



# North Coast Bioregion

Area 1	1 April – 15 November	Class A	Areas 1, 2 and 3 (4 boats)
Area 2	1 March – 15 November	Class B	Areas 2 and 3 (3 boats)
Area 3	1 March – 15 November	Class C	Area 2 (12 Exmouth Gulf boats)
Fortescue Nursery	1 May – 15 November	Class D	Area 3 (12 Nickol Bay boats)
Ashburton and Coolgra Point Nurseries	1 June – 31 July		

An area inside the boundary of the Coolgra Point Nursery was closed in 2003 for the whole year. This closure is to be in place until 2005, when its effectiveness will be reviewed.

The management system involves a total allowable effort arrangement where all vessels have an equal allocation of headrope length. The fleet is composed of trawlers up to 23 m operating twin-rigged otter trawls to a maximum headrope length of 16 fathoms (29.27 m).

Bycatch reduction devices (grids) were fully implemented in the fishery in the 2003 season, with vessels required to have grids fitted to both nets. In addition, the vessel monitoring system has been in operation in the fishery since 2002.

## Research summary

Research needed to manage this small fishery involves stock monitoring and assessment utilising the CAES monthly return data provided by industry, along with information from voluntary log books and some interviews with boat skippers. Annual meetings are held with boat operators to consider the status of the stocks and recommend changes to fishing operations.

A current FRDC project to examine the biodiversity of trawled and untrawled areas in Exmouth Gulf is also gathering data from Onslow Area 1.

## RETAINED SPECIES

Commercial production (season 2003): 193 tonnes

### Landings

The total landings of major penaeids for the 2003 season were 193 t, including 12 t of king prawns, 172 t of tiger prawns, 9 t of endeavour prawns and 1 t of banana prawns (Onslow Prawn Figure 2). The Onslow fishery is a small fishery in which tiger and king prawns have been the dominant species caught over the long term, with the acceptable catch range based on total landings ranging from approximately 60 t to 130 t. This season's catch of 193 t is the highest catch recorded and is above the acceptable catch range for this fishery. The high catch was dominated by tiger prawns, mirroring the relatively high catch of tiger prawns observed in the adjacent Exmouth Gulf fishery. The high tiger prawn abundance may reflect very favourable environmental conditions. Recorded landings of by-product species included 4 t of bugs (*Themus orientalis*), 2 t of squid, 2 t of blue swimmer crabs (*Portunus pelagicus*), 1 t of coral prawns and less than 1 t each of black tiger prawns (*Penaeus monodon*), cuttlefish and mixed finfish species.

### Fishing effort/access level

Different licence classes apply to this fishery allowing boats to trawl in specific zones. These classes are listed below, with figures in brackets indicating 2003 endorsements:

During 2003, 785 fishing days were recorded by boats licensed to fish in the Onslow prawn fishery. This was approximately 20% less than the number of fishing days recorded in 2002.

### Catch rate

Not assessed.

Recreational component:

Nil

## STOCK ASSESSMENT

Assessment complete:

Yes

The catches during 2003 were well above average for tiger prawns, and slightly below average for king and endeavour prawns but within their individual acceptable ranges. Tiger prawn landings were well above the acceptable catch range and may reflect highly favourable environmental conditions for this species (i.e. an absence of destructive cyclonic activity). Banana prawn catches were low, again reflecting the low summer rainfall (13 mm) in the area. The rainfall during summer 2003/04 was a total of 241 mm and therefore it is expected that banana prawn catches in 2004 should be up on the very low catches seen in 2003. Work continues on assessing the relationship between summer rainfall and banana prawn catches from Area 1, which includes the Ashburton River estuary, a nursery area for this species.

Exploitation status:

Fully exploited

Breeding stock levels:

Adequate

## NON-RETAINED SPECIES

Bycatch species impact:

Low

Bycatch from the fishery is typical of tropical trawl fisheries (i.e. up to about 6:1 relative to the target species), but the effort levels and spatial coverage are too low to impact bycatch species populations. Information gathered during a current research project on biodiversity of trawled and untrawled areas within Onslow Area 1 will provide additional information on bycatch composition and abundance. The introduction of fish escapement devices within the nets by 2004/05 should reduce this risk even further.

Protected species interaction:

Low

The Onslow prawn fishery has on rare occasions previously caught turtles and sea snakes, but the overall low effort level and targeted coverage of the fishery suggest that such interactions would not have been significant. Bycatch reduction devices (grids) are now fully implemented in the fishery, minimising the capture of large animals including turtles.

## ECOSYSTEM EFFECTS

### Food chain effects:

Because of the limited spatial coverage of this fishery and its low levels of catch, it is unlikely to have any significant ecological consequences.

Low

### Habitat effects:

This fishery targets primarily king and tiger prawns in most years and, occasionally, schooling banana prawns in the infrequent high rainfall periods, as in 2000. Within the extensive licensed fishing zone, relatively few discrete areas offshore from nursery areas are fished (less than 5% of the overall fishery). The fishery is restricted to clean sand and mud bottoms, where trawling has minimal long-term physical impact.

Low

## SOCIAL EFFECTS

Estimated employment for the year 2003 was 12–15 skippers and crew, with up to 10 people involved in local processing.

## ECONOMIC EFFECTS

Estimated annual value (to fishers) for year 2003:  
**\$2.4 million**

Ex-vessel prices for prawns vary depending on the type of product and the market forces operating at any one time. Generally, average prices received by vessels fishing along the Pilbara coast in 2003 were as follows:

King prawns	\$13.20/kg
Tiger prawns	\$12.70/kg
Endeavour prawns	\$7.00/kg
Banana prawns	\$11.00/kg
Coral prawns	\$2.50/kg

## FISHERY GOVERNANCE

Acceptable catch range for next season:  
**60–130 tonnes**

Under current effort levels and previous environmental conditions, the acceptable ranges of prawn catches, based on the catches of the 1990s, are as follows:

King prawns	10–55 t
Tiger prawns	5–40 t
Endeavour prawns	5–20 t
Banana prawns	2–90 t

Note the overall acceptable range for all species combined is different from the aggregate of the individual species ranges shown, as the environmental circumstances that benefit banana prawns generally result in decreased catches of the other species, as occurred in 1997 and 2000.

## New management initiatives (2003/04)

The Australian Government Department of Environment and Heritage is currently considering an application to certify the Onslow Prawn Managed Fishery as environmentally sustainable under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999*.

Amendments to the Onslow Prawn Management Plan 1991 have recently been approved by the Minister and should be implemented later in 2004. These changes will help to modernise the plan and bring it into line with the management controls used in the state's other prawn trawl fisheries. Some of these amendments include the removal of the hull size control and the re-description of port areas and the Onslow townsite closure that will simplify the nominations process. Similarly, existing nursery areas have been redrawn and further inshore areas have been nominated for temporal and permanent closures. These temporal closure areas will be known as size management areas and permanently closed areas as nursery areas.

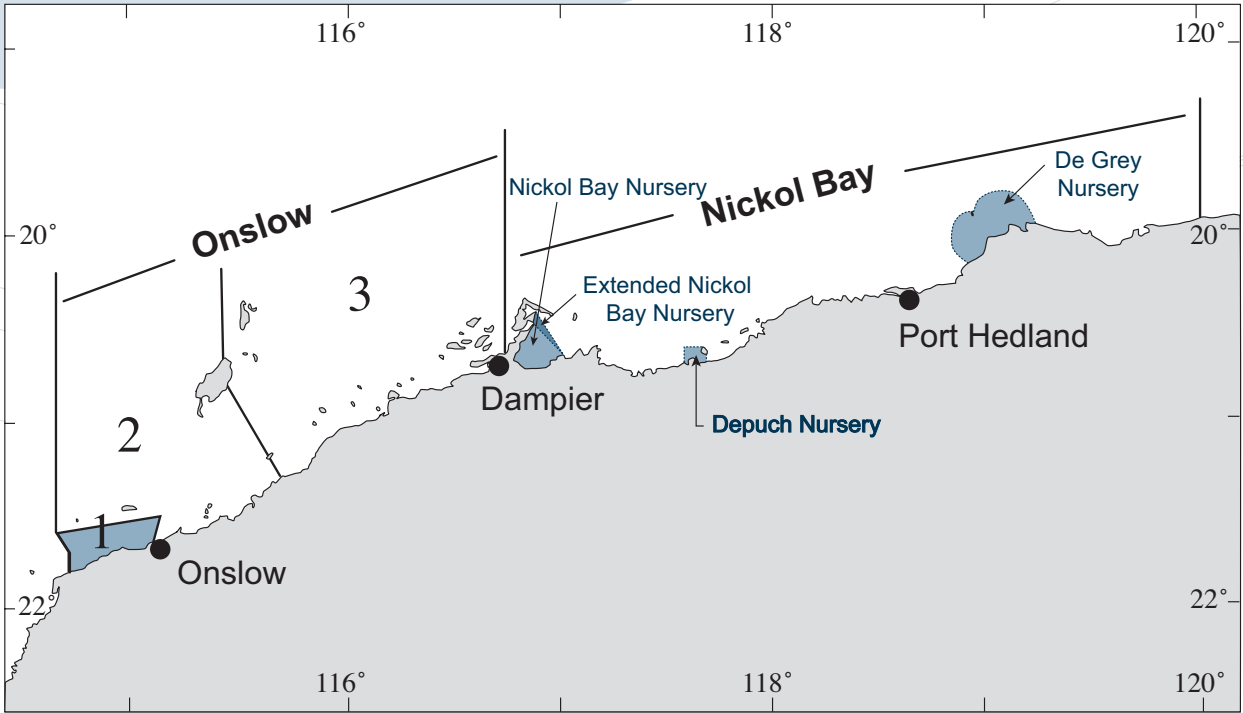
## EXTERNAL FACTORS

The catches taken are from a number of separate nursery areas and are highly variable from year to year. This is particularly the case for the rainfall-dependent banana prawn.

Catches of tiger prawns from this fishery are also quite variable, with very high catches seen in 2003. It is likely that severe cyclonic activity impacts negatively on tiger prawns in some years, and moreover, the effect varies depending on whether juvenile prawns are still in vulnerable, shallow nursery areas at the time. Severe cyclones can also impact directly on endeavour prawns. The king prawn catch has remained stable, indicating that environmental effects such as cyclonic activity (producing heavy rainfall) have little effect on the abundance of the king prawn stock. However, fishers report that there can be an indirect, short-term impact on the distribution of king prawns when heavy rainfall inland and subsequent river flooding appear to disperse the stock, affecting overall catches. At times, debris from flooding is reported to restrict fishing activities and hence landings for the year.

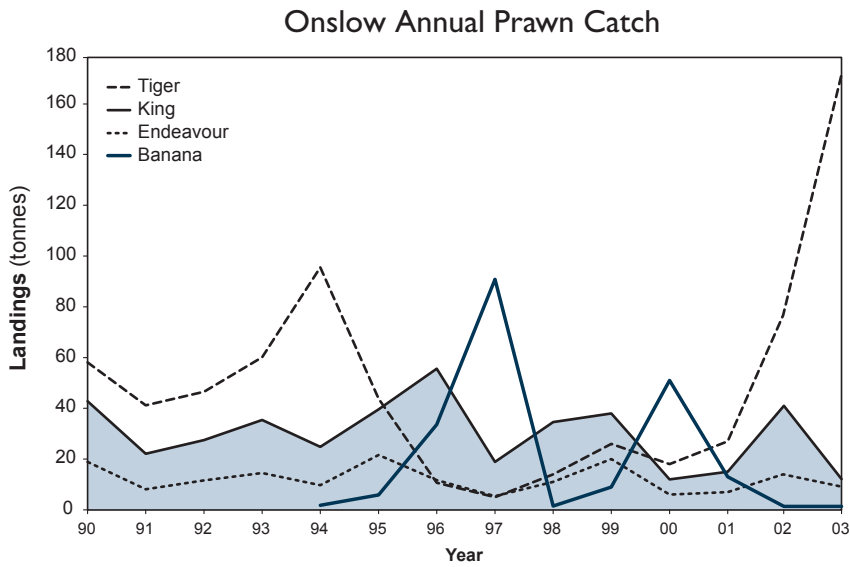


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**ONSLow/NICKOL BAY PRAWN FIGURE 1**

Boundaries of the Onslow and Nickol Bay Prawn Managed Fisheries.



**ONSLow PRAWN FIGURE 2**

Annual landings for the Onslow Prawn Managed Fishery, 1990–2003.