



Andrea Cosentino

Spatial and temporal distribution of *Hyperoodon ampullatus* off Pico Island, Azores

Andrea Cosentino^{1,2}, Karin Hartman^{1,3}, Dominique Weilermann^{1,4}, Laura González García¹, Fleur Visser⁵

(1) Nova Atlantis Foundation, Risso's dolphin Research Center, Ribeiras, Pico Island, Azores (2) Universidad de Málaga, Spain (3) University of the Azores, Portugal (4) University of Constance, Germany (5) University of Amsterdam, the Netherlands

Corresponding author: orcinus.orca.1758@gmail.com



Laura González G.

INTRODUCTION

The Azorean archipelago is characterized by deep coastal waters, steep slopes, submarine canyons and seamounts. These features make it possible to observe deep diving cetaceans close to shore, such as sperm whales, beaked whales and Risso's dolphins.

The potential suitable habitats for the Northern Bottlenose whales (*Hyperoodon ampullatus*) are those with deep waters (750-1780m) and steep slope (1,2).

The best studied population visits the Gully, Canada, during summer and the individuals stay an average of 20 days in the area (3). The species had been reported before in the Azores (1) although there is no data available on their habitat use.

The aim of the present study is to determine the temporal and spatial distribution of *Hyperoodon ampullatus* off Pico Island (Azores).

METHODS

During 2003 to 2009, land- and boat-based surveys were conducted around Pico Island (Figure 1).

