

# Yellowfin Bream (2018)

*Acanthopagrus australis*



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## STOCK STATUS OVERVIEW

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

EGF Estuary General Fishery (NSW), N/A Not Applicable (NSW), OHF Ocean Hauling Fishery (NSW), OTLF Ocean Trap and Line Fishery (NSW), ECIFFF East Coast Inshore Fin Fish Fishery (QLD)

## 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 [Thomson 1959] and one in Queensland [Pollock 1982], suggested the possibility of separate populations, based on a lack of significant movements between estuaries. However, a genetic investigation showed this species forms a single east coast population, with a general northward dispersal of adults and a southward dispersal of larvae [Roberts and Ayre 2010].

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*). This is especially the case in areas where the two species are sympatric [Roberts et al 2009, Roberts et al 2010, Rowland 1984].

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 Australia stock, the commercial catch of Yellowfin Bream from the net fishery was 92 t, the lowest since the changes to the minimum legal size (MLS) in 2010 and increases in areas protected from fishing in the Moreton Bay Marine Park in 2009 [QDAF 2018]. Prior to management changes, periods of high and low catches were common for this

species in both Queensland's contemporary Commercial Fisheries information System (CFISH) logbook data series, 1988–2009 (high of 242 tonnes [t] in 2007, low of 127 t in 1994) and the historic Queensland Fish Board (QFB) data series, 1945–80 (high of 361 t in 1945, low of 68 t in 1959). The overall averages of these two data series were similar, 174 t CFISH and 198 t QFB [QDAF 2018]. Nominal catch rate was similar to 2011 and was one of the lowest since 2010 (91 t at 30 kg per day in 2017, 106 t at 28 kg per day in 2010; 114 t at 31 kg per day in 2011 in the net fishery) [QDAF 2018]. Peak catch and catch rate in the years post 2010 occurred in 2015 (172 t at 48 kg per day). Length structures from fishery-dependent monitoring of Yellowfin Bream from 2007 onwards show very few changes, other than those caused by the changed MLS. The fishery-dependent age structures indicate a stable population with variable and continued recruitment [QDAF 2018]. The above evidence indicates that the biomass of this part of the stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

In the commercial net fishery, nominal effort in 2017 (2 416 boat days) was near the historic low, and largely a result of Queensland Government buybacks and structural adjustment packages [QDAF 2018]. The number of days fished in 2017 was 45 per cent lower than the number fished in 2007 [QDAF 2018]. The number of recreational anglers in the south of the State, where Yellowfin Bream are most common, decreased between 2001 (377 500) and 2011 (258 600), and then again between 2011 and 2014 (166 700) [Webley et al. 2015]. 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. 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 [QDAF 2018]. There is no estimate of Indigenous harvest for fishers using traditional fishing methods. Total mortality estimates for Yellowfin Bream in Queensland decreased between 2007 and 2010, and the 2017 estimate was similar to the long-term average. These estimates indicate that fishing mortality has been lower than natural mortality [Then et al. 2014] for the years 2007–17. Yellowfin Bream have a high survival (lower for gut-hooked fish) when released by recreational anglers, thus reducing impacts on this part of the stock [Broadhurst et al. 2005, Butcher et al. 2008, Butcher et al. 2010, McGrath et al. 2011]. Commercial fishers using tunnel nets operate under an industry developed code of best practice which limits post release mortality [Moreton Bay Seafood Industry Organisation 2012]. 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. Bycatch is generally low when compared to the harvest of the target species [Halliday et al. 2001]. The above evidence indicates that the current level of fishing pressure is unlikely to cause this part of the stock to become recruitment impaired.

The commercial catch from New South Wales accounts for approximately 75 per cent of the total catch of the Eastern Australia Yellowfin Bream stock. Reported commercial landings of Yellowfin Bream in southern New South Wales also include some Black Bream and, more commonly, hybrids formed by the two species [Roberts et al. 2010]. Notwithstanding some species confusion, the average nominal commercial catch rates of Yellowfin Bream in New South Wales have been relatively stable during the past decade and especially the past five years, reflecting consistency in the main fisheries; estuarine mesh netting (responsible for > 70 per cent of catches), and trapping (> 15 per cent of catches) [Department of Primary Industries 2018]. The length compositions of the landings have also been relatively stable since the 1950s [Stewart et al. 2015]. The above evidence indicates that the biomass of this part of the stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

During 2017 in New South Wales, there were substantial reductions in effort among estuarine mesh netters and trappers, and also ocean trap-and-line

fishers [Department of Primary Industries 2018], which manifested as a concomitant reduction in total catch to 172 t, or around 46 per cent lower than the average annual catch for the preceding decade. 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 FL) provides opportunity for Yellowfin Bream to spawn before recruiting to the fishery, and numerous studies report high short-term survival (typically > 70 per cent) of juveniles after discarding—not only from recreational hook-and-line as stated above [mostly > 90 per cent; Broadhurst et al. 2005, Butcher et al. 2007], but also most commercial fishing gears [mostly > 60 per cent, Broadhurst et al. 2008a, 2008b]. The most recent age-based assessment for 2010 indicated that natural and fishing mortalities were approximately equal [Gray et al. 2015].

