

Final Evaluation Report

Full Name	Camila Eugenia Calderón Quirgas
Project Title	Whale detectives: following the route of the enigmatic sei whale (<i>Balaenoptera borealis</i>) in the ex-whaling site of Caleta Chome 36°40'S; 73°15'W, Biobío región
Application ID	39320-2
Date of this Report	15/04/2025

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
During the spring, summer and autumn (November 2023 to March 2024/ November 2024 and March 2025), observations were made from a fixed platform (36°45'24.44"S 73°11'51.63"W) spending 40 days in the field (8 days per month), six hours per day, divided into 3 hours in the morning and 3 hours in the afternoon.		X		In total we did 57 days of monitoring. No work is done on days when the environmental conditions were not those indicated.
A monthly expedition was carried out for photo identification and acoustic sampling, from November (2023) to March (2024), with a total of 5.			X	<p>Each year we have expanded the catalog of sei whale fins in this area, adding new individuals each season, the last two seasons, we have added 9 individuals to the catalog.</p> <p>Acoustic monitoring does not allow us to count individuals, it only allows us to detect sounds, we have been able to detect fin whales and sei whales.</p>
A poster of Caleta Chome cetaceans			X	Fig. 1, 2,3,

was designed and distributed in the local community				
School visits			X	During this project we visited different courses at the "Hellen Keller" Women's School in Hualpén, it is a public school with few resources and is close to where we work, that is why that school has been chosen. In total, 40 students participated (Fig. 4).

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

During this stage we faced the death of the illustrator of all the projects, my brother Andrés Calderón, which greatly affected the team in general, and the project as well because there were still pending ideas to develop.

3. Briefly describe the three most important outcomes of your project.

Los resultados más relevantes son:

The identification of whales was more precise thanks to the lens that we acquired with the project, monitoring with theodolite was carried out but we still need more practice and training more people on the team.

Sei whales have fairly little-known behavior, therefore, everything we have been able to collect is very important. We have noticed the presence, for example, of solitary individuals that stay in the area for weeks, feeding, it is an interesting observation, although they are not large groups. In this area, whales are at risk of collision with boats, however, the good news is that the National Fisheries Service of the Government of Chile requested our sighting data to add them to the database of the Chilean Navy and with that a regulation can be generated so that boats slow down. This shows the importance of our work, because there is no other organization or people that has data on the whales in this area.

We are creating a monitoring database, but we have also created a citizen science network on WhatsApp that has given very good results. This year it celebrates 2 years of operation with 500 members who send records and allows us to expand the sightings.

4. Briefly describe the involvement of local communities and how they have benefited from the project.

This project designed a poster of "Cetaceans of Caleta Chome" that was distributed in the local community. After whaling, an educational product had never been made with the cetaceans of this area. All our terrain and navigation were done with the fishermen of the community and with Fernanda Silva, adventure tourism guide in this area.

5. Are there any plans to continue this work?

Yes, this project will continue each year to have a timeline of data that is meaningful to draw larger conclusions about habitat use, acoustic presence, and seasonality.

6. How do you plan to share the results of your work with others?

The results of our work have been disclosed in different instances:

Talk at a school in the city of Concepción and Hualpén (Fig. 4)
Free distribution of a poster about the project (Fig. 1,2,3)
Scientific manuscript in preparation

The publication is being written, it will be oriented to the importance of this area as a habitat for marine mammals, we initially thought of the Magazine of Marine Biology and Oceanography in Chile, but to publish in English. Regarding local media, I have had personal appearances in different media where I mentioned that the work has been done with the support of the Rufford Foundation. Ex: Chapter "Cetáceos" of the Chilean Podcast "La Ruta Secreta", I was a Speaker at the great Ladera Sur Festival and a few weeks ago after sending this report, I visited 3 schools and a group of children in a port where they were also able to see the fins that we have identified.

Our data is also contributing to the declaration of this area as a Marine Protected Area, a process that will be led by the Ministry of the Environment in Chile with the global NGO Oceana and also, as explained above, our data are the basis of the new regulations that seek to ensure that boats slow down to avoid fatal collisions.

7. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?

We used the grant for 2 year, which was the initial time that was considered in this project.

8. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

[Intentionally deleted]

9. Looking ahead, what do you feel are the important next steps?

The next steps are to focus efforts on continuing the monitoring of the sei whale in Caleta Chome and adding another monitoring point at the mouth of the Biobío River, in addition to promoting community monitoring that has been generated through a WhatsApp group called: "Biobío Cetacean Observation Network."

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

Yes, in all outreach activities and in educational products

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Camila Calderón Quirgas: Camila is the principal researcher of the project, she carried out field work, poster editing, poster delivery and purchasing management.

Andrés Calderón: Andrés was an illustrator, he made illustrations of cetaceans from Caleta Chome and the Gulf of Arauco

Andrea Cisterna-Concha, Co-researcher: She has supported the organization of the land, transfer of volunteers and land materials during the field work. In addition to training for volunteers in handling equipment. I have also participated in monitoring from land and by boat.

Richard Muñoz Herrera: He has provided supported with the collection of oceanographic data (T °, S °, dissolved oxygen) and subsequent analysis.

Daniela Calderón Quirgas: She has designed all the printed educational material y the material for social media too.

Felipe Oyarzún: Felipe actively participated in the field work, where he carried out monitoring from land and photo-ID work from a boat. During this period, Felipe also learned the use of hydrophones and protocols for the observation and monitoring of marine mammals, both from land and from a boat, as well as the basics of bioacoustics as a tool for studying cetaceans.

Julie Patris and Franck Malige: They have supported the analysis of acoustic data, describing and detecting sei whale and fin whale vocalizations in this area.

Fernanda Silva: She has supported throughout the project, making the link with the local community.

12. Any other comments?

This project has been developed successfully, we hope to continue working for the conservation of the sei whale in this area, I think it is urgent to continue monitoring from September to March, consider doing some monitoring in winter if conditions allow it and make educational material about this species. We hope to meet these objectives in the next stage of the project.



Figure 1. Visiting each of the houses in Caleta Chome, delivering information about our project.



Figure 2. Visiting each of the houses in Caleta Chome, delivering information about our project



Figure 3. Visiting each of the houses in Caleta Chome, delivering information about our project.



Figure 4. Socialization and education activities of the project in two schools in the city.