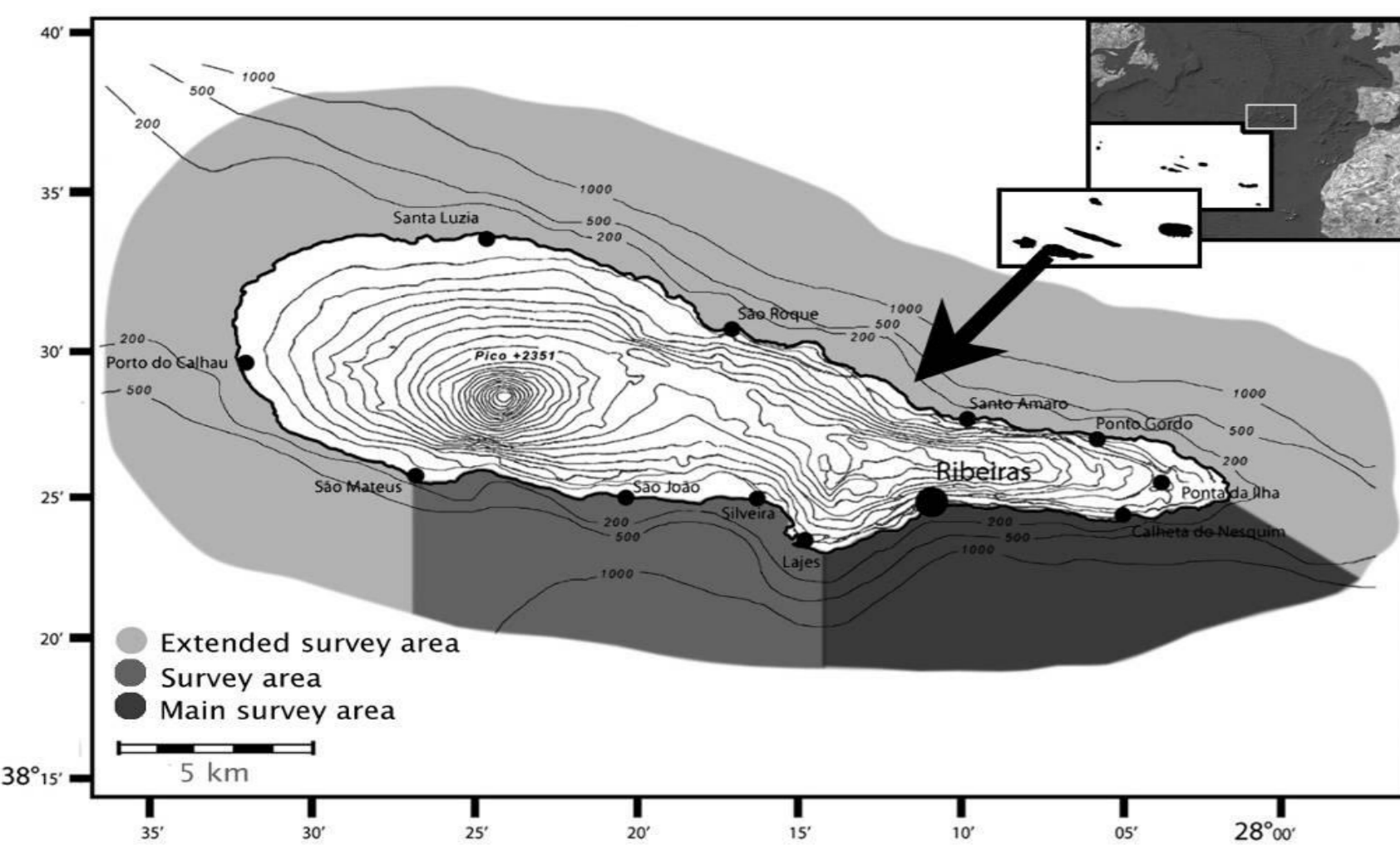


Figure 1: Location and detailed map of Pico Island, Azores, Portugal.

- **Land observations:** Daily binocular aided land-based surveys were made from lookouts at 30m above the sea level along the island's coast. Surveys lasted a minimum of 15 min. and a maximum of 20 min. (restricted to sea state < ds4).

- **Sea observations:** Boat-based surveys were carried out on a 7.2m open fiberglass boat and a 4.2 meter rigid inflatable. During 2007/2008 data was also gathered on board of a 8.5m rigid inflatable whale watch vessel, courtesy of Futurismo, Lajes do Pico. Whenever a group was encountered all individuals were photographed for identification purposes. During observations at sea GPS data was collected, as well as group size and focal group follows (4). A map was built using all GPS positions with the program ArcView GIS 3.2

RESULTS

TEMPORAL DISTRIBUTION

Northern bottlenose whales were sighted at least once every year during the study period and up to 13 different days a year. The species appeared in the summer from July to September, (Figure 2) spending up to 65 days in the study area (2009). Based on photo-ID, individuals spent from 1 to 13 days in the area (Poster D22)

