have declined. Discussions continue with the commercial sector to assist in developing more efficient and cost-effective management strategies that in turn will lead to more effective compliance outcomes. Outcomes to date include the substitution of the Northern Demersal Scalefish Fishery's Ministerial Advisory Committee with direct consultation with licensees and other stakeholders.

NORTH COAST COMMERCIAL COMPLIANCE TABLE 1

Summary of compliance and educative contacts and infringement types in commercial fisheries within the north coast bioregion during the 2001/02 financial year.

CONTACT WITH THE COMMERCIAL FISHING COMMUNITY	NUMBER
Hours delivered in bioregion	2,711
Fisher field contacts by Fisheries Officers *	54
District Office contacts by Fisheries Officers	946
Fishwatch reports **	44
OFFENCES DETECTED	
Infringement warnings	0
Infringement notices	1
Prosecutions	10

* Excludes compliance activities conducted in the Pearl Oyster Fishery.

** This represents the total number of Fishwatch reports, both commercial and recreational, since the service provider reporting mechanism cannot differentiate between sectors.

REGIONAL RESEARCH OVERVIEW OF WETLINE FISHING

This assessment, which utilised the CAES database, indicates that around a quarter (24%) of the State's wetline catch during 2001/02 was reported from this bioregion, which includes waters off both the Kimberley and Pilbara coasts. The top ten species comprised Spanish mackerel (*Scomberomorus commerson*) 330 t, giant threadfin (*Eleutheroyema tetradactylum*) 106 t, goldband snapper (*Pristipomoides multidens*) 24 t, unspecified shark 19 t, unspecified mackerel 17 t, grey mackerel (*Scomberomorus semifasciatus*) 9 t, trevally (Carangidae) 9 t, unspecified tuna (Scombridae) 8 t, unspecified threadfin (Polynemidae) 7 t. The next most numerous species group in the catch were the shovelnose/fiddler rays (Rhinobatidae/Rhinchobatidae, 6 t) that are being increasingly targeted for their fins.

An interim management plan for the troll fishery for mackerel, details of which are reported on pp. 97–102, will commence in 2004. The majority of threadfin were taken by net fishers south of the Kimberley Gillnet and Barramundi Managed Fishery. Most other species are taken by line fishing off the Pilbara coast.

Onslow Prawn Managed Fishery

Management Summary

The Onslow Prawn Managed Fishery targets western king prawns (*Penaeus latisulcatus*), brown tiger prawns (*Penaeus esculentus*), endeavour prawns (*Metapenaeus* spp.) and banana prawns (*Penaeus merguiensis*).

Management controls for the Onslow Prawn Managed Fishery are based on limited entry, seasonal and area closures, gear controls and restrictions on boat size. The opening and closing dates for the fishery vary from year to year and are based on advice from the Research Division. The 2003 fishing season commenced on 1 March and will end on 15 November, which generally aligns with season dates for the adjacent Exmouth Gulf Prawn Managed Fishery. However, different areas within the fishery have different season dates, which allows access to the various target species, primarily tiger and banana prawns, at appropriate times.

Bycatch reduction devices (grids) were fully implemented into the fishery in the 2003 season, with vessels required to have BRDs fitted to both nets. In addition, the Vessel Monitoring System has been implemented within the fishery since 2002.

A final application has been submitted to Environment Australia for the Onslow prawn fishery as part of EA's ecological sustainability reporting process under the *Environment Protection and Biodiversity Conservation Act 1999*. Following the public comment period, formal assessment by EA will be undertaken.

Governing Legislation/Fishing Authority
Onslow Prawn Fishery Management Plan 1991
Onslow Prawn Managed Fishery Licence

Consultation Process
Department–industry meetings

Research Summary

Research for managing this small fishery involves stock monitoring and assessment utilising the CAES monthly return data provided by industry, as well as information from voluntary logbooks 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 comprehensive ESD report was completed for this fishery as the basis of the application to meet the requirements of the Commonwealth's Environment Protection and Biodiversity Conservation (EPBC) legislation. This process determined performance indicators based on catch for each of the four main prawn species taken by the fishery.

The following status report summarises these research findings.

Onslow Prawn Managed Fishery Status Report

Prepared by M. Kangas and E. Sporer

FISHERY DESCRIPTION

Boundaries and access

The boundaries of this fishery are *'all Western Australian waters of the Indian Ocean below high water mark lying west of 116°45' east longitude and east of a line commencing at the high water mark on the mainland due south of the southernmost extremity of Locker Island drawn due north to the high water mark at that extremity; thence northwesterly to the high water mark at the southernmost extremity of Serrurier Island; thence northerly along the high water mark of that island on its western shore to its northernmost point; thence due north'* (Onslow/Nickol Bay Prawn Figure 1).

The fishery is then divided into three fishing zones with associated nursery areas as follows: Area 1, incorporating Ashburton Nursery; Area 2, incorporating Coolgra Point Nursery; and Area 3, incorporating Fortescue Nursery.

