

# **Behavior and habitat use of estuarine dolphin, *Sotalia guianensis* (Van Bénédén, 1864) (Cetacea, Delphinidae), at Morro do Pernambuco, Ilhéus, Bahia, Brazil**

Bianca Cruz Morais and Yvonnick Le Pendu

**Keywords:** *Sotalia guianensis*, group characteristics, feeding behavior, tide state influence

*Sotalia guianensis* inhabits the coast of Ilhéus, southern Bahia, Brazil. This species present an extent distribution along the Central and South America, including many estuarine areas along the Brazilian coast. Despite an increasing number of studies on the biology of the species, little is known about its ecology in the northeastern coast of Brazil, making difficult the definition of preservation and management measures. This project aimed to conduct the first study on the population of estuarine dolphins frequenting the Morro do Pernambuco, an area located at the entrance of the Pontal Bay in Ilhéus. The main objective was to analyze the occurrence and activity of *Sotalia guianensis* in this area during a year, to describe the size, composition and activity of the groups and to verify if these characteristics are influenced by environmental factors such as tide state and boat traffic. Data were collected from July 2008 through June 2009 during three hours sessions: between 8 a.m. and 5 p.m. (from 8 a.m. to 11 a.m., from 11 a.m. to 2 p.m. and from 2 p.m. to 5 p.m.). The monitoring of the entrance of the estuary and the open sea was carried out from three viewpoints along Morro do Pernambuco's coast. During a session, four successive scan samplings were conducted using binoculars every 15 minutes at each of the three viewpoints. Group size, composition and activity were recorded using a digital recorder. The spatial localization of each group, the presence of ships and local sea conditions were annotated on a check sheet. Tide state was obtained from the Brazilian Navy Department and the local depth was analyzed in the seaport's Nautical Chart. Dolphins were observed at Morro de Pernambuco in 25 to 92% of the sessions, depending on the month. A total of 130 observations sessions have been conducted. The animals were frequent in the area from May to October, but only occasionally observed during summer, i.e. from December to February. Such variation was previously registered at the Harbour of Ilhéus (ASSIS, 2008). Associations varied from 1 to 8 individuals and the modal group size was 2. Seventy one percent of the observed animals were adults and infants were registered in all months except December. Group size and composition were similar to those registered in other areas of Ilhéus' coast (SANTOS, 2007; ASSIS, 2008). Dolphins were more present from 8 to 11 a.m. (38%) and 2 to 5 p.m. (35%) than from 1 a.m. to 2 p.m. (27.3%). The area was mainly used for feeding activity (50%), besides travel (23%), aerial activity (14%), etc. The groups were more frequently located on the open sea side than at the entrance of the estuary. Animals were always

observed very near to the coast, where water depth was less than eight meters. The tide state influenced the presence of dolphins, the animals being more frequently observed during high and ebb tide. No significant alteration of the frequentation of the area nor the behavior of the dolphins according to sea conditions and the presence of ships was detected. The Morro do Pernambuco is an important area used for *S. guianensis*, especially for feeding activity. The local topography (beach rocks and shallow waters) seems to be very favorable to dolphins' feeding strategies. It is necessary to monitor human's activities at its vicinity in order to preserve the area and guarantee the future of the population of estuarine dolphins in Ilhéus.

The preliminary results of this research were presented during the Ninth Brazilian Congress of Ecology and published as an expanded abstract (Morais et al., 2009). The final results will be presented during the Annual Week of Seminars of Undergraduate Students of the State University of Santa Cruz and during the Sixth National Meeting on Conservation and Research of Aquatic Mammals (ENCOPEMAQ). We also plan to submit the results of the project to a scientific journal.

The Aquatic Mammal Research Group of Ilhéus (GMPAI) is conducting researches on estuarine dolphins since 2006. The knowledge acquired allowed us to understand more about the ecology of the species and its habitat use in different areas along the coast of Ilhéus. This study evidenced the importance of the Morro do Pernambuco area for the alimentation of the dolphins and how it is the necessity to preserve and monitor this site. The equipment financed by IdeaWild for the project was already reallocated to other studies on photo-identification and bioacoustics of *Sotalia guianensis*. In attempt to understand the dolphins' population dynamics and to monitor human activities. Our objective is to contribute not only to dolphin conservation but to its entire ecosystem, providing useful information for the definition of a marine conservation unit in Ilhéus. Such information is urgent while the construction of an industrial back-port and a deepwater port in the region is planned (LYONS, 2009) and little is done to prevent impacts on the environment.

#### **References:**

ASSIS, C. A. 2008. Comportamento alimentar e características dos grupos de boto-cinza, *Sotalia guianensis* (Van Bénéden, 1864) (Cetacea: Delphinidae) no Porto de Ilhéus, Bahia. 2008. 65 p. Master Dissertation, State University of Santa Cruz (UESC), Ilhéus, Bahia, Brasil.

MORAIS, B. C., DE PAULA, Y. C., LE PENDU, Y. 2009. Caracterização de grupos, uso de hábitat e comportamento do boto-cinza, *Sotalia guianensis* (Cetacea: Delphinidae), nos arredores dos Morro do Pernambuco, Ilhéus, Bahia, Brasil. Anais do XI Congresso de Ecologia do Brasil.

LYONS, C. S. 2009. Battle in Bahia: A new Port faces growing resistance. NACLA report on the Americas. Vol. 42(5). September/October. Available on-line at: <https://nacla.org/node/6097>

SANTOS, U. A. 2007. Uso do hábitat e atividades do boto-cinza, *Sotalia guianensis* (Van Bénéden, 1864) (Cetacea, Delphinidae), na Baía do Pontal, Ilhéus, Bahia. 2007. 56 p. Master Dissertation, State University of Santa Cruz (UESC), Ilhéus, Bahia, Brasil.

