

Final Project Evaluation Report

Your Details	
Full Name	Eliana Paola Zuazquita
Project Title	Conservation of Southern right whales, <i>Eubalaena australis</i> , through the development of responsible whale watching in Miramar, Buenos Aires province, Argentina
Application ID	25997-1
Grant Amount	£5,000
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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
<p>Provide local authorities with scientific information needed to draw up proper whale watching regulations and plan conservation strategies for the species in the area.</p>				<p>Monthly updates on the project's progress were given to municipal authorities. Ad-hoc update meetings were held. Formal meetings were held with General Alvarado's (Miramar) Secretariat of Tourism, Culture and Sports in August, September and October 2018 and September and October 2019 to report on the project's progress. Annual reports were sent to the local authorities to update them on the development of the project.</p>
<p>Contribute to the protection of the species along all of its range by increasing knowledge about SRW migration routes. This information will be given to the International Whaling Commission Conservation Management Plan for the Southwest Atlantic Southern right whale's population.</p>				<p>Fieldwork was conducted from July to October 2018 and in 2019 to study southern right whale (SRW) habitat use, resulting in 178 days on-effort. 559 groups of SRW (786 SRWs) were recorded (including data on group composition, age category, position, and behaviour). A paper, "Seasonal Occurrence of Southern Right Whales (<i>Eubalaena australis</i>) in Miramar (Buenos Aires Province, Argentina)", was submitted to the 67b meeting of the International Whaling Commission Scientific Committee (IWC SC). In May 2019 a summary of the work was presented at the 68a meeting of the IWC SC, to strengthen the conservation agenda of the Conservation Management Plan for the southwest Atlantic southern right whale population. Acoustic recordings were gathered from a semi-rigid boat of Prefectura Naval Argentina using a hand-held hydrophone, obtaining 16 min of recordings and at least three vocalisations.</p>
<p>Change people's attitude towards the whales and instil a desire</p>				<p>An educational programme was carried out involving 741 students and teachers of elementary and high schools from</p>

<p>to protect SRW. Develop knowledge in the local community, especially among young people, about the value of natural resources, with emphasis on SRW and other cetaceans, and the conservation of marine environments.</p>			<p>Miramar, Mar del Sud, Paraje La Ballenera, General Dorrego and Caseros, Buenos Aires province.</p> <p>Lectures were given to students and teachers, who continued working with the teachers in the classroom and undertook activities promoting the conservation of cetaceans, such as origami, posters, and searching for information about cetaceans.</p> <p>Three SRWs of the Miramar Catalogue were named by these students "Miriluna", "Blue" and "Aishe".</p> <p>Ecological bags containing information on SRW were distributed.</p> <p>The first "Jornadas de Conservación de Cetáceos" in Miramar were carried out by Fundación Cethus. The event aimed at biology teachers and students, local authorities, Prefectura Naval Argentina and the community.</p> <p>The community was involved in the project and three volunteers were trained to help with fieldwork, from Miramar and a veterinarian from Mar del Plata (city located 45 km north-east of Miramar).</p> <p>A talk on whales and dolphins of Argentina, including southern right whale, was given to staff of Prefectura Naval Argentina at its headquarters in Buenos Aires city on the 6th November 2019.</p> <p>Information on the project was disseminated by several digital press media.</p>
<p>Update the SRW photo identification catalogue for the area between Mar del Plata and Necochea. Each identified individual will be cross referenced with existing catalogues in Argentina, Brazil and Uruguay in order to understand migration patterns and to establish conservation criteria.</p>			<p>Two aerial surveys, one in 2018 and the other in 2019, were conducted with the support of the Prefectura Naval Argentina. In 2018, 22 SRWs were counted, including a mother with a calf, in 10 groups; photographs were taken for photo-ID. 11 SRWs have been added to the Miramar's catalogue, which currently consists of 19 SRWs. In 2019, 56 SRWs were counted, including a mother and a calf and two juveniles, in 29 groups; photographs were taken for photo-ID which are still under analysis.</p>

			<p>This catalogue (updated up to 2018) was compared to the catalogues from Golfo San Jorge and Cabo Virgenes, Santa Cruz province, Argentina, and no match was found.</p> <p>Miramar's catalogue was shared with the holders of SRW catalogues in Península Valdés, Argentina, and in Santa Catarina, Brazil.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

Collection of acoustic recordings was limited because it's very difficult to navigate in the area and the sea conditions were not favourable during the estimated recording days. The use of a small boat was challenging because open waters with high sea state and strong swell.

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

1. Educational activities:

During the year talks were delivered in nine schools involving 741 students and teachers from Miramar and other towns from Buenos Aires province. The aim of these talks was to involve children and adolescents in the conservation of cetaceans and share with them the knowledge generated through our research project on southern right whales in the area. Printed materials were distributed among students and the wider community. The ecological bags printed with information about SRWs were excellent to disseminate information and raise awareness on the reduction of the use of plastics. The proposal to schools to name the whales identified in the Miramar catalogue helped bring children and whales closer.