During the 2002 season the areas were open during the following periods:

Area 1	2 April–15 November
Area 2	1 March–15 November
Area 3	1 March–15 November
Fortescue Nursery	1 May–15 November
Ashburton and Coolgra Point Nurseries	1 May–30 September

Different licence classes apply to this fishery allowing boats to trawl in specific zones. These classes are listed below (figures in brackets indicate 2002 endorsements):

Class A	Areas 1, 2 and 3 (4 boats)
Class B	Areas 2 and 3 (3 boats)
Class C	Area 2 (12 Exmouth Gulf boats)
Class D	Area 3 (12 Nickol Bay boats)

Main fishing method

Otter trawl.

RETAINED SPECIES

Commercial production (season 2002): 135 tonnes

Landings

The total landings of major penaeids for the 2002 season were 135 t, including 42 t of king prawns, 77 t of tiger prawns, 14 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 total landings ranging from approximately 60 t to 130 t. The season catch of 135 t is the highest since 1988 and is slightly above the acceptable catch range for this fishery. Recorded landings of by-product species included 25 t of coral prawns, 9 t of bugs (*Thenus orientalis*), 3 t of squid, 2 t of blue swimmer crabs (*Portunus pelagicus*) and less than 1 t each of black tiger prawns (*Penaeus monodon*), cuttlefish and mixed finfish species.

Fishing effort

During 2002, 1,010 fishing days were recorded by boats licensed to fish in the Onslow prawn fishery. This was approximately 60% up on the average number of fishing days recorded in the previous two years.

Catch rate

Not assessed.

Recreational component: Nil

Stock assessment complete: Yes

The catches during 2002 were above average for king, tiger and endeavour prawns. Tiger prawn landings were above the acceptable catch range and may reflect favourable environmental conditions for this species (i.e. an absence of destructive cyclonic activity). As a result of improved stock abundance the overall fishing effort increased from 643 boat days in 2001 to 1,010 in 2002. Banana prawn catches were low, again reflecting the low summer rainfall (25 mm) in the area. The rainfall during summer 2002/03 was a total of 12.6 mm and therefore it is expected that banana prawn catches will remain low 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. 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. The introduction of bycatch reduction devices (grids) in the fishery during 2002 should eliminate the capture of large animals including turtles.

ECOSYSTEM EFFECTS

Food chain effects: Low

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

Habitat effects: Low

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.

SOCIAL EFFECTS

Estimated employment for the year 2002 was 12–15 skippers and crew, with up to 10 people involved in local processing.

ECONOMIC EFFECTS

Estimated annual value (to fishers) for year 2002: $1.7 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 2002 were as follows:

King prawns	$12.50/kg
Tiger prawns	$13.00/kg
Endeavour prawns	$7.50/kg
Banana prawns	$12.00/kg
Coral prawns	$3.00/kg

FISHERY GOVERNANCE

Acceptable catch range: 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:

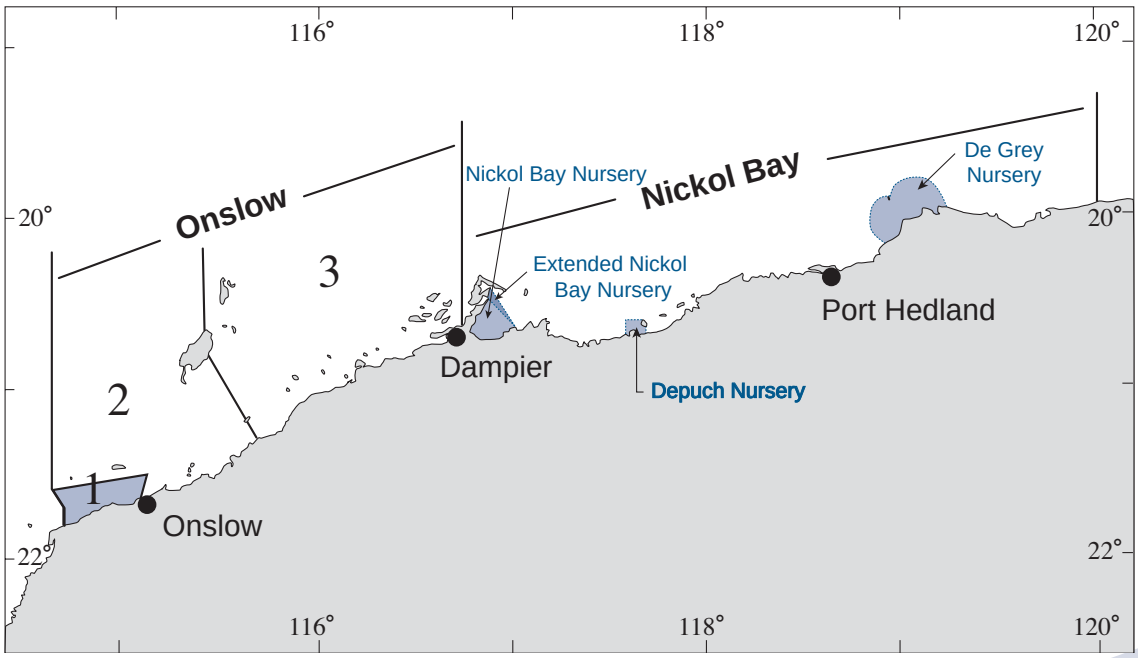
King prawns	10–55 t
Tiger prawns	5–40 t
Endeavour prawns	5–20 t
Banana prawns	2–90 t

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.

