Interaction between maritime traffic and cetaceans in the Canaries Archipelago

Submitted by the Government of Spain and the Regional Government of the Canary Islands to the Working Group on Ship Strikes, Conservation Committee Santiago, Chile, June 2008

Background

The Canaries, oceanic archipelago formed by 7 islands and many islets, forms a place of worldwide special interest in relation to its richness and diversity of cetaceans present in the Archipelago waters. This is due to its special characteristics, volcanic origin, geographic position of the archipelago, oceanographic processes and characteristics of the oceanic islands that favour the proximity of species living in oceanic habitats. It is therefore possible to find species from warm-temperate environment (most numerous) together with animals from northern latitudes (like long-finned pilot whales *Globicephala melas* or northern bottlenose whale *Hyperoodon ampullatus*) that reach the islands under the influence of the cold canaries current and some cases of tropical species such as Fraser's dolphin (*Lagenodelphis hosei*).

All cetacean species in the Canaries are protected, being included either in the Canaries Threatened Species Catalogue or in Annex IV of the European Habitat Directive. There are 12 marine protected areas due to cetaceans, particularly the bottlenose dolphin, in the Archipelago. They represent an area of 157 313.02 ha. included in the European Natura 2000 network.

Recent developments

- **A Royal Decree Establishing Measures for the Protection of Cetaceans** has been adopted by the Spanish Central Government on December 2007. The objective of the Royal Decree, to be applied in Spanish jurisdictional waters, is the establishment of specific protection measures for cetaceans to improve the ecological status of their populations. The Decree establish the figure of "**Mobile Area for the Protection of Cetaceans**", defined as a cylinder of 500 m of radio, 500 m high and 60 m deep, around a cetacean or group of cetaceans. The mobile area distinguishes 5 different sub areas:

  1. **Area of Exclusion,** with a radio of at least 60 m from the cetacean.
  2. **Area of Restricted Stay,** from 60 m to 300 m.
  3. **Area of Approximation;** from 300 m to 500 m.
  4. **Aerial Area,** an air cylinder above the cetacean of 500 m height and a radius of 500 m from the animal.
  5. **Submarine Area,** a water cylinder 60 m below the cetacean and a radius of 500 m from the animal.

  Within the "Mobile Area for the Protection of Cetaceans" several conduct rules have to be followed in order to minimize the negative impacts of human activities on cetaceans. Special attention is given to impacts from whale watching activities, for which the Royal Decree provides a specific code of conduct.

  In case an animal is injured or is found injured or dead, the Royal Decree requires it to be reported to the Maritime Authorities indicating the location and buoys marking, the case being.

- An **Agreement between the Ministry of Defence, the Ministry of the Environment and Rural and Marine Affairs and the Regional Government of the Canary Islands aiming at the conservation and research of cetaceans populations in order to prevent accidental strandings** has entered into force in November 2007. Biological, pathological, physiological and behavioural studies as well as spatial and temporal distribution studies on the cetaceans of the Canary archipelago, with a special attention to sperm whales and beaked whales, will be carried out. The duration of the agreement is for three years and it is expected that these studies will lead, among others, to the establishment of measures to reduce the impact of Navy sonars on Ziphiids and other cetaceans.

Progress of knowledge on interaction between maritime traffic and cetaceans in the Canaries Archipelago

For many years, a thorough monitoring of stranded cetaceans has been carried out by the regional Government of the Canary Islands in collaboration with cetacean biological and pathological experts. Since 2000, the average number of stranded cetaceans per year in the Canaries has been 44 animals. Since that year, the coverage of the stranding network in the islands is complete and homogenous. The data of stranded cetaceans show that those related to interaction with ships or that show definite or probable signs of collision with ships represent around 10-11% of all the mortality factors of the stranded and analysed cetaceans. Approximately 65,75% of these strandings are due to natural causes and the rest is mainly due to interactions with fisheries, followed by causes associated to military manoeuvres, and finally to other pathologies (including the ones associated to pollutants).