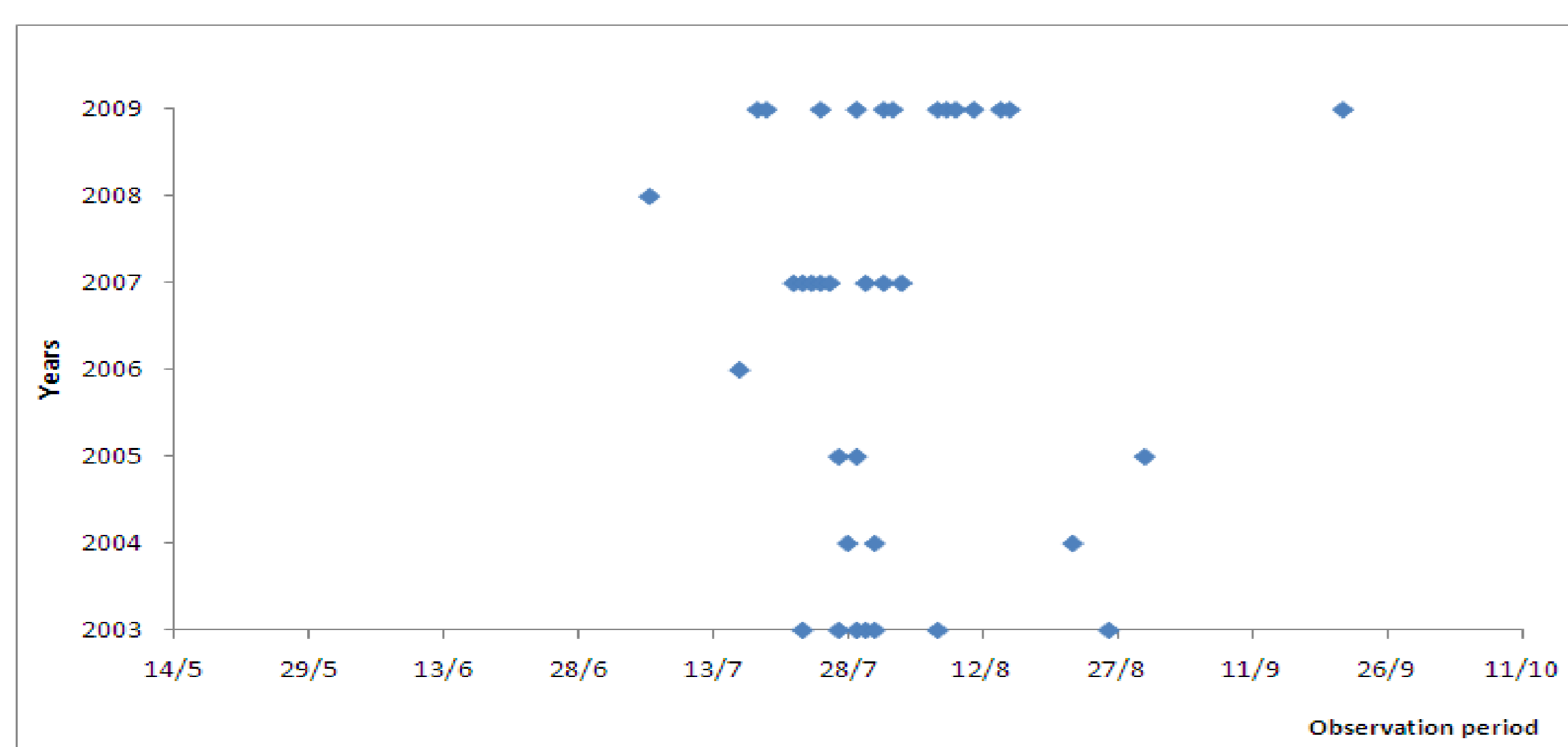


Figure 2: Temporal distribution of *H. ampullatus* off Pico Island, Azores.

- ✓ A total of 87 groups were recorded (51 from land, 36 at sea)
- ✓ 36% of all group encounters occurred in the summer of 2009 and 22% in 2003.
- ✓ 70% of all group sightings were made between 7:30 and 14:00.

