

A first record of longfin mako, *Isurus paucus*, in the mid-North Atlantic

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The occurrence of longfin mako, *Isurus paucus* is recorded for the first time in the mid-North Atlantic. Two specimens were caught, including a 215 cm stretched total length mature male, at 42°50'N 36°16'W by a commercial longline vessel targeting swordfish.

The genus *Isurus* consists of two species, the shortfin mako *Isurus oxyrinchus* Rafinesque, 1810 and the longfin mako *Isurus paucus* Guitart, 1966 (Compagno, 2001). The latter is a pelagic, oceanic, probably circumtropical shark, reaching a maximum size of 417 cm total length (Compagno, 1984, 2001). This species is apparently common in the western Atlantic where it was described for the first time (Garrick, 1967; Dodrill & Gilmore, 1979). The capture of a large female south of Panama City, FL reported by Killam & Parsons (1986), extended this species known distribution into the Gulf of Mexico. Later, Moreno & Morón (1992) confirmed the presence of longfin mako sharks in waters off the north-west African coast and recorded them for the first time off the Iberian Peninsula coast.

In September 2005, two specimens of longfin mako were caught north-west of the Azores (100x100 nm area centered at 42°50'N 36°16'W) on swordfish longlines (Figure 1). Baited hooks were set at a depth between 50 and 100 m over an average water depth of 4000 metres. Night time sea surface temperature (SST) data averaged over eight days (31 August to 7 September) from MODIS/Terra were obtained through the online PO.DAAC Ocean ESIP Tool (POET – <http://poet.jpl.nasa.gov/>). Data were averaged to reduce the area with high cloud cover, and night-time grids were used in order to better estimate the SST, since solar heating can warm the skin of the sea surface (Donlon et al., 1999; Teo et al., 2004). Mean SST for the area was 22.74°C. Both sharks presented typical *I. paucus* diagnostic features, such as pectoral fins broadly-tipped with a length similar to the head length, origin of first dorsal fin behind the pectoral free rear tip (Figure 2A) and dark grey coloration on the ventral surface of the snout (Figure 2B).

All measurements, stretched total length (STL) and over-the-body fork length (OFL), were made while the sharks were lying horizontally on a flat surface. Weights were taken on a floor scale calibrated in kilograms. The largest shark, a female, weighing 91 kg and measuring 245 cm STL and 218 cm OFL (Figure 2). Unfortunately, female maturity could not be accessed due to restrictions imposed by commercial agents. The second shark was a male of 56 kg, measuring 215 cm STL and 188 cm OFL. According to the scale provided by Stehmann (2002) the male was mature since claspers were elongated (33 cm) and clasper cartilages were rigid with calcification. Although reproductive information for *I. paucus* is scarce (Gilmore, 1983; Compagno, 2001), this shark is probably the smallest mature male ever observed.

The present results confirm the presence of *I. paucus* in mid-North Atlantic waters, expanding their known distribution. As such, this species is likely to be more commonly caught as by-catch in offshore longlining vessels from that area than previously thought (Moreno & Morón, 1992; Buencuerpo et al., 1998). Also, its wide distribution further complicates any future management or conservation attempt (Baum et al., 2003), which would now require an international coordination plan.

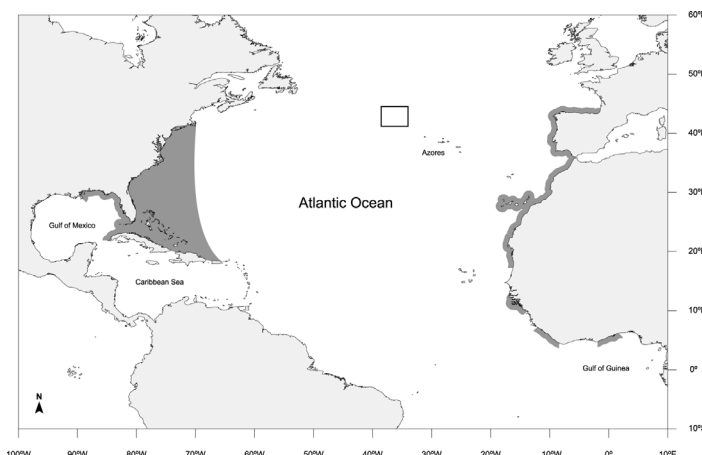


Figure 1. Capture site of *Isurus paucus* specimens in the mid-North Atlantic; dark grey area represents known distribution – adapted from Killam & Parsons (1986) and Compagno (2001).

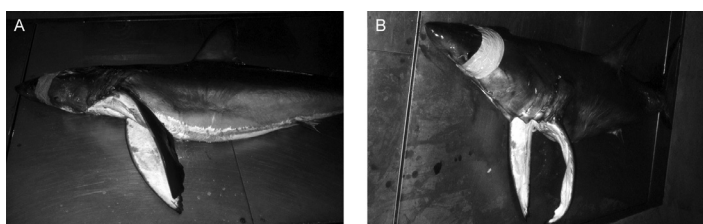


Figure 2. Female *Isurus paucus*, measuring 245 cm stretched total length and 218 cm over-the-body fork length.

Thanks are owed to the crew of the vessel 'Algamar' and all the scientific staff of the Portuguese Association for the Study and Conservation of Elasmobranchs (APECE – <http://www.apece.pt>) who became involved in the ongoing shark sampling programme. This work was funded by APECE.

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Submitted 9 February 2006. Accepted 14 May 2006.