A working day on conservation of cetaceans entitled "Jornadas de Conservación de Cetáceos" was held by Fundación Cethus and the Instituto Superior de Formación Docente y Técnica N° 81 in Miramar. The workshop was aimed at future teachers, local authorities and interested community members, and topics such as cetaceans of the Argentine Sea, responsible whale watching and our project on SRWs in Miramar as an example of cetacean research.

A talk on whales and dolphins of Argentina (new information and threats) was given to approximately 60 Prefectura Naval Argentina staff.

All this work helps us to build support towards the conservation of SRWs and their habitat, as well as raise awareness of conservation issues and build people's appreciation of their local environment.

2. Responsible whale watching tourism

The process to establish responsible land-based whale watching is making progress. We have forged good working relationships with the authorities of Tourism of General Alvarado Municipality. They have expressed interest to continue this process in order to better implement the activity through best practices. We delivered a report with information collected about SRWs in the area, for example when is the best time to watch whales. Our advice is to develop land-based responsible whale watching from shore to avoid disturbance or injuries on whales (e.g. from ship strikes, boats and airplane engine noise). The authorities agreed on the land-based whale watching and we will continue working together on guidelines for responsible whale watching in Miramar to make a proper legislation.

3. Habitat use of Southern right whales

- Land-based survey: land-based survey is a non-invasive alternative that allows us to collect scientific information about habitat use of SRWs. This information gives a better understanding about the importance of the area for the species. Last year, from July to October 2018, 369 SRWs were sighted in 274 groups, 70% solitary animals. In 2019, during the same period, 417 SRWs in 285 groups were sighted, with 63% solitary animals. In July 2019, 54 SRWs were sighted; with a similar sampling effort, this is the highest number of whales for July since the study began. However, for both years, the peak of sightings was during August-September.

For each sighted group the behaviour, position, number of whales and environmental conditions were recorded. The incorporation of a theodolite for position data gives the capacity to get greater precision in the positioning of whales, which is very important for ecology studies and whale watching advice.

- Miramar's southern right whale catalogue: this is the first catalogue in the area for this species. 11 individuals have been added last year, so now the Miramar's catalogue consists of 19 SRWs. The photographs taken in aerial surveys undertaken in 2016 and 2018 were compared and found no internal re-sightings within Miramar. Miramar catalogue was also compared with the catalogues for Golfo San Jorge and Cabo Virgenes, both from Santa Cruz province, Argentina and found no match either. The Miramar catalogue has already been shared with researchers of Peninsula Valdés, Argentina, and Santa Catarina, Brazil, to be compared with their southern right whales' catalogues. A coincidence ("match") between any of these catalogues could reveal an important aspect of their life, such as migration routes. The photographs taken in 2019 are being analysed for adding new individuals to the SRW catalogue. In 2019 Fundación Cethus bought a drone to obtain images of cetaceans, which began to be used in September 2019. The first results are encouraging. In addition, other drone pilots joined in contributing their films. The drone will allow us to take more photographs to increase the catalogue with the resulting benefits to our research.

- Underwater acoustic recordings: On August 23rd 2018, navigation on-board a Prefectura Naval Argentina semi-rigid boat was conducted for approximately 1.75 h. An acoustician deployed a hand-held hydrophone between 5 and 10 m while the boat kept drifting with its motor powered off. At the same time an experienced observer collected data on SRWs at the surface. During the session, 16 min of recordings were collected, five groups of SRWs were sighted (eight whales), and at least three vocalisations were recorded.

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

Our aim is to include local communities in our educational and awareness programmes, as we consider this is the best way to reach conservation. We believe that from knowledge you can achieve the desire to preserve and take care of cetaceans and their habitat.

The educational programme reached nine schools (741 students and teachers) through lectures on the marine environment, cetacean biology and conservation problems providing knowledge to continue working on environmental issues and acquire knowledge about their environment. Students were invited to name a whale of Miramar's southern right whale catalogue, forging the desire to preserve them. It's important to highlight that before receiving these lectures many of the students didn't know about the presence of whales and dolphins in their coast.

The educational programme was expanded to teachers, future biology teachers, local authorities, tourism agents, interested community and members of Prefectura Naval Argentina in an open and working day, entitled "Jornada de Conservación de Cetáceos", held in October 2018. Responding to the interest of Instituto Superior de Formación Docente y Técnica N° 81, the working day event was carried out in the institute by Miguel Iñiguez (president of Fundación Cethus) and Eliana Zuazquita.

The main conservation achievements of this activity are the involvement of the community (including future teachers) in the conservation of whales and their environment and also introduce them in the economic benefit that the responsible whale watching activity could represent to all the community in winter (low touristic season). The project also focuses to show the community how to see southern right whales from the coast as a land-based of responsibly whale watching. A Facebook group was created to share whales' sightings in real time, so members could go to the coast to see the whales. The group has more than 430 members.

