



**Uruguay's First Marine Protected Area  
Pilot: Towards the Effective Protection of  
Juvenile Green Turtle Critical Habitats**

**Final report**  
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## INTRODUCTION

Green turtles (*Chelonia mydas*) occur in tropical and subtropical regions throughout the world's oceans (Groombridge and Luxmoore 1989) but due to intense human overexploitation, this species is listed as endangered throughout its range (IUCN Red List; Baillie et al. 2004). As the other sea turtles the green turtles are very susceptible to the impact of fishing activities, these practices have been recognized for many years as a serious source of sea turtle mortality due to incidental capture in fishing gear (Oravetz 2000). In Uruguay, an important number of juvenile green sea turtles are incidentally captured in artisanal fishermen gillnets with an estimated mortality percentage around 50 % (Lezama et al. in press).

*C. mydas* is distributed throughout the coast, mostly in those regions where seaweeds are abundant (rocky and insular areas) which constitute their main food item. Previous studies indicated that an important population of green turtles utilizes the coastal fringe and insular habitats of Cerro Verde for foraging during their developmental stages (López-Mendilaharsu et al. 2003). Preliminary results of mixed stock analysis of juvenile green turtles



indicated that the main contributor was the Ascension Island (UK) rookery followed by, among others, Matapica (Suriname) and Aves Island (Venezuela). The sequence obtained provided enough information to presume that Uruguay is an area hosting green turtles from several nesting beaches in the Atlantic Ocean (Caraccio et al. 2006). Thus, mortality due to fishing activities in Uruguayan waters may be depleting endangered nesting populations elsewhere in the Atlantic.

The difficult economic situation that these coastal communities and adjacent areas are facing linked to the unsustainable resource use practices, menace to endanger these green turtle populations. The lack of fishing resources and money to support the ships and other materials has favoured the secondary use of the turtles for other purposes as consumption and carapace sale. The promotion of newly economic alternatives (using the charismatic image of the turtle) and the local people participation in conservation activities along with the creation of the Marine Turtle Center (MTC) has served as key elements to gain the community support and for the successes of the programme. Ecotourism activities, and festive events (Carnival, "Sea Turtle Festival" and the "Environmental Day") have been gaining local support by bringing conservation values for future generations. In this project we also studied the habitat use and movements of green turtles along the area in order to make grounded decisions and recommendations regarding the protection of *C. mydas* critical habitats at the forthcoming development of the "Cerro Verde MPA" management plan.

**OBJECTIVE 1 & 2.** Determine juvenile green turtle movements and spatial requirements through the use of satellite telemetry to ensure the protection of their critical habitats within the proposed MPA.

## Methods

### Study Area

Cerro Verde is part of the Easter Wetlands and Coastal Fringe Biosphere Reserve established in 1976 and is a RAMSAR site since 1982. This region is located in the North-eastern Atlantic coast of Uruguay, and contains great biodiversity, including many migratory and/or endangered species (e.g. franciscana dolphins, *Pontoporia blainvillei*; bottlenose dolphins, *Tursiops truncatus*; southern right whales, *Eubalaena australis*; sea lions, *Otaria flavescens* and *Arctocephalus australis*; migratory sea birds, *Thalasseus maximus*, *T. sandvicensis eurygnatha*, *Sterna hirundo*, etc.). The study was conducted within this Coastal Fringe at the Cerro Verde Islands ( $33^{\circ}56' S - 53^{\circ} 29' W$ ; Figure 1) and adjacent coastal waters between the localities of La Coronilla and Punta del Diablo. A great diversity of ecosystems is present in this area, like sandy dunes, hills and sandy beaches interrupted by rocky shore areas. Abundant algae beds occur along rocky bottoms with depths less than 4 m.



Figure 1: Map of the Cerro Verde area, including the limits of the Marine Protected Area.

## Green turtle capture and measurements

We captured green turtles with an entanglement net (30 m x 2.5 m; mesh size = 36 cm) placed along the area (islands and coastal waters), next to the shore. The net was set manually from the beach or by boat and monitored continuously until a turtle was captured. Entangled turtles were removed from the net and transported to the beach where they were measured and tagged.



Curve carapace length was measured from the nuchal notch to the posterior tip of the supracaudals using a flexible tape measure (CCL). Turtles were weighted to the nearest kg using a spring scale and tagged on the front flippers; we used Inconel tags (style 681) provided by the Cooperative Marine Turtle Tagging Program, which belongs to the Archie Carr Center for Sea Turtle Research (ACCSTR).

Based on minimum nesting size at the “Trindade Island” rookery (Brazil) (Moreira et al. 1995), we classified all turtles with CCL < 101 cm as immature and all turtles with CCL = 101 cm or more as adults.