The recreational catch of Yellowfin Bream greatly exceeds the commercial sector in New South Wales, with the most recent estimate (which includes an unknown component of Black Bream and hybrids) being approximately 330 t angled and retained during 2013–14 [West et al. 2015]; 52 per cent less than the previous harvest estimate of 684 t in 2000–01 [Henry and Lyle 2003], but with concomitant reductions in effort. There have been no major changes to the sizes of Yellowfin Bream retained by recreational fishers in New South Wales [Stewart et al. 2015]. The above evidence indicates that the current level of fishing pressure is unlikely to cause this part of the stock to become recruitment impaired.

The catch from the Victorian component of this stock is reported as negligible due to historically low catches by this jurisdiction. During 2017, no commercial catches of Yellowfin Bream were reported; however, commercial fishers may be catching Yellowfin Bream and misidentifying them as Black Bream. When compared to New South Wales and Queensland, the commercial catch of Yellowfin Bream from the Victorian part of the Eastern Australia stock is likely to be very low (less than one per cent of total catch). There is no commercial fishing in Mallacoota Inlet and catches from the Gippsland Lakes have historically been very small (less than 1.5 t in total since 2010). The proportion of the Eastern Australia Yellowfin Bream stock that inhabits Victorian waters is very small and unlikely to significantly influence the stock dynamics of the Eastern Australia stock [Kemp et al. 2013].

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. This species is not targeted by commercial fishers and the total number of days fished by commercial fishers in the Gippsland Lakes has been steady since 2006 at between 1 200–1 500 days [Victorian Fisheries Authority Unpublished Data]. The above evidence indicates that the current level of fishing pressure is unlikely to cause this part of the stock to become recruitment impaired.

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

## BIOLOGY

**Yellowfin Bream biology** [Gray et al 2015, Pollock 1984]

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

**DISTRIBUTION**



Distribution of reported commercial catch of Yellowfin Bream

**TABLES**

<b>Commercial Catch Methods</b>	<b>New South Wales</b>	<b>Queensland</b>
Fish Trap	✓	
Haul Seine	✓	
Hook and Line		✓
Mesh Net	✓	
N/A		✓
Net		✓
Traps and Pots	✓	
Unspecified	✓	

<b>Fishing methods</b>			
	<b>New South Wales</b>	<b>Queensland</b>	<b>Victoria</b>
<b>Charter</b>			
Handline	✓	✓	
<b>Commercial</b>			
Fish Trap	✓		
Haul Seine	✓		
Hook and Line		✓	
Mesh Net	✓		
Net		✓	
Traps and Pots	✓		
Unspecified	✓		
<b>Indigenous</b>			

Handline	✓		
Spearfishing	✓		
Various		✓	
<b>Recreational</b>			
Handline	✓	✓	✓
Spearfishing	✓	✓	✓
<b>Management Methods</b>			
	<b>New South Wales</b>	<b>Queensland</b>	<b>Victoria</b>
<b>Charter</b>			
Bag and possession limits		✓	
Gear restrictions		✓	
Size limit		✓	
Spatial closures		✓	
<b>Commercial</b>			
Gear restrictions	✓	✓	✓
Limited entry	✓	✓	✓
Size limit	✓	✓	✓
Spatial closures	✓	✓	✓
Temporal closures	✓	✓	✓
Vessel restrictions	✓		
<b>Indigenous</b>			
Bag limits	✓		
Customary fishing permits			✓
Native Title	✓		
Section 37 (1d)(3)(9), Aboriginal cultural fishing authority	✓		
<b>Recreational</b>			
Area closures			✓
Bag and possession limits	✓	✓	✓
Bag limits	✓		✓

<b>Fishing gear and method restrictions</b>	✓		
<b>Gear restrictions</b>		✓	✓
<b>Size limit</b>	✓	✓	✓
<b>Spatial closures</b>	✓	✓	✓

