

John Dory (2023)

Zeus faber



Timothy Emery: Australian Bureau of Agricultural and Resource Economics and Sciences, **Geoffrey Liggins:** New South Wales Department of Primary Industries, **Justin Bell:** Victorian Fisheries Authority, **Marlee Jesson-Kerr:** Department of Agriculture and Fisheries, Queensland, **Jeff Norriss:** Department of Primary Industries and Regional Development, Western Australia, **Grant Johnson:** Department of Industry, Tourism and Trade, Northern Territory

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth, Queensland, New South Wales, Victoria	South Eastern Australia	Depleted	CPUE, catch
Western Australia	Western Australia	Negligible	
Northern Territory	Northern Territory	Negligible	

STOCK STRUCTURE

John Dory inhabits coastal and continental-shelf waters around most of Australia. The majority of the catch is taken along the eastern and southern coasts, with a small catch reported from the Northern Territory Timor Reef Fishery. The main distribution stretches from Moreton Bay in southern Queensland south and west to Cape Cuvier in Western Australia, with a limited distribution in eastern Bass Strait. John Dory are solitary as adults [Stergiou and Fourtouni 1991] and are reported to inhabit depths from 5 to 360 m. Most of the catch is taken in 50–200 m depth, with over half of the catch taken at 100–149 m depth [Kailola et al. 1993; Staples 1995]. The stock structure of this species off Australia is poorly understood [Staples 1995]. Along the eastern and south-eastern coasts, John Dory is considered to constitute a single biological stock for assessment and management purposes.

Here, assessment of stock status is presented at the biological stock level—South Eastern Australia, and at the jurisdictional level—Western Australia and Northern Territory.

STOCK STATUS

Northern Territory

Stock status for the Northern Territory is reported as **Negligible** due to catches only being reported in 2014–18 in the Timor Reef Fishery. The maximum annual catch during this time was less than 0.4 tonnes (t) and the stock has not been subject to targeted fishing by any sector. Fishing is unlikely to be having a negative impact on the stock.

South Eastern Australia

This stock is primarily caught by the Commonwealth managed Southern and Eastern Scalefish and Shark Fishery (SESSF), with small catches from State jurisdictions. Stock status classification reported here is based on analyses conducted for the SESSF, which include reported State catches.

Commonwealth catch (landings and discards) of John Dory averaged 200–300 t from 1986 to 1995, peaking at about 400 t in 1993. Total catch has been lower in recent years, averaging less than 100 t over the past decade [Emery et al. 2022].

John Dory caught off the south-east coast of Queensland are at the northern-most limit of their Australian east coast distribution [Kailola et al. 1993]. In Queensland they are a non-target species incidentally harvested in net and line fisheries. Commercial catch of John Dory has been variable since 1992 with a peak catch of 23 tonnes (t) in 1993. Since 2000, general reductions in licences and effort across Queensland's fisheries have seen the overall catch and effort for John Dory decrease, reducing to an average of 2.8 t over the last decade to 2021–22. The recreational harvest of John Dory is considered to be low with no reported catch in the most recent recreational fishing survey [Webley et al. 2015; Teixeira et al. 2021].

The annual commercial catch from New South Wales waters has declined over the past 10 years from 19.9 t in 2013–14 to 2.3 t in 2021–22. John Dory is a by-product species for the NSW Ocean Trawl Fishery (OTF) and the decline in catch has been associated with a similar decline in effort. The nominal catch-per-unit-effort (CPUE) has been relatively stable. Catches from the New South Wales OTF represent a small fraction (approximately 4% in 2021–22) of the total commercial catch of John Dory extracted annually from the South Eastern Australian stock; the total catch being dominated by the Commonwealth SESSF.

In Victoria, commercial John Dory landings have been less than 1 t since 1996 and recreational landings are believed to be low. The very low level of fishing mortality in Victoria is unlikely to have a significant influence on the stock.

John Dory in the SESSF is currently managed as a Tier 4 stock under the SESSF Harvest Strategy Framework [AFMA 2021a]. Although a weight of evidence approach informed the total allowable catch (TAC) for the stock for the 2021–22 fishing season, a new Tier 4 analysis was undertaken in 2021 [Sporcic 2021], informing the Recommended Biological Catch (RBC) for the 2022–23 fishing season.

