

Yellowfin Bream (2016)

Acanthopagrus australis



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Queensland, New South Wales, Victoria	Eastern Australia	ECIFFF, EGF, GLF, OHF, OTLF	Sustainable	Commercial catch and CPUE, length and age, mortality rate

EGF Estuary General Fishery (NSW), OHF Ocean Hauling (NSW), OTLF Ocean Trap and Line (NSW), ECIFFF East Coast Inshore Fin Fish Fishery (QLD), GLF Gippsland Lakes Fishery (VIC)

STOCK STRUCTURE

The stock structure of Yellowfin Bream has been examined through tagging studies and genetic investigations. Two tagging studies, one in New South Wales[1] and one in Queensland[2], have suggested the possibility of separate populations, based on a lack of significant movements between estuaries. However, a genetic investigation has shown that this species forms a single east coast population, with a general northward dispersal of adults and a southward dispersal of larvae[3].

Towards the southern end of their distribution (southern New South Wales to East Gippsland), Yellowfin Bream are known to hybridise with Black Bream (*Acanthopagrus butcherii*), especially in areas where the two species are sympatric[4–6].

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

STOCK STATUS

Eastern Australia This cross-jurisdictional stock has components in Queensland, New South Wales and Victoria. Each jurisdiction assesses the part of the biological stock that occurs in its waters. The status presented here for the entire biological stock has been established using evidence from all three jurisdictions.

In the Queensland part of the Eastern Australian stock, the commercial catch and nominal catch rate of Yellowfin Bream are improving after a change to the minimum legal size (MLS), from 230–250 mm, and the increase in areas protected from fishing in the Moreton Bay Marine Park in 2009 (107 tonnes [t]

at 28 kg per day in 2010; 172 t at 48 kg per day in 2015 in the net fishery)[7]. Length structures from fishery-dependent monitoring of Yellowfin Bream from 2007 onwards also reflect this rebuilding catch trend. The fishery-dependent age structures indicate a stable population with variable and continued recruitment[7]. The above evidence indicates that the biomass of the Queensland part of the stock is unlikely to be recruitment overfished.

The Queensland government has removed 36 per cent of Yellowfin Bream targeted effort in the net fishery since 2007, through buy-backs and structural adjustment packages. Nominal effort in the Queensland commercial fishery in 2015 was higher than in the previous 2 years, but still well below 2009 levels (3623 days fished in 2015; mean of 3233 days fished in 2012–13; 4466 days fished in 2009)[7]. The number of recreational anglers in the south of the state, where Yellowfin Bream are most abundant, decreased between 2001 and 2010, and then again between 2010 and 2014. Together with the increased MLS and introduction of an in-possession limit in 2009, it is unlikely targeted fishing effort by recreational anglers has increased over the short-term[7]. The current MLS (250 mm total length [TL]) for Yellowfin Bream in Queensland applies to both commercial and recreational fishers and allows a proportion of mature fish to spawn for one, or even several years before becoming available to the fishery[2]. Total mortality estimates for Yellowfin Bream in Queensland decreased between 2007 and 2010 and have remained steady since[7]. Estimates indicate that fishing mortality has been lower than natural mortality for the years 2007–15. Yellowfin Bream have a moderate rate of survival (lower for gut-hooked fish) when released by recreational anglers, thus reducing impacts on this part of the stock[8–11]. The above evidence indicates that the current level of fishing pressure is unlikely to cause the Queensland part of the stock to become recruitment overfished.

The commercial catch from New South Wales accounts for about two-thirds of the total catch of the Eastern Australian Yellowfin Bream stock. Reported commercial landings of Yellowfin Bream in this state also include Black Bream and the hybrids formed by the two species. The median nominal commercial catch rates of Yellowfin Bream in New South Wales have been relatively stable during the past decade. Nominal catch rates in the estuary mesh net fishery have increased slightly during this period, whereas catch rates by fish trapping show no overall trend[12]. The length composition of the landings for this species has also been relatively stable since the 1950s[13]. The above evidence indicates that the biomass of the New South Wales part of the stock is unlikely to be recruitment overfished.

