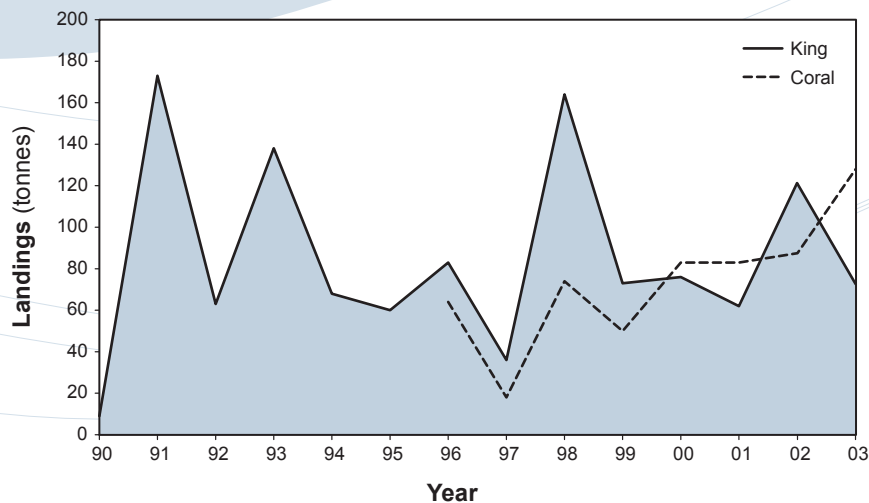


Broome Annual Prawn Catch



BROOME PRAWN FIGURE 1

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

Kimberley Prawn Managed Fishery Status Report

Prepared by M. Kangas, E. Sporer and G. Parry, with management input by G. Baudains

FISHERY DESCRIPTION

The Kimberley Prawn Managed Fishery (KPF) operates off the north of the state between Koolan Island and Cape Londonderry. It predominantly targets banana prawns (*Penaeus merguianus*) but also catches tiger prawns (*Penaeus esculentus*), endeavour prawns (*Metapenaeus endeavouri*) and western king prawns (*Penaeus latisulcatus*). Fishing is undertaken using otter trawl.

Governing legislation/fishing authority

Kimberley Prawn Fishery Management Plan 1993
Kimberley Prawn Fishery Managed Fishery Licence

Consultation process

Department–industry meetings

Boundaries

The boundaries of this fishery are ‘all Western Australian waters of the Indian Ocean lying east of 123°45’ east longitude and west of 126°58’ east longitude’. It abuts the western boundary of the Australian Government’s Northern Prawn Fishery (NPF).

Management arrangements

The management controls for the Kimberley Prawn Managed Fishery are based on limited entry, seasonal closures, gear controls and restrictions on boat replacements.

Seasonal dates for the Kimberley Prawn Managed Fishery are aligned with those of the adjacent Northern Prawn Fishery. A significant number of vessels hold authorisations to operate

in both the KPF and the NPF, and opening and closing dates are aligned to prevent large shifts of fishing effort into the Kimberley fishery. Consequently, the 2003 Kimberley season opened on 1 April and closed for the mid-season closure on 27 May. The fishery re-opened on 1 September with a promulgated final season closure on 9 November.

In 2003 a total effort cap system was introduced that restricts the number of fishing days available within the fishing season, based on historical effort levels in the fishery. This was split as 600 days for the first half of the season and 900 days for the second half.

The vessel monitoring system has been in operation in the fishery since 2001. From the second half of the 2003 season, bycatch reduction devices (specifically grids) were also required in all gear (except try nets).

Research summary

Research data for monitoring this fishery are provided by Western Australian fishers’ monthly returns, and by research log books collected by the Australian Fisheries Management Authority for NPF boats licensed to operate in the Kimberley fishery. Research assessments are provided to annual meetings of boat operators and provide the basis for recommending changes to management arrangements each year.

RETAINED SPECIES

Commercial production (season 2003): 390 tonnes

Landings

The total landings for the 2003 season were 390 t, comprising 309 t of banana prawns, 47 t of tiger prawns, 26 t of endeavour prawns and 7 t of king prawns (Kimberley Prawn Figure 1).