The analyses undertaken in support of the weight of evidence approach to determining the TAC for the 2021–22 fishing season consisted of a preliminary catch–maximum sustainable yield (MSY) analysis and a preliminary surplus production model (SPM) [Penney 2020]. The preliminary catch–MSY analysis, which used catch as a proxy for abundance, indicated that the stock had declined below the Target Reference Point (TRP) in 1985 and below the Limit Reference Point (LRP) in 2003, before rebuilding to above the LRP around 2013 (due to reductions in fishing mortality) [Penney 2020]. In 2019, the stock was

estimated to be at 32% of unfished biomass, although the uncertainty around this estimate was high (95% confidence interval 7–57%). Projections indicated that the stock would rebuild to above the TRP within 5 years under a constant catch of 65 t. The preliminary SPM, which used CPUE as an indicator of abundance, indicated that the stock had declined below the TRP in 1990, below the LRP in 2002, and was estimated to be at 13% of unfished biomass in 2019 [Penny 2020]. Based on these results, the South East Resource Assessment Group (SERAG) recommended that catches do not exceed 60 t for the 2021–22 fishing season, which AFMA subsequently set as the TAC [AFMA 2020].

The 2021 Tier 4 analysis indicated that the standardised CPUE had declined in recent years and had been below the TRP since 1995 and below the LRP since 2010 [Sporcic 2021]. The RBC was therefore 0 t [AFMA 2021b]. A comparison between total mortality over the past decade with the apparent stock response reflected by the standardised CPUE proxy for biomass indicates that mortality over this period has maintained the stock below the LRP and prevented it from rebuilding. This may indicate that the stock was subject to overfishing during this period.

Because of the outcomes of the Tier 4 analysis, SERAG reviewed a companion species analysis by CSIRO that examined the link between target species catch and the associated level of unavoidable bycatch of rebuilding stocks [Burch et al. 2021]. It was noted that John Dory was mostly caught by the demersal trawl and Danish-seine sectors targeting flathead on the east coast of Australia. Under a predicted flathead TAC of 2,407 t for the 2022–23 fishing season, the level of unavoidable bycatch was 61 t (95% CI 56–66 t) [Burch et al. 2021]. AFMA subsequently determined a bycatch TAC of 60 t for the 2022–23 fishing season.

The 2021 Tier 4 analysis indicates that the biomass of the south-eastern Australia biological stock is likely depleted and that recruitment is likely to be impaired.

Commonwealth-landed catch for John Dory in the Commonwealth Trawl and Gillnet, Hook and Trap sectors (CTS and GHTS) of the SESSF was 50.4 t in the 2021–22 fishing season. Discards and state catches have been estimated to be 7.2 t and 6.8 t, respectively, based on the weighted average of the previous four calendar years (2017 to 2020) [Althaus et al. 2021]. The total fishing mortality for the 2021–22 fishing season was estimated to be 64.4 t. There are no reliable indicators to determine if this level of fishing mortality will allow the stock to rebuild [Emery et al. 2022].

On the basis of the evidence provided above, the south-eastern Australia biological stock is classified as a **depleted stock**.

Western Australia

Stock status for John Dory in Western Australia is reported as **Negligible** due to historically low catches in this jurisdiction, and because the stock has generally not been subject to targeted fishing. The Western Australian commercial catch from 2008 to 2019 averaged less than 35 kg per annum, and John Dory is not a major component of recreational landings. Fishing is unlikely to be having a negative impact on the stock.

