

Spotted Mackerel (2018)

Scomberomorus munroi



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Western Australia, Northern Territory, Queensland	Northern Australia	GOCIFFF, MMF, ONLF, SPDF	Negligible	Catch, effort, current and historical fishing pressure
Queensland, New South Wales	Eastern Australia	ECIFFF, N/A, OTLF	Sustainable	Biomass, catch and CPUE, fishery-dependent length and age frequency, estimates of total mortality rate

N/A Not Applicable (NSW), OTLF Ocean Trap and Line Fishery (NSW), ONLF Offshore Net and Line Fishery (NT), ECIFFF East Coast Inshore Fin Fish Fishery (QLD), GOCIFFF Gulf of Carpentaria Inshore Fin Fish Fishery (QLD), MMF Mackerel Managed Fishery (WA), SPDF Small Pelagic Developmental Fishery (NT)

STOCK STRUCTURE

Spotted Mackerel occurs in continental shelf waters along Australia's western, northern and eastern coast between the Abrolhos Islands region to central New South Wales [Begg et al. 1998a, Cameron and Begg 2002]. In eastern Australian waters, Spotted Mackerel comprise a single stock (confirmed through genetic analysis, otolith microchemistry and tagging studies) that is genetically isolated from fish in the northern Arafura Sea [Begg et al. 1998a,b, Cameron and Begg 2002]. In northern and western Australian waters the delineation of stocks is less clear. Results from an otolith microchemistry study suggest that fish from Gove and Joseph Bonaparte Gulf may belong to separate stocks [Cameron and Begg 2002] although the biological stock boundaries are unknown. Here, assessment of stock status is presented at the biological stock level—Eastern Australia; and the management unit—Northern Australia.

STOCK STATUS

Eastern Australia Spotted Mackerel is commonly fished throughout its distribution along the east coast of Australia. Queensland and New South Wales both access the part of the biological stock that occurs in their waters. Most of the fishery occurs in Queensland, with a smaller seasonal fishery in northern New South Wales [Stewart et al. 2015] during late summer–autumn. A 2005 stock assessment indicated that catches in 2002 were near, or above, the estimated maximum

sustainable yield (MSY) and that the stock was at risk of being overfished [Begg et al. 2005]. Management measures introduced in Queensland since 2002 have substantially reduced that risk [QDAF 2018]. These measures included a limit on the commercial harvest, the prevention of fishing using ring nets, by-product possession limits for net fishers and a reduced recreational possession limit. As a result of these restrictions, the Queensland commercial net harvest has been stable, but low. In 2016–17, the Queensland commercial line harvest was 24 tonnes (t), which is below the 10 year average of 57 t and well below the annual commercial catch limit of 140 t [QDAF 2018]. The number of active licences and days fished in 2016–17 was below the 10 year average [QDAF 2018]. The Queensland recreational harvest of Spotted Mackerel decreased between 2001 and 2013–14 [Webley et al. 2015], reflecting in part the reduction in recreational line fishing effort between 2001 and 2011 [Taylor et al. 2012]. The New South Wales recreational harvest of Spotted Mackerel was similar during 2001 and 2013–14 at between 10 000 and 13 000 fish, estimated to weigh around 41 t [Stewart et al. 2015, West et al. 2015]. As the most recent stock assessment was completed 10 years ago (using data up to 2002) and alternative indicators have been developed, a weight-of-evidence approach was used to determine the status of this biological stock.

