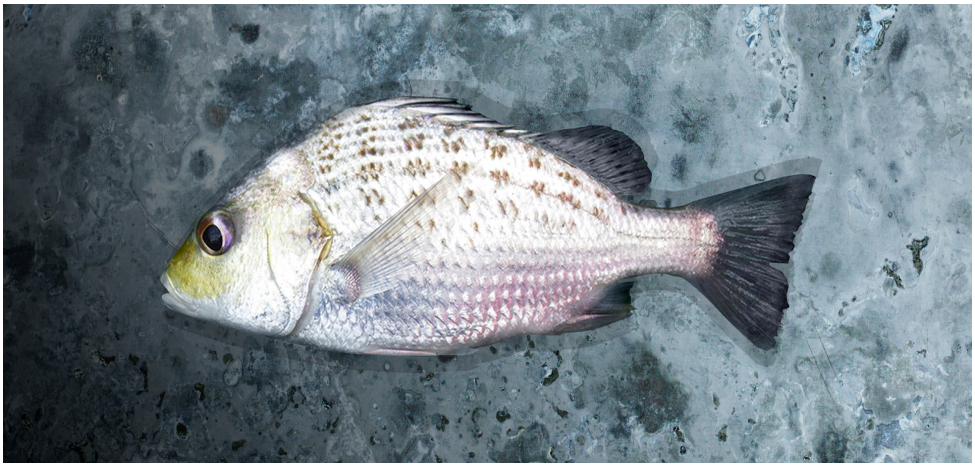
Barred Javelin (2020)

Pomadasys kaakan



Anthony Roelofs: Department of Agricutlure and Fisheries, Queensland, **Fabian Trinnie**: Department of Primary Industries and Regional Development, Western Australia, **Stephen Newman**: Department of Primary Industries and Regional Development, Western Australia, **Thor Saunders**: Department of Primary Industry and Resources, Northern Territory

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia, Northern Territory	Northern Australia	Sustainable	Catch, Spawning biomass of indicator species
Northern Territory, Queensland	Gulf of Carpentaria	Sustainable	Catch, Biomass, Fishing Mortality
Queensland	East Coast Queensland	Sustainable	Catch, Biomass, Fishing Mortality

STOCK STRUCTURE

Barred Javelin are widely distributed throughout the Indian Ocean to the western Pacific Ocean, ranging from the Red Sea and east coast of Africa through to southeast Asia, extending north to Taiwan and south to northern Australia. They have also been reported from the Persian Gulf. In Australia, Barred Javelin range from Shark Bay in Western Australia (possibly also ranges further south), north and east to at least Moreton Bay in Queensland.

Garrett (1997) assessed allozymes from Barred Javelin between locations along the eastern and western coasts of northern Queensland (Cape York). These data showed significant genetic differences between locations in the Gulf of Carpentaria and the QLD east coast. The boundaries of these stocks and their relationship to populations along the western and northern coasts of Australia are not known. Due to the logistic and operational constraints of the relevant monitoring, assessment and management agencies, assessment is undertaken at the management unit level.

Here, assessment of stock status is presented at the management unit level—Northern Australia (Western Australia and Northern Territory), Gulf of Carpentaria (Queensland); and East Coast Queensland.

STOCK STATUS

East Coast Queensland

Barred Javelin are a popular recreational species on the Queensland east coast. The recreational sector comprised nearly 80 per cent of the total (commercial and recreational combined) harvest in 2013–14 [Webley et al. 2015, QFISH 2020]. Barred Javelin can be confused with Spotted Javelin (*Pomadasys argenteus*) by fishers as both are commonly caught in Queensland. It is estimated that 90 per cent of retained javelin are Barred Javelin [QDAF unpublished]. The recreational harvest is estimated to have peaked at around 200 tonnes (t) in 2000–01. Between 60 and 70 per cent of recreationally caught javelin fish are released [Webley et al. 2015], although post release mortality is unknown. Barred Javelin are caught mainly as a by-product in the ECIFFF. Commercial harvest in 2019 was 11 t and has been relatively stable and averaged 26 t since 2000, with a peak catch of 34 t reported in the calendar year 2015 [QFISH 2020]. There are recreational possession limits in place for Barred Javelin (10 per person) and the minimum legal size of 40 cm total length (both sectors) is set above size at maturity (50 per cent) to allow some fish to spawn before they can be legally harvested.