In New South Wales, effort in 2015 (number of fisher days where Yellowfin Bream were reported) in the Estuary General Fishery (13 440 days, summed across methods), the Ocean Haul Fishery (198 days) and the Ocean Trap and Line Fishery (776 days, summed across methods) in 2015 was among the lowest reported, especially for the two former fisheries[12]. Historically low effort levels contributed to the 2015 landings of Yellowfin Bream in New South Wales of approximately 260 t, or 30 per cent less than the 20-year annual average of 382 t[12]. Recent size compositions in commercial landings suggest no large changes in the stock. The minimum legal commercial and recreational length in New South Wales (250 mm TL; approximately 225 mm fork length) provides opportunity for Yellowfin Bream to spawn before recruiting to the fishery. The most recent age-based assessment for 2010 indicated that natural and fishing mortality were approximately equal[14]. Yellowfin Bream are predominantly landed by the recreational sector in NSW, with the most recent estimate being approximately 330 t retained during 2013–14[15], 52 per cent less than the previous harvest estimate of 684 t in 2000–01. There have been no major changes to the sizes of bream retained by recreational fishers in New South Wales[13]. The above evidence indicates that the current level of fishing pressure is unlikely to cause the New South Wales part of the biological stock to

become recruitment overfished.

The catch from the Victorian component of this stock is reported as negligible due to low catches by this jurisdiction. Victorian catch averaged a little over 5 kg per year between 2004 and 2014, with no reported catch in 2015. When compared to New South Wales and Queensland, the commercial catch of Yellowfin Bream from the Victorian part of the Eastern Australian stock is very low (less than one per cent of total catch). There is no commercial fishing in Mallacoota and catches from the Gippsland Lakes are very small (less than 1.5 t since 2010). The proportion of the Eastern Australian Yellowfin Bream stock that inhabits Victorian waters is very small, and unlikely to significantly influence the stock dynamics of the Eastern Australian stock[16].

The total annual catch of Yellowfin Bream by recreational fishers in Victoria has not been estimated. Recreational fishing effort is managed under regulations for bream (all species) using a MLS (280 mm) and a bag/possession limit (maximum of 10 fish). Fish must be landed whole or in carcass. Less than 10 commercial fishers landed Yellowfin Bream in Victoria in 2015. In addition, this species is not targeted and the total number of days fished by commercial fishers in the Gippsland Lakes has been steady since 2006–07 (around 1500 days)[17]. The above evidence indicates that the current level of fishing pressure is unlikely to cause the Victorian part of the stock to become recruitment overfished.

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

BIOLOGY

Yellowfin Bream biology[2,14]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Yellowfin Bream	~20 years; ~400 mm <u>FL</u>	Males: 190 mm <u>FL</u> Females: 200–210 mm <u>FL</u>

DISTRIBUTION



Distribution of reported commercial catch of Yellowfin Bream

TABLES

Commercial Catch Methods	New South Wales	Queensland	Victoria
Coastal, Estuary and River Set Nets	✓		
Fish Trap	✓		
Haul Seine	✓		✓
Line		✓	
Mesh Net	✓		✓
Net		✓	
Unspecified			✓

Fishing methods	New South Wales	Queensland	Victoria
Commercial			
Coastal, Estuary and River Set Nets	✓		
Fish Trap	✓		
Haul Seine	✓		
Line		✓	
Mesh Net	✓		
Net		✓	
Unspecified			✓

Recreational			
Hand Line, Hand Reel or Powered Reels	✓	✓	✓
Spearfishing	✓	✓	✓
Management Methods			
	New South Wales	Queensland	Victoria
Commercial			
Fishing gear and method restrictions	✓	✓	✓
Limited entry	✓	✓	✓
Size limit	✓	✓	✓
Spatial closures	✓	✓	✓
Temporal closures	✓	✓	✓
Vessel restrictions	✓		
Indigenous			
Bag limits	✓		
Gear restrictions	✓		
Section 31 (1)(c1), Aboriginal cultural fishing authority	✓		
Size limit	✓		
Spatial closures	✓		
Recreational			
Bag limits	✓		✓
Fishing gear and method restrictions	✓	✓	✓
In possession limits	✓	✓	✓
Size limit	✓	✓	✓
Spatial closures	✓	✓	✓
Active Vessels			

	New South Wales	Queensland	Victoria
	312 License in EGF, 25 License in OHF, 75 License in OTLF,	199 License in ECIFFF,	

EGF Estuary General Fishery(NSW)

OHF Ocean Hauling(NSW)

OTLF Ocean Trap and Line(NSW)

ECIFFF East Coast Inshore Fin Fish Fishery(QLD)

Catch	New South Wales	Queensland	Victoria
Commercial	225.999t in EGF, 26.3038t in OHF, 7.09866t in OTLF,	175.72t in ECIFFF,	
Indigenous	Unknown	Unknown	None
Recreational	330 t (2013–14)	125 t (2013–14)	Unknown

