



Conservation of the vulnerable Atlantic humpback dolphin (*Sousa teuszii*) in southern Angola: an uncertain future?

Caroline R. Weir^{1,2}

¹Ketos Ecology, 44 Lord Hay's Grove, Aberdeen, AB24 1WS, U.K. ²University of Aberdeen, Tillydrone Avenue, Aberdeen, AB24 2TZ, U.K.

Introduction

Atlantic humpback dolphins (*Sousa teuszii*) are endemic to tropical and sub-tropical waters from Western Sahara to Angola, West Africa (Van Waerebeek et al., 2004). They are classified as vulnerable by the IUCN based on low abundance and widespread decline, and are amongst the current top five endangered cetacean species worldwide (Jefferson, 2009).

In 2008, the first dedicated study of Atlantic humpback dolphins was carried out in Angolan waters (Weir, 2009). This poster examines the relevant conservation findings and assesses human impacts on the species in Namibe Province, southern Angola.

Methods

The study area comprised 55 km of coast located around Flamingos (15°33'S 12°01'E). Data collection and analysis is explained fully by Weir (2009). In summary, a total of 1106.2 km of boat, 520.6 km of vehicle and 53.7 hr of shore based effort for Atlantic humpback dolphins occurred in January 2008 (summer) and June/July 2008 (winter).

The coast was divided into ten sectors of 5-km and 0.1 km latitude to examine relative abundance and fine-scale use of the area respectively. Fishing vessels and nets were recorded during the outward leg (554.4 km effort) of each boat survey.

Anthropogenic activities potentially impacting Atlantic humpback dolphins

No mortality of humpback dolphins was directly observed during the 6-week duration Namibe Province study. However, the evaluation of anthropogenic activity in the region revealed four key potential impacts: (1) bycatch; (2) directed capture; (3) habitat degradation; and (4) over-fishing.

1. Bycatch



Gill net density ≤ 1 km from shore peaked at over 2 nets/km in sector 10. A gill net was located within 500 m of the shore in Tuna Bay during all summer and winter surveys

2. Directed capture



Coastal communities rely heavily on the ocean for protein and there is potential for deliberate capture of dolphins for bait or human consumption ('marine bushmeat').

3. Habitat degradation



Dolphins occurred within 800 m of the coast and used specific small bays and reef breaks for foraging, rendering them vulnerable to coastal development and pollution

4. Over-fishing



Over-fishing of coastal fish stocks is a potential impact. Fishing boat activity ≤ 1 km of the coast was low in sectors 1 to 8, but increased to over 4.8 boats per km in sector 10.

The study area



Figure 1. Study area showing the 10 area sectors, boat effort (red), the extent of vehicle effort and location of coastal communities (black lines), other buildings (triangles) and fisherman huts (crosses)



Atlantic humpback dolphins off the coast of Namibe Province

Atlantic humpback dolphins at Namibe Province

A total of 71 Atlantic humpback dolphin sightings were recorded (32 during boat surveys, 20 during vehicle surveys, six during timed watches at Flamingos and 13 opportunistically). The study yielded the following key results (summarised from Weir, 2009) relevant to the conservation of Atlantic humpback dolphins:

1. Sightings were distributed throughout sectors 1 to 8 of the study area but no dolphins were sighted in sectors 9 and 10 where artisanal fishing communities were located
2. Photo-identification during 49 sightings identified 10 dolphins (with nine animals present in both seasons and one calf born between surveys). High re-sighting rates and an absence of unmarked animals indicated that all animals in the area at the time of the study were identified
3. All (except one) Atlantic humpback dolphin sightings occurred at a maximum distance of 800 m from the coast, and most (N=46, 65%) occurred exclusively within 300 m of the shore
4. Forage/feed behaviour occurred in particular locations, primarily around rocky reefs within Blue Water and Skull Bays in the north of the study area, the area around High Rocks and north of Flamingos at the (dry) mouth of the Flamingo River

What future for the Atlantic humpback dolphin?

1. This study suggests that the Angola Management Stock (Van Waerebeek et al., 2004) is at extremely low abundance
2. Their use of coastal habitat and specific foraging areas mean that the potential for, and vulnerability to, anthropogenic interactions is high
3. Of the identified potential impacts, artisanal gill net fishing within 1 km of the coast is likely to represent the greatest threat
4. Additional potential impacts include genetic isolation, climate change, marine pollution and anthropogenic sound
5. Challenges for conserving Atlantic humpback dolphins in Namibe Province include a lack of biological data, lack of mortality data, absence of public awareness and economic/political difficulties given widespread poverty amongst coastal communities and their reliance on natural resources, particularly fishing, for subsistence
6. The Atlantic humpback dolphin faces many of the same threats and conservation issues as other endangered small cetaceans including the now extinct baiji (*Lipotes vexillifer*) and the critically endangered vaquita (*Phocoena sinus*)
7. If it is not to follow the baiji's fate, measures must be implemented to protect the Atlantic humpback dolphin in core parts of its range

Literature cited: Jefferson, T.A. (2009). The most endangered cetacean species. In: Sidenstecker (Ed.), Save the Whales Newsletter, 2009: 5-7. Seaside, CA. Available online at: <http://www.savethewhales.org/mostendangered.html>. Downloaded on 14 February 2010. Van Waerebeek, K., Barnett, L., Camara, A., Cham, A., Diallo, M., Djiba, A., Jallow, A.O., Ndiaye, E., Samba Ould Bilal, A.O. and Bamy, I.L. (2004). Distribution, status, and biology of the Atlantic humpback dolphin, *Sousa teuszii* (Kükenthal, 1892). *Aquatic Mammals* 30: 56-83. Weir, C.R. (2009). Distribution, behaviour and photo-identification of Atlantic humpback dolphins (*Sousa teuszii*) off Flamingos, Angola. *African Journal of Marine Science*, 31(3): 319-331.

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