WHALE-WATCHING EFFECTS ON THE BEHAVIOUR AND ACOUSTIC ECOLOGY OF HUMPBACK WHALES IN THE SOUTHWESTERN ATLANTIC BREEDING GROUND

PROGRAMA DE PÓS-GRADUAÇÃO EM ECOLOGIA E BIOMONITORAMENTO / UNIVERSIDADE FEDERAL DA BAHIA

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INTRODUCTION

• The increasing popularity of whale-watching tourism worldwide has led to growing concern about the potential effects of this activity on the targeted individuals and populations, in terms of behavioural changes, acoustic disturbances or longer-term physiological effects [1].
• The activity has grown in recent years in Praia do Forte, northern Bahia state, Brazil, yet no specific studies to evaluate the effects of this activity have been carried out to date in this locality.

RESEARCH QUESTIONS

• What behavioural changes are expressed by humpback whales in response to approaching whale-watching vessels?
• How does the underwater noise produced by whale-watching vessels affect humpback whale behaviour and use of habitat?

RESEARCH OBJECTIVES

• To evaluate the behavioural responses of humpback whales to whale-watching vessel approach;
• To evaluate changes in the acoustic behaviour of humpback whales in response to anthropogenic noise in the study area;
• To map the acoustic habitat of humpback whales in the study area.

METHODS

Land station monitoring

• Land-based theodolite observations to investigate the behavioural repsonses of humpback whales to whale-watching vessel approach.

Behavioural monitoring with drones

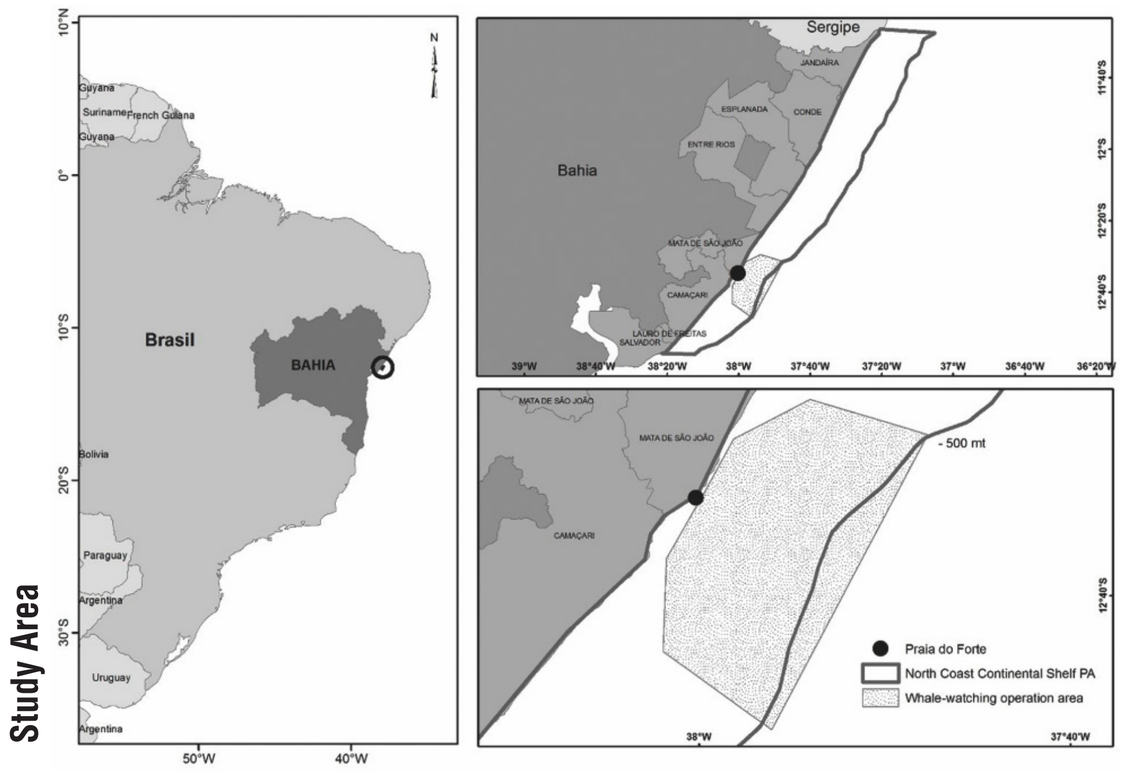
• Controlled experiments with drones to observe the interactions between the humpack whales and the whale-watching vessels.

Passive acoustic monitoring

• Recording biological (whale song) and anthropogenic (vessel) sounds during long periods of time.
• Associating acoustic and behavioural data to describe vessel approach events.

Mapping the acoustic habitat

• Whale distribution and acoustic data will be mapped together in order to understand how vessel noise affects use of habitat by the humpack whales.



SIGNIFICANCE OF THIS RESEARCH

• The northern coast of Bahia state represents an important breeding ground for the southwestern Atlantic humpback whale population [2].
• Praia do Forte, northern Bahia state, is located inside the North Coast Continental Shelf Protected Area and is the locality where whale-watching tourism has shown the fastest growth in recent years [3].
• The data gathered during this project may subsidise the improvement of the current legislation and implementation of a Management Plan for the activity inside this Protected Area, taking into consideration the species' conservation needs and the socio-economic benefits for the region's coastal communities.

References:

[1] Parsons ECM (2012) The Negative Impacts of Whale-Watching. J Mar Biol 2012:1–9; Parsons ECM, Scarpaci C (2015) Review Recent Advances in Whale-Watching Research: 2014–2015. Int Whal Comm 1–12; Senigaglia V, Christiansen F, Bejder L, *et al* (2016) Meta-analyses of whalewatching impact studies: comparisons of cetacean responses to disturbance. Mar Ecol Prog Ser 542:251–263.
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