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The future of Atlantic Humpbacked Dolphins *Sousa teuszii* in Dakhla Bay, Atlantic Sahara

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Preamble

In 2006 Alex Lees and I visited the Atlantic Sahara; a vanguard mission to a place little visited by naturalists previously. This visit would contribute to the destination thereafter becoming exceptionally popular with birders, mammal watchers and general naturalists. Whilst birds were our main focus, we had read about the presence of Atlantic Humpbacked Dolphins Sousa teuszii *in Dakhla Bay in a paper published in 1998. We had no joy in seeing this species in 2006 but fast-forward four years and we were joyous to find a group of three animals foraging at the north end of the bay (Plate 1).*

Plate 1. Atlantic Humpbacked Dolphin, January 2010 (© Richard Moores)

Introduction

In 2017 the Atlantic Humpbacked Dolphin was upgraded to 'Critically Endangered' by the International Union for Nature Conservation (IUCN). Recent declines have been confirmed or suspected for all populations throughout its west African range between Dakhla Bay in Atlantic Sahara (Figure 1) and Angola, with estimates of the total population of below 3,000 individuals (Collins 2015).

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Plate 2. Dakhla Bay – Atlantic Humpbacked Dolphin habitat at north end at high tide

Dakhla Bay

The populations at the extremities of this species' range are small and may reflect the limits of habitat suitability; Dakhla Bay represents the northernmost limit of its range. The Atlantic Humpbacked Dolphin population in the bay has always been small, described as "miniscule" by Beaubrun (1990), who observed a group of three individuals with Bottlenose Dolphins *Tursiops truncatus*. Notarbartolo-di-Sciara *et al.* (1998) reported four sightings from two days surveying in the bay in February 1996. All four sightings occurred in the shallow areas of the northern part of the bay (Figure 1) with a peak group size of ten animals (and mean group size of 6.9). Since this survey, reported sightings from visiting birders and locals between January 2010 and April 2018 suggest that the population is in trouble as no group size has exceeded three individuals. Most worrying, perhaps, is that most recent records are of three individuals, possibly suggesting the same three individuals seen on each occasion. It was also reported to us by a staff member of Association Nature Initiative (ANI) in 2015 that only three animals survived, including an adult male and its progeny.

Ecology and habitat

The northern end of Dakhla Bay represents typical habitat for this species; shallow, nearshore and strongly influenced by tides with sandbanks. Atlantic Humpbacked Dolphins most actively feed on rising tides, chasing fish up tidal channels.

Figure 1. Dakhla Bay – Area in red indicates approximate area of suitable Atlantic Humpbacked Dolphin habitat

Migration

The nearest population of Atlantic Humpbacked Dolphin to the Dakhla Bay populations exists some 450km to the south, at Banc d'Arguin National Park, Mauritania. Movements between these populations have not been proven and many authors consider it unlikely to occur at all, certainly there are no published records of this species along the intervening coastline. In contrast, Robinaeu & Vely (1998) believed it "inconceivable" that the Dakhla population was isolated.

Threats

Throughout its range the major threats to this species are substantial, including:

- risk of bycatch from the extensive fishing industries present in its inshore habitat;
- a reduction in prey-base for dolphins from fishing;
- a developing trend of 'marine bushmeat' in some areas;
- boat-strikes; and
- myriad potential adverse impacts from coastal developments and their varied cumulative effects.

In Dakhla Bay, one of the most visible potential threats is from the booming kite-surfing industry (Plate 3). Over the last 12 years, the number of kite-surfing camps built or proposed has grown rapidly from zero; now it is not uncommon to witness three figure numbers of kite-surfers out on the water at any one time, at all times of the year. The best kite-surfing areas overlap greatly with the optimal Atlantic Humpbacked Dolphin habitat in the bay (Figure 2), with suitable dolphin habitat at low tide being even more reduced (Figure 3). This competition for space is a real cause for concern given that this species appears to be very prone to disturbance. Animals that seek to avoid disturbance are forced into sub-optimal areas with presumably negative consequences for population health. In March 2016 we witnessed a lone Atlantic Humpbacked Dolphin with a small group of Common Bottlenose Dolphins *Tursiops truncatus* midway down the western side of the bay, possibly as a result of disturbance in the north of the bay.