## Transmitter attachment and tracking

Three juvenile green turtles were fitted with Satellite Platform Transmitter Terminals (PTTs) provided by Sirtrack, New Zealand (Model: Kiwisat 101). Transmitters were attached to the crown of the carapace using epoxy glue and covered with a layer of antifouling paint. Instrumented turtles were released at their capture sites less than 4 hours later. Turtle’s locations were retrieved by Argos satellite tracking services (funded by the Biological Station Terra Natura, CIBIO, University of Alicante, Spain - [www.ua.es/area/ebtn/proyectos/tortugas.html](http://www.ua.es/area/ebtn/proyectos/tortugas.html)), and then filtered. The accuracy of the Argos locations is quoted in classes, we used location class 3, 2, 1, 0, A, and a speed limit < 5km/h between locations to generate route maps.



## Results

A total of 35 juvenile green turtles were captured at the Cerro Verde area and adjacent waters from November 2005 to November 2006. Three of the turtles tagged during previous field season were also recaptured (Table 1). All the turtles captured were immature individuals (CCL < 101 cm). Curve carapace length (CCL) of the green turtles captured ranged from 30.4 – 56.7 cm (mean = 42.4 cm, SE = 1.3; n = 35). There were no significant differences ( $t = -0.53$ ,  $p = 0.6$ ) between the size of the turtles captured in the current study versus the size of the turtles captured during the previous season (mean = 41.6 cm, SE = 0.8; n = 64). We also recorded the number of turtles stranded on the beach as shown in Table 2. Some of the turtles stranded alive were kept in the centre's facilities to improve their condition, after the proper treatment they were released back to the sea.



Table 1. Green turtle recaptures during the study period at the Cerro Verde area.

Life stage	Tagging site	Date	Recapture site	State	Method	Date
Juvenile	Cerro Verde (Rocha, Uruguay)	18/01/05	Cerro Verde (Rocha, Uruguay)	alive	Karumbé net	27/01/06
Juvenile	Cerro Verde (Rocha, Uruguay)	12/04/05	Cerro Verde (Rocha, Uruguay)	alive	Karumbé net	11/03/06
Juvenile	Cerro Verde (Rocha, Uruguay)	22/03/04	Cerro Verde (Rocha, Uruguay)	alive	Karumbé net	08/03/06

Table 2. Number of green turtles stranded during the study period. (2) Turtles previously tagged by Karumbé's tagging program.

Specie	Dead	Alive	Total
<i>C. mydas</i>	9	7 (2)	16

Table 3. Release date, location, measurements and tagging information of the juvenile green turtles tracked through satellite telemetry in Cerro Verde, Rocha, Uruguay. (CCL = curve carapace length; W = weight; LF = left flipper and RF = right flipper).

# PTT	Species/ Life stage	Release Date/ Location	Length (cm) Weight (Kg)	Metal tag numbers	Name
34461	<i>C. mydas</i> juvenile	16/01/2007 Cerro Verde	CCL – 41.3 W – 8.0	LF:TTM365 RF:TTM366	Candombe
34462	<i>C. mydas</i> juvenile	16/01/2007 Cerro Verde	CCL – 53.7 W – 18.3	LF:TTM394 RF:TTM395	SKA*
34463	<i>C. mydas</i> juvenile	16/01/2007 Cerro Verde	CCL – 56.0 W – 18.0	LF:TTM396 RF:TTM397	Caibaté

\* SKA: juvenile green turtle recaptured after three years of being tagged by Karumbé at the same place in the Cerro Verde area.

## Tracking effort and movement patterns

Three green turtles were tracked from January 16, 2007 to the date (June 10, 2007). Two of the turtles (34462, 34463) remained in the area during this period (5 months), however the third one (34461) started to move heading south, at the end of January. Two months later (March 14) the turtle was sighted by a biologist at the Mar del Plata's port in Argentina (Figure 2) while she was breathing near the surface. But sadly on the 27<sup>th</sup> of March the turtle was found dead at the port of Mar del Plata, by one of the members of Fundación Fauna Argentina (Argentine Fauna Foundation).



## Turtle 34461 (Candombe)

Tracking duration: from January 16 to March 27, 2007 (70 days); found dead in Mar del Plata.

Minimum distance travelled from the release site: 585 km (From Cerro Verde, Uruguay to Mar del Plata, Argentina).

Cumulative distance travelled between locations: around 670 km.

After filtering Argos locations 11 geographic locations were used to generate the route map (Figure 2).

