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HARBOUR PORPOISE SURVEY OFF NORTHWESTERN AFRICA; FURTHER EVIDENCE FOR A DISCRETE WEST AFRICAN POPULATION?

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Summary

- This study describes visual and acoustic surveys for harbour porpoises in the Atlantic waters of northwest Africa from March-May 2005 between latitudes of 20°N and 37°N.
- 275 hours of acoustic data were collected in all sea states and 60 hours of visual effort were conducted in sea states ≤ three from IFAW's research vessel *Song of the Whale*.
- Porpoises were seen 3 times on the survey trackline and on 4 occasions off track.
- Four individuals seen in Agadir Bay at latitude 30°N represent the most northern living porpoises reported from the Atlantic African coasts and the first sightings of porpoises reported in Moroccan waters.
- 31 acoustic detections of porpoises were made on the trackline (plus 19 off track).
- There was a marked lack of acoustic detections in the north of the study area.
- As harbour porpoises are highly susceptible to fisheries bycatch in many other parts of the North Atlantic, further monitoring of the status of this remote and isolated population is required for effective conservation management.

Introduction and Aims

- The aim of the study was to investigate porpoise distribution in the unstudied region south of the Iberian peninsula and north of Mauritania, using visual observers and acoustic detection equipment.
- 13 separate porpoise populations are proposed for the North Atlantic (Donovan & Bjørge, 1995).
- There are very limited data on their distribution off southern Europe and West Africa, particularly between the Straits of Gibraltar and Mauritania.
- Evidence exists of a southern population between Morocco and Senegal (30 to 14°N); recent genetic evidence supports a separate NW African population (Tolley & Rosel, 2006).
- Although porpoises are subject to bycatch throughout their range, no national legislation specifically protects porpoises in west Africa. The status of this population is therefore of concern.



Field Methodology

- Transects had random start points to provide non-zero coverage.
- A twin-element towed hydrophone was used with an automatic porpoise detection system to detect high-frequency porpoise clicks.
- In clear weather, 2 observers on watch (5.3m above sea level).
- An automatic detection algorithm classified clicks; the results were subsequently examined by an analyst.
- Clicks were classified as 'porpoise' if they had an amplitude ≥ 105 dB *re* 1μPa and a signal strength in the 115-145 kHz band ≥ 30 dB above mean signal strength at two lower control frequencies.

Results

- The porpoise detection system was deployed for 3125 km (276 hours).
- 50 porpoise events were identified in the acoustic data, of which 31 were on the trackline.
- Only 7 porpoise sightings were made throughout the survey, of which 3 were on the trackline.
- Weather conditions often precluded visual effort (average sea state in all four blocks ≥ three).

Discussion

- This study supports limited observations from previous studies suggesting the waters between 20° and 31°N provide important habitats for harbour porpoises.
- The use of an acoustic detection system allows insights on habitat usage not available through traditional visual techniques in the choppy waters off west Africa.
- Of particular interest is the high number of acoustic detections made between Dakhla and Cap Corveiro, an area with limited prior evidence of porpoise presence.
- These detections represent the most northern living porpoises reported from non-Mediterranean African coasts and the first sightings reported in Moroccan waters.
- Porpoise presence may be linked to cold-water upwelling (mean sea surface temps were 17-18°C during the study).
- Fisheries activities are intense in this region (both local artisanal and foreign-flag vessels). Porpoises have regularly been caught by fishermen off Mauritania, both in gill nets and in the hook and line fishery.
- There is currently a proposal to list the population under Appendix II of CMS because of the likely reproductive isolation, lack of abundance information and poor insight into distribution combined with the well established anthropogenic threats.

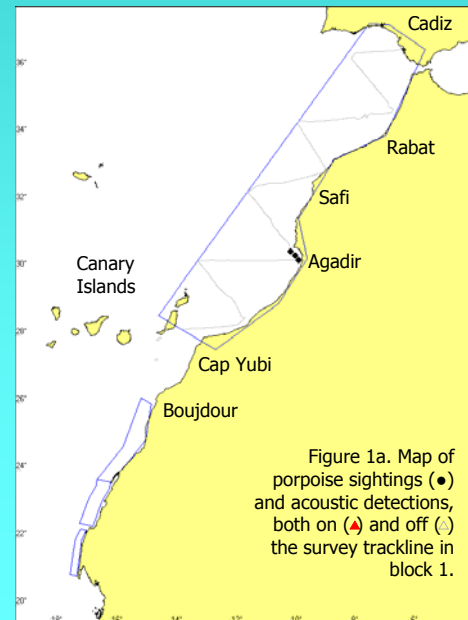


Figure 1a. Map of porpoise sightings (●) and acoustic detections, both on (▲) and off (◌) the survey trackline in block 1.

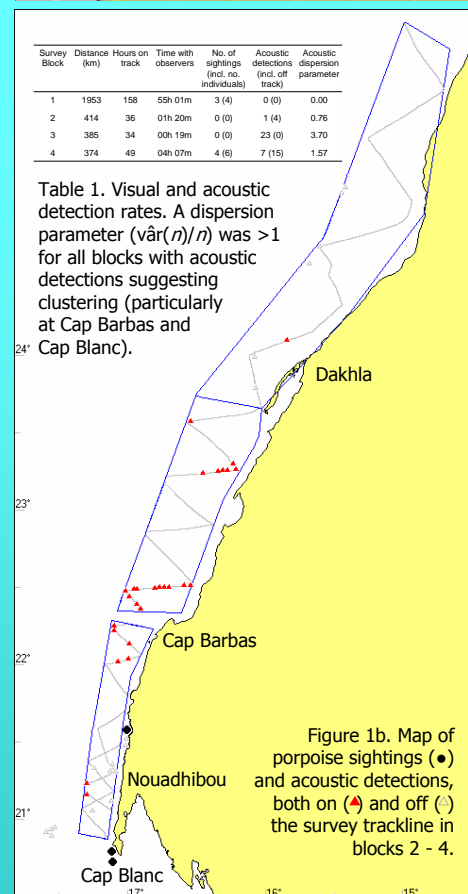


Figure 1b. Map of porpoise sightings (●) and acoustic detections, both on (▲) and off (◌) the survey trackline in blocks 2 - 4.