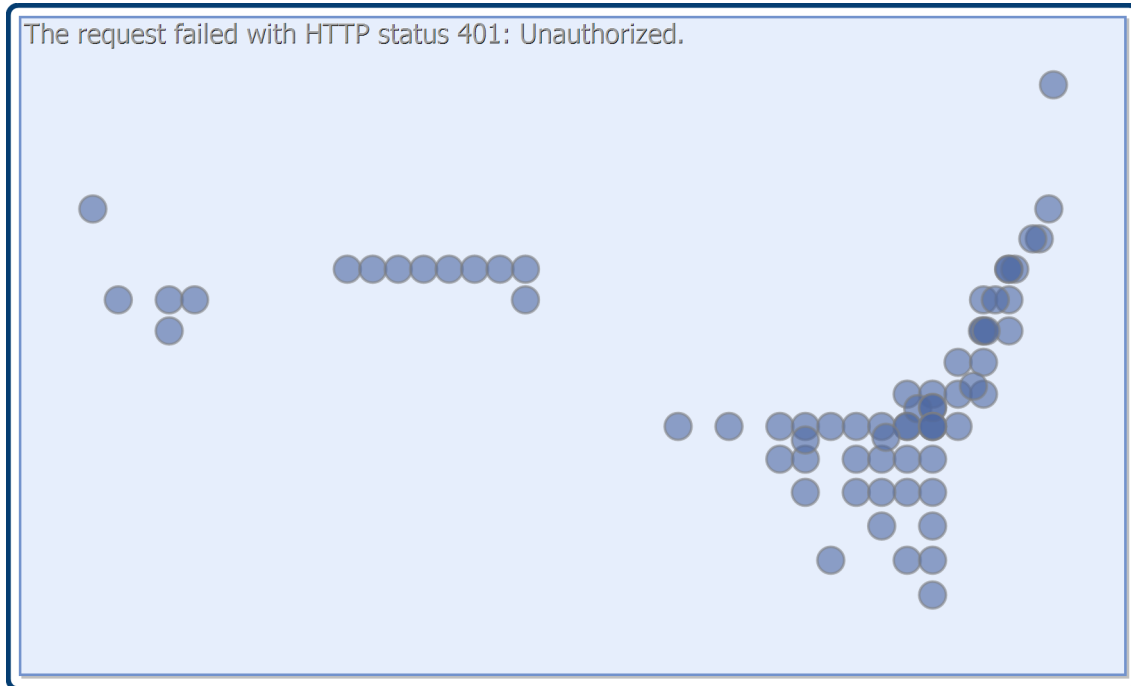
BIOLOGY

John Dory biology [Staples 1995]

STATUS OF AUSTRALIAN FISH STOCKS REPORT
John Dory (2023)

Species	Longevity / Maximum Size	Maturity (50 per cent)
John Dory	12–15 years, 500–650 mm TL	3–5 years

DISTRIBUTION



Distribution of reported commercial catch of John Dory

TABLES

Fishing methods	Commonwealth	New South Wales	Northern Territory	Queensland	Victoria
Charter					
Hook and Line		✓		✓	
Rod and reel		✓			
Commercial					
Danish Seine	✓				
Demersal Gillnet	✓				
Gillnet					
Net				✓	✓
Otter Trawl	✓	✓			
Unspecified			✓		
Various		✓			

Western Australia
✓
✓
✓

STATUS OF AUSTRALIAN FISH STOCKS REPORT
John Dory (2023)

Recreational					
Hook and Line		✓		✓	✓
Rod and reel		✓			
Management Methods					
	Commonwealth	New South Wales	Northern Territory	Queensland	Victoria
Charter					
Bag and possession limits		✓			
Bag limits					
Bag/possession limits				✓	
Gear restrictions		✓	✓	✓	
Licence		✓			
License					
Limited entry			✓		
Marine park closures		✓			
Possession limit			✓		
Seasonal or spatial closures				✓	
Spatial closures			✓		
Temporal closures					
Commercial					
Catch limits			✓		✓
Effort limits (individual transferable effort)					
Gear restrictions	✓	✓	✓	✓	✓
Harvest Strategy				✓	
Licence					✓
License					

Western Australia

✓
✓
✓
✓
✓

✓
✓
✓

STATUS OF AUSTRALIAN FISH STOCKS REPORT
John Dory (2023)

