Rufford Innovation Award

Final Report

Blue whales in Chile: the giants of marine conservation

Name of grantee: Dr. Rodrigo Hucke-Gaete,
Centro Ballena Azul / Blue Whale Centre (CBA)

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I. Executive Summary:

The Rufford Innovation Award was granted at a critical time within the context of marine conservation efforts in Chile. This timely contribution constituted a boost to the ongoing creation of a marine protected area covering the Chiloe-Corcovado seascape. All key project objectives were met. Awareness has been raised using blue whales as a flagship species to gain public attraction. At the same time, the Government continues to show high-level support to the creation of this protected area, partially lured by the potential of ecotourism activities. Local communities stand firmly behind conservation efforts. Conservation is thus not imposed, but rather a "bottom-up" concern. Unfortunately, powerful interests see the protected area as a threat to their activities. In order to achieve tangible conservation results, the Blue Whale Center and its allies have engaged in a painstaking process seeking to find a workable compromise. This process is currently ongoing. There is reason to believe that it will eventually succeed. Without the early support from the Rufford Innovation Award, momentum would have certainly been lost and the whole process might well have derailed.

II. Operating context and difficulties encountered

Project implementation began within a relatively inauspicious context. On the one hand, decisions on key resource appropriations for matching funds were delayed by donor agencies. This meant that the Blue Whale Centre could only rely on the Rufford Innovation Award for all of its science and advocacy operations during the 2006/7 season. In fact, had these funds not arrived, all conservation efforts would have been brought to a standstill with a harmful (and perhaps irreversible) loss of momentum. As a result, the project had to bear the full costs of all project staff (whereas a cost share had originally been anticipated).

When the first funding tranche (approximately 75% of total funds)) arrived, the exchange rate British Pound had sunk to around 900 Chilean Pesos (while a rate of approximately 1050 had been assumed). Fortunately, the Pound recovered by the time the second tranche (25% of total funds) was paid in. These exchange rate variations meant that the overall project budget was squeezed by approximately 10% in local currency terms.

Figure 1: Educational activities with children (left panel) and photo-id work (right panel) undertaken on board CBA vessel, R/V Musculus.

To add to this financial trouble, fuel costs soared during the implementation of the project. Fuel is in fact a key input for all marine based activities. Furthermore, the purchase of a project truck came at a higher cost than budgeted.

The final hit to project assumptions was felt at the early stages of the construction of the project research station. Building plans had been laid out and a suitable piece of land had been identified. Construction was about to begin when a local islander protested because he laid claim to the same plot. Although a "legal" deed was available to enforce property rights, it was felt that if construction pressed on, goodwill with the local population may well have been jeopardised. Avoiding trouble with locals was considered a paramount concern.

Despite these difficulties, the timing for the project was excellent. This grant singlehandedly allowed for science and conservation activities to continue. With hindsight, it now becomes evident that political will for a marine projected area would have subsided without the advocacy activities undertaken. In addition, the Rufford Innovation Award allowed for valuable scientific information to be collected during the 2007 season. Given the lack of hard data to support conservation activities and the fact that observations can only be made in the summer, losing a year would have been disastrous. Finally, the project ultimately allowed for further resource mobilisation. Matching funding was made available and the financial continuity of both scientific and conservation activities has been secured for the medium term. The political process towards the declaration of a marine protected area tortuously, but steadily marches on.

III. Reporting by objectives

Objective 1: To strengthen a research program on blue whales in order to increase knowledge on its ecology and address human-induced conservation impacts together with increasing presence in the study area, Chiloe and Corcovado Gulf, southern Chile.
Sea- and land-based surveys were undertaken for both the 2007 and the 2008 austral summer seasons. Scientific protocols were refined and followed correctly largely in all

cases. The 2007 field season was developed between 25 January and 7 April completing a total of 173 hours of land-based observations in 37 effective days [weather-wise]. Despite the numerous mechanic problems we had with the vessels' outboard (Suzuki 115 hp) and additional outboards we brought in to solve the problem (without much success), we were able to complete a total of 21 boat based surveys through the aid of land-based observers guiding the research vessel (R/V Musculus). This issue only highlights the need for obtaining better equipment and count with replacement options, which we did not have available at the time. The 2008 field season started on 26 January in Melinka, Guaitecas Islands. A total of 31 very successful marine surveys were completed together with 334 hours of land based observations on-effort.