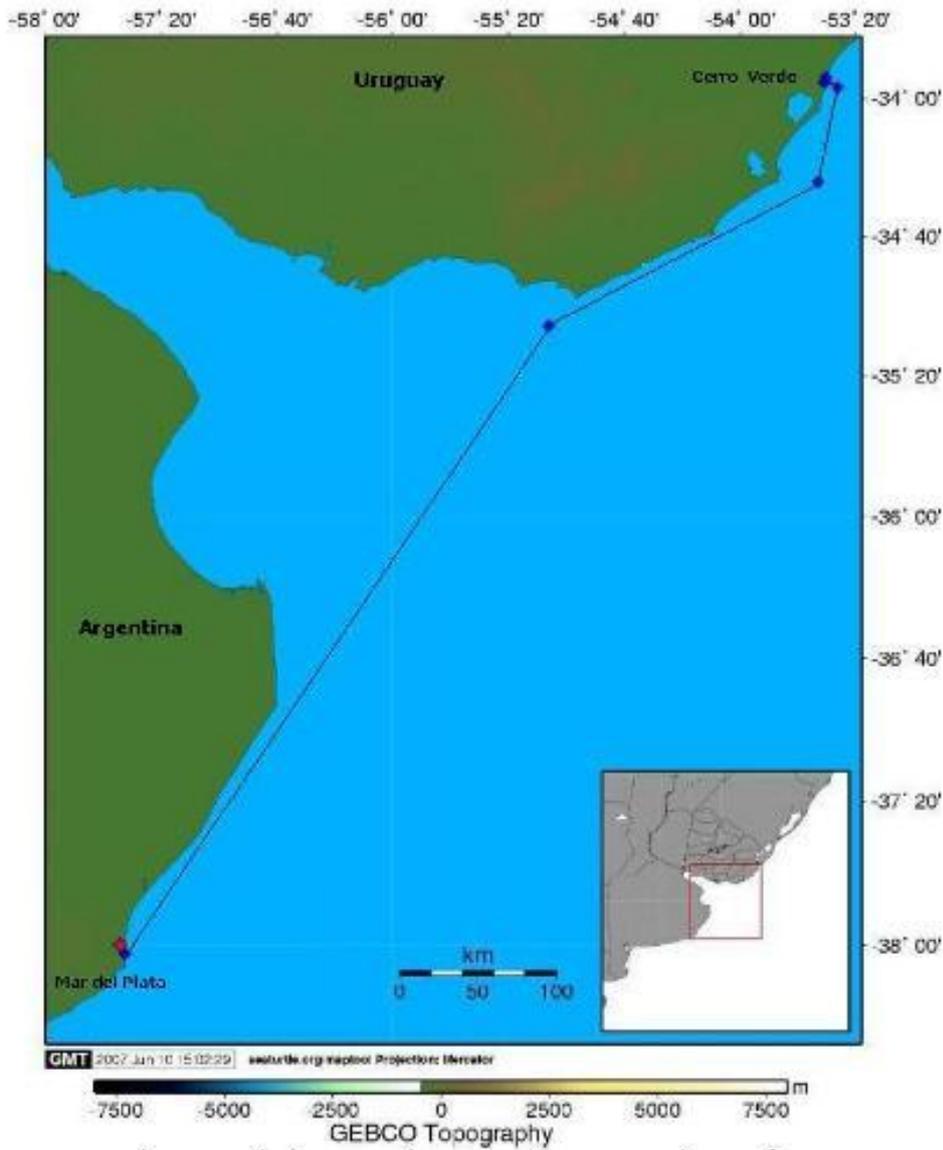


Figure 2. Trajectory of Argos-tracked green turtle 34461 at the Cerro Verde area, from January 16 to March 27, 2007.

### Turtle 34462 (Ska)

Tracking duration: January 16 to June 8, 2007 (143 days); still in the area.

Displacement from the release site: range 0.4 - 8 km.

Cumulative distance travelled between locations: around 130 km

Maximum distance from shore: 4 km

Mean distance from shore: 1.3 km

Depth of the sea floor ranged from 0.5 to 6 m.

After filtering Argos locations 18 geographic locations were used to generate the route map (Figure 3).