The banana prawn catch was within the projected catch range (240–370 t) calculated using the relationship between

summer rainfall and catches. Banana, tiger and endeavour prawn catches were all within their acceptable catch ranges. Recorded by-products were 75 t of squid, 5 t of bugs and 1 t of coral prawns.

Fishing effort/access level

Although a total of 135 boats had access to the Kimberley Prawn Managed Fishery under various licensing arrangements, 32 boats operated in the fishery during some period of the year. Nineteen boats fished in the first half of the season and 25 boats operated in the fishery during the second half of the 2003 season.

During the 2003 season, the 32 vessels operated in the fishery for a total of 1,478 fishing days, compared to 30 vessels fishing 1,135 days in 2002. The effort cap in the first half of the season was 600 days and 468 days were fished during this period. The effort cap in the second half of the season was set at 900 days, and as it appeared likely that this total would be exceeded the fishery was closed on 27 October, two weeks before the promulgated closure date. A total of 1,010 days of fishing took place in the second half of the season.

Catch rate

Not assessed.

Recreational component: Nil

STOCK ASSESSMENT

Assessment complete: Yes

While no formal stock assessment based on catches and fishing effort has been completed for the Kimberley prawn stocks, the relationships identified between rainfall and catches of banana prawns (the dominant species taken in this area) may provide a degree of forecasting.

Investigations have shown a promising relationship between early season rainfall (January and February) and the subsequent catch of banana prawns.

Exploitation status: Fully exploited

Breeding stock levels: Adequate

Projected catch next season (2004):
Banana prawns 230–350 tonnes

Rainfall during the period January–February 2004 was 511 mm at Derby and 615 mm at Kalumburu so the rainfall–catch relationship indicates that banana prawn catches for 2004 should be in the range of 230–350 t, which is a similar range to 2003.

NON-RETAINED SPECIES

Bycatch species impact: Low

The majority of the catch in this fishery comprises banana prawns, which usually form schools that are specifically targeted, meaning that bycatch is minimal. However, banana prawns may occasionally be dispersed due to the local tidal conditions in the Kimberley, with the result some untargeted trawling may also occur. Overall, the fishery is likely to have a low impact on bycatch species. The introduction of fish

escapement devices within the nets by 2004/05 should reduce this risk even further.

Protected species interaction: Negligible

Grids were fully implemented in the fishery during 2003. These measures should minimise the catch of large animals including turtles.

ECOSYSTEM EFFECTS

Food chain effects: Low

As the fishery targets banana prawns, which are highly variable in recruitment due to cyclonic rainfall, any food chain impacts from fishing are likely to be negligible.

Habitat effects: Low

The Kimberley prawn trawl fishery operates over a very limited sector, estimated to be 7% of the licensed area during 2003. Owing to the unusual nature of the environment, characterised by extreme (10 m) tidal ranges, heavy mud substrates and high turbidity, the fishing is judged to have minimal impact on the habitat.

SOCIAL EFFECTS

Estimated employment for the year 2003 was 120 skippers and crew.

ECONOMIC EFFECTS

Estimated annual value (to fishers) for year 2003:
\$4.3 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 boats fishing along the Kimberley coast in 2003 were as follows:

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

FISHERY GOVERNANCE

Acceptable catch range for next season: 240–500 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:

Banana prawns	200–450 t
Tiger prawns	15–60 t
Endeavour prawns	7–80 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 in the same year.

New management initiatives (2003/04)

The Australian Government Department of Environment and Heritage is currently considering an application to certify

North Coast Bioregion

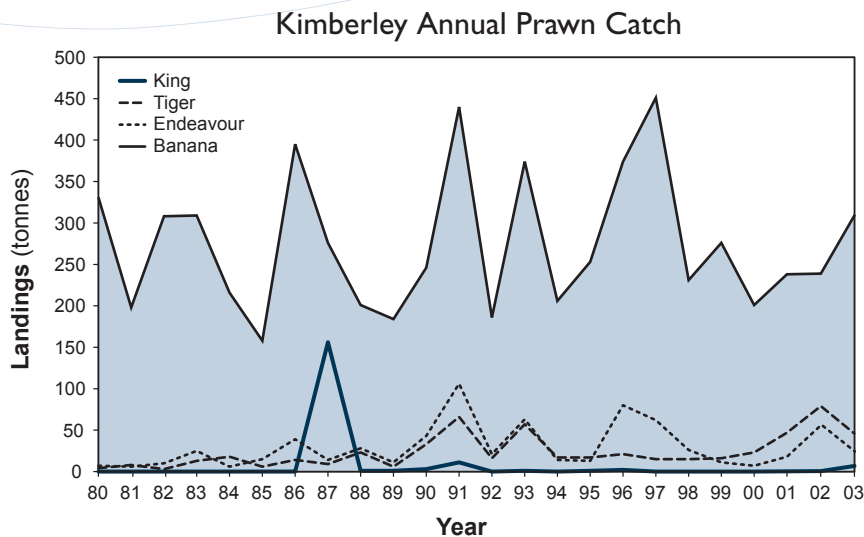
the Kimberley Prawn Managed Fishery as environmentally sustainable under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999*.

The effort cap instigated in 2003 will be continued at the same level in 2004 and then reviewed.

EXTERNAL FACTORS

The relationship between summer rainfall and the catch of banana prawns is being investigated further. As banana prawns usually comprise the majority of the prawn catch from this fishery, this correlation will assist fishers and managers to make the best use of the fishery.

Few Kimberley-only boats operate for the complete fishing season. In general, boats from Nickol Bay and elsewhere in Western Australia operate within this fishery at certain times of the year to complement catches in their 'local' fisheries. Boats fishing in the Northern Prawn Fishery in the Gulf of Carpentaria also operate in this fishery for periods each year, with the Kimberley fishing season set to mirror dates used in the NPF. This was done to prevent the small Kimberley fishery from attracting too much fishing effort from its much larger neighbour. However, the effort cap that was introduced in 2003 addresses the issue of latent effort in this fishery.



KIMBERLEY PRAWN FIGURE 1

Annual landings for the Kimberley Prawn Managed Fishery, 1980–2003.

Kimberley Gillnet and Barramundi Managed Fishery Status Report

Prepared by S. Newman, with management input by D. Harvey

FISHERY DESCRIPTION

The Kimberley Gillnet and Barramundi Managed Fishery (KGBF) extends from the WA/NT border to the top of Eighty Mile Beach, south of Broome. It encompasses the taking of any fish by means of gillnet in inshore waters and the taking of barramundi by any means.

The species taken are predominantly barramundi (*Lates calcarifer*), giant threadfin salmon (*Polydactylus macrochir*) and blue threadfin salmon (*Eleutheronema tetradactylum*). The main areas of the fishery are the river systems and tidal creek systems of the northern Kimberley, King Sound, Roebuck Bay and the top end of Eighty Mile Beach.

Governing legislation/fishing authority

Kimberley Gillnet and Barramundi Managed Fishery Management Plan 1989
Kimberley Gillnet and Barramundi Managed Fishery Licence

Consultation process

Department–industry meetings

Boundaries

The waters of the KGBF are defined as 'all Western Australian waters lying north of 19° south latitude and west of 129° east longitude and within three nautical miles seaward of the low water mark of the mainland of Western Australia and the waters of King Sound of 16°21.47' south latitude and Jacks Creek, Yardogarra Creek and in the Fitzroy River north of 17°27' south latitude'.

The distribution of barramundi and threadfin salmon catches in Western Australia extends south of the KGBF along the Pilbara coast. These latter catches are outside of the boundaries of the managed fishery, but have been shown in the summary table (Kimberley Gillnet Table 1) for completeness.

Management arrangements

The KGBF is managed primarily through input controls in the form of limited entry, seasonal and area closures and gear restrictions.