ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/277309262

First record of the megamouth shark, Megachasma pelagios, (Chondrichthyes: Lamniformes: Megachasmidae) from Sri Lanka, northern Indian Ocean

Article *in* Marine Biodiversity Records · April 2015

DOI: 10.1017/S1755267215000512

CITATIONS
5

READS
519

3 authors:

Daniel Fernando
Linnaeus University
36 PUBLICATIONS **450** CITATIONS
SEE PROFILE

Nishan Perera
Blue Resources Trust
10 PUBLICATIONS **53** CITATIONS
SEE PROFILE

David A. Ebert
Moss Landing Marine Labs
306 PUBLICATIONS **5,691** CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Coral reef ecology and influence of habitat on reef fish distribution in eastern Sri Lanka View project

Global Shark Trends Project View project

All content following this page was uploaded by Daniel Fernando on 28 May 2015.

The user has requested enhancement of the downloaded file.

Marine Biodiversity Records, page 1 of 3. © Marine Biological Association of the United Kingdom, 2015
doi:10.1017/S1755267215000512; Vol. 8; e75; 2015 Published online

First record of the megamouth shark, *Megachasma pelagios*, (Chondrichthyes: Lamniformes: Megachasmidae) from Sri Lanka, northern Indian Ocean

DANIEL FERNANDO[1,2,3], NISHAN PERERA[1,3] AND DAVID A. EBERT[4]

[1]Department of Biology and Environmental Science, Linnaeus University, 39182 Kalmar, Sweden, [2]The Manta Trust, Dorchester, UK, [3]Blue Resources, Colombo, Sri Lanka, [4]Moss Landing Marine Laboratories, Pacific Shark Research Centre, 8272 Moss Landing Road, Moss Landing, California, 95039 USA

The megamouth shark, Megachasma pelagios*, is a rare and poorly studied shark. In this paper, the first record of the megamouth shark is reported for Sri Lanka. The shark, a juvenile estimated at 180 cm in total length, was caught in a gillnet in close proximity (<92 km) to the Negombo fisheries harbour (7°12′11.67″N 79°49′44.35″E).*

Keywords: megamouth shark, *Megachasma pelagios*, new record, range extension, Elasmobranchs, Sri Lanka

Submitted 18 March 2015; accepted 15 April 2015

INTRODUCTION

The megamouth shark, *Megachasma pelagios* Taylor, Campagno & Struhsaker, 1983, is considered one of the most spectacular new shark discoveries of the late 20th Century. The discovery of such a large shark species, reaching over 5.5 m total length (TL), not only represented a new genus, but an entirely new shark family. The first capture of this pelagic shark species occurred in 1976, north-west of the Hawaiian Island of Oahu (21°51′N 157°46′W), but the species was not formally described for another seven years (Taylor *et al.*, 1983). Since the capture of the first *M. pelagios*, an additional 64 specimens have been reported (Burgess, 2015a). The majority of records have come from the western North Pacific, particularly from off Japan (N = 16), the Philippines (N = 15) and Taiwan (N = 11), with an additional ten records from the eastern Pacific (Burgess, 2015b). Atlantic Ocean records are relatively sparse, with only three confirmed records, two from Brazil and one from off Senegal (Séret, 1995; Amorim *et al.*, 2000).

Indian Ocean records are limited to four widely scattered records; one from off South Africa and one each from off Western Australia, north of Sumatra and the high seas of the East Indian Ocean (Berra & Hutchinson, 1990; Smale *et al.*, 2002; White *et al.*, 2004). The species may be captured incidentally more frequently, but, given its relatively low economic value is likely to be discarded at sea rather than returned to fish markets for sale. Furthermore, records of small juvenile specimens (<200 cm TL) are rare, since most specimens that have been reported are over 400 cm TL. Here we report on only the fifth known record of *M. pelagios* from the Indian Ocean – a small juvenile.

Corresponding author:
D. Fernando
Email: daniel@mantatrust.org

MATERIALS AND METHODS

An unusual shark landing was reported at Negombo fisheries harbour, Sri Lanka (7°12′11.67″N 79°49′44.35″E) on 5 July 2012. The shark was caught in a pelagic gillnet at night by a commercial multi-day fishing vessel operating out of Negombo. Anecdotal information from the boat captain revealed that the specimen was captured while fishing within the Sri Lankan Economic Exclusive Zone (EEZ) and in relative close proximity to the coast (<92 km offshore). This would place the catch location off the continental shelf in water depths ranging from approximately 2300 to 2600 m. The fishermen had brought the specimen back since they had never encountered one before, but discarded it into the Negombo lagoon after displaying it for a few hours at the market.

RESULTS

Upon examination of photographs received from fishers (Figure 1), the specimen was identified as a megamouth shark, *Megachasma pelagios* (Taylor *et al.*, 1983), making it the first record of this species within Sri Lankan waters, and the first known record from the northern Central Indian Ocean. This specimen was estimated to be around 180 cm TL, a small juvenile, but the sex could not be determined from the photographs.