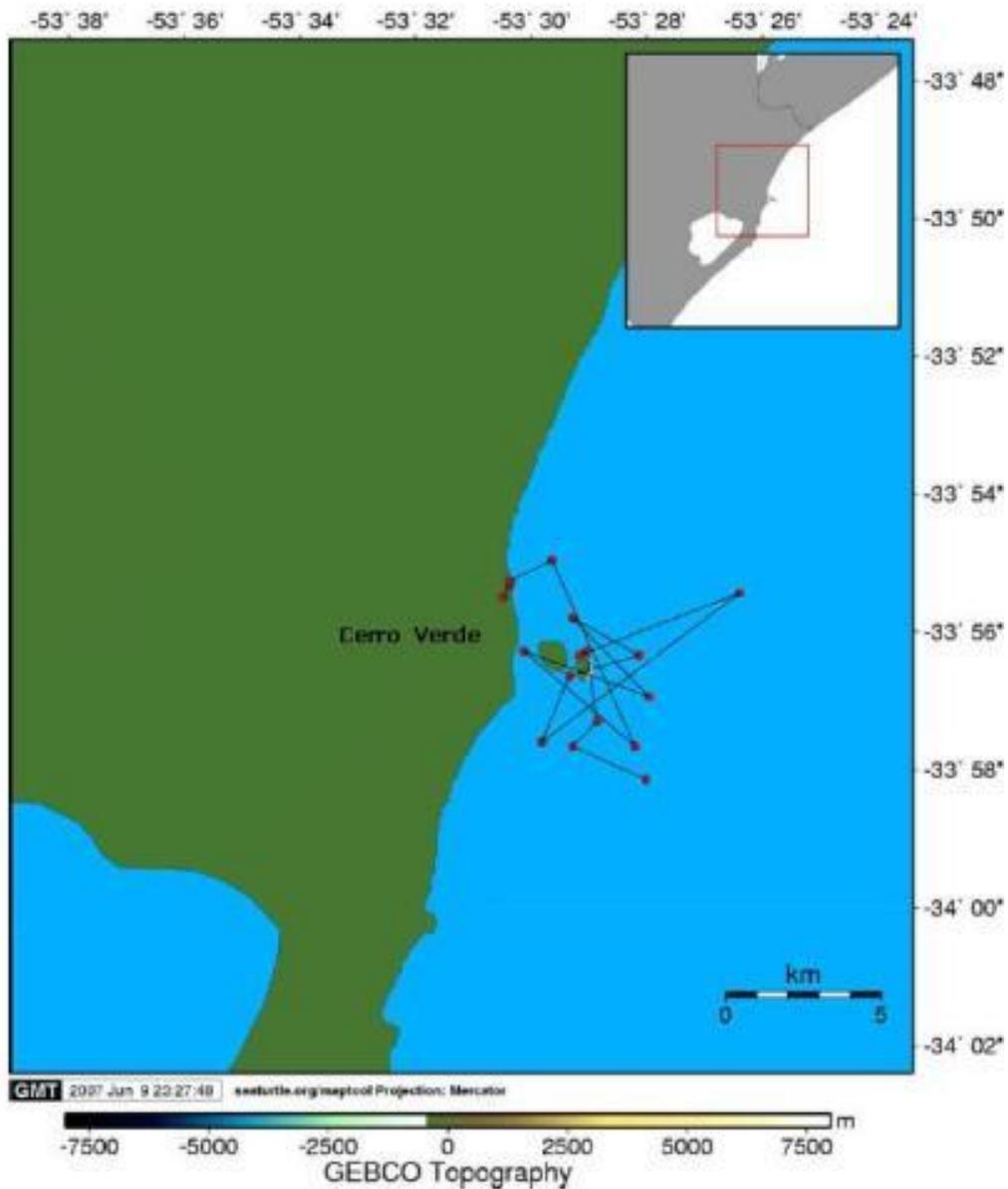


Figure 3. Trajectory of Argos-tracked green turtle 34462 at the Cerro Verde area, from January 16 to June 8, 2007.

### Turtle 34463 (Caibaté)

Tracking duration: January 16 to June 8, 2007 (143 days); still in the area.

Displacement from the release site: range 0.3 - 26 km.

Cumulative distance travelled between locations: around 400 km

Maximum distance from shore: 21 km

Mean distance from shore: 5 km

Depth of the sea floor ranged from 0.5 to 20 m.

After filtering Argos locations 27 geographic locations were used to generate the route map (Figure 4).