Taking into account all the data available to the regional administration, an exhaustive revision of strandings related to collisions is been done, as well as a revision of the reports presented to the International Whaling Commission. The percentages are similar, in general, to the ones already presented. The data show that there are around 50 records of cetaceans considered to have suffered confirmed collision or where collision is a possibility with a certain degree of certainty. Likewise, there is a list of records of stranded cetaceans with some clues but little definite or consistent information reported by not specialised people, which are considered they should not be included because they have a high degree of uncertainty. The Veterinary Faculty of the University of Las Palmas de Gran Canaria is analysing the stranded cetaceans susceptible to have entered in collision with ships to determine if they were produced before or after death. This data is fundamental to evaluate whether a cetacean has died because of an interaction with maritime traffic or not.

Taking into account all these considerations, and once all the analyses are finished and all the variables studied, the regional Government of the Canary Islands has the intention to present an exhaustive and detailed study at the 2009 IWC in Madeira.

Even so and taking into account that the information to date is almost final, we can consider that the percentages of stranded animals due to collisions compared to the total number of strandings, the species involved and other type of information that will be presented next year, will not change substantially from the current data. Therefore, we are willing to offer this information now as it is considered important in order to continue the work on this issue and try to find solutions or measures to minimize it.

Taking into account the previous information, the percentage of cetaceans stranded due to interactions with ships in the Canaries with regard to the total stranded cetaceans is around 10.8%. Of these, the cetaceans more affected by collisions are sperm whale (39.5% of all the collisions, 24 animals considered), pygmy sperm whale (18.4% of all collisions, 7 animals considered), beaked whale (15.8% of all the collisions, 8 animals considered of which 6 were Cuvier's beaked whale *Ziphius cavirostris*, one *Mesoplodon bidens* and one *Mesoplodon europaeus*), rorquals (10.5% of the collisions, 4 animals considered, 2 Sei whale *Balaenoptera borealis*, 1 fin whale *Balaenoptera physalus* and one more specimen without species identification) and short-finned pilot whales *Globicephala macrorhynchus* (10.5% of the collisions, 5 animals considered), to which one case of Atlantic spotted dolphin (*Stenella frontalis*) can be added.

The collisions could have happened with all type of ships, from recreational boats to high speed ships, averaging 5 collisions per year. An increase in the number of collisions was first due to the start of fast ferries in 1999 (there was also an improvement of the stranding network in that year) and a second increase since 2003. The type of boat can not be determined for sure if there are no direct observations; however, in most cases, the cut type, section or impact indicated that there were large ships.

Another factor to consider is marine currents, as they prevent the stranding on the coast of a large part of the animals that could have died from collisions and of which no information is available. This is emphasized by the fact that 50% of the stranded cetaceans died due, or possible due, to collisions appear on the east of Tenerife (the largest and highest Island), percentage that rises to 59% if the entire island is considered.

Actions and measures

With this basic information, and understanding that interaction of cetaceans with ships is a conservation problem for these protected species, the main actions under development or consideration are:

1- Monitoring of the stranded cetaceans to maintain a rigorous information and data on the animals affected by this problem.
2- Study and knowledge of the temporal and spatial distribution of the populations affected.
3- Analysis of the risk areas.
4- Analysis of the measures to take and their viability (only possible if the previous points have been done), including periods and areas that should be avoided by ships.
5- Possibility to apply technologies to avoid collisions. Detection of cetaceans early enough to manoeuvre. Urge research on this topic at international level.
6- Other mitigation measures such as observers on board, analysis of their usefulness (usefulness for information and/or prevention).

As explained before, the regional Government of the Canary Islands is monitoring in detail the stranded cetaceans in the Canaries. For the next meeting of the IWC (Madeira 2009), it has the intention of sending a detailed report with the data of all the historic records of cetacean collision, including the analysis on the category of certainty of the collision, probability and the consideration of the collision before or after death.

With this information and the results of the studies conducted under the agreement between the Ministry of Defence, the Ministry of the Environment and Rural and Marine Affairs and the Regional Government (see above), an analysis of the risks will be done, in order to minimize the impact of maritime transport.

The IWC will be informed of the results obtained from these studies.

On the other hand, it is important to urge the International Community to promote studies on technologies applied to the maritime traffic and mainly to high speed ships that allow the detection of cetaceans and manoeuvre with enough time to avoid the collision.

It is also considered of interest to promote studies bringing information on why certain species like sperm whale, beaked whale and pygmy sperm whale are more affected than others by this problem, at least in the case of the Canaries, and how their physiology and behaviour play a role in this regard.