

## The Rufford Small Grants Foundation

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

Grant Recipient Details	
<b>Your name</b>	Ana Carolina Oliveira de Meirelles
<b>Project title</b>	Distribution and conservation of the Antillean manatee ( <i>Trichechus manatus</i> ) in NE Brazil
<b>RSG reference</b>	56.07.08
<b>Reporting period</b>	January – December 2009
<b>Amount of grant</b>	£4800
<b>Your email address</b>	<a href="mailto:cameirelles@yahoo.com.br">cameirelles@yahoo.com.br</a>
<b>Date of this report</b>	5 <sup>th</sup> July 2010.

**1. Please 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
Determine the distribution of the Antillean manatee on the east coast of Ceará state and west coast of Rio Grande do Norte state, northeastern Brazil.			X	
Obtain information on habitat use (feeding and reproductive).			X	
Describe the main manatee habitats (characterisation of seagrass beds and freshwater sources).		X		The characterisation of these habitats was partially achieved, due to some difficulties that were encountered in the proposed methodology for the characterisation of seagrass beds and freshwater sources. The work was carried out only in the communities of Touros and Areia Branca. The following limiting factor must be emphasised: fishermen with good knowledge of the composition of the sea bottom near the coast are hard to find. Besides, the seagrass meadows' spatial location along the year is very dynamic due to the coastal currents, which bury or expose it. Moreover, the study area is very extensive, and requires more time and budget to be completed surveyed.
Determine Antillean manatee major threats on the east coast of Ceará and west coast of Rio Grande do Norte.			X	
Identify priority areas for the conservation of the Antillean manatee on the east coast of Ceará and west coast of Rio Grande do Norte.			X	

List priority actions for the Antillean manatee on the east coast of Ceará and west coast of Rio Grande do Norte.			X	
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**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

We encountered some difficulties in the proposed methodology for the characterisation of seagrass beds and freshwater sources because of these limiting factors: (1) the difficulty in find fishermen with good knowledge of the composition of the sea bottom near the coast; (2) the seagrass meadows' spatial location along the year is very dynamic due to the coastal currents, which bury or expose it and; (3) the study area is very extensive, and requires more time and budget to be completed surveyed, the work was carried out only in the communities of Touros and Areia Branca.

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

The information resulted from this project, related to manatee distribution and potential use areas are new for most of the study area, especially in the west coast of Rio Grande do Norte. From the obtained data, it was possible to establish priority levels for the whole area, based on ecological importance of the places to manatee. This was the most important outcome of the project. Other two important outcomes of the project include the most current data of the distribution of the Antillean manatee and the potential use areas for the species, establishing priority areas for the conservation of the Antillean manatee.

**4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).**

From the results of this project (manatee occurrence areas, as well as important areas for the species - e.g., seagrass beds and nursery habitats) it a map was prepared that was placed in a folder, together with information related to the research. The folder was distributed in all coastal communities, so the fishermen that collaborated with the study could have access to the knowledge they helped build. Besides conducting the research, the team identified community members to become volunteers that received an educational folder containing information about protective laws, life history and biology of the manatee and how to act in case of stranding, especially of calves.

**5. Are there any plans to continue this work?**

Yes, there are. With this project it was possible to determine the new occurrence areas of the Antillean manatee, as well as important areas for the species and the threats that the manatees are suffering. With this data we identified priority areas for the conservation of the Antillean manatee and priority actions for each priority area. The Aquasis team intent to continue this work through the priority actions identified. See the Aquasis' next steps on the question number nine.

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

We plan to share the results of the project with others through:

- **Scientific dissemination** – The final results will be submitted as scientific papers to international journals related to biodiversity and marine mammal conservation.
- **Events** – The results will be presented during the “XIV Working Meeting of Experts on Marine Mammals of South America (XIV RT)”.
- **Media dissemination** – Aquasis will launch the project in the local and national media (newspaper and TV) by releases and local interviews.
- **Aquasis’ Homepage** – We will promote the project’s results in our homepage.
- **Folders** – A folder were printed with the results of the project and distributed to the local community, which collaborated with the project.

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

The Rufford Small Grant was used for 12 months (January-December 2009). Aquasis has been working for Antillean manatee conservation since 1994, mainly through calf rescue and rehabilitation. Since 2000, our team is focused on identify important data on ecology and threats to the species. Thus, RGS represented 1/9 of the period that our team is dedicated to this project.