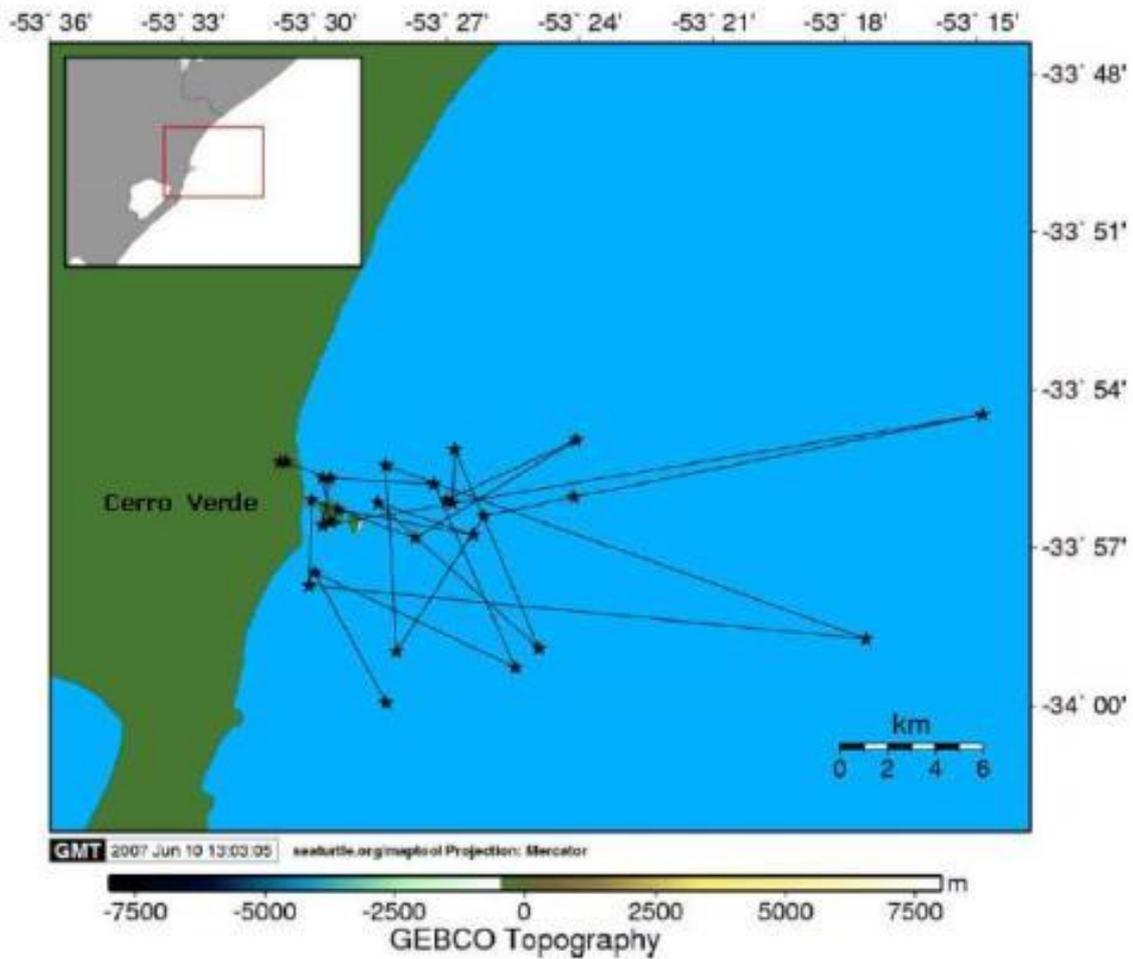


Figure 4. Trajectory of Argos-tracked green turtle 34463 at the Cerro Verde area, from January 16 to June 8, 2007.

## Sea Surface Temperature

During the tracking period the temperature of the water ranged from a maximum of 25.2 °C to a minimum of 13.1 °C (Figure 5). The highest temperatures were recorded between the end of January 30 and March 15 (summer season) while the lowest value was observed in June due to the stronger influence of the Malvinas current and the proximity of the winter season.

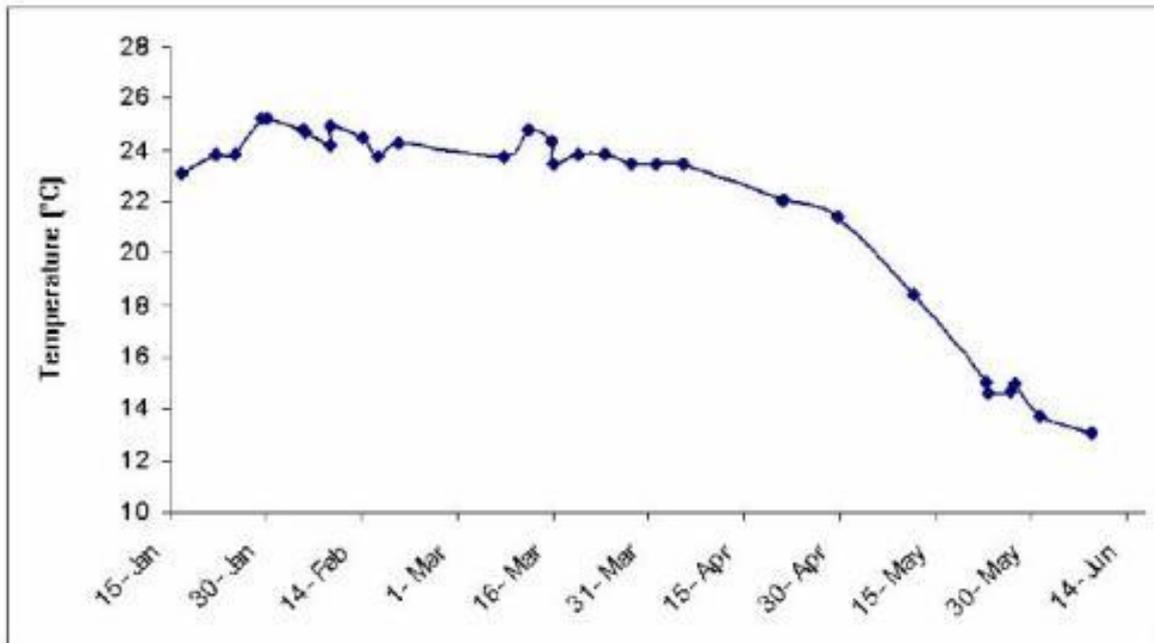


Figure 5. Sea-surface temperature recorded during the tracking period (January 16 – June 8, 2007).

## Discussion

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Two of the juvenile green turtles tracked by satellite telemetry remained in the study area during the entire tracking season (around 5 months) demonstrating strong site fidelity.

Moreover, one of them (34462) was recaptured after three years at the same location suggesting that they may remain over extended time periods. The cause of death of the third turtle remains unknown, but thanks to the collaborative network that links most of the conservation projects and NGO's within the SW Atlantic, important information was recovered.



Previous radio telemetry studies also indicated that juvenile green turtles (n= 8) were very resident as they were located within the area (radius distance of 11-12 km) almost during the entire tracking season.

Also, four of the eight turtle's radio tracked during that study was detected in the area until the end of the battery life (up to 5-6 months) (López-Mendilaharsu 2006). The abundance of extensive algal mats along the study area may account for the high site fidelity. In addition previous analyses of diet samples support the utilization of several species of algae as food resources (López-Mendilaharsu et al. 2006). It is important to note that even though the temperature of the water is getting colder the turtles still remain in the area suggesting that they may remain year-round.

