

Bluespotted Flathead (2018)

Platycephalus caeruleopunctatus



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
New South Wales	Eastern Australia	N/A, OTF	Sustainable	Catch, catch rates, length and age compositions, biomass depletion and harvest rate estimates

N/A Not Applicable (NSW), OTF Ocean Trawl Fishery (NSW)

STOCK STRUCTURE

Bluespotted Flathead is distributed along eastern Australia between southern Queensland and eastern Victoria, inhabiting deep estuarine and ocean waters to depths of about 100 m. The stock structure of Bluespotted Flathead has not been formally investigated and remains unknown. However, a recent review of the species' taxonomy that examined specimens from along the New South Wales coast and Lakes Entrance, Victoria, identified no significant variation in morphological characters within the species [Imamura 2015]. Limited tagging data also suggest that, while some individuals show high site fidelity in estuarine habitats, other individuals cover large distances within a short period [Fetterplace et al. 2016], so some longshore mixing of populations is possible.

Here, assessment of stock status is presented at the biological stock level—Eastern Australia.

STOCK STATUS

Eastern Australia Commercial landings of Bluespotted Flathead in New South Wales are primarily (98 per cent) taken by fish and prawn trawlers in the Ocean Trawl Fishery (OTF) [Hall 2015]. Small quantities of commercial catch are also reported by the Estuary General Fishery (mostly using mesh nets) and Ocean Trap and Line Fishery (mostly using handlines). Total annual reported commercial catches of Bluespotted Flathead in New South Wales are available since 1947–48, when catches peaked at almost 500 tonnes (t), to the present [Hall unpublished]. Early catches fluctuated considerably and then stabilized during the 1990s and 2000s at around 120–170 t, with a maximum catch of 207 t in 1998 [Hall 2015]. Over recent years, catches have decreased from 173 t in 2010 to 78 t in 2015, 96 t in 2016 and 93 t in 2017 [NSW DPI unpublished data]. Standardised catch rates for the fish trawl sector have been 5–41 per cent above the long-term (20 year) average of 61.1 kg per day for the last 10 years, but 2–28 per cent below the shorter-term (eight year) average of 13.4 kg per hour for the last five years

[Hall unpublished]. The reliability of these indices as proxies for relative abundance is questionable because of the undue influence of catch reporting changes since July 2009.

The quantities of Bluespotted Flathead taken by fisheries in other jurisdictions are unknown, but assumed to be negligible. These are generally reported against an undifferentiated flathead group code or included with catches of another sympatric flathead species (e.g., Tiger Flathead, *Platycephalus richardsoni* in Commonwealth waters and Southern Bluespotted Flathead, *Platycephalus speculator* in Victorian waters).

Bluespotted Flathead is also a key species for recreational and charter boat fishers in New South Wales. The total New South Wales recreational catch of Bluespotted Flathead in 2013–14 was estimated to be 210 t, which was 65 per cent of the total harvest including commercial catches [West et al. 2015], and 75 per cent when the additional recreational catch taken by interstate fishers is also included [Hall unpublished]. Charter boat catches remained at less than 10 t in most years since data collection started in 2000–01, but recently increased to 15.6 t in 2016–17, possibly in response to improved reporting compliance. Catch rates in the recreational sector (in number of fish per fisher day) are only available for combined flathead species, of which Bluespotted Flathead is likely to be one of the main species from ocean waters. These data indicate that there was a slight increase in catch rates of ocean flathead between surveys done in 2001–01 and in 2013–14, from 1.1 to 1.3 fish per fisher day [West et al. 2015]. Nominal catch rates in the charter boat sector also show a slight increase over the last 15 years for which data are available.