Standardised catch rates for the Queensland commercial line fishery are within historical bounds but were below the 10 year average in 2016–17 [QDAF 2018]. Nominal catch rates in New South Wales have fluctuated, but show no overall trends over the past 20 years [Stewart et al. 2015]. The minimum legal size in Queensland and New South Wales is set above the size at maturity for males and equal to the size at maturity for females, providing some protection of the spawning stock [Begg 1998, Begg and Sellin 1998]. In Queensland, fishery-dependent monitoring of the recreational and commercial harvest shows relatively consistent length structures during the past 10 years [QDAF 2018]. Fishery-dependent monitoring indicates a range of ages, including older fish (4–10-year-olds) are present in the harvest, with 2–5-year-olds dominating the catch [QDAF 2018]. Estimates of total mortality rate, derived from the fishery-dependent age composition data, indicate fishing mortality was lower than natural mortality between 2007–08 and 2016–17 [QDAF 2018]. These are positive indicators of a stable spawning biomass with continuing recruitment. The above evidence indicates that the biomass of the stock is unlikely to be depleted and that recruitment is unlikely to be impaired, and 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 entire Eastern Australia biological stock is classified as a **sustainable stock**.

Northern Australia

Spotted Mackerel is broadly distributed across northern Australia, with components occurring in Western Australia, Northern Territory and Queensland [Begg et al. 1998a, Cameron and Begg 2002]. Stock status for the Northern Australia management unit is reported as Negligible due to historically low catches and the stock has not been subject to targeted fishing [QDAF 2018, Webley et al. 2015, West et al. 2012].

Spotted Mackerel is not a major component of the commercial or recreational landings in all jurisdictions. In Western Australia, only the Mackerel Managed Fishery is licensed to land mackerel species and in 2017 the reported commercial catch of Spotted Mackerel was less than 20 kg and the Charter catch was 88 kg. The Western Australian Mackerel Managed Fishery predominantly targets Spanish Mackerel with gear, and in locations, not conducive to catching Spotted Mackerel. Spotted Mackerel are not a major component of the recreational landings, estimated at < 1 t with high uncertainty. In the Northern Territory the recreational catch is < 2 t [West et al. 2012] and the commercial catch has averaged 159 kg over the last 10 years with a maximum harvest of 819 kg in 2016. In Queensland Gulf of Carpentaria waters there is limited

recreational catch and commercial catches have been low since 1992 with a maximum harvest of 370 kg recorded in 2007–08. There is a recreational possession limit of five Spotted Mackerel in both Northern Territory and Queensland waters. Fishing is unlikely to be having a negative impact on the stock.

BIOLOGY

Spotted Mackerel biology [Begg et al. 1998a, Begg et al. 2005, Cameron and Begg 2002, QDAF 2018]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Spotted Mackerel	8 years, 1 230 mm TL	Females 1–2 years, 600 mm TL Males 1–2 years, 520 mm TL

DISTRIBUTION



Distribution of reported commercial catch of Spotted Mackerel

TABLES

Commercial Catch Methods	New South Wales	Northern Territory	Queensland	Western Australia
Drifting longline	✓			
Hook and Line	✓		✓	
N/A		✓	✓	✓
Net			✓	
Trolling	✓			
Unspecified	✓			

Fishing methods	New South Wales	Queensland

Charter		
Hook and Line	✓	
Commercial		
Drifting longline	✓	
Hook and Line	✓	✓
Net		✓
Trolling	✓	
Unspecified	✓	
Indigenous		
Hook and Line	✓	✓
Spearfishing	✓	
Recreational		
Hook and Line	✓	✓
Spearfishing	✓	✓
Management Methods		
	New South Wales	Queensland
Charter		
Bag and possession limits	✓	
Bag limits	✓	
Gear restrictions	✓	✓
Licence	✓	
Marine park closures	✓	✓
Possession limit		✓
Size limit	✓	✓
Spatial closures	✓	
Spatial zoning		✓
Commercial		
Fishery spatial closures		✓
Gear restrictions	✓	✓
Limited entry	✓	✓
Marine park closures	✓	✓
Size limit	✓	✓
Spatial closures	✓	

Spatial zoning		✓
Total allowable catch		✓
Vessel restrictions	✓	✓
Indigenous		
Bag limits	✓	
Native Title	✓	
Section 37 (1d)(3)(9), Aboriginal cultural fishing authority	✓	
Recreational		
Bag and possession limits	✓	
Bag limits	✓	
Gear restrictions	✓	✓
Licence	✓	
Marine park closures	✓	✓
Possession limit		✓
Size limit	✓	✓
Spatial closures	✓	
Spatial zoning		✓