Limited entry	✓	✓	✓	✓	✓
Marine park closures	✓	✓			
Mesh size regulations		✓			
Quota	✓				
Seasonal or spatial closures				✓	
Spatial closures	✓	✓	✓		✓
Total allowable catch	✓				
Vessel restrictions		✓		✓	
Recreational					
Bag and possession limits		✓			✓
Bag limits					✓
Bag/possession limits				✓	
Gear restrictions		✓	✓	✓	✓
Licence		✓			✓
Licence (Recreational Fishing from Boat License)					
Marine park closures		✓			
Possession limit			✓		
Seasonal or spatial closures				✓	
Spatial closures			✓		✓
Temporal closures					

✓
✓
✓
✓
✓
✓

STATUS OF AUSTRALIAN FISH STOCKS REPORT
John Dory (2023)

Catch	Commonwealth	New South Wales	Northern Territory	Queensland	Victoria
Charter			0	Unknown	
Commercial	55.98 t	2.2894 t	0	1.6511 t	0.5057 t
Indigenous		Unknown	Unknown	Unknown	Unknown (No catch under permit)
Recreational		Negligible (2019–20)	0	Unknown	

Commonwealth – Commercial (Management Methods/Catch) Data provided for the Commonwealth align with the Commonwealth Southern and Eastern Scalefish and Shark Fishery for the 2021–22 financial year.

Commonwealth – Recreational The Commonwealth does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations.

Commonwealth – Indigenous The Australian government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters

Queensland – Indigenous (Management Methods) for more information see <https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing>

Queensland – Recreational Fishing (Catch). Data with high uncertainty (Residual Error >50 %) has been excluded and listed as unknown. More information available at: <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-research/monitoring-reporting/statewide-recreational-fishing-surveys>

Queensland – Commercial (Catch). QLD commercial and charter data has been sourced from the commercial fisheries logbook program. Further information available through the Fisheries Summary Report <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-research/data/queensland-fisheries-summary-report>

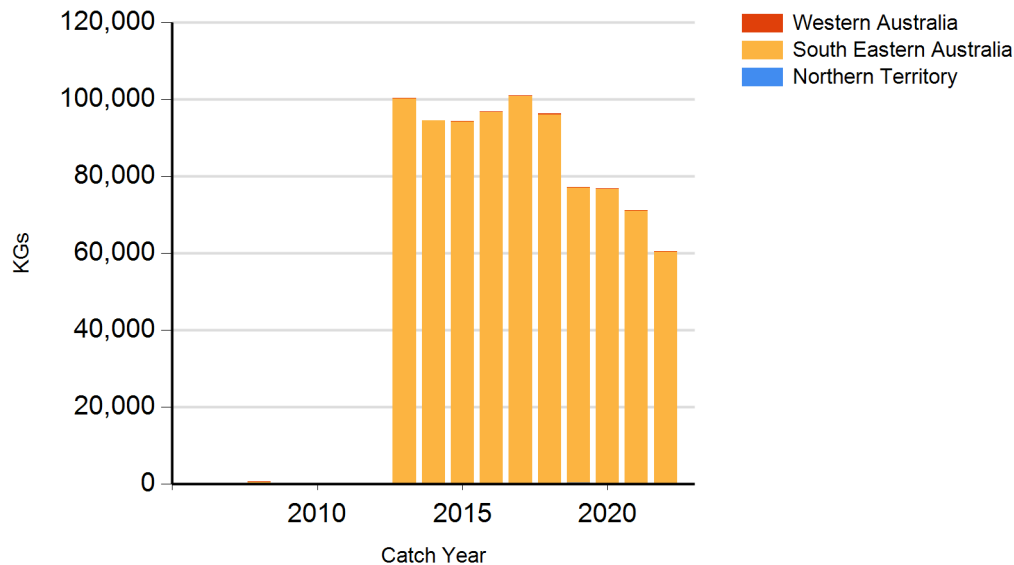
New South Wales - Recreational (Catch) Recreational catch estimate of “Negligible” is based on zero catches of John Dory recorded during the 2019–20 survey of the catch by 1–3 year NSW recreational licence holders [Murphy et al. 2022]

New South Wales - Indigenous (Management Methods) Cultural Fishing Management Arrangements. See <https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>

Victoria – Indigenous (Management Methods) A person who identifies as Aboriginal or Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch limits, size limits and restricted areas. Traditional (non-commercial) fishing activities that are carried out by members of a traditional owner group entity under an agreement pursuant to Victoria’s *Traditional Owner Settlement Act 2010* are also exempt from the need to hold a recreational fishing licence, subject to any conditions outlined in the agreement. Native title holders are also exempt from the need to obtain a recreational fishing licence under the provisions of the Commonwealth’s *Native Title Act 1993*.