## 8. Budget: Please 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.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Salaries for field staff & assistants	2,000.00	2,000.00	0	
Purchased services	300.00	350.00	-50.00	
Equipment	925.00	935.00	-10.00	
Expendable supplies & materials	555.00	515.00	+ 40.00	
Car maintenance	1,020.00	1,010.00	+10.00	
<b>Total</b>	<b>4,800.00</b>	<b>4,810.00</b>	<b>-10.00</b>	

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

According to priority actions, AQUASIS’ next steps are:

### 1. Proposal of Creation of a Marine Protected Area and a Planning of natural resources use

Aquasis is an institutional member of the sign team for a Marine Protected Area (MPA) in the east coast of the state of Ceará, between Beberibe and Icapuí cities. This area comprises the Ceará portion of the study area. The MPA objectives are the protection of threatened species (Antillean Manatee, migratory birds and marine turtles), key nurseries ecosystems (estuaries, seagrass beds and algae banks) and fishery planning.

The information resulting from this study will compose an environmental diagnosis of the area that will be used to endorse the MPA proposal and its zoning and managing plan. The proposal has already been approved by the Brazilian Government Authorities and is in process, although there

has not been defined a category. The MPA will permit a sustainable use by artisanal fisheries, but the highest priority areas with needed action of “creation of a protected area” for manatee conservation will be designed for future protected area with non-permitted use (only for research or other conservation action).

In the state of Rio Grande do Norte there is another area with demanding a protected area creation, and might be Aquasis’ future focus for Antillean Manatee conservation.

## **2. Educational effort and consolidation of a stranding network**

A recent approved project by Aquasis for Antillean manatee conservation shall begin its activities in January 2010. Two of the project’s main objectives are consolidating a stranding network with coastal communities and their key members (in the states of Ceará and Rio Grande do Norte) and promoting educational effort in critical selected communities.

The stranding network will be consolidated through the identification of key community members that will be “joined” to Aquasis’ stranding crew. They will receive a theoretical and practical training course about marine mammals, human related impacts and actions in strand events. Their telephone numbers and names will be strategically put on all posters and distributed in their community, so they can be contacted in case of a marine mammal stranding. This network will contribute to a faster attendance to the animals that strand alive, increasing recovery chances.

In the east coast of Ceará there are two key municipalities for manatee conservation: Icapuí and Aracati. These are the focus of the Educational effort predicted in the approved project in which all communities should be evolved in manatee conservation issues, specially school teachers, local environmental managers and fishermen.

## **3. Adequate areas for rehabilitated manatees release**

Aquasis team has been rescuing Antillean manatee neonates that strand on Ceará and Rio Grande do Norte in partnership with the National Centre for the Conservation of Aquatic Mammals (CMA-ICMBio, Ministry of Environment) since 1992. The rescued calves stay on Aquasis’ Marine Mammal Rehabilitation Centre only along the necessary period to stabilize their health. After that, they are sent to the CMA-ICMBio in the state of Pernambuco by airplane, provided by the Ceará Government.

After rehabilitation, these neonates are released in other states closer to the CMA-ICMBio, mainly in Alagoas and Paraíba (Lima et al., 2007). However, on the Marine Mammal Release Protocol of the National Oceanic and Atmospheric Administration (NOAA, 1997), and on the recent Antillean Manatee Release Protocol in Brazil, published by ICMBio (Lima et al., 2007), rehabilitated manatees should be released on the same region that they stranded, once the local have wild manatees, feeding areas, fresh water supplies, and low motor boats traffic. This procedure is very important for the maintenance of the manatee population genetic unit, and its conservation.

If rehabilitated animals do not return to their native population, the size of this population can reach critical levels, leading to inbreeding, that can reduce the population disease resistance and compromise the adaptive response of population to a changing environment and, as a consequence, their long-term persistence, that can lead to local extinction.

As stated before, Aquasis recently approved a project for Antillean manatee conservation, that began its activities in January 2010. One of the main objectivities is the construction of a larger

Marine Mammal Rehabilitation Centre, specially designed for manatee calves, what will allow complete rehabilitation of all animals rescued in necessary time. In this way, it will be possible to release them near their strand local.

In this study, two areas were considered adequate for manatee stranded release: Ponta Grossa (Icapuí city) and Cristóvão (Areia Branca city). Aquasis' primary next step is to seek for resource and partnership to build a semi-captive structure in one of these areas to an adaptive time to release the rehabilitated calves in the new Centre.