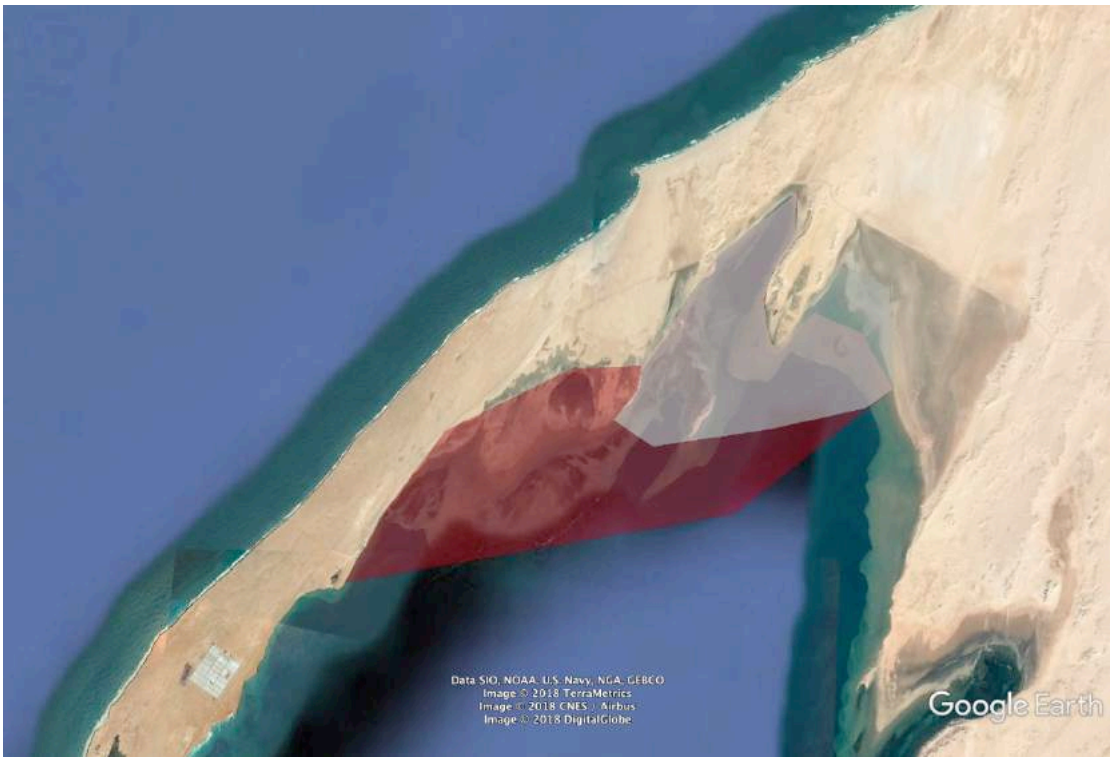

Figure 2. Area in white indicates main kite-surfing area

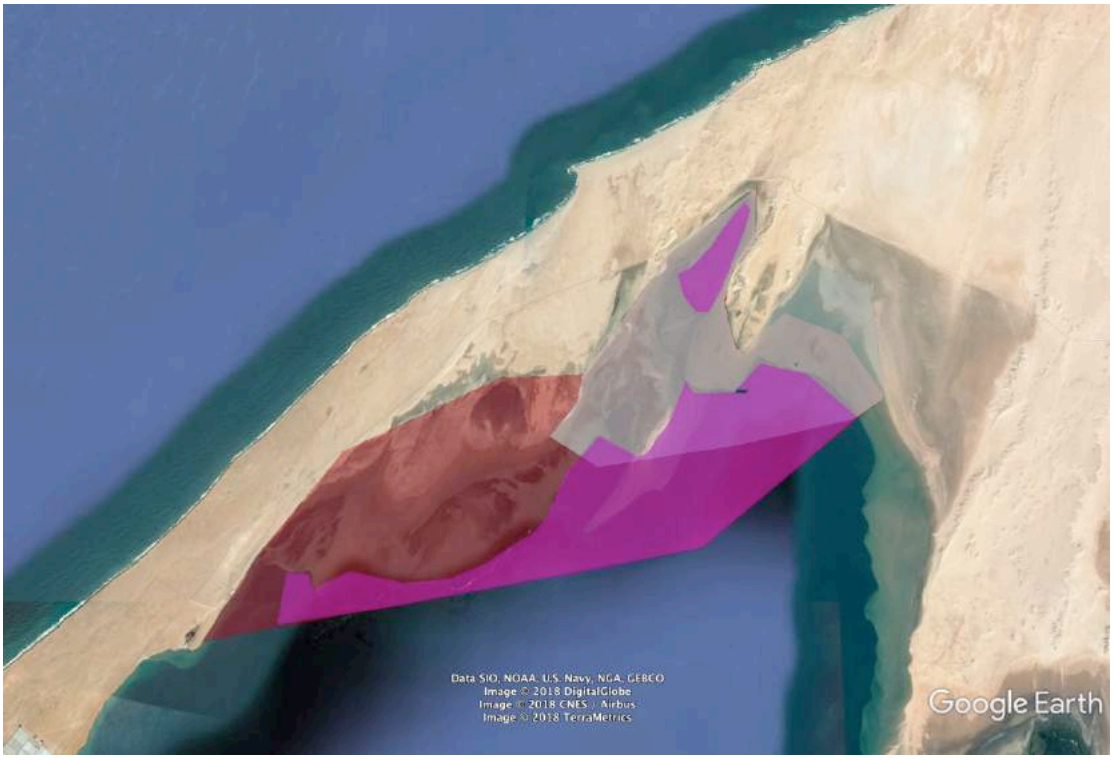

Figure 3. Area in purple and non-overlapped red indicates approximate area of suitable Atlantic Humpbacked Dolphin habitat at low tide

Although fatalities due to fishing activities have been suspected in the bay (Van Waerebeek *et al.* 2004), fishing appears to remain a relatively minor issue in the parts of the bay where the dolphins reside. While such pressures are considered unlikely to significantly increase in the near future, any animal injured or killed by such activity is likely to have a major negative impact on such a small population.

Plate 3. Kite-surfers at north end of Dakhla Bay

Hope for the future?

At present, there appears little hope for the long-term future of the Atlantic Humpbacked Dolphin population in Dakhla Bay, which has seemingly declined to very low numbers since 1996. The kite-surfing industry continues to expand in the dolphins preferred areas forcing it into sub-optimal habitats. This edge of range population has likely always been small, although with no group size exceeding three individuals reported since 1996 (when a maximum group size of ten animals were observed) it suggests that the decline is inexorable.

If they can adapt to these sub-optimal 'edge' areas, and perhaps, however unlikely given the absence of records and its general sedentary nature, be supplemented by incomers from populations to the south, then maybe there is hope going forward….

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