



TURMARES TARIFA,  
SPAIN (1)



UNIVERSITY OF CADIZ,  
SPAIN (2,3)



NMNH,  
LUXEMBOURG (4)



GARUMTARIFA,  
SPAIN (5)

# SHIP STRIKES IN THE STRAIT OF GIBRALTAR

Ana García, (1,3,5), Lucía Lapuente (1), Ezequiel Andréu, (1,2,5), Mónica Martínez, (1,5), Baldomero Medina, (1,5) Pierre Gallego, (4,5)

(1) Turmares Tarifa, Alcalde Juan Núñez, S/N, 11380, Tarifa (Cádiz), Spain; (2) Departamento de Biología, Facultad de Ciencias del Mar y Ambientales, Universidad de Cádiz, Polígono del Río San Pedro, s/n, Apdo. 40, 11510 Puerto Real (Cádiz), Spain; (3) Departamento de Genética, Facultad de Ciencias del Mar y Ambientales, Universidad de Cádiz, Polígono del Río San Pedro, s/n, Apdo. 40, 11510 Puerto Real (Cádiz), Spain; (4) National Museum of Natural History (NMNH), rue Münster 25, L-2160 Luxembourg; (5) Garum Tarifa association, Doctor Fleming, 4, 11380, Tarifa, Cádiz, Spain.

## INTRODUCTION

Collisions between ships and cetaceans are known to be widely underestimated, representing a major threat for some species, e.g. the North-Atlantic right whale (*Eubalaena glacialis*) population. The Strait of Gibraltar is a major cetacean hotspot, but also one of the world's major shipping routes. The incidence is underestimated mainly because strong surface currents wash the carcasses towards the Mediterranean Sea and few wash ashore.

## MATERIAL AND METHODS

This study was carried out from May to September 2003 through 2007, from platforms of opportunity, i.e. whale watching vessels (2003-2005 from the "Jackelin" and 2006-2007 also from the "Dolphin Safari"). We selectively collected data, e.g. Beaufort sea state, wind strength and direction, group composition and behaviour, etc.

In addition, necropsies were carried out on small cetaceans on behalf of the voluntary stranding network NERITA.

## RESULTS AND DISCUSSION

Several small cetaceans were recaptured showing clear marks of encounters with propellers. Most of these involved fin mutilation or propeller scars on the animals' body. The species presenting most collisions signs was the long-finned pilot whale (*Globicephala melas*), followed by the bottlenose dolphin (*Tursiops truncatus*). One case involving a short-beaked common dolphin (*Delphinus delphis*) showed a large injury just in front of the dorsal fin which cut through the spine. Sperm whales (*Physeter macrocephalus*) also presented clear signs of ship strikes on their flukes and in some cases on their head. There have been reports of dead sperm whales due to collisions in the area. Fin whales are particularly at risk because they travel perpendicularly to the fast ferries' routes. The new harbour in Tangiers will represent a major threat to the sperm whales as the shipping routes going in and out of this harbour leads right through the major habitat of these whales. The project to enlarge the Tarifa harbour and the number of fast ferries departing from it (from 3 to 8) is another major issue.



Figure 1: Jackelin, opportunistic platform of whale watching.



Figure 2: Intense shipping represents an acute collision risk for cetaceans in the Strait of Gibraltar.

## CONCLUSION

There are many more collisions in the Strait of Gibraltar than has been directly assessed in the past. These collisions probably involve smaller vessels which frequently change direction and target dolphin groups because of the frequent association of dolphins with targeted fish swarms.

It is of utmost importance that the traffic in the Strait of Gibraltar be regulated in a way that the critical habitats of the cetaceans inhabiting the area are protected. The fishing activity around the cetaceans should be regulated as well in order to minimise collisions. Finally, thorough environmental impact assessments taking into account the cetaceans from the Strait of Gibraltar should be carried out and taken into consideration before considering the possibility of building or enlarging a harbour in this very critical habitat.

## ACKNOWLEDGEMENTS

This research was supported by Turmares Tarifa, S.L., we therefore thank the entire Turmares team and volunteers whose work made this research possible. Special thanks to Lucía Lapuente for her selfless assistance on the making of this poster. Many thanks to Eléctrica Cádiz for its financial support for the creation of this poster.