Results of modified Catch-MSY analyses [Haddon et al. 2018, Martell and Froese 2013] of 12 historical catch series comprised of different recreational fishing scenarios combined with commercial and charter catches and discards estimate that the biomass of Bluespotted Flathead in New South Wales waters in 2017, while heavily fished in the past, was at 32.6–34.2 per cent of the estimated maximum biomass, which is above the limit reference point of 20 per cent [Hall unpublished]. Annual length frequencies of fish sampled from the commercial catch over a period spanning 45 years also indicate that the length structure of the population has remained stable. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

The total number of active operators in the OTF has declined from 252 in 1998 to 88 in 2017 [Hall unpublished]. Reported effort in total days and hours fished for Bluespotted Flathead by the OTF have decreased by 80 per cent from a maximum of 16 610 days and 170 700 h in 2002 to only 3 372 days and 34 320 h in 2017. The most recent statewide recreational survey in 2013–14, estimated that recreational fishing participation rates have also decreased by 30 per cent from over 1 million participants (16.6 per cent of population) in 2000–01 to 836 632 (11.7 per cent) in 2013–14 [West et al. 2015]. Concurrently, estimated fishing effort for all species combined decreased by 37 per cent from over 5 million fisher days (and 5.6 days per fisher) in 2000–01 to 3.2 million (and 4.3 days per fisher) in 2013–14.

Results of modified Catch-MSY analyses estimate that the harvest rate of all sectors on Bluespotted Flathead in New South Wales (0.054–0.088) has been below the limit reference point of FMSY (0.079–0.098) since 2014, irrespective of which historical catch series was analysed [Hall unpublished]. Length-converted catch-curve analyses supported this result, with fishing mortality approximately equal to an average estimate of natural mortality of $M=0.49$ [Hall unpublished]. However, this latter result depends on the accuracy of the estimated value for M , which varied (0.45 and 0.65) depending on the method of estimation used [modified Hoenig and Pauly equations, respectively, as recommended in Then et al. 2014]. The above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become

recruitment impaired.

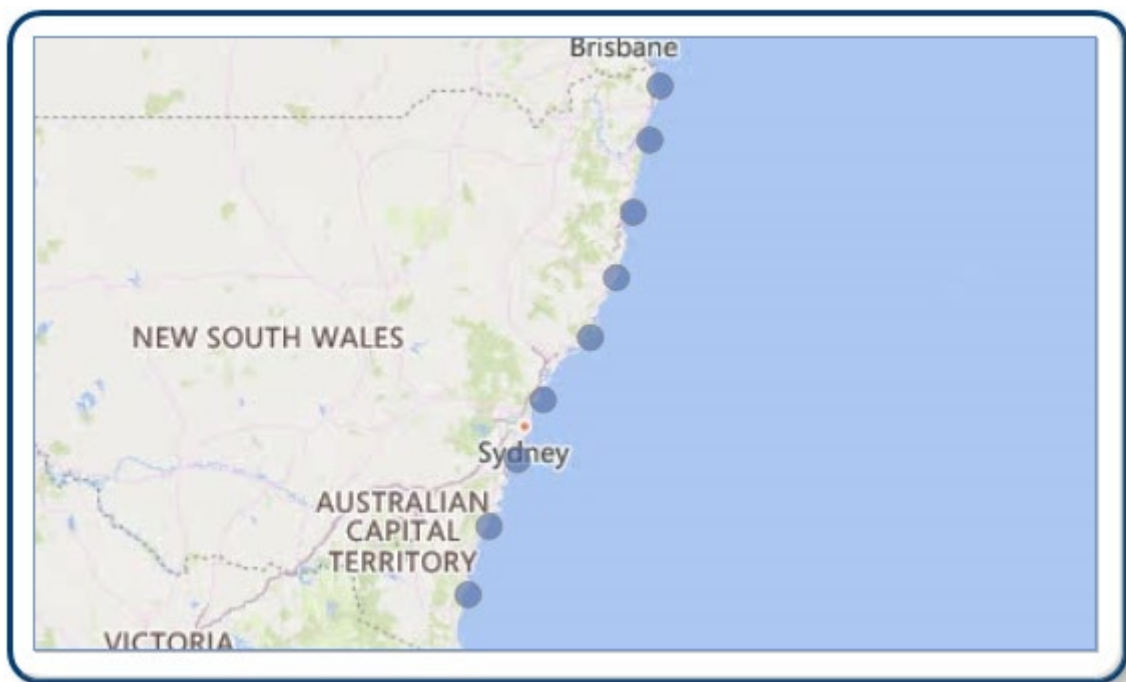
On the basis of the evidence provided above, the Eastern Australia biological stock of Bluespotted Flathead is classified as a **sustainable stock**.

