

Nickol Bay Prawn Managed Fishery

MANAGEMENT OVERVIEW

The Nickol Bay Prawn Managed Fishery targets western king prawns (*Penaeus latisulcatus*), brown tiger prawns (*Penaeus esculentus*), endeavour prawns (*Metapenaeus* spp.) and banana prawns (*Penaeus merguensis*), with most prawn fishing activity occurring in inshore areas. A number of the Nickol Bay prawn trawlers also operate in the Pilbara Fish Trawl Interim Managed Fishery.

Management controls for the Nickol Bay Prawn Managed Fishery are based on limited entry, seasonal and area closures, gear controls and restrictions on boat replacement.

COMPLIANCE AND COMMUNITY EDUCATION OVERVIEW

Karratha Fisheries Officers conducted frequent licence and gear inspections aboard vessels at Point Samson and Dampier.

Sea patrols were also conducted aboard agency patrol vessels by Fisheries Officers who carried out catch, gear and licence inspections.

A number of patrols, including those aboard agency patrol vessels, were carried out in the company of officers from the Department of Transport under the Joint Servicing Agreement.

No major offences were detected within the fishery.

RESEARCH OVERVIEW

Research for the management of this small fishery involves stock monitoring and assessment utilising data from CAESS provided by industry, information from vessel skippers, and rainfall records. Stock assessment of the banana prawn stock involves updating the catch-rainfall relationship.

Research outcomes are reviewed at annual industry meetings which consider the status of the stocks and recommend changes to fishing operations.

The following status report summarises the research findings for this fishery.

Fishery Status Report

Main Features

Stock assessment complete:

Not assessed

Exploitation status:

Not assessed

Breeding stock levels:

Not assessed

Previous catch projections for year 1998:

168-237 tonnes

Catch current season (1998):

Major penaeids 89 tonnes, comprising:

King prawns	50 tonnes
Tiger prawns	3 tonnes
Endeavour prawns	< 1 tonne
Banana prawns	36 tonnes

Estimated annual value (to fishers) for year 1998:

\$1.2 million

Catch projection next year (1999):

Major penaeids 89-222 tonnes, comprising:

King prawns	20-73 tonnes
Tiger prawns	3-37 tonnes
Endeavour prawns	0-5 tonnes
Banana prawns	150-250 tonnes*

(*using rainfall-catch relationship; others based on five-year range)

Recreational component (1998):

Nil

Boundaries and Access

The boundaries of this fishery are 'all the waters of the Indian Ocean and Nickol Bay between 116°45' east longitude and 120° east longitude on the landward side of the 200 m isobath' (Other Prawn Figure 1).

During the 1998 season the areas were open during the following periods:

Nickol Bay	1 May-15 November
Sloping Point to Dixon Island	1 May-31 August
Dixon Island to One Lung Point	1 May-15 November
Depuch Nursery Area	1 May-31 August
De Grey Nursery Area	1 May-15 November
Onslow III	1 March-15 November

There were 14 vessels licensed to trawl for prawns in Nickol Bay during 1998.

Annual Production

Main fishing method

Otter trawl.

Landings

The banana prawn landing of 36 tonnes for the 1998 season was low compared with the 212 tonnes caught in 1997, but fell within the range of 10-100 tonnes projected on the basis of the low rainfall in the 1997/98 summer period.

Other prawn landings for the 1998 season were 53 tonnes, comprising 50 tonnes of king prawns, 3 tonnes of tiger prawns and less than 1 tonne of endeavour prawns (Other Prawn Figure 3).

Fishing effort

Not assessed.

Catch rate

Not assessed.

Stock Assessment

The relationship between banana prawn catch and rainfall is assessed annually. Other prawn stocks are insufficient to carry out a formal stock assessment. A relationship exists between the summer period rainfall (December-March) and the catch of banana prawns in the same year (Other Prawn Figure 4). Adjusting the forecast of banana prawns for the 275 mm of rain during the 1998/99 summer period provides a catch projection of between 150 and 250 tonnes.

Breeding Stock Levels

Not assessed.

Catch Projection for Year 1999

With the current effort levels, the projections for the range of prawn catches for the 1999 season, based on the five-year range, are as follows:

King prawns	20-73 tonnes
Tiger prawns	3-37 tonnes
Endeavour prawns	0-5 tonnes
Banana prawns	150-250 tonnes

The total catch projection is between 150 and 250 tonnes.

Product Value for Year 1998

Wholesale prices for prawns vary depending on the grade and quality of the product and the market forces operating at any one time. Generally, average prices were as follows:

King prawns	\$14.50/kg
Tiger prawns	\$16.40/kg
Endeavour prawns	\$10.00/kg
Banana prawns	\$10.50/kg
Coral prawns	\$3.50/kg