EGF Estuary General Fishery (NSW), OHF Ocean Hauling (NSW), OTLF Ocean Trap and Line (NSW), ECIFFF East Coast Inshore Fin Fish Fishery (QLD), GLF Gippsland Lakes Fishery (VIC),

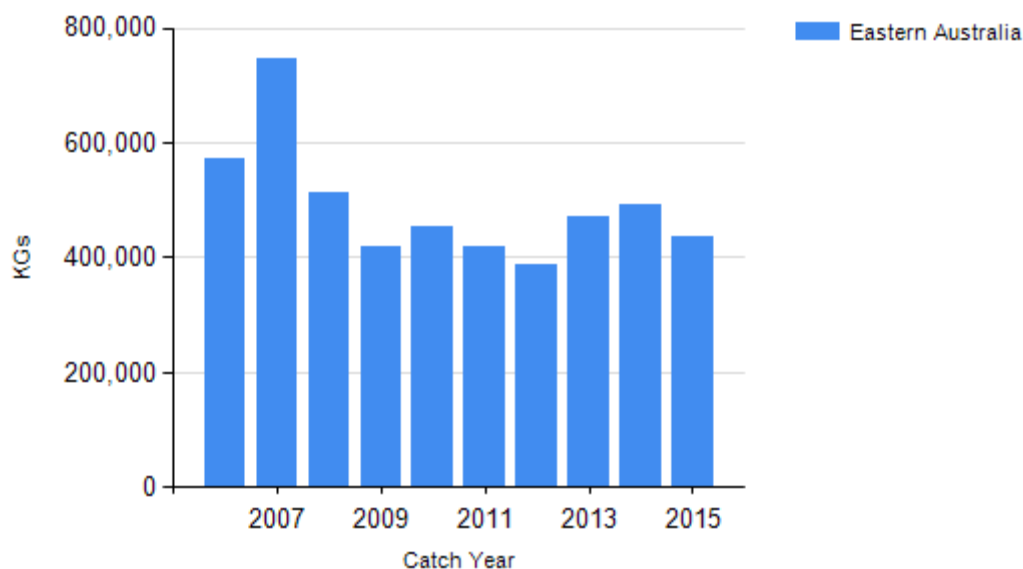
a Queensland – Indigenous (management methods) In Queensland, under the Fisheries Act 1994 (Qld), indigenous fishers are able to use prescribed traditional and non-commercial fishing apparatus in waters open to fishing. Size and bag limits and seasonal closures do not apply to Indigenous fishers. Further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

b New South Wales – Indigenous (management methods) 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.

c New South Wales – Indigenous (management methods) 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 (1)(c1), Aboriginal cultural fishing authority.

d Victoria – Indigenous (management methods) In Victoria, regulations for managing recreational fishing are also applied to fishing activities by Indigenous people. Recognised Traditional Owners (groups that hold native title or have agreements under the Traditional Owner Settlement Act 2010 [Vic]) are exempt (subject to conditions) from the requirement to hold a recreational fishing licence, and can apply for permits under the Fisheries Act 1995 (Vic) that authorise customary fishing (for example different catch and size limits or equipment). The Indigenous category in Table 3 has been interpreted to mean customary fishing being undertaken by Recognised Traditional Owners. In 2012–13 there were no applications for customary fishing permits to access Yellowfin Bream.

CATCH CHART



Commercial catch of Yellowfin Bream - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

- In Queensland, coastal river and estuary set gillnets have been shown to have minimal impact on the environment and are quite selective in their harvest[19]. Bycatch is generally low when compared to the harvest of the target species[19]. Fishers using tunnel nets operate under industry developed code of best practice guidelines[20]. Marine turtles are released with minimal difficulty, and undersized or unwanted catch is returned to the water alive.
- In New South Wales, it has been shown that seining in estuaries can incur large amounts of bycatch of undersized organisms and unwanted species, but the use of appropriately sized mesh can reduce mortalities of these species[21–23].
- Studies conducted in New South Wales indicate that gillnets used in estuaries can incur substantial amounts of bycatch, including the capture of undersized individuals of key species[24,25].
- Seabirds and other marine life often become entangled in discarded recreational fishing tackle[26]. In south-east Queensland, a Fishing Line Recovery Bin program was instigated in 2012 in order to minimise the occurrence of discarded tackle at popular shore based fishing locations.

ENVIRONMENTAL EFFECTS on Yellowfin Bream

- Yellowfin Bream are dependent on estuarine and inshore coastal habitats throughout their life cycle[27,28]. Physical impacts on coastal marine vegetation, sub-surface topography and water quality are likely to influence the resilience and productivity of Yellowfin Bream populations at local scales.

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