Published Date: 1 March 2019

Endeavour Dogfish, *Centrophorus moluccensis*

Report Card assessment	**Eastern Australian subpopulation – Recovering** **Western Australian subpopulation – Sustainable**		
IUCN Red List Australian Assessment	Eastern Australian subpopulation – Near Threatened Western Australian subpopulation – Least Concern	IUCN Red List Global Assessment	Data Deficient
Assessors	Graham, K. & Kyne, P.M.		
Report Card Remarks	Taxonomic uncertainty; separate Australian east and west coast populations characterised by very different levels of fishing pressure		

Summary

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The Endeavour Dogfish is a deepwater shark species with taxonomic uncertainty in that it may represent a species-group. The species has been reported from sporadic locations through the Indo-West Pacific. It is taken as bycatch of deepwater fisheries. The late age at maturity and very low fecundity make the Endeavour Dogfish extremely sensitive to rapid population depletion by commercial fishing. In Australian waters, Eastern and Western Australian subpopulations have been assessed by the IUCN separately. The Eastern Australian subpopulation is thought to have been severely depleted over approximately 20% of its range. Management measures have been implemented to promote recovery of depleted deepwater sharks on the southeast Australian coast. North of this area, recent surveys have recorded relatively high catch rates of this species, while deepwater fishing effort off northern New South Wales and Queensland is very low. Therefore, the Eastern Australian subpopulation has been assessed as Near Threatened (IUCN) and the stock as Transitional Recovering (SAFS) because although recovery is expected to take decades and has not yet been shown in the areas in which depletion occurred, catches are increasing north of the heavily depleted area. The very low level of deepwater commercial fishing off Western Australia (WA), coupled with the stringent trip limits in the WA deepwater fisheries, results in the Western Australian subpopulation of the species being considered healthy and stable. Therefore, the Western Australian subpopulation has been assessed as Least Concern (IUCN) and stocks as Sustainable (SAFS). Globally, taxonomic uncertainty and a lack of catch information precludes an accurate assessment of the species, so it is assessed as Data Deficient (IUCN).

Distribution

The Endeavour Dogfish occurs off South Africa, Western Australia and some areas of the western Pacific including Australia, the Philippines, New Caledonia, Indonesia, Philippines, Taiwan and Japan (Last and Stevens 2009). In Australian waters, the species has a disjunct distribution comprising subpopulations, or distinct stocks, on the east and west coasts. The Eastern Australian subpopulation has been recorded from Townsville (Queensland) to Bass Strait (Victoria) and the Western Australian subpopulation from the Kimberley region to Albany (Western Australia) (Last and Stevens 2009).

Stock structure and status

There are no estimates of abundance for the global population of the Endeavour Dogfish, and no information from outside of Australia. The Eastern Australian stock has been severely affected by commercial fishing in the southern 20% of its east coast range (off southern New South Wales) (Andrew et al. 1997). In the period 1975–2000, off central and southern NSW the species was severely affected by trawling, reducing the relative abundance to an estimated <5% of historical levels (Graham et al. 2001, Daley et al. 2002, Wilson et al. 2009). In a 2009 targeted longline survey, only a single specimen was caught south of Sydney, consistent with its depletion from these waters, while significant numbers were caught off northern NSW (Williams et al. 2012). Although the Eastern Australian subpopulation overall is currently considered stable (Forrest and Walters 2009), it is considered to remain severely depleted in the southern parts of its range. In 2010, the stock status for the three species of upper slope gulper sharks (Endeavour Dogfish, Harrisson's Dogfish *C. harrissoni* and Southern Dogfish *C. zeehaani*) on southeast Australian grounds was assessed as 'overfished' and 'subject to overfishing' (Stobutzki et al. 2011). Subsequently, a plan of management was implemented with catch limits and spatial and depth closures to promote recovery of the overfished dogfish populations, with recovery estimated to take many decades (AFMA 2012). There is no information about the abundance of the Endeavour Dogfish in Western Australia, but with very little or no deepwater fishing in the region, it is assumed that the Western Australian subpopulation is healthy and stable. Given the above, the Eastern Australian stock is classified as Transitional Recovering, while the Western Australian stock is considered Sustainable.

Fisheries

No information on major fishing threats is available from outside of Australia. Off eastern Australia, commercial fishing activities provide the only current threat to this species. The core depth of the species (300 to 600 m) coincides with the depths most heavily fished by trawlers that operated on the upper continental slope off central and southern New South Wales prior to 2000 (Graham et al. 2001, Daley et al. 2002, Wilson et al. 2009). Commercial fishing in the Commonwealth Trawl and Scalefish Hook Sectors of the Southern and Eastern Scalefish and Shark Fishery (SESSF) continued to affect this portion of the Eastern Australian subpopulation, despite a ban on trawling below 700 m implemented in 2007 (AFMA 2006). Fishing pressure is considerably lower off southern Queensland and northern NSW and is believed to have minimal impact on the species. Deepwater commercial fishing activities in the range of Endeavour Dogfish off Western Australia are minimal and overall fishing mortality is likely to be low.

Habitat and biology

The Endeavour Dogfish inhabits the upper continental slope at depths of 300 to 600 m, sometimes to 820 m and is also occasionally caught on the outer shelf (125 to 200 m) at night (Last and Stevens 2009, Graham and Daley 2011). Maximum size is 100 cm total length (TL) with males mature at 70 cm TL and females at 85 cm TL (Graham and Daley 2011). It has a very low fecundity of one to two pups every two (or possibly three) years, high longevity and probable late age at first maturity of >20 years.

Longevity and maximum size	Longevity: unknown Max size: 100 cm TL
Age and/or size at maturity (50%)	Males: 70 cm TL Females: likely >20 years, 85 cm TL

Link to IUCN Page: http://www.iucnredlist.org/details/42838/0
Link to page at Shark References: http://www.shark-references.com/species/view/Centrophorus-moluccensis

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