A total of 205 groups comprised by 326 blue whales (Balaenoptera musculus) were observed in 2007. During 2008, a total of 170 blue whale sightings (including 241 individuals), 29 humpback whale sightings (including 40 animals) and 5 sei whale sightings (including 11 animals) were obtained. We were also able to obtain a total of 35 biopsy samples (including skin and blubber) from blue, humpback and sei whales, furthering in this way on the build-up of a genetic and contaminant database on the whales of the Corcovado Gulf. The photographic identification database of blue and humpback whale physical characteristics and pigmentation patterns has now been enlarged to 125 presumed individual blue whales and 27 humpback whales.

Finally, sound recordings were taken and analysed to try and determine whether or not this population has a distinctive acoustic signature. We made just over 16 hours of opportunistic recordings, coupled with visual species identification, within a general study area of 1542 km2. A total of 206 individual calls were identified, of which 25 were short duration (<1s) calls at 418 Hz (average), 37 were short-duration calls at 351Hz (average) and 144 were long-duration calls (3-24s) between 19-98Hz. The atypical nature of the acoustic signal recorded here might support the notion that the Chilean blue whale belongs to a separate sub specific grouping, but clearly further studies are required to fully resolve this matter. Construction of the research station was however discontinued due to the difficulties mentioned in section II above regarding traditional property right in the islands. This adjustment also helped release the financial restrictions mentioned in that section.

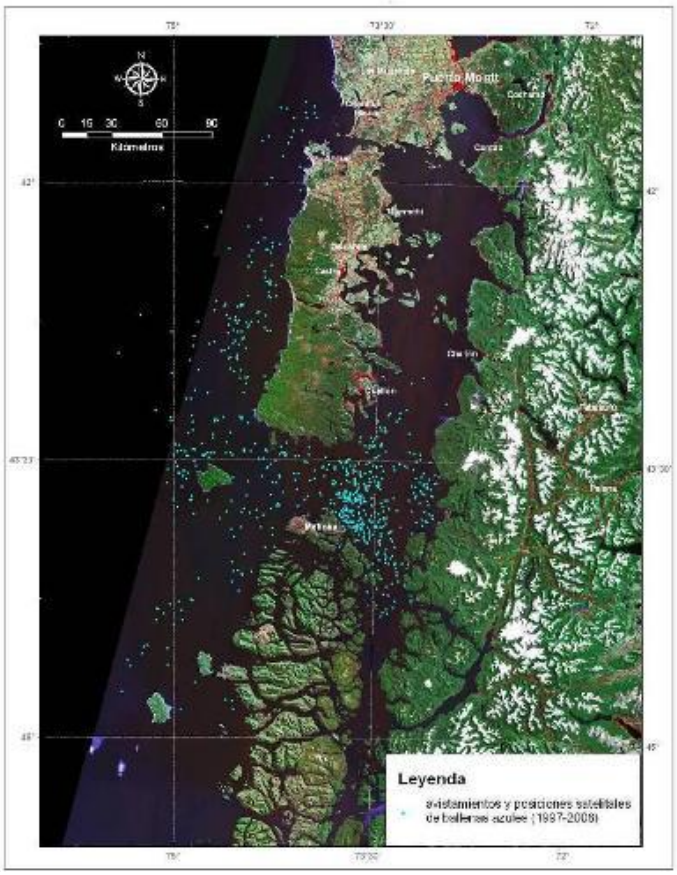

Figure 2: Total sightings and satellite tag positions of blue whales obtained between 1997 y 2008 (Source: CBA/UACh).

As a result of project activities, much has been learned about the ecology and the habitat use of cetaceans in the area under study. A detailed report of field activities is available upon request. In addition, a number of scientific articles have been published on research funded by the Rufford award. This information is now proving invaluable to argue for the protection of these biologically rich, yet threatened waters.

Objective 2: To provide scientific advice to national authorities on the need of implementing a MU-MCPA, develop workshops with local stakeholders and continue the development of an educational program that increases environmental conscience about endangered species inhabiting the area at both local and national levels.

The marine protected area project has proved extremely ambitious in light of the complexity of both the threats faced and of the heterogeneity of interests affecting the area. Threats range from marine traffic and military exercises, to introduced marine species and industrial mega projects (such as a projected aluminium smelter). Stakeholders encompass local inhabitants (poorer than the national average), salmon farmers (one of Chile's main exporters), military officers, as well as a number of authorities at various levels. In fact, the proposed protected area overlaps two different Chilean "Regions", which entails the participation of a number of local, "provincial", and federal


Figure 3: Awareness-raising through artistic activities.

authorities, each with different interests and representing different constituencies. Even local conservationists have highly disparate views as to how to protect the local environment (ranging from the very radical, to those that are willing to tolerate some level of extractive and other disruptive activities).