DISCUSSION

This record of *Megachasma pelagios*, the first in northern Central Indian Ocean, is important in understanding the wide geographic range and ecology of this species. Records

Fig. 1. *Megachasma pelagios* Taylor, Campagno & Struhsaker 1983, juvenile: (A) dorsal view; (B) right lateral view.

of small juvenile *M. pelagios*, measuring less than 2 m TL, are extremely rare with only two previously confirmed records and all other records being of adults and sub adults (Séret, 1995; Amorim *et al.*, 2000; White *et al.*, 2004). The birth size of *M. pelagios* is estimated at below 170 cm TL (Ebert *et al.*, 2013), with the smallest specimen on record being a juvenile male of 176.7 cm TL found stranded in Sumatra, Indonesia (White *et al.*, 2004). Adult *M. pelagios* are estimated to reach sexual maturity at around 4.5 m TL for males and over 5.5 m TL for females (Ebert *et al.*, 2013); maximum length is estimated at about 7 m TL.

Recently, the Food and Agriculture Organization (FAO) has initiated a program to assist in the identification of pelagic sharks and rays in the Western Indian Ocean (FAO, 2014). The program is designed to improve the identification of pelagic sharks and rays that are of major, moderate or minor importance. Species such as *M. pelagios* are among those little known species that the program aims to alert fishers about and to record their occurrence should they encounter this and other little known species.

The capture in a pelagic gillnet of *M. pelagios* off the continental shelf further supports other records of this species as preferring a pelagic habitat. Capture at night is also consistent with other records and can be attributed to the diel vertical migration of this species; ascending to upper layers at night and descending by day (Nelson *et al.*, 1997; Ebert *et al.*, 2013). The widespread records of *M. pelagios* from around the Indian Ocean, and elsewhere, indicates that this species is fairly wide-ranging and may be encountered more frequently than previously thought in pelagic fisheries. Improved species identification products for fishers such as those available through the FAO will be invaluable to refining species-specific catch information. The information gathered may eventually provide a useful resource for learning more about the life history and ecology of little known species such as *M. pelagios*. The occurrence of *M. pelagios* in Sri Lankan EEZ waters brings the number of shark species known to occur here to 61 (De Silva, 2015).

ACKNOWLEDGEMENTS

We are grateful to J. Fernando of Negombo, Sri Lanka for informing us about this unusual landing and for providing photographs for publication. This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

REFERENCES

Amorim A.F., Arfelli C.A. and Castro J.I. (2000) Description of a juvenile megamouth shark, *Megachasma pelagios*, caught off Brazil. *Environmental Biology Fishes* 59, 117–123.

Berra T.M. and Hutchinson J.B. (1990) A specimen of megamouth shark, *Megachasma pelagios* (Megachasmidae) from Western Australia. *Records of the Western Australian Museum* 14, 651–656.

Burgess G. (2015a) Distribution table of confirmed megamouth shark sightings. Available at: http://www.flmnh.ufl.edu/fish/sharks/megamouth/tablemega.htm (accessed 14 March 2015).

Burgess G. (2015b) Worldwide distribution of confirmed megamouth shark sightings. Available at: https://www.flmnh.ufl.edu/fish/sharks/megamouth/MegaMap.htm (accessed 14 March 2015).

De Silva R.I. (2015) *The Sharks of Sri Lanka*. Colombo: Field Ornithology Group of Sri Lanka.

Ebert D.A., Fowler S. and Compagno L.J.V. (2013) *Sharks of the world: a fully illustrated guide to the sharks of the world*, 1st edn. Plymouth, UK: Wild Nature Press.

FAO (2014) On board guide for the identification of pelagic sharks and rays of the Western Indian Ocean. In Ebert D.A. (author) and Dando M. (illustrator). *Food and Agriculture Organization, SmartFish Programme, Indian Ocean Commission*. Available at: http://commissionoceanindien.org/activites/smartfish/publications/manuals-and-guides/ (accessed 14 March 2015).

Nelson D.R., Mckibben J.N., Strong W.R., Lowe C.G., Sisneros J.A., Schroeder D.M. and Lavenberg R.J. (1997) An acoustic tracking of

a megamouth shark, *Megachasma pelagios*: a crepuscular vertical migrator. *Environmental Biology of Fishes* 49, 389–399.

Séret B. (1995) Premiere capture d'un requin grande gueule (Chondrichthyes, Megachasmidae) dans l'Atlantique, au large du Sengal. *Cybium* 19, 425–427.

Smale M.J., Compagno L.J.V. and Human B.A. (2002) First megamouth shark from the western Indian Ocean and South Africa. *South African Journal of Science* 98, 349–350.

Taylor L.R., Compagno L.J.V. and Struhsaker P.J. (1983) Megamouth – a new species, genus and family of lamnoid shark (*Megachasma pelagios*, Family Megachasmidae) from the Hawaiian Islands. *Proceedings of the California Academy of Sciences* 43, 87–110.

and

White W.T., Fahmi K. and Sumadhiharga K. (2004) A juvenile megamouth shark, *Megachasma pelagios* (Lamniformes: Megachasmidae) from northern Sumatra, Indonesia. *Raffles Bulletin of Zoology* 52, 603–607.

Correspondence should be addressed to:
D. Fernando
86 Barnes Place, Colombo 00700, Sri Lanka
email: daniel@mantatrust.org

View publication stats