Regarding the habitat utilization, around 75 to 100 % of the turtle's locations (34462 and 34463) fell within the proposed marine protected area, which comprises the coastal-marine fringe adjacent to the municipal register N° 2643 and extends 5 nautical miles into the territorial sea limited north and south by perpendicular lines to the coast (Figure 1). Thus, apparently the proposed area design will take into account the majority of the developmental/feeding sites used by green turtles nearby Cerro Verde. However, we have to be cautious as we must increase the number of turtles tracked in future studies in order to provide confident data to assist in the proper protection of green turtles critical habitats.

**OBJECTIVE 3.** *Raise awareness about the importance that represents the creation of the first MPA to the conservation of the country's biological diversity.*

### Marine Turtle Center (Marine Community Centre)

For third consecutive year the Marine Turtle Center (MTC) opened in La Coronilla from the 6<sup>th</sup> of January to the 27<sup>th</sup> of March, 2006 with the purpose of disseminate our work and basic information about the importance of the new Marine protected area Cerro Verde, through guided visits. Since its opening the MTC was a success being visited for more than 4000 people (tourists, school children and neighbours of the surrounding localities). Visitors were able to see and identify the sea turtles species that are frequently found in coastal and oceanic waters, as well as the threats that they face in our country and around the world. The public was able to get familiar with the activities developed by Karumbé at the Cerro Verde research area, and



visit our photo gallery including mounted parts and osseous material of sea turtles. A "kids corner" decorated with colourful posters was also created, so the children had their own table with draws of sea turtles, colour sheets and materials to paint and create their own designs. We also exhibited informative material from other projects which are working together in the same area as Freplata (GEF-PNUD-BID) and the Dolphin project. Also we received a generous support from the National Environmental Agency (DINAMA) who donated framed photos of our project for the centre. A total of 4331 visitors were recorded during January, February and March. Tourists were mainly from Uruguay, but also from Argentina, Brazil, and others (Figure 6).

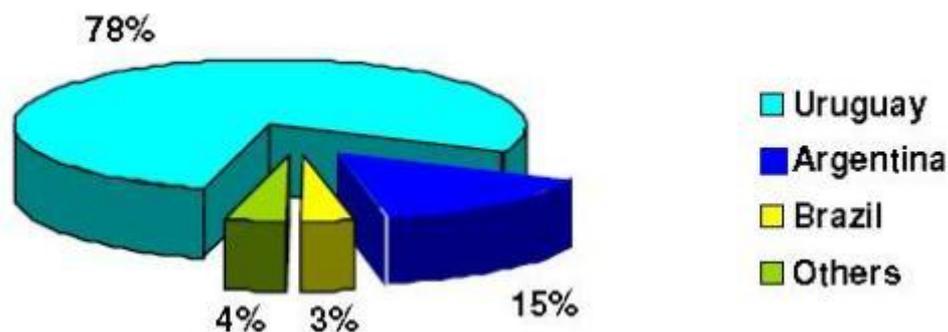


Figure 6. Percentage of visitors from different countries.

## Ecotourism

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Well developed ecotourism is a multifunctional tool for the conservation of natural areas, that's why ecotourism activities with guide visits to Cerro Verde were developed during January, as a pilot proof. Three long walks were carried out to Cerro Verde along the coastal line during that month, with a maximum of 15 people. The walks took 5 hours at the most, while specific information about the area (fauna, flora, history, conservation, etc.) was given, as well as species observation and identification together with

Karumbé's technicians and volunteers.

During January, February and March, a total of 8 rehabilitated sea turtles were released in the communities of Punta del Diablo, Santa Teresa, La Coronilla and Barra del Chuy. During these journeys recreative activities with the children were performed at the beach, handing over of informative brochures and finally the turtle's liberation together with the tourists and local communities, achieving a greater integration in conservation activities and valuation of marine diversity.

Karumbé proposal is based on the development of a responsible ecotourism. This is an essential and complementary activity for the development and growth of the project within the communities. This activity not only brings development alternatives for the local communities, furthermore, generates visitor's satisfaction and enthusiasm through recreational and education activities in the natural environment.



## Carnival

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During January, February and March, the project took part in different activities carried out by the community of La Coronilla, highlighting the volunteer's participation in the festivity allusive to the three "Wise Men" (06/01/06) and in the marathon developed in the community (21/01/06). Also members of the project participated in the Brazil-Uruguay Bionational Social Forum that took place in the Chuy city, where lectures and workshops about Karumbé project were presented (26/01/06).

From February 15<sup>th</sup> up to the 26<sup>th</sup>, we worked on the "Sounds of the Sea" proposal that congregated more than 20 children from la Coronilla community. This activity consisted in creating marine animal fancy dresses for the participation in the Carnival 2006 at La Coronilla. The activity was divided in three stages; first of all, we gained the interest and motivation of the children for their subsequent participation, then together with the volunteers we selected and produced the fancy dresses and finally our participation with the volunteers and children in the carnival.