Given this high level of complexity, as well as the asymmetry in resources between parties (vis a vis, for example the military or the salmon producers), the project has engaged in alliances with a wide range of actors from the civil society. Interestingly, the highest level of support has been felt from local islanders. They are often keen to capitalise on the potential for ecotourism. They also often wish to preserve their natural environment unspoiled from what is sometimes perceived as outsiders eager to rip away the area's resources for their short term gain.

During 2007, the CBA achieved a voting procedure in the two regional discussion tables of both Regional Commissions of Coastal Border Use in Los Lagos and Aysen Regions. The next step forward was to present the initiative to the National Commission of Coastal Border Use, presided by the Minister of Defence, and accompanied by the undersecretary of Maritime Affairs. This meeting was held in August 2007, and against all expectations, a group of artisanal fishermen accompanied by 2 national NGOs interrupted the meeting, demanding that the process be halted so as to develop an ad hoc participation strategy. Even though there are civil representatives in the regional discussion tables, mainly for artisanal fisheries and salmon farming industries, the group of artisanal fishermen did not express explicit opposition to the proposal during previous consultation stages. The legitimate demands of this group that were to be integrated in the near future once the intention of declaring a MUMPA was clear, were assembled and used by the NGOs that work mostly from Santiago and which have not yet had a clear position in relation to the consultation process, but have constantly opposed the process in some way.

Unfortunately this resulted in that the initial proposal for a Multiple Use Marine Protected Area (MUMPA) was frozen by the central government until more participatory activities are undertaken. Due to this, a big opportunity was lost to review in detail the imminent expansion of the salmon farming industry under the general framework of a MUMPA. This expansion process southward started increasing alarmingly during 2008 until fish farming was brought to an abrupt halt by the appearance of a lethal virus which causes infectious salmon anaemia (ISA), forcing companies to close a large number of processing plants and to slaughter all the fish in infected farms and the use indiscriminate use of antibiotics. The ISA virus also infected those farms located in the recently colonized Aysen waters.

Despite the above, we continue our work building alliances and agreements with local communities, creating a solid base for a new process in this territory. This new process is focused in generating a conservation strategy for the area, which possibly ends up proposing several marine protected areas, such as reserves, parks, or multiple uses areas or just a large MUMPA as initially proposed. This new strategy aims at generating strong support from the local communities and stakeholders. They are the base of any intervention and the people who can work to maintain this process in the long term. We have been able to generate alliances and compromises with indigenous people (the Consejo de Caciques de Chiloé and the Federación de Comunidades Huilliches de la Isla de Chiloé), fishermen (the Provincial Council of Artisanal Fishermen of Chiloe (PCAFC)), other NGOs, local governments and consolidate a better presence throughout this territory and our proposal of sustainable development, using the blue whale not just as an iconic species to understand the importance of the area, but also to generate awareness on marine conservation issues and along Chile.

After tenacious efforts from both the grantee and other players, high-level federal government support has also been secured. In fact, the National Commission for the Environment opened a bid to advise the Government on the creation of a marine protected area, taking due consideration of social, biological, and economic factors. This can be considered as the main achievement to which Rufford Award Funds contributed. In addition, technical continuity will be attained as this far-reaching study has been commissioned to the Blue Whale Centre (CBA) though the Austral University of Chile.

The implementation of this official high-level study, which is currently ongoing, has made apparent a great deal of resistance from a number of powerful players. The likely results are difficult to gauge. However, possible scenarios include a “diluted” version of the marine protected area, seeking to provide a compromise outcome to all parties involved. At this stage, however, the future evolution of this initiative is highly uncertain.

At a technical level, much has been achieved. The biological data collected has been transformed into useful inputs for the creation of the management plan for the protected area. Thus, information on habitat use, life cycles, and overlap with human activities has been systematised into GIS systems. This analysis is providing the technical basis for fashioning the protected area.

In order to reach this point, a number of educational and advocacy activities were funded through the Rufford award. They include, (i) talks to primary, and high school children, (ii) community outreach, (iii) sensitisation trips for local and national authorities, (iv) intense media exposure, (v) production and distribution of pamphlets, illustrations and other promotional material, (vi) targeted lobbying selected influential persons, and (vii) the establishment of contacts at the International Whaling Commission. A list of these activities is available upon request. Within this process the support of WWF and other local conservationists has been key.

IV. Reporting by outputs

1. Development and report of the 5th dedicated field season investigating blue whales and their ecosystem.

Status: Completed. Report available upon request.

2. The building of the first marine scientific station in the Guaitecas Archipelago.
   Status: Interrupted. Please refer to section II above.