Active Vessels	New South Wales	Northern Territory	Queensland	Western Australia
	55 Fishing Business in OTLF,	7 LICENCES in ONLF, 2 LICENCES in SPDF,	153 in ECIFFF,	<3 in MMF, 11 in Charter,

OTLF Ocean Trap and Line Fishery(NSW)

ONLF Offshore Net and Line Fishery(NT)

ECIFFF East Coast Inshore Fin Fish Fishery(QLD)

MMF Mackerel Managed Fishery(WA)

SPDF Small Pelagic Developmental Fishery(NT)

Charter Tour Operator(WA)

Catch	New South Wales	Northern Territory	Queensland	Western Australia
Commercial	0.007t in N/A, 15.12t in OTLF,		41.056t in ECIFFF,	

Indigenous	Unknown	Unknown
Recreational	41 t (2013–14)	65 t (2013–14)

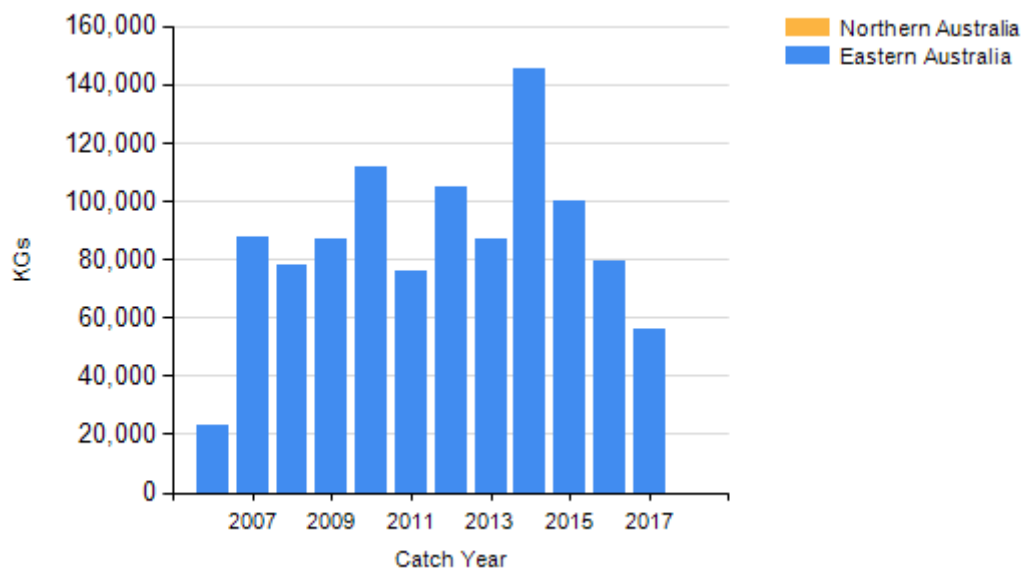
N/A Not Applicable (NSW), OTLF Ocean Trap and Line Fishery (NSW), ONLF Offshore Net and Line Fishery (NT), ECIFFF East Coast Inshore Fin Fish Fishery (QLD), GOCIFFF Gulf of Carpentaria Inshore Fin Fish Fishery (QLD), MMF Mackerel Managed Fishery (WA), SPDF Small Pelagic Developmental Fishery (NT),

Queensland – recreational (catch) Estimated from Webley et al. 2015 (26 000 fish retained by Queensland residents) and average weight of 2.6 kg.

Queensland - Indigenous (Management Methods) In Queensland, under the *Fisheries Act 1994*, Indigenous fishers are able to use prescribed traditional and non-commercial fishing apparatus in waters open to fishing. Size and bag limits and seasonal closures do not apply to Indigenous fishers. Further exemptions to fishery regulations can be obtained through permits.

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; (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 Spotted Mackerel - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Spotted Mackerel

References	
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