
Studying baleen whales in the Golfo de Penas



Blue Marine Foundation and Patagonia Projects

Project overview - June 2020



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Headlines

- Baleen whale populations were decimated by industrial whaling and are recovering at different rates.
- Southern hemisphere baleen whales are thought to spend the summer feeding in Antarctic waters, and migrate to low latitude breeding grounds in the winter.
- The annual presence of baleen whales in the Golfo de Penas is still unknown.
- Although the high latitude Golfo de Penas would normally act as a summer feeding ground, Patagonia Projects has anecdotal data that some whales may feed there year-round (when conditions allow).
- In November 2018, Patagonia Projects were the first to document a blue whale in the region.

Story

Baleen whales are migratory in nature, feeding at higher latitude areas in the summer months and travelling to the tropics to breed and calve in the winter. While studies on humpback and blue whales in northern Chilean Patagonia suggest that these species spend from December to around May in these areas before migrating north, virtually nothing is known about the endangered sei whale's seasonal migrations and habitats throughout Chile. The Golfo de Penas is a high latitude ecosystem of fjords and inner channels, which has high levels of primary productivity and therefore krill and prey abundance for cetaceans. However, apart from opportunistic sightings in the past by the Patagonia Projects team, there are no published papers on what species of baleen whales are found in the fjords and inner channels of the Golfo de Penas. In November 2018, Patagonia Projects set up a protocol for on-effort sightings, recording cetacean behaviour and taking photo ID data of both baleen and toothed whales (dolphins and orca). The aim was to better understand which baleen whales inhabit the area, whether they are residents and whether there is high site fidelity (do they return each year?), and what they are feeding on in the area. Data from the mass mortality event in 2015 suggested that the sei whales were feeding on copepods, euphausiids, amphipods in the Patagonian fjords, but that diet as well as migratory patterns vary between individuals. The first observation of the endangered blue whale was documented in the area in November 2018, and even better it was observed lunge-feeding in the inner fjords, indicating that it might be familiar with this area and that there was prey available. A short publication will soon be submitted on this blue whale's presence and the fact that the Patagonia Projects' photo-identification data was able to match it as an individual from the Chiloe region further north, where there is a blue whale feeding ground that has stimulated much focus and protection debates.

- (Also linked in the "Media & Art" project summary) Short film of the November 2018 trip by Will Darwin was presented at the World Marine Mammal Conference in Barcelona, in December 2019 <https://www.youtube.com/watch?v=qcnlqWjqSFM>
- This film was also selected to be shown at the World Whale Film Festival, Hawaii, February 2020.



Top image: A sei whale in the Golfo de Penas. Credit: Keri-Lee Pashuk
 This image: A blue whale surfaces next to the Saoirse. Credit: Keri-Lee Pashuk
 Front cover: Aerial shot of a blue whale. Credit: Will Darwin.

Papers

Directly from Patagonia Projects expeditions:

- Clegg, I. L. K., Pashuk, K., Greg Landreth, G., Darwin, W., Espan ol, S., Galletti Vernazzani, B., Haussermann, V. (Manuscript in preparation). "Blue whale observation within the fjords of the Golfo de Penas, Chilean Central Patagonia and connectivity with Isla de Chiloe sightings: another mid-latitude feeding site for Chilean blue whales?"
- Reiss, L., H ussermann, V., & Mayr, C. (2020). Stable isotope records of sei whale baleens from Chilean Patagonia as archives for feeding and migration behavior. *Ecology and Evolution*, 10(2), 808-818.

From Patagonia Projects scientists on the same topic:

- F rsterra, G., & H ussermann, V. (2012). Report on blue whales sightings (*Balaenoptera musculus*, Linnaeus, 1758) in a narrow fjord during autumn-winter in southern Chile (Mammalia, Cetacea, Balaenopteridae). *Spixiana*, 35(2), 237-45.

Activities

- Document the species and location of all cetacean species encountered on-effort or opportunistically.
- Conduct "on-effort" observations where at least 1 observer is following a standardised visual transect.
- Take photo ID data (dorsal, tail and markings) for sei whales and blue whales to start with.

Targets

- Collect data on species, abundance and seasonality for the Golfo de Penas.
- Develop standardised transects to follow when in-transit as part of on-effort observations.
- Starting with sei whales and blue whales establish photo ID catalogues of individual animals.
- Investigate pairing of behavioural data with blow sampling and tagging of sei whales.

Outcomes

- Publish the first data on cetacean species and abundance in the inner Golfo de Penas.
- Understand which individual sei whales, blue whales are sighted in the Golfo de Penas each year: is there high site fidelity?
- Analyse sei whale hormone levels and pathogen load through blow sampling with drones.
- Understand where sei whales are going after they leave Golfo de Penas through deploying tags.



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