3. A strategically designed meeting schedule with various stakeholders and government officers to promote a set of new policies and legal tools in Chile regarding marine conservation.
   Status: Completed. Report available upon request.

4. Meetings and workshops with local stakeholders and government officials (March, July, September & November 2007).
   Status: Completed. Report available upon request.

5. Production of outreach material.
   Status: Completed. Samples available upon request.

6. Press releases.
   Status: Issued and disseminated. A number of these press releases yielded article on local and national newspapers and magazines with mass circulation. Selected press releases and articles can be downloaded at http://www.ballenazul.org/noticias.htm

7. Submit scientific publications to peer reviewed journals
   Status: Done. References below

Branch, T.A., K.M. Stafford, D.M. Palacios, C. Allison, J.L. Bannister, C.L.K. Burton, E. Cabrera, C.A. Carlson, B. Galletti Vernazzani, P.C. Gill, R. Hucke-Gaete, K.C.S. Jenner, MN. M. Jenner, K. Matsuoka, Y.A. Mikhalev, T. Miyashita, M.G. Morrice, S. Nishiwaki, V.J. Sturrock, D. Tormosov, R.C. Anderson, A.N. Baker, P.B. Best, P. Borsa, R.L. Brownell Jr, S. Childerhouse, K.P. Findlay, T. Gerrodette, A.D. Ilangakoon, M. Joergensen, B. Kahn, D.K. Ljungblad, B. Maughan, R.D. McCauley, S. Mckay, T.F. Norris, Oman Whale and Dolphin Research Group, S. Rankin, F. Samaran, D. Thiele, K. van Waerebeek & R.M. Warneke (MS in review). Past and present distribution, densities and movements of blue whales in the Southern Hemisphere and adjacent waters. Mammal Review 37 (2): 116-175.

Viddi, F.A., **R. Hucke-Gaete**, J.P. Torres-Florez, S. Ribeiro & C. Christie (MS in review). Spatial and temporal variability of cetacean distribution in the fjords of northern Patagonia, Chile. Journal of the Marine Biological Association of the United Kingdom (JMBA).

Buchan, S., L. Rendell & **R. Hucke-Gaete** (submitted). Preliminary recordings of blue whale (Balaenoptera musculus) vocalizations in the Gulf of Corcovado, northern Patagonia, Chile. Submitted to Marine Mammal Science (MMSCI-2840).

In addition, the following six working papers were also presented to the Scientific Committee of the International Whaling Commission:

Hucke-Gaete, R., H. Rosenbaum, J. P. Torres, F.A. Viddi, M. Leslie, Y. Montecinos, S. Cuellar & J. Ruiz (2006) Blue whale research and conservation off southern Chile: 2006 update. Comité Científico de la Comisión Ballenera Internacional SC/58/SH9, St. Kitts & Nevis.

Hucke-Gaete, R., J. P. Torres-Florez, F.A. Viddi, S. Cuellar, Y. Montecinos & J. Ruiz (2006) A new humpback whale (Megaptera novaeangliae) feeding ground in northern Patagonia, Chile: extending summer foraging ranges. Comité Científico de la Comisión Ballenera Internacional SC/58/SH10, St. Kitts & Nevis.

Montecinos, Y. & **R. Hucke-Gaete** (2007) Blue whale sightings from a land-based platform in the Corcovado Gulf, southern Chile. Comité Científico de la Comisión Ballenera Internacional SC/59/SH/WP2, Anchorage, Alaska.

Montecinos, Y. & **R. Hucke-Gaete** (2008). Land-based observations of blue, humpback and sei whales in the Gulf of Corcovado, northern Patagonia, Chile: sighting rates, movements and space use (2006-2008). Comité Científico de la Comisión Ballenera Internacional SC/60/SH46, Santiago, Chile.

Buchan, S., L. Rendell & **R. Hucke-Gaete** (2008). Preliminary characterization of blue whale (Balaenoptera musculus) vocalizations recorded in the Gulf of Corcovado, northern Patagonia, Chile. Comité Científico de la Comisión Ballenera Internacional SC/60/SH45, Santiago, Chile.

Acevedo, J., **R. Hucke-Gaete**, E. Secchi, J. Allen, A. Aguayo-Lobo, L. Dalla Rosa, D. Haro, L.A Pastene (2008). Photo-identification analysis among humpback whales from three localities of the stock G. Comité Científico de la Comisión Ballenera Internacional SC/60/SH27, Santiago, Chile.

V. Further analysis of project outputs

1. Expansion and consolidation of the research protocol and enhancement of current datasets.
   Status: Done.

2. Consolidation and inauguration of a permanent space in the field.
   Status: Interrupted as explained above. However, agreements are being discussed with local islanders in order to use alternative space and in the meanwhile foster the injection of funds to the local (island) economy.