The animals' chosen by the children to be represented were: sea turtles, sharks, sea stars, sand dollars, sea horses, dolphins, octopus, jelly fishes, crabs and sea birds.

The result of this initiative was very satisfactory, obtaining the first prize in the carnival, because of the remarkable creativity.

### 3rd Festival “Saving the Sea Turtle”

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The third festival entitled “Saving the Sea Turtle” was held at the locality of “La Coronilla”, in Rocha, from March 13 – 19, 2006. The activities undertaken during the event with the secondary school students included a story contest (theme Cerro Verde Marine Protected Area), guided visit to the Marine Turtle Center (MTC) and release of sea turtles after sharing our field work activities. An introductory lecture including slides of the Project and the creation of a puzzle with the shape of a sea turtle were organized for kindergarten children from 3 to 4 years old. And for school students the activities performed were: a drawing contest in regard to sea turtles and their habitats; the creation of a cooperative collage and a guided visit to the MTC and further release of a sea turtle. A total of 400 children and students participated in the activities performed during the week. Over the weekend a Treasure Hunt and a Soccer Championship was carried out with the children of the community. On the last day of the festival, a sea turtle cake contest took place involving the women of the community. The party and awards ceremony for the winners took place at the closing day of the festival. Thanks to the support of “Contraviento Productions” a documentary film

regarding Karumbe’s research and conservation activities in the Cerro Verde area, was shot during 2004 field season. The documentary entitled “Ancient Navigators” was ready to be exhibited at the festival closing day. The documentary film resulted in a great success among the community members of La Coronilla and Punta del Diablo. We also received very good reviews by other conservation projects and international colleagues.

Local people felt that the Festival was a very positive event. Thanks to the collaboration and donations received from 60 shops and stores of La Coronilla, Punta del Diablo and Chuy the awards ceremony resulted in a great success. This recognition showed us an increasing level of credibility and trust of these localities in our project activities.



## Environment Day June 5th

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From the 5<sup>th</sup> to the 9<sup>th</sup> of June 2006, considered “the environment week”, many talks were carried out in the Cerro Verde area and adjacent communities, aiming to present and discuss the creation of the coastal-marine protected area: Cerro Verde and its most relevant characteristics. Written material and posters about this Protected Area were given in all cases.

In La Coronilla and Punta del Diablo towns, Karumbé worked with 30 and 20 school kids of 11 and 12 years old respectively, discussing together why it is important that Cerro Verde becomes a MPA. As well, the documental film “Ancient Navigators” was shown, with a reflexion talk after it.

Also, a workshop with EcoCoronilla NGO was carried out, discussing the importance of working together for the creation of a suitable managing plan for the MPA. In this workshop also participated local people from La Coronilla interested in the creation and good implementation of the MPA.

Pamphlets and general information were given to Santa Teresa National Park’s School and authorities of the Military Parks Service.

As well, at the Punta del Diablo locality we talked with the fishermen informally with a great feedback, as we received a letter of support in behalf of their association, supporting the creation of the MPA.

Generally we noticed a great interest about the creation of protected areas mainly among the generations, kids, teenagers and young adults. However, it is relevant to say that not many adults from La Coronilla attended to the workshop, showing a disinterest and lack of participation in this type of activities. More work must be done in behalf of the active participation of local people regarding the MPA and about general environmental tasks where everybody should be involved.



## Coastal-Marine Protected Area (CMPA) “Cerro Verde”

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In February 2000, the Law 17.234 was approved, declaring of general interest the creation of a National System of Protected Areas (SNAP) as an essential tool for the conservation of Biodiversity in Uruguay. This law is regulated by the Decree N°52/2005, approved in February 2005, with the demand of implementing gradually the National System of Protected Areas by the National Environmental Agency (DINAMA) supported by SNAP Project, DINAMA/UNDP/GEF URU/05/001 - [www.snap.gub.uy](http://www.snap.gub.uy). Until the date, Uruguay was the only Latin-American country lacking a National System of Protected Areas.



The SNAP includes experimental experiences which will allow the government to test and adjust politics and management plans for all the Protected Areas (PAs) defined generally in the Strategic Plan, which includes different management models, diverse financial mechanisms, communication and educational strategies.

The experimental experiences are key elements because they contribute at different levels: a) strengthening institutions and capacitating individuals through its own action; b) contributing to the effective implementation of PAs, which are included in the SNAP during the period of execution of the Project, or in certain cases, in later periods; c) generating knowledge that will feedback the SNAP's Strategic Plan, as well as replicating successful solutions in other PAs of the country or other parts of the world. In this way, these strategies end up to be highly cost-effective.

### Implementation

Since 1999 many research and conservation groups have been working in Cerro Verde to strengthen the information about the ecological, social and economical relevance of this area. In 2004, all the information generated, was unified in two theses for the Science College (Universidad de la República, Uruguay), in order to characterize and set the most outstanding facts about the area following the IUCN statements. It is worth to note that since the beginning, all the information collected was possible through key local people from nearby towns that have been supporting all the research and conservation activities performed to the date (fishermen, local authorities, artisans, teachers, local military groups, local traders, tourist guides and farmers).