EXTERNAL FACTORS

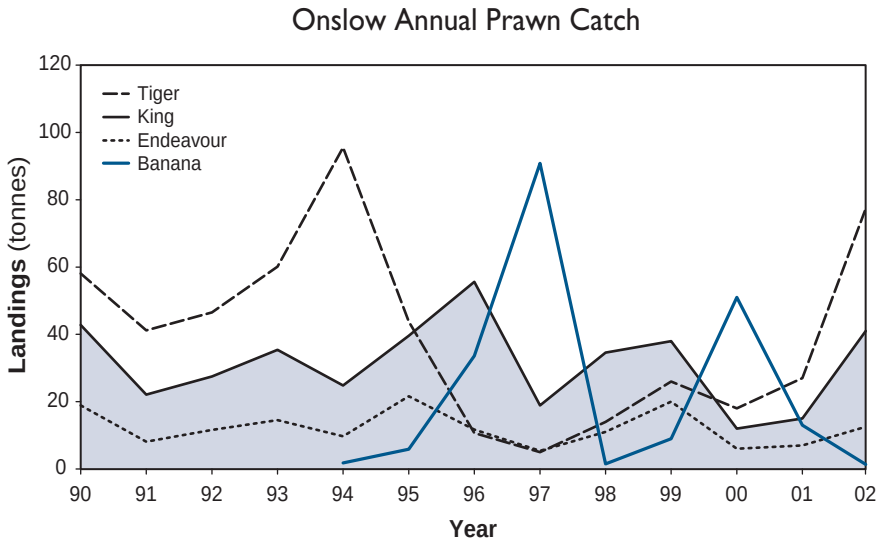
The catches taken are from a number of separate nursery areas and are highly variable from year to year. This is particularly the case for the rainfall-dependent banana prawn.

Catches of tiger prawns from this fishery are also quite variable. 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.



ONSLOW/NICKOL BAY PRAWN FIGURE 1

Boundaries of the of the Onslow and Nickol Bay Prawn Managed Fisheries.



ONSLOW PRAWN FIGURE 2

Annual landings for the Onslow Prawn Managed Fishery, 1990–2002.

Nickol Bay Prawn Managed Fishery

Management Summary

The Nickol Bay Prawn Managed Fishery (NBPF) targets banana prawns (*Penaeus merguiensis*), western king prawns (*Penaeus latisulcatus*), brown tiger prawns (*Penaeus esculentus*) and endeavour prawns (*Metapenaeus* spp.).

Management controls for the Nickol Bay Prawn Managed Fishery are based on limited entry, seasonal and area closures, gear controls and restrictions on boat size. Different areas within the fishery have different season dates. The main fishing ground for the 2003 fishing season opened on 1 May and will close on 15 November. Having a number of fishing areas with varying season dates allows access to target species, usually tiger and banana prawns, at appropriate times.

Bycatch reduction devices (grids) were fully implemented into the fishery in the 2003 season, with vessels required to have BRDs fitted to both nets. In addition, the Vessel Monitoring System has been implemented within the fishery since 2002.

A final application has been submitted to Environment Australia for the Onslow prawn fishery as part of EA's ecological sustainability reporting process under the *Environment Protection and Biodiversity Conservation Act 1999*. Following the public comment period, formal assessment by EA will be undertaken.

Governing Legislation/Fishing Authority
Nickol Bay Prawn Fishery Management Plan 1991
Nickol Bay Prawn Managed Fishery Licence

Consultation Process
Department–industry meetings

Research Summary

Research for the management of this small fishery involves stock monitoring and assessment utilising monthly return data provided by industry, information from boat skippers, and rainfall records. Stock assessment of the banana prawn stocks 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.

A comprehensive ESD report has recently been completed for this fishery which was used as the basis of an application to meet the requirements of the Commonwealth's EPBC legislation. This process determined performance indicators based on catch for each of four main types of prawns taken by this fishery.

The following status report summarises these research findings.

Nickol Bay Prawn Managed Fishery Status Report

Prepared by M. Kangas and E. Sporer

FISHERY DESCRIPTION

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'* (Onslow/Nickol Bay Prawn Figure 1).

During the 2002 season the major fishing areas were open during the following periods: