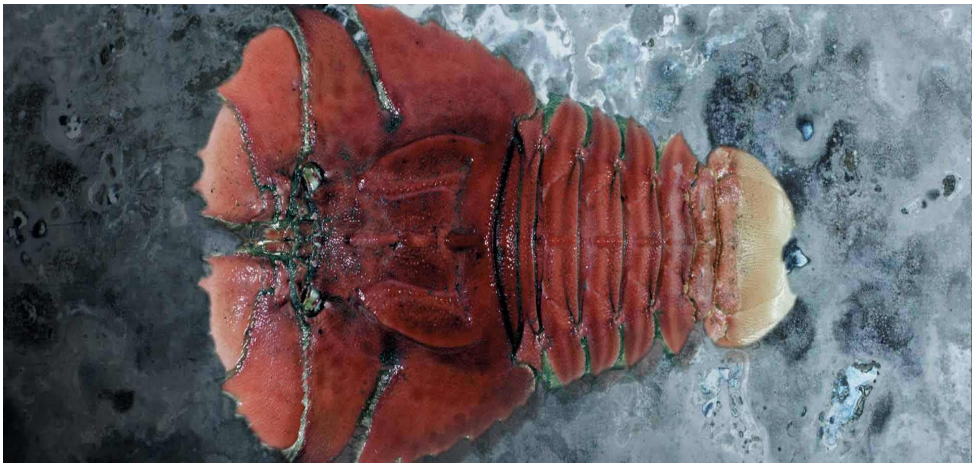
BALMAIN BUGS (2020)

Ibacus peronii, Ibacus brucei, Ibacus chacei, Ibacus alticrenatus, Ibacus spp.



John Stewart: Department of Primary Industries, New South Wales, **Anthony Roelofs**: Department of Agriculture and Fisheries, Queensland, **Craig Noell**: South Australian Research and Development Institute, **Victorian Fisheries Authority**: Victorian Fisheries Authority, **Mervi Kangas**: Department of Primary Industries and Regional Development, Western Australia

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia	Negligible	
Queensland, New South Wales	East Coast	Sustainable	Catch rates, catch, effort, size structure, risk assessment
Victoria	Victoria	Undefined	Catch
South Australia	South Australia	Negligible	

STOCK STRUCTURE

The common name ‘Balmain Bug’ refers to four similar species of fan lobster: *Ibacus alticrenatus, I. brucei, I. chacei and I. peronii* [Haddy et al. 2007]. These species partially overlap in their distributions on the east coast of Australia and have evolved different life-history strategies, tending to occupy different depth ranges. However, here, they are assessed as a single species group because they are rarely distinguished by fishers or fish marketers.

The true Balmain Bug (*I. peronii*) is widely distributed around the southern half of the continent, from around the Queensland—New South Wales border (latitude 28°S) to central Western Australia (latitude 29°S), including the east coast of Tasmania and Bass Strait. The true Balmain Bug is mainly found close to shore, in waters less than 80 m deep. The Smooth Bug (*I. chacei*) is distributed between northern Queensland (latitude 17°S) and southern New South Wales (latitude 36°S), although it is rarely caught south of Sydney (latitude 34°S). It is most abundant on the mid-continental shelf in depths of 50–150 m. The Honey Bug (*I. brucei*) is distributed between central Queensland and northern New South Wales. It is most abundant on the outer continental shelf and upper slope in waters from 120–300 m deep. The Deepwater Bug (*I. alticrenatus*) is distributed throughout southern Australian and New Zealand waters. It is most abundant at depths of 200–400 m on the upper continental slope, and stock structure remains unknown [Haddy et al. 2007].

Given the prevailing influence of the East Australian Current along the east coast out to 150 m

depth, a protracted pelagic larval phase and a northerly migration of older stages, true Balmain Bugs, Smooth Bugs and Honey Bugs are thought to each constitute single biological stocks across Queensland and New South Wales [Haddy et al. 2007]. Stock status of the Balmain Bugs species group in these jurisdictions is therefore presented at the biological stock level—East Coast biological stock.

Landings in Victoria, South Australia and Western Australia are thought to be predominantly true Balmain Bugs (*I. peronii*). However, the stock relationship between Balmain Bugs caught in these jurisdictions and those caught off New South Wales and Queensland is unknown. Stock status in these jurisdictions is therefore presented at the jurisdictional level.

STOCK STATUS

East Coast

In Queensland, Balmain Bugs form a very minor by-product harvest in the trawl fishery for Eastern King Prawn. Balmain Bugs fishing mortality is managed by a prohibition on landing of egg-bearing females; a conservative minimum legal size (MLS), which was updated in 2009; and mandatory use of turtle excluder devices since the early 2000s, which also lower the incidental catch rates of scyllarid lobsters, including Balmain Bugs [Courtney et al. 2007, Courtney et al. 2008]. In addition, the spawning stock is partly protected from fishing during an annual seasonal closure. Landings in 2019 were 37 per cent below the 2000–18 average of 75 tonnes (t) per year. Nominal catch rates declined from 2011 to 2016 however they have been relatively steady since [QFISH 2020]. The 2019 catch at 47 t was slightly greater than the previous two years but still low compared to the long-term average harvest. The lower harvest from 2017 to 2019 is considered to be a result of increased MLS for *I. chacei* and changed fishing practices rather than declining abundance.

An ecological risk assessment of the Queensland East Coast Otter Trawl Fishery found a low risk of recruitment overfishing the Queensland part of the East Coast Balmain Bug stock south of the Great Barrier Reef Marine Park (GBRMP) at the 2009 fishing effort level [Jacobsen et al. 2018], where about 83 per cent of the catch is taken. The average annual number of days post 2009 for the Eastern King Prawn fishery is similar to 2009, indicating that the risk of overfishing the main part of the Queensland Balmain Bug stock is unchanged. The risk of recruitment overfishing within the GBRMP has also been assessed and found to be intermediate to high [Pears et al. 2012]. However, annual fishing effort in the GBRMP has declined by an average of 17 per cent since 2009, substantially reducing risk of overfishing for this part of the stock.

In New South Wales, Balmain Bugs (primarily *I. peronii* and *I. chacei*) are trawl target species and have been assessed in terms of their commercial nominal catch rates and length compositions in landings. Median catch rates (kg per day in the ocean prawn trawl fishery) have fluctuated throughout the past 25 years and show an overall slight increase, especially during 2018-19 when the catch rate was approximately double the average catch rate during the previous five years [Stewart 2020]. 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. Landings fluctuate annually but show an overall decline during the past 15 years, from an average of approximately 63 t per year during 2002–03 to 2006–07 to 36 t per year during 2014–15 to 2018–19. Landings in recent years have been increasing with approximately 58 t being reported during 2018-19 which is the highest catch since 2004-05. Nevertheless, effort in the ocean prawn fishery has declined substantially since the early 2000s, from approximately 16,000 days to an average of 4,660 days during the previous 5 years [Stewart 2020]. This reduction in fishing effort in combination with stable size compositions in landings [Stewart 2020] indicates that fishing mortality is constrained in New South Wales waters to sustainable levels. 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 entire East Coast biological stock is classified as a **sustainable stock**.

South Australia

Stock status for Balmain Bugs in South Australia is reported as **Negligible** due to historically low catches in this jurisdiction and the stock has generally not been subject to targeted fishing. South Australia's commercial catch between 2001–02 and 2018–19 averaged less than 5 t per annum, and Balmain Bugs is not a major component of recreational fishery landings. Fishing is unlikely to be having a negative impact on the stock.

Victoria

In Victoria Balmain Bugs are caught as a small part of the commercial inshore trawl fishery, mainly off Gippsland in eastern Victoria. This fishery has produced > 99 per cent of the catch of Balmain Bugs since 2000. The Victorian jurisdictional Balmain Bug fishery is data limited and annual catches have been consistently low (< 20 t per annum), averaging 13.6 t per annum (over the period from 2000–01 to 2018–19). Recreational catch is unknown.

On the basis of the evidence provided above, Balmain Bugs in the Victorian jurisdiction is classified as a **sustainable stock**.

Western Australia

Stock status for the Western Australian jurisdictional stock is reported as **Negligible** due to historically low catches in this jurisdiction and because the stock has generally not been subject to targeted fishing. Western Australian commercial catch in 2010–19 averaged less than 200 kg per annum and Balmain Bug is not a major component of recreational landings. Fishing is unlikely to be having a negative impact on the stock.