A preliminary assessment using catch data applied to a modified catch-MSY model (developed by Martell and Froese [2013] and modified by Haddon et al. [2018]), estimated that the 2019 biomass of Barred Javelin was 76 per cent of unfished levels [Saunders and Roelofs 2020] suggesting that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Similarly, the model estimated that the fishing mortality (0.08) in 2019 was well below the limit point indicating 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, Barred Javelin on the Queensland east coast is classified as a **sustainable stock**.

Gulf of Carpentaria

Barred Javelin are accessed by commercial net and trawl fisheries in the Gulf of Carpentaria. The species is caught mainly as a by-product in the net fishery when targeting Barramundi/King Threadfin [Bade 1989]. They are also a popular recreational species, especially in the Karumba region. Barred Javelin can be misidentified by fishers as Spotted Javelin, which are less commonly caught in the Gulf of Carpentaria. It is estimated that 95 per cent of retained javelin fish are Barred Javelin [QDAF unpublished]. The recreational fishery harvested more than 70 per cent of the harvest in Queensland in 2013–14 [Webley et al. 2015, QFISH 2020]. Barred Javelin would have also been exposed to foreign trawling activity from the 1950s to the 1980s [O'Neill et. al. 2011] with commercial catches during this period probably substantially higher (>70 t) than contemporary levels. Recent commercial catches in the GOC have generally been below 15 t due to reduced finfish trawling activity. Recreational harvests in Queensland are estimated to be 47.5 t [Webley et al. 2015]. The combined harvest has averaged about 55 t for the past 20 years. There are recreational possession limits in place in Queensland (10 per person, 20 fillets: minimum fillet length 26cm) and the minimum legal size of 40 cm total length (both sectors) is set above size at maturity (50 per cent) to allow some fish to spawn before they can be legally harvested. Only small catches of Barred Javelin (< 3 t from all sectors combined) are caught in the NT portion of this stock. These are predominantly caught by recreational fishers in the King Ash Bay Region [West et al. 2012].

A preliminary assessment using catch data applied to a modified catch-MSY model (developed by Martell and Froese [2013] and modified by Haddon et al. [2018]), estimated that the 2019 biomass of Barred Javelin was 44 per cent of unfished levels [Saunders and Roelofs 2020] suggesting that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Similarly, the model estimated that the fishing mortality (0.23) in 2019 was below the limit point indicating 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 management unit is classified as a **sustainable stock.**

Northern Australia

In Western Australia, Barred Javelin are not identified to the individual species level, but are landed as part of the group javelinfishes. There is currently little evidence to determine the proportion of the javelinfish catch by species. The total landed catch of all javelinfishes in WA in 2019 was 37 t. Javelinfishes are caught primarily as a component of the multispecies Pilbara Fish Trawl (Interim) Managed Fishery within the Pilbara Demersal Scalefish Fisheries (which also includes Pilbara Trap Managed Fishery and the Pilbara Line Fishery) and in small quantities in the Northern Demersal Scalefish Managed Fishery (NDSMF) and Gascoyne Demersal Scalefish Managed Fishery [Gaughan and Santoro 2020]. Javelinfishes (which include the Barred Javelin) are assessed on the basis of the status of several indicator species (including, for example, Red Emperor, Rankin Cod, and Bluespotted Emperor in the Pilbara region) that represent the entire inshore demersal suite of species occurring at depths of 30–250 m [Newman et al. 2018]. The major performance measures for these indicator species are estimates of spawning stock levels estimated using an integrated age-structured assessment. The target level of spawning biomass is 40 per cent of the unfished level, with a threshold reference level of 30 per cent and a limit reference level of 20 per cent of the estimate of initial spawning biomass [DPIRD 2017]. Indicator species assessments determined that the spawning biomass levels of each of the indicator species were greater than 40 per cent of the unfished level in the Pilbara Demersal Scalefish Fisheries in 2015 (the year the last integrated assessment was undertaken). The above evidence suggests that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

The catch of Javelinfishes in WA over the past 10 years (2010–19) have ranged from 18.0–39.4 t, with a mean annual catch of 27.8 t. In the Northern Territory, the Barred Javelin is the only species of javelin fish caught in any significant numbers. The commercial harvest has been very low (2 t; 10 year average) and primarily from the Demersal Fishery trawl sector. The recreational take for this species of approximately 3 t is also low [West et al. 2012, Matthews et al. 2015]. Therefore, the 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 Northern Australian biological stock is classified as a **sustainable stock**.