<b>Active Vessels</b>		
	<b>New South Wales</b>	<b>Queensland</b>
	287 Fishing Business in EGF, 26 Fishing Business in OHF, 9 Fishing Business in OTF, 78 Fishing Business in OTLF,	178 in ECIFFF,

**EGF** Estuary General Fishery(NSW)

**OHF** Ocean Hauling Fishery(NSW)

**OTF** Ocean Trawl Fishery(NSW)

**OTLF** Ocean Trap and Line Fishery(NSW)

**ECIFFF** East Coast Inshore Fin Fish Fishery(QLD)

<b>Catch</b>	<b>New South Wales</b>	<b>Queensland</b>	<b>Victoria</b>
<b>Commercial</b>	165.775t in EGF, 34.9t in N/A, 7.284t in OHF, 2.223t in OTLF,	94.24t in ECIFFF,	
<b>Indigenous</b>	Unknown	Unknown	Unknown (No catch under permit)
<b>Recreational</b>	330 t (2013–14)	125 t (2013–14)	Unknown

EGF Estuary General Fishery (NSW), N/A Not Applicable (NSW), OHF Ocean Hauling Fishery (NSW), OTLF Ocean Trap and Line Fishery (NSW), ECIFFF East Coast Inshore Fin Fish Fishery (QLD),

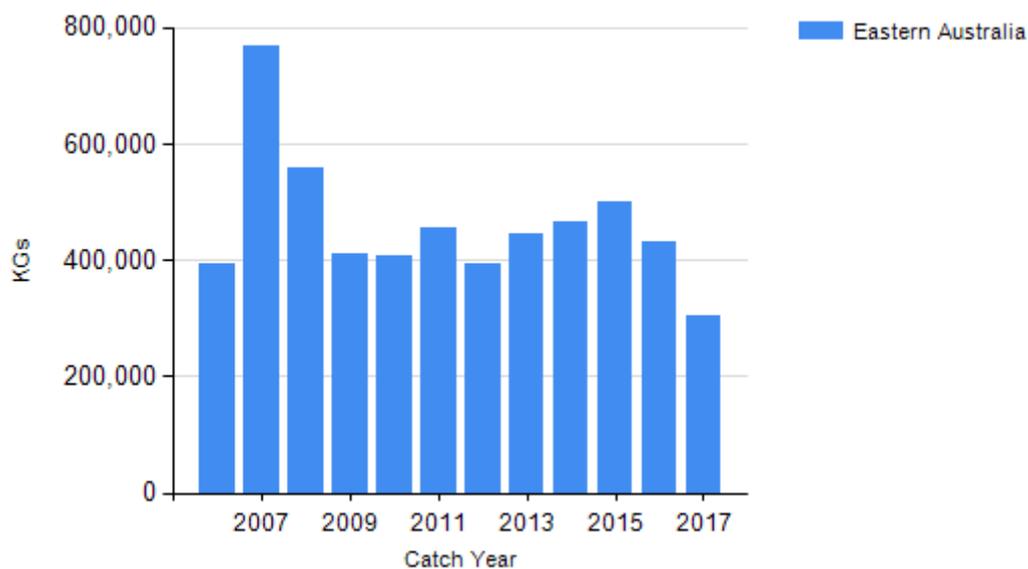
**Queensland – Indigenous (Management Methods)** In Queensland, under *the Fisheries Act 1994* (Qld), indigenous fishers are able to use prescribed traditional and non-commercial fishing apparatus in waters open to fishing. Size and bag limits and seasonal closures do not apply to Indigenous fishers.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

**New South Wales – Indigenous (Management Methods)** (a) 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) 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.

**Victoria – Indigenous (Management Methods)** In Victoria, regulations for managing recreational fishing may not apply to fishing activities by Indigenous people. Victorian traditional owners may have rights under the *Commonwealth's Native Title Act 1993* to hunt, fish, gather and conduct other cultural activities for their personal, domestic or non-commercial communal needs without the need to obtain a licence. Traditional Owners that have agreements under the *Traditional Owner Settlement Act 2010 (Vic)* may also be authorised to fish without the requirement to hold a recreational fishing licence. Outside of these arrangements, Indigenous Victorians can apply for permits under the *Fisheries Act 1995 (Vic)* that authorise fishing for specific Indigenous cultural ceremonies or events (for example, different catch and size limits or equipment). There were no Indigenous permits granted in 2017 and hence no Indigenous catch recorded.

## CATCH CHART



Commercial catch of Yellowfin Bream - note confidential catch not shown

## EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

### ENVIRONMENTAL EFFECTS on Yellowfin Bream

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