5. Are there any plans to continue this work?

Our future plans include:

- Analyse scientific data gathered during the project and publish a peer-reviewed paper on seasonality of SRWs in Miramar after 3 years of collecting data.
- Continue analysing photographs taken in the 2019 aerial survey plus drone images.

- Continue with data collection and analysis for the next year to establish the habitat use of SRW in the area.
- Establish areas of the coast suitable for land-based responsible whale watching.
- Continue to provide advice on the development of responsible whale watching activity to the Municipality of General Alvarado, based on the scientific knowledge generated from this study.
- Continue using digital media to share information with the community and facilitate a mutual exchange.
- Continue the educational programme at all levels, including schools and the general public, to disseminate knowledge and increase awareness on the marine environment, cetaceans, the threats they face and their conservation.
- Obtain photo-ID images of whales in the area by aerial censuses and using other non-invasive technology, unmanned aerial vehicles (drones).
- Compare the photo-ID catalogue of SRW in Miramar and its vicinity with those from Peninsula Valdés, Argentina, Uruguay, and Santa Catarina, Brazil.
- Share scientific knowledge with the International Whaling Commission and with the Argentine conservation bodies to support the creation of protected areas for Southern right whales.

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

The results of this project are shared with national, provincial and local authorities through reports during and at the end of each fieldwork season. Outcomes of the project are also covered by local and regional press and digital media. The educational programme is another way to share information with the community, as well as the Facebook group constitutes a means of diffusion.

At the international level, scientific documents will be submitted to the International Whaling Commission, regional meetings and published in scientific journals.

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

The grant was used from July 2018 to October 2019 (authorised by The Rufford Foundation, see item 12). This covered the whole fieldwork period for 2018 and 2019.

This project is expected to continue for one more year to gather the necessary information to conduct an assessment on SRW ecology in the area and responsible whale watching tourism.

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.

Item	Budgeted amount	Actual amount	Difference	Comments
Travel 1 additional researcher Buenos Aires - Miramar (2 x 77.35GBP) (Jul/Aug - Oct 2018)	155	150	-5	
Admin	237	237		
Miscellaneous (internet, phone, equipment repair, etc.)	99	39	-60	
Insurance for researchers (1 x 1 year, 3 x 15 days) + equipment	63	63		
Design and production of Ecological bags x 1000u	354	396	+42	
Travel 1 person Buenos Aires - Miramar - Buenos Aires (1 x 77.35GBP/each) (Jul -2018)	221	132	-23	
Meals MI WW Workshop 1 person for 3 days (USD 15/days/each)				
Accommodation x 2-day WW Workshop				This was provided in kind
Training on the use of theodolite (Brazilian expert coming to Miramar) 10 days	730	665	-65	
Taxis	10	18	+8	
Transportation Miramar - Mar del Plata - Miramar for aerial survey x2 researchers (4.05GBP/each)	8	4	-4	
Gasoline for helicopter (2.5 hs x 1 surveys x 0.66GBP/liter)	1160	1607	-447	
Gasoline for boat (50 lts/day - 51.5 GBP x 10 days)	368	17	-351	
Meals for additional researcher (20 days x 11.05 GBP/days)	221	164	+436	
Meals for principal researcher (116 days x 11.05GBP/day) (13 days Jul-Aug-Sep-Oct-2018, Jul - 2019)	851	657	-195	
Travel Mar del Plata-Miramar-Mar del Plata Volunteers (129 days x 4.05 GBP/day)	523	224	-299	
TOTAL	5000	4373	-627*	(£1= \$arg27.149)

*To use these available funds to extend the project until October 2019, an authorisation was requested by e-mail on the 13th September 2019 to The Rufford Foundation. On the same day the relevant end-use authorisation was received.

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

It is important to continue collecting data in order to provide advice to the authorities to develop the responsible whale watching activity based on the best available science. Research will provide the best support for any decision adopted by the authorities to protect southern right whales and their habitat. Continue the educational programme at all levels, including schools and the general public, to improve the knowledge about the marine environment and cetaceans in order to generate awareness about their conservation and threats.

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?

The Rufford Foundation logo was used in the ecological bags which were widely distributed at the schools, during the workshop and in the Tourism, Culture and Sport Secretary office. The Rufford Foundation is also mentioned in every presentation of this project in press and digital media and the paper submitted to the 67b meeting of the International Whaling Commission Scientific Committee (IWC SC) and will also be acknowledged in the scientific articles published on this project in peer review journals and meetings.

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

Eliana Zuazquita: fieldwork organizing, researcher, orator of educational program and working day, analysis data.

Jimena Belgrano: fieldwork organizing, researcher and orator of educational program and analysis data.

Miguel Iñiguez: Fundación Cethus President, fieldwork organizing, and orator of working day.

Alexander Marino: acoustic data collection and analysis.

Vanesa Reyes: acoustic data collection and analysis.