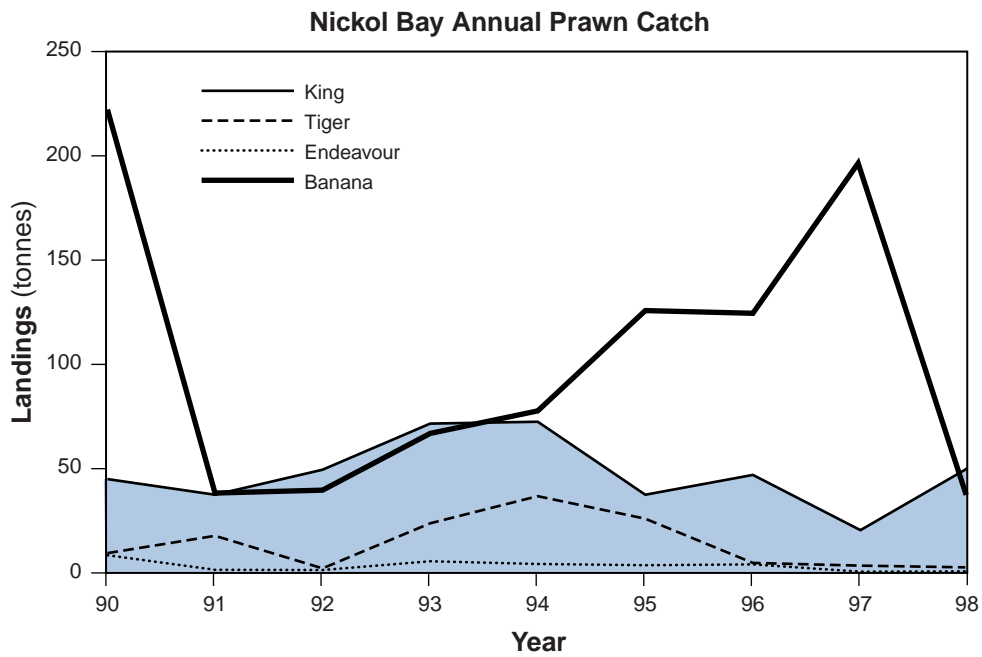
General Comments

Minimum catch monitoring is completed for minor fisheries such as the Nickol Bay Prawn Managed Fishery.

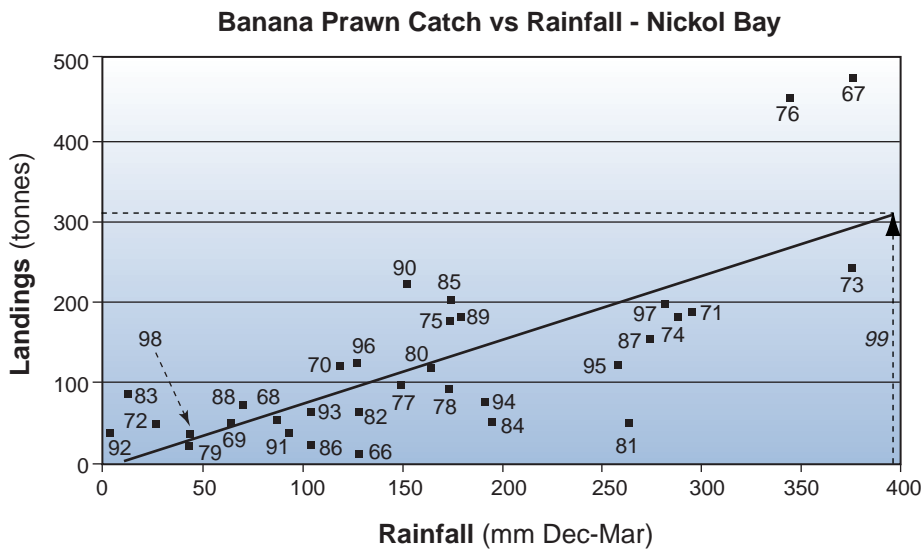
The majority of vessels in the prawn fleet of Nickol Bay are also licensed to fish finfish stocks offshore (the Pilbara Fish Trawl Fishery). Some also fish for prawns in the Kimberley Prawn Managed Fishery. As such, the fishing effort in the Nickol Bay Prawn Managed Fishery is dependent on management measures taken elsewhere, and on the catch rates available in these other fisheries. Fishing for finfish has encouraged the construction of larger vessels with greater fishing power than would otherwise have been supported by fishing prawns alone. In recent years, however, concern about over-exploitation in the Pilbara Fish Trawl Fishery has led to time quotas and other restrictions. The impact of these restrictions and of falling finfish catches has been to force some of the fishing effort back into the Nickol Bay Prawn Managed Fishery.

Banana prawns usually dominate the catch from Nickol Bay. The catch of this species is positively correlated with rainfall in the months December to March. The relatively poor catches of banana prawns in 1998 were anticipated because of the low rainfall (only 45 mm) during this critical period. With 275 mm of rainfall recorded for this same period during 1998/99, much improved landings of banana prawns are forecast.

There are designated nursery areas in Nickol Bay designed to protect the harvest of under-sized banana prawns. During 1998 these areas were opened for fishing on 15 March but immediately closed when fishing revealed that the prawns were still too small on average (large prawns are more valuable). The nursery areas were reopened on 1 May when the prawns had reached a larger, more valuable size.



Other Prawn Figure 3 Annual landings for the Nickol Bay Prawn Managed Fishery, 1990-1998.



Other Prawn Figure 4 Relationship between banana prawn landings and rainfall between December and March for years 1966-1998.