3. The involvement of apex politicians and government officers pushing at various levels for the discussing and implementing the most urgent policies needed.
   Status: Done, they include e.g. Senators Andres Allamand, Alejandro Navarro and Antonio Horvath.

4. A decree signed by the president of Chile, Mrs. Michelle Bachelet, establishing a Marine Protected Area in the Corcovado Gulf together with preliminary agreements and potential partnerships with stakeholders for developing measures to mitigate and control identified threats to marine conservation in the area.

Status: Underway. Getting the Marine Protected Area (MPA) approved has proved to be a more tortuous process than expected. However, high level political interest has been secured, including a decision by Chile's Senate to work towards securing such an MPA. The whole process is likely to take still some years.

5. Outreach material disseminated at various levels.
   Status: done.

Figure 4: A blue whale mother-calf pair photographed in the Moraleda Channel during field season

6. Popular media articles appearing in local, national and international media.
   Status: done.

7. Scientific publications published in peer reviewed journals.
   Status: done.

VI. Use of Rufford Logo & picture gallery

The Logo of the Rufford Foundation was intensively used, whenever possible. Also a picture gallery has been built for eventual use at the Foundation's website. Pictures are available upon request.

VII. Lessons learned

The Rufford Innovation Award provided an outstanding opportunity to build capacity within Chile for marine conservation. As in other parts of the world, conservation efforts in Chile have often focused on terrestrial species and ecosystems. Chile seems to have forgotten that the country boasts one of the most extended and rich coastlines in the world. As such, capacity for marine conservation within Chile is relatively thinly spread. Capacity was built in number of areas, consistent with some of the key lessons learned during the implementation of this project as set out below:

1. <u>Project Management:</u>

As a science-based marine conservation NGO, CBA had never been exposed before to the vagaries of exchange rate fluctuations. These financial events had a deep impact in the project means to achieve its goals. Also, managing a number of contracts for the project team was a difficult task. By now, CBA has developed protocols for hiring external support, which have streamlined this cumbersome process.

2. <u>Dealing with local communities and other local actors:</u>

Chile is very modern in many ways. However, in the country's fringes, the local populations have kept traditions which are not necessary known to Chileans living in towns. As an illustration, a small "shockwave" was released when trying to secure land for the construction of the research based in the Island of Melinka. This situation was not anticipated at all. CBA ultimately privileged the relationship with the local islanders and backed up. This retreat was, however, not without a cost to CBA's own operations. It has now become apparent that managing local mores constitutes a central challenge in order to achieve conservation goals.

3. <u>Complexity of conservation goals:</u>

With the benefit of hindsight, it becomes clear that it was simply unrealistic to achieve the approval of the Marine Protected Area within an ambitious time-frame. On the one hand, the disparity of interests of the various stakeholders makes progress painfully slow. On the other, the Government' machinery works at its own pace, which must be endured without giving up hope. Finally, the different priorities and operation methods within the conservation community itself becomes a further element of complexity. The experience from this project does bring hope that, with perseverance, conservation goals can be achieved. There are simply no magic solutions.

In relation to the stagnation of the MUMPA proposal at high political levels, we undertook several internal and external evaluations with partners and non-partners to understand what really could've gone better in the past process. These lessons are being put into practice for this second round of building a new proposal using a bottom-up perspective. We always knew that participation was one of the most important components, and we believe this project was conducted with the aim of reinforcing an opportunity for the local communities and build new governance for the area. However, these processes normally take longer than others and much slower in terms of being assumed and incorporated by people. However, in this case the controversy that almost closed all doors for protecting the ecoregions was fired up by other NGOs working from Santiago. We have vague ideas of what really moves them to do this, but we suppose this is a protagonist problem related to egos and funding.

What is important to be aware of is that one of the most important threats to this areas' sustainability is the salmon farming industry, especially concerning their bad practices, the impressive expansion and the few monitoring and evaluation tools the government has and we will continue searching for alternatives to protect this unique area.

VIII. Acknowledgements

The Blue Whale Centre family thanks the Rufford Foundation for supporting the conservation of the Chiloe-Corcovado seascape. The award came at a critical moment. Without the funds, conservation activities might well have been derailed and momentum lost. I would like to thank all the CBA team members that worked long hours pursuing the successful accomplishment of all objectives. The work undertaken will certainly have a profound impact on how we Chileans view and take care of the wonders of our sea. Now, the there is a hopeful outlook for future in the conservation of this seascape, along with the various cetaceans that inhabit it year after year.