

# The habitat use and site fidelity of bottlenose dolphins (*Tursiops truncatus*) in the Slovenian Sea and Bay of Trieste: a first estimation

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Poster SD20

## Introduction

The bottlenose dolphin (*Tursiops truncatus*) is the last remaining marine mammal in the Bay of Trieste in the northernmost area of the Adriatic Sea. This shallow bay, measuring just 33 m at its deepest point, has, however, a surprisingly large biodiversity of species in the face of considerable anthropogenic pressures. Lying at the top of the food chain, the coastal dolphins frequenting these waters are undoubtedly a crucial component of this marine ecosystem, as well as important bio-indicators for the health and ecological status of the area. This presentation communicates some preliminary observations and considerations from on-going monitoring studies of these animals in predominantly Slovenian-governed waters.

## Methods

Data were collected from 2001 to 2005 using dedicated survey methods and opportunistic public sightings (compiled from questionnaires) in a 140 km<sup>2</sup> study area shown in figure 1. All dedicated surveys were made using a 5.11 m motorboat with a 80 hp 4 stroke outboard. The surveys were carried out at speeds of 15 to 20 Nm hr<sup>-1</sup> in sea states of Beaufort 3 or less and in good light conditions with an experienced crew.

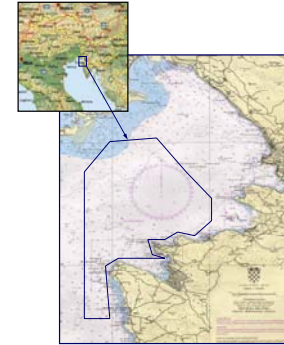


Figure 1. Showing the position of the study area comprising the majority of the Slovenian Sea, the southern side of the Italian-owned Bay of Trieste and the north-western side of the Istra Peninsula.

## Results

- ❖ The distribution of bottlenose dolphins from 2001 to 2005 is shown in figure 2.
- ❖ The majority of animals were recorded at depths of less than 20m.
- ❖ Sightings were made throughout the year, but a higher number was seen during the summer and spring (fig. 3a) and the majority of sightings (29%) occurred in June.
- ❖ During the summer months, a significantly lower number (just 2%) of recordings were made during peak daylight hours (11-18 hrs), with optimal sightings being made during quieter morning and evening periods (fig. 3b).
- ❖ From encounter data, dolphins were predominantly seen travelling (62%) or foraging/feeding (33%), with just 5% of animals observed resting (n=40).
- ❖ Group sizes ranged from 1 to 40 animals with a mean of 8.4 ±9.60 (median = 4) (n=56).

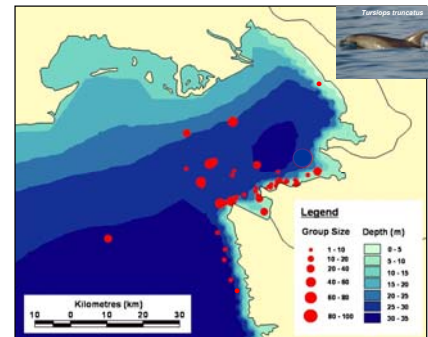


Figure 2. GIS map showing the position of bottlenose dolphin sightings in Trieste Bay from 2001 to 2005 inclusive (n=56). (Acknowledgement to M. Tetley).

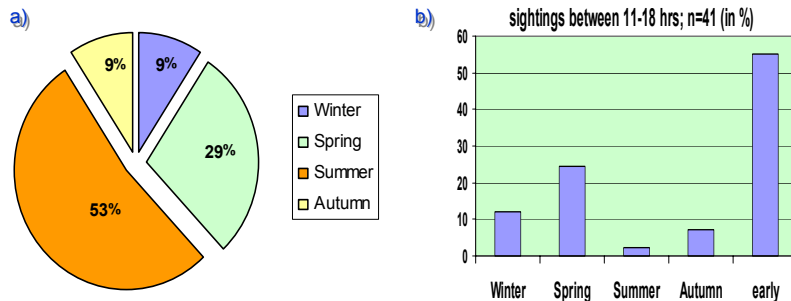


Figure 3. (a) Pie chart showing the percentage of pooled sightings in the study area by season; and (b) stack histogram showing the time of day of bottlenose sightings across the seasons (n=41).



Figure 4. Bottlenose fishing for mullet (*Mugil cephalus*) in Slovenian waters. Photo Darja Ribarič.

## Discussion

Whilst bottlenose dolphins are frequently recorded within the study area, the majority of sightings are made in the shallow, coastal waters of the “inner” bay during the warmer summer months. In this largely uniform habitat there are few refuges for prey which probably results in “patchy” distributions of available fish species for the dolphins exploiting these waters. This may account for the large variability in group sizes observed in the present study, the typically bigger offshore schools working cooperatively to lessen the difficulties in locating and/or controlling such patches. It is also apparent that the bottlenoses in this busy location (with its high shipping traffic and large numbers of recreational water users, particularly in the summer months) may avoid “hotspots” of human activity during peak times of the day; choosing instead to occupy these areas in the early morning and evening periods when noise disturbance is lowest.

The northern Adriatic is one of the most degraded areas in the Mediterranean Sea, and factors such as prey depletion, contamination by xenobiotics and residual animosity by fishermen towards these dolphins not only serve to shape the social structure and ecology of this bottlenose community in Trieste Bay, but also present a great threat to its future – carrying the risk of local or even regional extinction. Management actions which focus on restoring local ecosystems, such as rebuilding habitat quality by reducing contaminants and nutrient uploads (particularly as run-off from local rivers) and improving fisheries management aimed at enhancing local fish stocks, for example, therefore remain a priority in this vulnerable coastal location.