#### **4. Research and habitat restoration**

Antillean Manatee National Conservation Plan- Aquasis, in partnership with the National Centre for the Conservation of Aquatic Mammals (CMA-ICMBio, Ministry of Environment) and other Brazilian institutions, is developing Antillean Manatee National Conservation Plan, where it will be clarified what studies are priorities for the species conservation. This study already shows that some areas have a high priority for research, where the occurrence of manatees should be more investigated. In areas where the presence of the species and some ecological aspects of the populations are known, studies such as abundance estimation and identification of spatial use area shall be taken soon. Genetics studies are already being performed, so we can understand more about the population dynamics, through kinship analysis of samples from dead and alive stranded animals.

Besides, Aquasis also maintain partnerships with institutions that have a more local performing, which drive efforts to mangrove restoration in some critical areas for manatees, such as Barra Grande estuary, in Icapuí municipality. In this area, Aquasis is working together with the *Fundação Brasil Cidadão*, a NGO that is performing mangrove restoration. Also in Icapuí, Aquasis is working with the prefecture, trying to avoid the installation of other enterprises in mangrove area, as wind farms.

Other partnerships should be taken soon, so we can also promote the restoration and preservation of other mangrove areas, dunes (that ensure freshwater supply to springs) and sea grass beds.

#### **5. Application of Law**

Environmental law application and control of human activities could themselves minimize major part of Antillean manatee threats, especially concerned to fishing activities, shrimp farms and oil exploitation. An adequate control, including penalty and habitat restoration promotion can contribute significantly to reduce direct and indirect impacts to the species. Aquasis is and will continue to be in permanent contact with federal, state and municipal environmental agencies to ensure law and penalties application.

#### **10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?**

Yes, we did use the RSGF logo on the folder produced for the project, as shown below, and in Aquasis Web Site. The Logo will also be used in conference presentations during 2010.

#### **11. Any other comments?**

We would like to thank the support provided by the Rufford Small Grants on the Antillean Manatee Conservation and we hope we can count with the RSGF on the support for future actions on Marine Mammals conservation.



Esse é um material desenvolvido pela Aquasis, para disseminar informações importantes para a preservação do peixe-boi.

## Veja como ajudar:



Proteja o animal do sol e vento

Afaste os curiosos

Cubra o animal com panos umedecidos

Evite falar alto próximo ao animal

Evite colocar redes nos locais onde os peixes-bois se alimentam e bebem água!

## AQUASIS

A Aquasis - Associação de Pesquisa e Preservação de Ecossistemas Aquáticos é uma organização não governamental (ONG), sem fins lucrativos, que trabalha pela conservação do meio ambiente e da biodiversidade no Nordeste do Brasil.

A Aquasis é também a instituição responsável pelo atendimento aos encalhes de botos, baleias e golfinhos no Ceará (vivos ou mortos). Caso encontre algum desses animais encalhado, ligue imediatamente para (85)3318.4911 ou 9675.0665 (Plantão 24h).

No caso de encalhes de peixe-boi vivo ou morto, no Ceará, ligue para:

**(85)3318.4911**

**(85)9675.0665**

No caso de encalhes no Rio Grande do Norte, ligue para:

**(84)8843.4621**

**(81)3544.1056**

### PARCEIROS

**SESC**

**FECOMÉRCIO**  
FECOMÉRCIO  
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## Conservação do Peixe-boi marinho



## Peixe-boi marinho



### Características gerais:

**Tamanho máx:** 4m

**Peso:** até 600kg

**Alimento:** plantas aquáticas, como capim-agulha e algas

**Corpo:** grande e arredondado, pele grossa e escura, poucos pêlos espaçados, e cauda em forma de remo

**Reprodução:** 01 filhote a cada três ou quatro anos!

**Período de gestação:** 12 meses

**Período de amamentação:** 2 anos

**Local onde vive:** águas calmas, de até 5m de profundidade

A espécie está desaparecendo de nossos mares, pois foi muito caçada antigamente. Atualmente, ela é protegida por lei, e sua caça está proibida no país, bem como sua utilização como alimento ou fonte de outros produtos.

**O peixe-boi é o mamífero marinho mais ameaçado de extinção do Brasil!**



Além do peixe-boi, outras espécies de mamíferos marinhos também estão ameaçadas, como é o caso do boto-cinza, um golfinho costeiro que sofre com as intensas atividades humanas no seu ambiente (a zona costeira).

## AMEAÇAS

O encalhe de filhotes recém-nascidos é a principal ameaça à espécie. Com a destruição de áreas de mangue e bocas de rios, as fêmeas dão à luz em mar aberto. Os filhotes não conseguem, e acabam encalhando nas praias. A Aquasis resgata esses animais e leva ao seu Centro de Reabilitação de Mamíferos Marinhos, onde eles recebem alimentação e cuidados veterinários até poderem ser devolvidos à natureza.