BIOLOGY

Distribution of reported commercial catch of Bluespotted Flathead

Species	Longevity / Maximum Size	Maturity (50 per cent)
Bluespotted Flathead	9 years, 680 mm TL	Males: 1.0–1.1 years, 212–231 mm TL Females: 1.8–3.0 years, 272–354 mm TL

DISTRIBUTION



Distribution of reported commercial catch of Bluespotted Flathead

TABLES

Commercial Catch Methods	New South Wales
N/A	✓
Otter Trawl	✓

Fishing methods	New South Wales
Charter	
Handline	✓
Commercial	
Otter Trawl	✓
Indigenous	

Handline	✓
Recreational	
Handline	✓
Management Methods	
	New South Wales
Charter	
Bag limits	✓
Gear restrictions	✓
In possession limits	✓
Size limit	✓
Spatial closures	✓
Commercial	
Gear restrictions	✓
Limited entry	✓
Size limit	✓
Spatial closures	✓
Vessel restrictions	✓
Indigenous	
Bag limits	✓
Native Title	✓
Section 37 (1d)(3)(9), Aboriginal cultural fishing authority	✓
Recreational	
Bag limits	✓
Gear restrictions	✓
In possession limits	✓
Size limit	✓
Spatial closures	✓
Active Vessels	
	New South Wales
	52 Fishing Business in

	OTF,
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OTF Ocean Trawl Fishery(NSW)

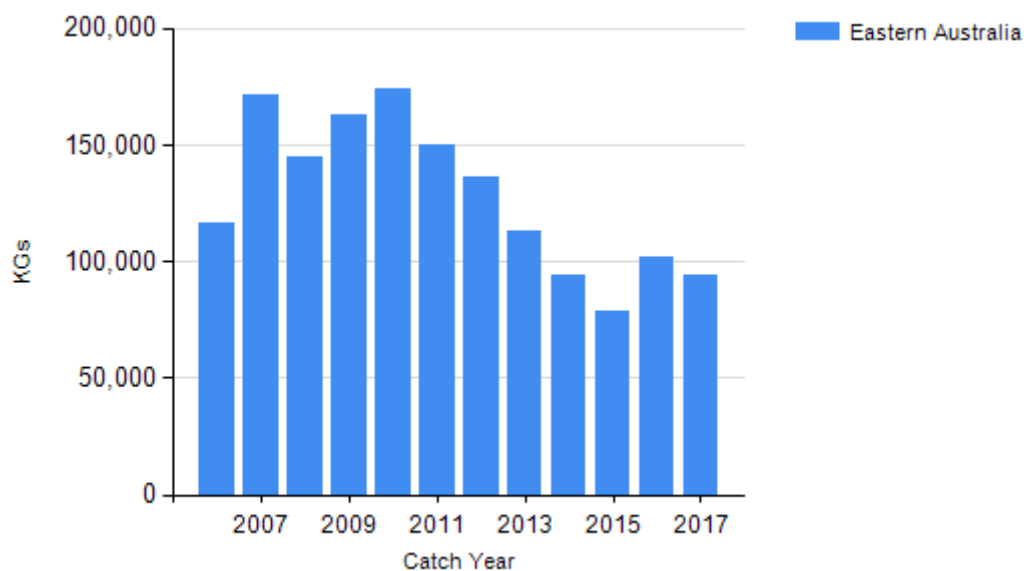
Catch	New South Wales
Charter	15.6 t (2016–17)
Commercial	7.525t in N/A, 86.657t in OTF,
Indigenous	Unknown
Recreational	210 t (2013–14)

N/A Not Applicable (NSW), OTF Ocean Trawl Fishery (NSW),

New South Wales – Indigenous (management methods) (a) Bag limits - the 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 themselves; (b) Aboriginal cultural fishing authority- 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) Native title- 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.

New South Wales – Charter (catch) Considerable under-reporting of catch by this sector is likely.

CATCH CHART



Commercial catch of Bluespotted Flathead - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Bluespotted Flathead

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