create a better record of the mammals. Happywhale.com was developed for this purpose, to create a better record of the mammals.

In the 2015-2016 Antarctic season, thanks to contributions from Antarctic expedition staff and cruise participants, Happywhale.com documented 296 individual humpback whale sightings. We would like to double this in the 2016-2017 season. We want to know where the whales of South Georgia are coming from, and want to document the movement and population growth rate of humpback whales. We have included the movement and population growth rate of humpback whales. We have included the movement and population growth rate of humpback whales.

You can find a larger catalog at www.happywhale.com/locations/antarctica

We are interested in all large whale species, killer whales, any rare whale sightings, or Weddell and leopard seals. For humpbacks and sperm whales, blue photos are most useful. For most other whales we use the dorsal fin for ID. Photograph as often as possible. With southern right whales, photograph the head (the calloused discoloration of the forehead) from as overhead as possible. For any rare whale sightings (the whale patches of humpbacks), as many photos as possible will help us learn every detail about these whales. For seals, Weddell seals are best with their dorsal fin up. We can learn from dorsal fin photos, but dorsal fin photos are best with the dorsal fin up. We can learn from dorsal fin photos, but dorsal fin photos are best with the dorsal fin up.

We collaborate with multiple researchers to seek to find out even things about the individuals in your photos. Photos can be uploaded as often as you like for bulk submissions. We'll respond as quickly as possible. This is an exciting project and success depends on your participation – join us!



Optional: Name a whale to raise vital funds for research while engaging your guests! For high quality images of humpback whales sent by expedition staff, we try to keep a rapid feedback cycle, with notification within 48 hours from image submission to notification of a match found or confirmation that a whale is new to science. You may name an unnamed matched whale or a whale confirmed to be new to science if used in a fundraising context, such as the voyage auction following certain naming guidelines. If you are interested in naming a humpback whale, please contact Ted.

- Make sure cameras are set to Antarctic local date and time (ship's time) and use on/in camera GPS if available. Happywhale will use GPS data either directly from the camera or from the time stamp that is attached in the metadata of each photo to derive location (each IAATO vessel is continuously sending its position, so if the time stamp is right, Happywhale will know where the photo was taken).

Note for expedition staff: Remind guests to adjust camera times during South Georgia trips when time changes are occurring.

Training and equipment required

Participation is easy, requiring a decent quality camera/smartphone and basic internet navigation skills. No other training is required.

The equipment needed for this project includes

- Camera/smartphone with decent camera function

Expected results/feedback

Participating in science can be rewarding! Happywhale will notify every participant of what we find in their photographs, both by email notification and on the website <https://happywhale.com>. Notifications will tell contributors when individuals have been identified, what the sighting history of the animal is, or reveal that their animal is new to science. Every time an animal is identified in the future, contributors who have photographed that animal will get a notification. This reward for participation – finding out for example that a whale they photographed has migrated to Panama or was first seen over 20 years before – reminds the contributor of their Antarctic experience and keeps the voyage alive in their memories. For science, these studies are helping us to understand marine mammal populations, how species are recovering from whaling and responding to a rapidly changing climate. Scientific findings and results will be shared via social media: <https://www.facebook.com/happywhales>.

Since starting in 2015, Happywhale has already documented over 70000 individual humpback whales worldwide, some sighted over 40 years apart and tracked many across migrations of thousands of miles. Where will your whales go?

Resource materials

To help integrate the Happywhale citizen science project into your expedition program, further information is given in the IAATO Field Operations Manual. These materials include further detailed project instructions, posters for display on board and recent scientific papers. There is also a helpful humpback whale catalogue included - can you identify 'your' whale?

Main contact information

Ted Cheeseman, info@happywhale.com or ted@happywhale.com

Scientific project partners

Data are shared with a wide collaboration of research groups, depending on species. A major goal of Happywhale is to make data available for sound management and protection of remote polar regions. By sharing your photos through Happywhale, you are contributing to these projects (more info about each project is available via the resource material):

Antarctic Killer Whale Photo Identification Catalog

The Antarctic Peninsula may be home to the world's most diverse assemblage of killer whale ecotypes, possibly different species! Photos of the dorsal fin and saddle patch (the pale area just below and behind the dorsal fin) are requested by researchers Robert Pitman, John Durban and Holly Fearnbach from NOAA's Southwest Fisheries Science Center to help understand pod structure and population health.

Antarctic Humpback Whale Catalog

Humpback Whales are showing a very strong recovery after the end of commercial whaling. Photos of the underside of the tail are requested to understand their population recovery and migration patterns. This research project at Allied Whale, College of the Atlantic now spans more than two decades and has documented over 8000 individual whales.

WHALE:SWIM Project – Southern Right Whales in South Georgia

Southern Right Whales were one of the first whales hunted in the Southern Ocean whaling era, but we know very little about their recovery. Photos of the head, particularly viewed from above to show the "callosity" patterns are requested. The WHALE:SWIM project is the first ever survey of southern right whales in South Georgia waters, their primary feeding grounds.



Sei Whales in the Falkland Islands (Malvinas)

Falklands Conservation is researching the distribution and abundance of sei whales in Falkland (Malvinas) waters and across the South Atlantic and Southern Ocean to understand how to best protect the species in light of increased shipping and proposed hydrocarbon development. Photos of the dorsal fin in profile are requested.



Sea Leopard Project

Leopard seals are frequently encountered during our trips and occur throughout the Southern Ocean, yet are still poorly studied. The Sea Leopard Project seeks to understand distribution, vocalizations, feeding habits, and most importantly, the nature of interactions with humans. Photos of the left side of the head for ID and photos of behavior are requested.

Collaborating globally to understand and protect whales

IAATO and Happywhale collaborate with the Scientific Committee of the International Whaling Commission (IWC) and the Southern Ocean Research Partnership (SORP) to create data access for whale researchers trying to understand ongoing changes in whale populations in the Southern Ocean. Of particular importance are images of visible injuries on whales and images of species known to have been hunted intensively in the 20th century, including dorsal fin photos of blue whales, fin whales and any rare whales.

Weddell Seal Photo Identification

Weddell seals can be identified by the spot patterns on their beautiful pelts. Researchers at Stony Brook University are studying how Weddell seals move around the Antarctic Peninsula, requesting sharp images of the belly region of seals.



Antarctic Shags at Base Brown

Penguin Lifelines monitors various seabird colonies in polar regions using fixed cameras. For the cliff nesting Antarctic shags in Paradise Bay, which are only accessible by Zodiac cruise, they need our help. The colony is near the water's edge immediately south of the Argentine Base Brown station. Photos are requested of the colony as a whole so that nests and nesting birds can be counted.



IMPORTANT NOTE: It is recommended that you discuss permitting or authorisation needs with the project lead for any citizen science project in advance of the Antarctic season, engaging with your National Competent Authority as necessary. Please remember to add citizen science activities to your Post Visit Report form.