BIOLOGY

Balmain Bugs biology [Haddy et al. 2005, Haddy et al. 2007, Stewart 1999, Stewart et al. 1997, Stewart and Kennelly 2000]

Species	Longevity / Maximum Size	Maturity (50 per cent)
BALMAIN BUGS	Balmain Bug: 15 years, 86 mm CL Smooth Bug: 5–7 years, 80 mm CL Honey Bug: longevity largely unknown, maximum CL in Queensland samples is 72 mm for females and 66 mm for males. Deepwater Bug: longevity largely unknown, maximum CL in Queensland samples is 55 mm for both females and males. Balmain Bug: 2 years, 50 mm CL Smooth Bug: 2 years, 55 mm CL Honey Bug: 47 mm CL Deepwater Bug: 45 mm CL	Balmain Bug: 2 years, 50 mm CL Smooth Bug: 2 years, 55 mm CL Honey Bug: 47 mm CL Deepwater Bug: 45 mm CL

DISTRIBUTION

Distribution of reported commercial catch of BALMAIN BUGS

TABLES

Fishing methods				
	New South Wales	Queensland	South Australia	Victoria
Commercial				
Net				✓
Otter Trawl	✓		✓	
Trawl		✓		
Various	✓			
Recreational				
Diving	✓	✓		

Management Methods				
	New South Wales	Queensland	South Australia	Victoria
Commercial				
Bag limits				✓
Effort limits		✓		
Gear restrictions				✓
Limited entry	✓	✓		✓
Retention of females with eggs prohibited		✓	✓	
Size limit	✓	✓	✓	✓

Spatial closures	✓			✓
Spatial zoning		✓		
Vessel restrictions	✓	✓		
Recreational				
Bag limits	✓			✓
Gear restrictions				✓
Licence	✓			✓
Marine park closures	✓			
Possession limit	✓			
Size limit	✓			
Spatial closures	✓			✓

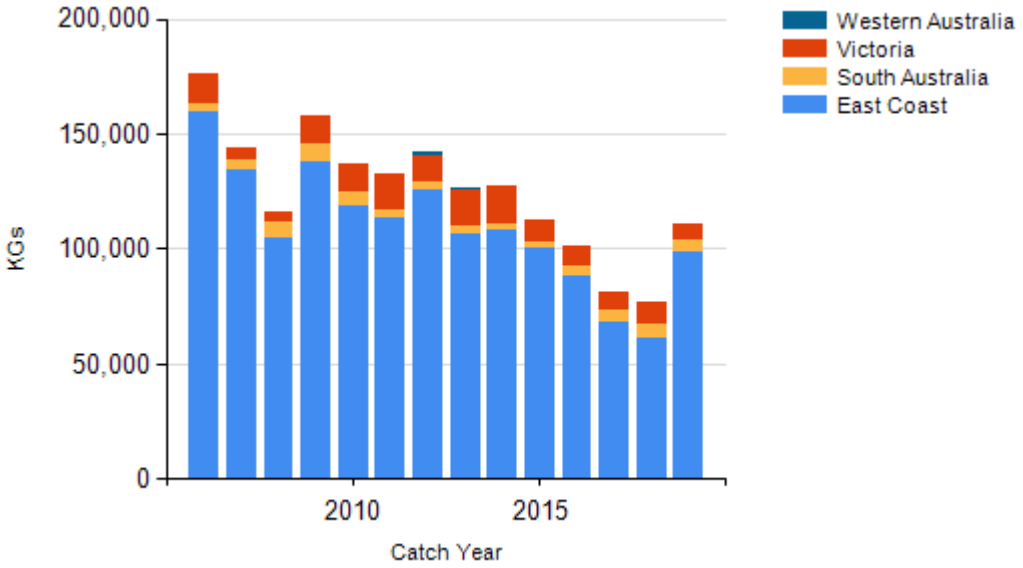
Catch					
	New South Wales	Queensland	South Australia	Victoria	Western Australia
Commercial	51.9053 t	46.9284 t	5.5025 t	6.373 t	0 t
Indigenous	Unknown	Unknown		Unknown	
Recreational	Unknown	Unknown		Unknown	

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

New South Wales – Indigenous (management methods)
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*.

CATCH CHART



Commercial catch of BALMAIN BUGS

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