SPATIAL DISTRIBUTION

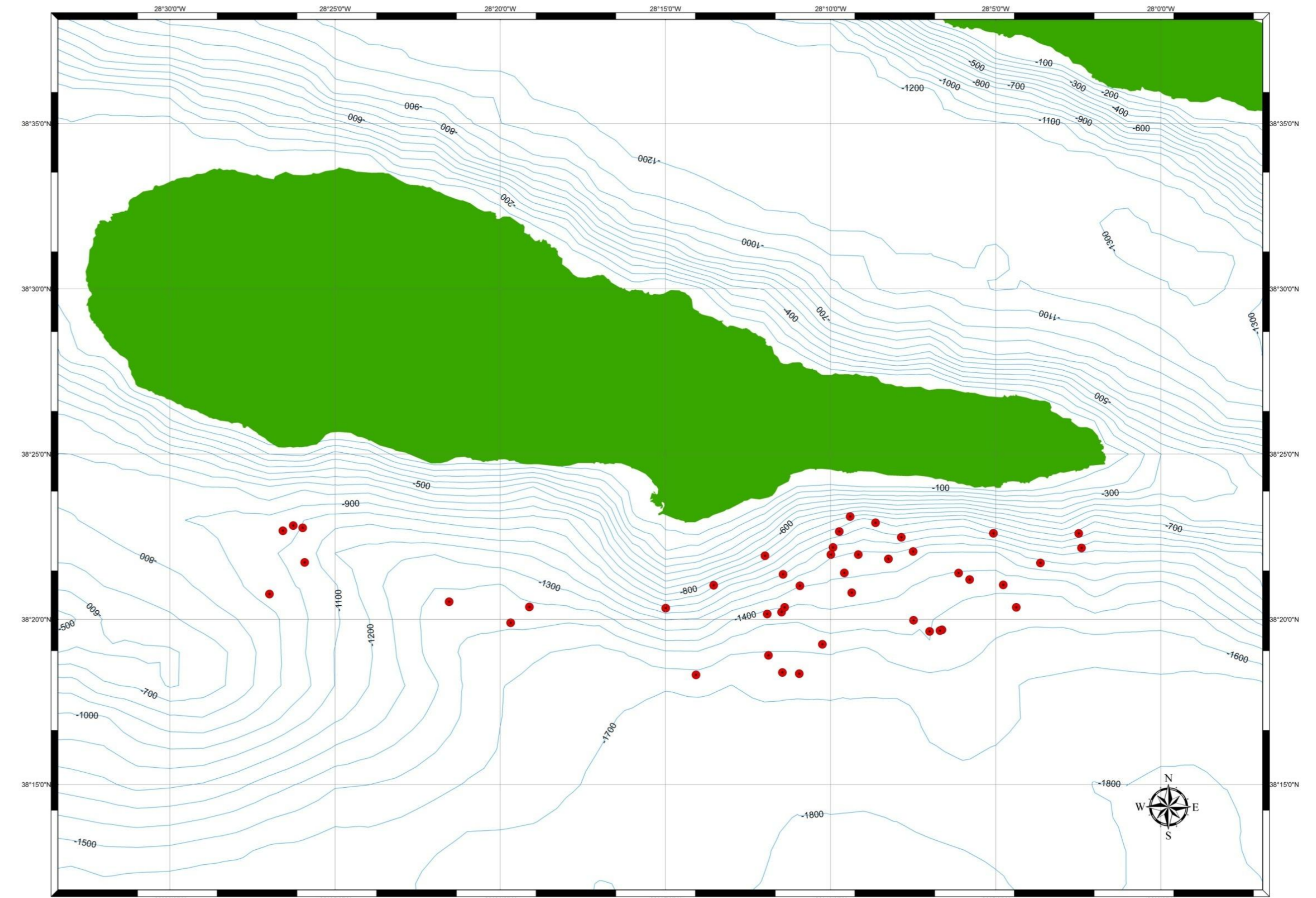


Figure 3: Map of Pico Island, Azores, representing GPS positions of groups of *Hyperoodon ampullatus* encountered at sea from 2003 to 2009.

The spatial distribution of *H. ampullatus* ranges from 38°18' to 38°23' N and from 28°02' to 28°27' W, which correlates with an area of 800 to 1600 meters deep.

CONCLUSIONS

-The Northern bottlenose whale is a regular migratory species in the Azorean archipelago being observed at least once every year.

-*H. ampullatus* shows a seasonal presence, being present mainly during July and August.

-The species was present in waters from 800 to 1600m deep, correlating with their preferred depth.

- More data, extension of our study area, and collaboration with researchers from other islands is needed in order to achieve a better understanding of this species' habitat use in the Azores.



Acknowledgements: This study has been carried out with financial support from the World Wildlife Fund, Greenpeace International, Federation for International Nature Conservation, Nikon Europe, Foto Natura. During 2007/2008, ID pictures were also taken by Roman Vodička, and Steve Geelhoed, spaces on board were friendly provided by Futurismo whale watching enterprises, Lajes do Pico. Special thanks to Marc Fernandes UAC/CIRN for helping us with the GIS data and to all students, volunteers and colleagues who participated in the project. This research was conducted under a scientific license issued by the Secretaria Regional do Ambiente e do Mar, Faial, Azores, Portugal.

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