Eastern Shovelnose Ray (2020)

Aptychotrema rostrata

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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
New South Wales	Eastern Australia	Undefined	

STOCK STRUCTURE

The Eastern Shovelnose Ray, *Aptychotrema rostrata*, is an endemic batoid common to the east coast of Australia. Distribution ranges from approximately 18°S to 36°S [Last and Stevens 2009] over sandy substrates in depths less than 150 m. No genetic analysis of stock structure has been conducted for Eastern Shovelnose Rays. There appear to be biological differences between Queensland and New South Wales, implying potential stock differentiation within their range. However, further investigation would be required to confirm stock structure. Here, assessment of stock status is presented at the biological stock level—Eastern Australia.

STOCK STATUS

Eastern Australia

Almost all the harvest for Eastern Shovelnose Ray occurs in New South Wales. Eastern Shovelnose Rays constitute 75% of the total Rhinobatidae landed in NSW [NSW I&I 2007]. The NSW Ocean Trawl Fishery (OTF) is responsible for approximately 95 per cent of all rhinobatids landed in the commercial fishing sector. Demersal trawl nets are used to catch Eastern Shovelnose Rays in the OTF. In Queensland, the species is one of the most abundant elasmobranch species caught in the East Coast Trawl Fishery (ECTF), with minor catches in the deepwater component of the eastern king prawn sector ([Simpfendorfer et al. 2019]. Although they are primarily discarded, post-release survivorship is unknown and females often abort pups following capture stress [Adams et al. 2018].

Between 1998 and 2008 catch rates within the NSW Ocean Trawl Fishery were stable around 110 t per annum. Since 2014 there has been a reduction in catch; however, this has corresponded with reduced effort in the Ocean Trawl Fishery

and catch per unit effort (CPUE) has remained relatively constant.

However, CPUE in NSW trawl fisheries is spatially and temporally highly varied, with significantly higher landings reported between 32°S and 31°S latitudes and double the amount landed in the winter months.

Recreational fishers catch 18 t per annum, of which 2.4 t (~14%) are kept [Murphy et al. 2020]. No data on post-release survivorship from recreational angling are available. Indigenous catches are unknown.

In Hervey Bay, Queensland, sexual maturity is reached at between 54–66 cm for females and 60–68 cm for males [Kyne and Bennett 2002].

Female Eastern Shovelnose Rays exhibit a positive linear relationship between maternal total length and uterine fecundity, and can have more than 18 embryos, suggesting high fecundity [Meagher 2010]. Eastern Shovelnose rays have an annual, seasonal reproductive cycle in NSW. Reproductive cycles, maximum total length and length at maturity differ between NSW and Queensland implying there may be sub-structuring within the eastern Australian stock of Eastern Shovelnose Rays [Meagher 2010].

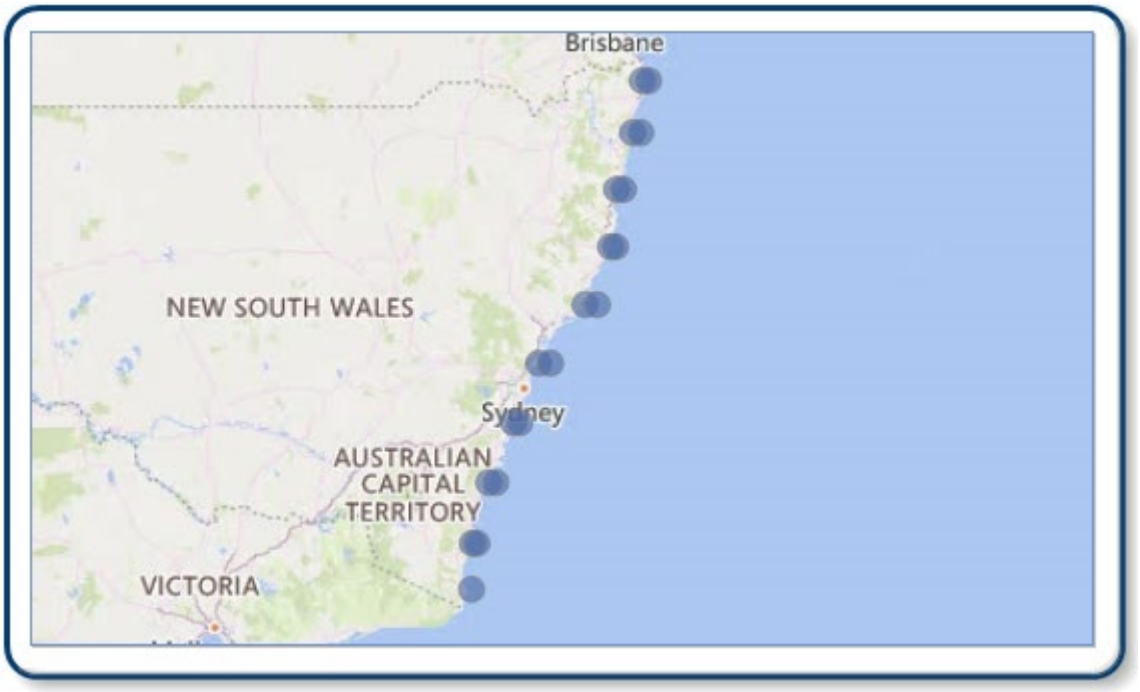
There is insufficient information available to confidently classify the status of this stock. On the basis of the evidence provided above, the Eastern Australia biological stock is classified as an **undefined stock**.