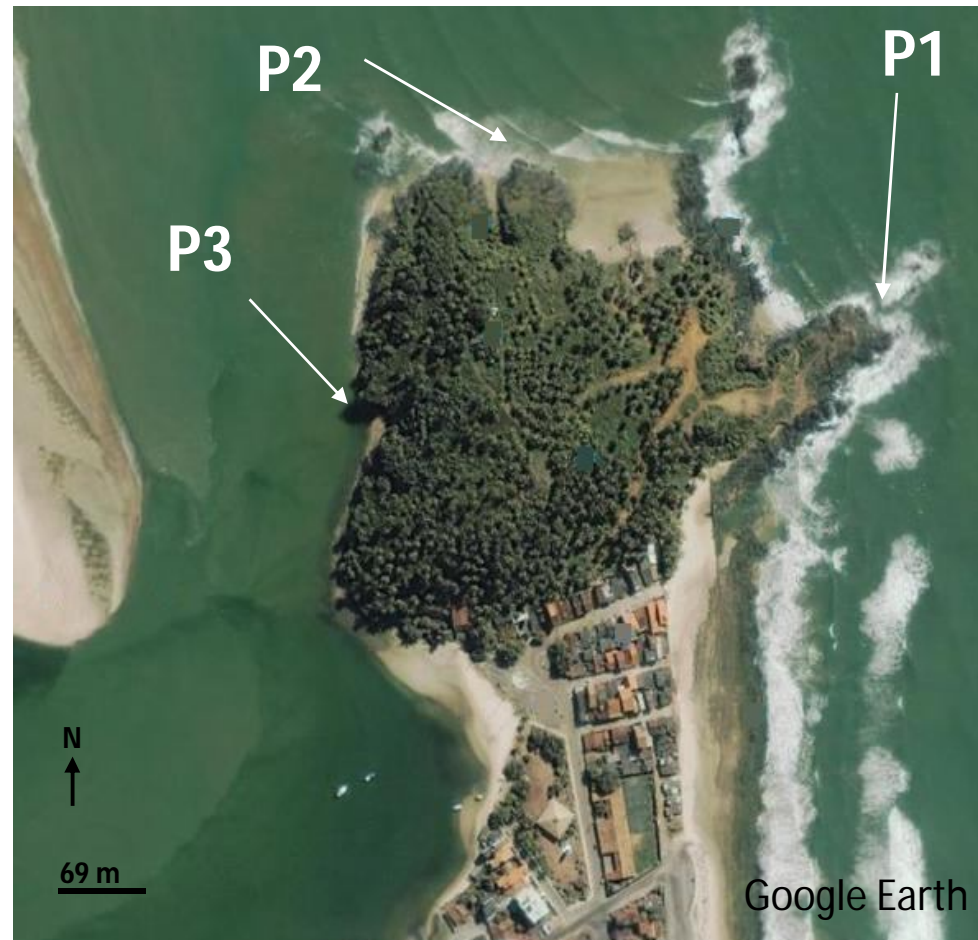
# Study area



Cachoeira river estuary, or Pontal Bay, Ilhéus, Bahia, Brazil. The Morro do Pernambuco is located at the entrance of the estuary.



Morro do Pernambuco – Aerial view.



Aerial views from Morro do Pernambuco. The 3 viewpoints are indicated in the map.



Viewpoint 1

Bianca Morais

Viewpoint 2





Viewpoint 3

Bianca Morais

# The Estuarine Dolphin, *Sotalia guianensis*



Bianca Morais



Bianca Morais

A group of estuarine dolphins in Ilhéus seaport.



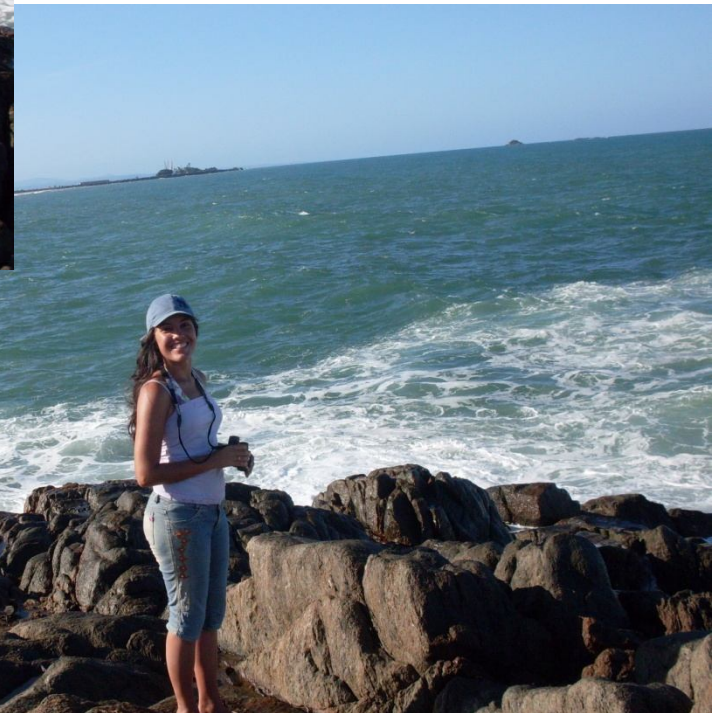
Yvonnick Le Pendu



Yvonnick Le Pendu

Estuarine dolphins in Morro do Pernambuco

# Field work



Idea Wild granted student at Morro do Pernambuco



Looking for dolphins at Morro d Pernambuco



A group of students observing dolphins at Morro do Pernambuco