This integrated information enabled the NGO CID/Karumbé to submit a report ([www.frepata.org/biodiversidad/documentos/Prop\\_incorp\\_CoVerde.pdf](http://www.frepata.org/biodiversidad/documentos/Prop_incorp_CoVerde.pdf)) to the DINAMA, according to the Decree N°52/2005 (Law 17.234), asserting the priority of the inclusion of the Cerro Verde area within the National System of Protected Areas. The inclusion of Cerro Verde was finally approved, becoming the first Coastal-Marine Protected Area (CMPA) of Uruguay. This zone was indicated due to its biogeographical, ecological, scientific, economical and social relevance, unique landscapes and also because its importance at a national and international level. All these features justified that the area must be included within the SNAP.

The Environmental Project for the River Plate and its Maritime Front: Prevention and Control of Pollutants and Restoration of Habitats – FREPLATA (UNDP/GEF RLA/99/G31) through its Biodiversity National Strategy, also has selected Cerro Verde as an experimental experience of their project to be one of the new Marine Protected Areas in Uruguay.

The Uruguayan government, through the Project entitled “Strengthen Capacities for the Implementation of the National System of Protected Areas (SNAP)”, chose 5 areas as experimental experiences. Recently, the 18th of November 2005, Karumbé was invited to be the representative organization to introduce Cerro Verde to the Protected Areas Advisory National Commission.

The SNAP Project has proposed the management of the Cerro Verde area, as a co-management between Karumbé and the government, so this will contribute to the sustainability of the PANS as well as to increase links between the conservation of biodiversity and local development.

The most adequate management category approved for Cerro Verde CMPA was “Habitat and/ or species management area”, that establish: 1º. Maintain the habitat in the necessary conditions to protect important species, group of species, biotic communities or physical characteristics of the environment, when certain type of human concrete manipulation is required for an optimum management; 2º. Facilitate scientific research and environmental monitoring as principal activities associated to the sustainable management of resources; 3º. Establish limited areas for educational purposes and for the appreciation of



the characteristics of these habitats and the management activities of the wildlife, by the general public; 4º. Exclude and prevent the overexploitation or hostile occupation to the designation purposes; and 5º. Contribute to the local populations that live inside the designated area, with the benefits derived from the different activities that are compatibles with the other management objectives. At the beginning of 2006, the Regulation was effectively approved thus the Cerro Verde has become the first Coastal-Marine Protected Area of Uruguay (CMPA). To implement and develop effectively this CMPA, as mentioned in the Decree N°52/2005, it is necessary to develop a “Management Plan” to guide the conservation actions and sustainable development of the area, promoting the coordination and active participation of all sectors.

On the 22<sup>nd</sup> of August, 2006, a Public Audience was carried out by the government with the objective of informing about the MPA and its implementation. Participants such as locals NGO, governmental institutions, general public from La Coronilla and fishermen from La Coronilla and Punta del Diablo discussed about the implementation of the MPA. It was noticed that a group of participants from La Coronilla town disagree with the idea of Cerro Verde becoming a protected area. This seems to be natural in this type of process as not everyone’s interests are represented in PA initiatives.

**OBJECTIVE 3.** *Raise awareness about the importance that represents the creation of the first MPA to the conservation of the country's biological diversity.*

**Mass media**



One of the objectives of the Karumbé, proposed as one of our principal goal was to implement a massive information campaign, with emphasis on local communities and tourist that make use of the area and interact with the turtles.

Radio - FM Coronilla 102.3, AM Chuy 1440, AM El Espectador 810

Television – Cuatro Estaciones (Four Seasons), Channel 5

Newspaper – Diario El Este, Diario El Pais

Magazine – Sala de Espera

**Meetings & Symposium**

Juvenile Green Turtle as a Flagship Species: Starting Point for the First Marine Protected Area in Uruguay. 27<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, Myrtle Beach, South Carolina, USA. February 24-27, 2007.

Tortuga Marina como Especie Bandera: Punto de Partida para la Primer Area Marina Protegida en Uruguay. 5<sup>th</sup> Meeting of Ecotourism and Rural Tourism & IV National Congress on Natural Protected Areas. Trinidad, Flores, Uruguay, April 25-28, 2007.



**Seaturtle.org**

Webpage where researchers, teachers, students and general public can follow green turtles with satellite transmitter movements.

[www.seaturtle.org/tracking/?project\\_id=172](http://www.seaturtle.org/tracking/?project_id=172)

## FINANCIAL REPORT

Items	Rufford funds (U\$S)	Karumbé & Partners (U\$S)	Total (U\$S)
Equipments	6780	3000	9780
Education materials	850	300	1150
Travel Expenses	470	150	620
Accommodation and subsistence	830	0	830
Salaries (Education area)	0	600	600
Administration & Communication	0	200	200
Total (U\$S)	8930	4250	13180

## ACKNOWLEDGMENTS

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