BIOLOGY

Eastern Shovelnose Ray biology [Last and Stevens 2009, Kyne and Bennett 2002, Meagher 2010]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Eastern Shovelnose Ray	NSW [Meagher 2010]: Females: 985 mm (11 years) Males: 920 mm (8 years)	NSW [Meagher 2010]: Females: 50% maturity at 690-700 mm (3.5-4 years) Males: 50% maturity at 710-720 mm (4.5-5 years) Queensland [Kyne & Bennett 2002]: Females: 540-660 mm Males: 600-680 mm

DISTRIBUTION



Distribution of reported commercial catch of Eastern Shovelnose Ray.

TABLES

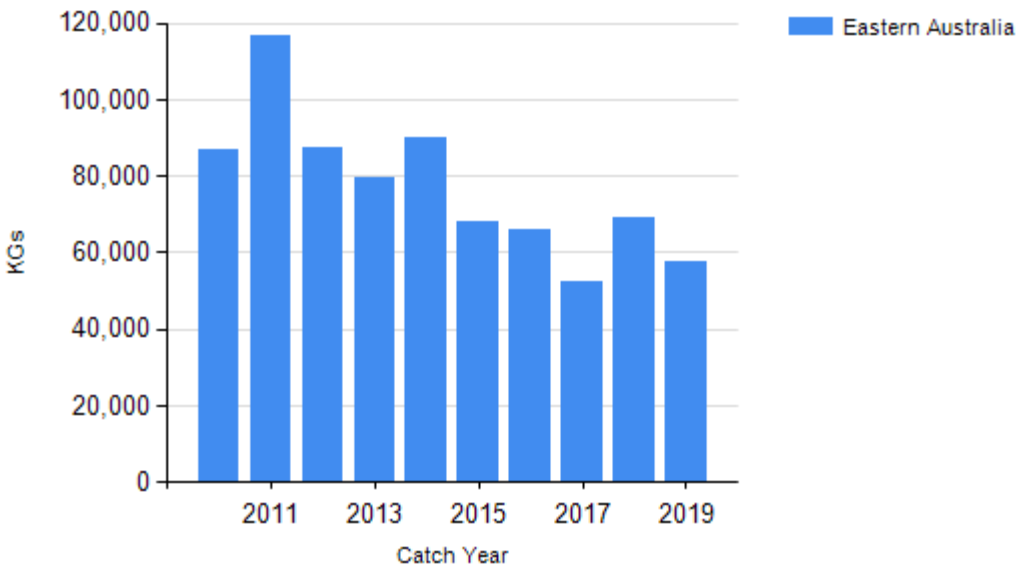
Fishing methods	
	New South Wales
Commercial	
Mesh Net	✓
Otter Trawl	✓
Various	✓

Management Methods	
	New South Wales
Commercial	
Effort limits	✓
Gear restrictions	✓
Limited entry	✓
Processing restrictions	✓
Spatial closures	✓
Recreational	
Bag limits	✓
Gear restrictions	✓

Catch	
	New South Wales
Commercial	57.6199 t
Indigenous	unknown
Recreational	2.4 t

New South Wales – Indigenous (Management Methods) (a) Aboriginal Cultural Fishing Interim Access Arrangement—allows an Indigenous fisher in New South Wales to take in excess of a recreational bag limit in certain circumstances; for example, if they are doing so to provide fish to other community members who cannot harvest for themselves; (b) The Aboriginal cultural fishing authority is the authority that Indigenous persons can apply to take catches outside the recreational limits under the *Fisheries Management Act 1994* (NSW), Section 37 (1d)(3)(9), Aboriginal cultural fishing authority; and (c) In cases where the *Native Title Act 1993* (Cth) applies fishing activity can be undertaken by the person holding native title in line with S.211 of that Act, which provides for fishing activities for the purpose of satisfying their personal, domestic or non-commercial communal needs. In managing the resource where native title has been formally recognised, the native title holders are engaged with to ensure their native title rights are respected and inform management of the State's fisheries resources.

CATCH CHART



Commercial catch of Eastern Shovelnose Ray - note confidential catch not shown

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Murphy et al. 2020	Murphy JJ, Ochwada-Doyle FA, West LD, Stark KE and Hughes JM 2020. The NSW Recreational Fisheries Monitoring Program - survey of recreational fishing, 2017/18. NSW DPI - Fisheries Final Report Series No. 158.

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