



# Killer whales (*Orcinus orca*) from the Strait of Gibraltar on the brink of extinction

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## ABSTRACT

Killer whale populations around the world have been described as cultural units of conservation. This study focuses on killer whales from the Strait of Gibraltar. This population is associated with the bluefin tuna (*Thunnus thynnus*) migration through the Strait of Gibraltar. It numbers approximately 30 individuals, divided into 2 groups. The first, associated with trap-net fishery along the Spanish coast, is mainly observed from April to the end of June. The second group, associated with the long-line fisheries, appears from July until September, and hunts closer to the Moroccan coast. Observations, carried out from land and from whale-watching vessels out of the port of Tarifa, Spain, took place during spring and summer, from 2004 to 2007. Our observations have shown both groups to have unique hunting strategies which appear to be transmitted horizontally. Little interaction was witnessed between the first group and the tuna trap-net fishery, whereas the second group has shown an increasing rate of interactions, leading to aggressive reactions by fishermen. In 2004, two cases of direct takes of killer whales were reported in the area, one of them with photographic evidence. In May 2006, an adult female killer whale stranded in the Bay of Algeciras. In June 2007 a pregnant female killer whale stranded and died on the Saharan coast. Reproduction is very slow in orcas, and only few calves have been observed so far. Other threats include intensive shipping, pollution, bycatch, habitat loss and prey depletion. This very small population is believed to be isolated, possibly resident in the area of the Strait of Gibraltar and its adjacent waters, and represents a cultural unit of conservation. We estimate this population to be seriously facing extinction, and we recommend that the relevant authorities from the range states take urgent action in order to protect it.

## INTRODUCTION & MATERIAL AND METHODS

Killer whale presence in the Strait of Gibraltar is thought to be related to the seasonal migration of bluefin tuna (*Thunnus thynnus*) through the area. Two groups of orcas feed on tuna during 2 different seasons and using 2 different hunting strategies. Nevertheless, these orcas have also been observed feeding on other preys both during the tuna season and when no bluefin tuna is present. This small population faces a real challenge by living in this complex environment characterised by intense anthropogenic activities.

This study is the result of surveys carried out from land and from opportunistic platforms of opportunity in the Strait of Gibraltar during spring through fall from 2004 to 2007. The PVA was carried out using the Vortex program.

## RESULTS

- This population of approximately 30 individuals is possibly resident and isolated.
- It's primary diet, bluefin tuna, is showing catastrophic declines.
- Violent interactions with fishermen include at least one direct take.
- Collisions are a real threat in this extremely busy channel.
- Contamination, both chemical and acoustic are a real concern.
- One reported stranding in the Bay of Algeciras in May 2006 involved an extremely emaciated adult female.
- PVA shows 28-72% chances of extinction in the next 100 years.
- Have been recently proposed to be listed as « critically endangered » by IUCN.
- This population could be wiped out by a disease outbreak such as morbillivirus.

## DISCUSSION & CONCLUSIONS

The population of killer whales in the Strait of Gibraltar is very small, possibly isolated and faces an important number of threats, including direct takes. More and more intense interactions with fisheries are leading to an increasing problem as the tuna stocks decrease rapidly. These killer whales have a unique hunting technique that is most probably transmitted vertically; they thus represent a cultural unit of conservation. The additional threats of vessel collisions, pollution, and last but not least epidemic disease outbreak (e.g. morbillivirus) add significant concern to the conservation status of this population. We recommend that the relevant authorities from the range states take urgent action in order to protect this population.

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Figure 1: A killer whale taken in the Strait of Gibraltar in 2004.



Figure 2: The stranded female from May 2006 was severely emaciated.