Western Australia
0.0249 t

CATCH CHART



Commercial catch of John Dory - note confidential catch not shown

References	
Webley et al. 2015	Webley, J, McInnes, K, Teixeira, D, Lawson, A and Quinn, R 2015, Statewide Recreational Fishing Survey 2013–14, Queensland Department of Agriculture and Fisheries, Brisbane.
Kailola et al. 1993	Kailola, PJ, Williams, MJ, Stewart, PC, Reichelt, RE, McNee, A and Grieve, C 1993, Australian Fisheries Resources, Australian Bureau of Resource Sciences and the Fisheries Research and Development Corporation, Canberra.
Stergiou and Fourtouni 1991	Stergiou, KI and Fourtouni, H 1991, Food habits, ontogenetic diet shifts and selectivity in <i>Zeus faber</i> Linnaeus, 1758, <i>Journal Fish Biology</i> , 39: 589–603.
Staples 1995	Staples D 1995, John Dory 1994, Stock Assessment Report, South East Fishery Assessment Group, Australia Fisheries Management Authority, Canberra.
AFMA 2021a	AFMA 2021a, Harvest strategy framework for the Southern and Eastern Scalefish and Shark Fishery 2009 (amended 2021), Australian Fisheries Management Authority, Canberra.
Burch et al. 2021	Burch, P, Sutton, C, Cannard, T and Bradford, RW 2021, An investigation of the bycatch of rebuilding and other selected species in the Southern and Eastern Scalefish and Shark Fishery, CSIRO Oceans and Atmosphere, Hobart.
Emery et al. 2022	Emery, T, Wright, D, Davis, K, Keller, K, Woodhams, J and Curtotti, R 2022, Commonwealth Trawl and Scalefish Hook sectors, in Patterson, H, Bromhead, D, Galeano, D, Larcombe, J, Timmiss, T, Woodhams, J and Curtotti, R (eds), <i>Fishery status reports 2022</i> , Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.
Teixeira et al. 2021	Teixeira, D, Janes, R and Webley, J 2021, 2019/20 Statewide Recreational Fishing Survey Key Results, Project Report, State of Queensland, Brisbane.
Murphy et al. 2022	Murphy, JJ, Ochwada-Doyle, FA, West, LD, Stark, KE, Hughes, JM and Taylor, MD 2022, Survey of recreational fishing in NSW, 2019/20 – Key Results, NSW DPI – Fisheries Final Report Series No. 161, ISSN 2204-8669.
AFMA 2021b	AFMA 2021b, South East Scalefish and Shark Fishery South East Resource Assessment Group (SERAG) meeting 2, minutes, 19–20 October 2021, Australian Fisheries Management Authority, Canberra.
Penny 2020	Penney, A 2020, Exploratory data-poor catch-MSY and production model assessments for john dory in the Southern and Eastern Scalefish and Shark Fishery, Pisce Australis (Pty) Ltd, Canberra.
Althaus et al. 2021	Althaus, F, Thomson, R and Sutton, C 2021, Southern and Eastern Scalefish and Shark Fishery catches and discards for TAC purposes using data until 2020, CSIRO Oceans and Atmosphere, Hobart.

STATUS OF AUSTRALIAN FISH STOCKS REPORT
John Dory (2023)

Sporcic 2021	Sporcic 2021, Draft tier 4 assessments for selected SESSF species (data to 2020), CSIRO Oceans and Atmosphere, Hobart.
AFMA 2020	AFMA 2020, Southern and Eastern Scalefish and Shark Fishery South East Resource Assessment Group (SERAG) meeting 2.1, minutes, 23–24 November 2020, Australian Fisheries Management Authority, Canberra.