BIOLOGY

Barred Javelin biology [Garnett 1997, Szczecinski 2012]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Barred Javelin	East coast Queensland: 15 years, 715 mm TL Gulf of Carpentaria: 14 years, 670 mm LCF	East coast Queensland: over 50% of fish were maturing or spawning by 280-319 mm TL. Gulf of Carpentaria: 463 mm LCF for females at L50

DISTRIBUTION

Distribution of reported commercial catch of Barred Javelin.

TABLES

Fishing methods			
	Northern Territory	Queensland	Western Australia
Charter			
Handline			✓
Hook and Line	✓	✓	
Rod and reel			✓
Various			✓
Commercial			
Bottom Trawls	✓		
Gillnet	✓		
Line		✓	
Midwater Trawl		✓	
Net		✓	
Recreational			
Handline			✓
Hook and Line	✓	✓	
Rod and reel			✓

Management Methods			
	Northern Territory	Queensland	Western Australia
Charter			

Bag limits			✓
Limited entry			✓
Passenger restrictions			✓
Spatial closures			✓
Spatial zoning			✓
Commercial			
Bag and boat limits	✓		
Effort limits			✓
Gear restrictions		✓	
Limited entry (licensing)		✓	
Spatial closures		✓	
Spatial zoning			✓
Total allowable effort			✓
Vessel restrictions		✓	
Recreational			
Area restrictions	✓		
Gear restrictions		✓	
Licence (Recreational Fishing from Boat License)			✓
Possession limit		✓	
Size limit		✓	
Spatial closures		✓	

Catch			
	Northern Territory	Queensland	Western Australia
Charter	3 t		
Commercial	0.2876 t	11.8879 t	0 t
Indigenous	Uknown	Uknown	
Recreational	2.6 t (2015)	67 t East Coast (2019–20); 47.5 t GOC (2013–14)	

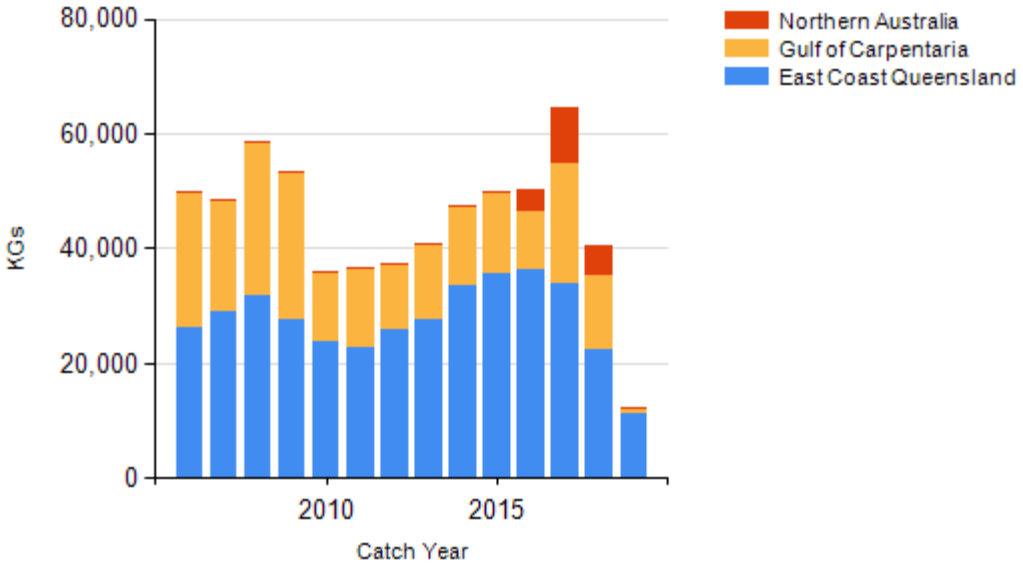
Queensland – Indigenous (management methods) for more information see https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing

Western Australia – Recreational (Catch) Boat-based recreational catch is from 1 September 2017–31 August 2018. These data are derived from those reported in [Ryan et al. 2019].

Western Australia – Recreational (management methods) A Recreational Fishing from Boat License is required for the use of a powered boat to fish or to transport catch or fishing gear to or from a land-based fishing location.

Western Australia – Indigenous (management methods) Subject to application of Section 211 of the *Native Title Act 1993* (Cth), and the exemption from a requirement to hold a recreational fishing licence, the non-commercial take by Indigenous fishers is covered by the same arrangements as that for recreational fishing.

CATCH CHART



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