



NORTHERN PRAWN FISHERY DATA SUMMARY 2010



Matt Barwick
NPF Industry Pty Ltd
2010

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NPF INDUSTRY PTY LTD on behalf of Australian Fisheries Management Authority
Matt Barwick
Northern Prawn Fishery Data Summary 2010
March 2011

AFMA
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STREET ADDRESS

Level 6
73 Northbourne Ave
Civic ACT 2600
Telephone: (02) 6225 5555
Facsimile: (02) 6225 5439

POSTAL ADDRESS ENQUIRIES

Box 7051
Canberra BC
ACT 2610



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Preface

Scope of the Report

This document summarises catch and effort information for the Northern Prawn Fishery (NPF) in 2010, including data relating to interactions with Threatened, Endangered and Protected (TEP) species. The data summary provides an important mechanism for providing feedback to stakeholders on the logbook data received by AFMA. In addition, the process of data extraction and analysis assists in identifying data quality issues where they exist and also assists in ensuring that data needs for fisheries management continue to be met.

AFMA has produced data summary reports for the NPF on an annual basis since 1999. As part of the AFMA/NPF Co-Management trial being undertaken in the NPF, this is the third year NPF Industry Pty Ltd has been responsible for development of the data summary.

Acknowledgements

Production of this report was made possible through the efforts of the skippers, vessel owners and Crew Member Observers of the NPF. Skippers supplied daily logbook information and vessel owners completed Season Landing Returns. Crew Member Observers supplied information on a voluntary basis whilst undertaking their daily duties, on interactions with TEP species and species identified as 'At-Risk' through the Ecological Risk Assessment process. Thanks to staff from D&S Datafix for processing of Log sheets and Season Landing Returns. Thanks also to staff from AFMA's Fisheries Information Management Branch for their assistance with data management activities.

If you have any comments or queries on this, or any other data summaries, please do not hesitate to call:

Matt Barwick, NPF Industry Pty Ltd
Phone: 0422 752 789
Email: m.barwick@npfindustry.com.au

Or

Fiona Hill, Manager Northern Prawn, Torres Strait Prawn, Western Trawl Fisheries, AFMA
Phone: (02) 6225 5371
Email: Fiona.Hill@afma.gov.au

Also note that this Data Summary is available on AFMA's website: www.afma.gov.au



Table of Contents

PREFACE	3
Scope of the Report.....	3
Acknowledgements	3
TABLE OF CONTENTS.....	4
INTRODUCTION.....	7
DESCRIPTION OF THE NORTHERN PRAWN FISHERY.....	7
Area of Fishery	7
Fishing Methods	8
Management Information	8
Species.....	9
Data Collection Program	9
METHODS USED FOR PREPARING DATA SUMMARY	9
Banana and Tiger Prawn Fishery Components.....	10
CATCH AND EFFORT DATA FOR THE NORTHERN PRAWN FISHERY.....	10
Coverage	10
Catch	10
Catch by week.....	12
EFFORT.....	13
Nominal and effective effort.....	13
Catch, effort and catch rate by month.....	15



VESSEL AND GEAR INFORMATION.....	16
Vessel length.....	16
Distribution of catch by vessel.....	16
Average catch per vessel.....	17
Fishing Gear.....	19
CATCH AND EFFORT BY STATISTICAL AREA IN THE NPF.....	20
All areas.....	20
Weipa.....	21
Keerweer.....	23
Edward	26
Mitchell	28
Bold	30
Sweers.....	32
Mornington	34
Limmen Bight	36
Groote	38
Gove	40
Arnhem.....	42
Port Essington.....	44
Melville.....	46
Fog Bay	48
Bonaparte	50
BYCATCH IN THE NORTHERN PRAWN FISHERY.....	52
Turtle bycatch.....	52
Sea snake bycatch	55



Scampi Catch	55
SCIENTIFIC OBSERVER AND CREW MEMBER OBSERVER COVERAGE.....	55
STATE/TERRITORY SPECIFIC DATA	56
BYPRODUCT OF THE NPF BY STATE/TERRITORY	58



Introduction

The Northern Prawn Fishery Data Summary 2010 contains catch and effort statistics by prawn species, area, time and fishery. Comprehensive bycatch information is also included for the information of stakeholders and to meet AFMA's obligations under Offshore Constitutional Settlement agreements with Queensland, the Northern Territory and Western Australia. Interactions with threatened, endangered and protected (TEP) species, including turtles and sea snakes are also reported.

Description of the Northern Prawn Fishery

Area of Fishery

The Northern Prawn Fishery (NPF) is located off Australia's northern coast, and extends from the low water mark to the outer edge of the Australian fishing zone (AFZ) in the area between Cape York in Queensland and Cape Londonderry in Western Australia (Figure 1).

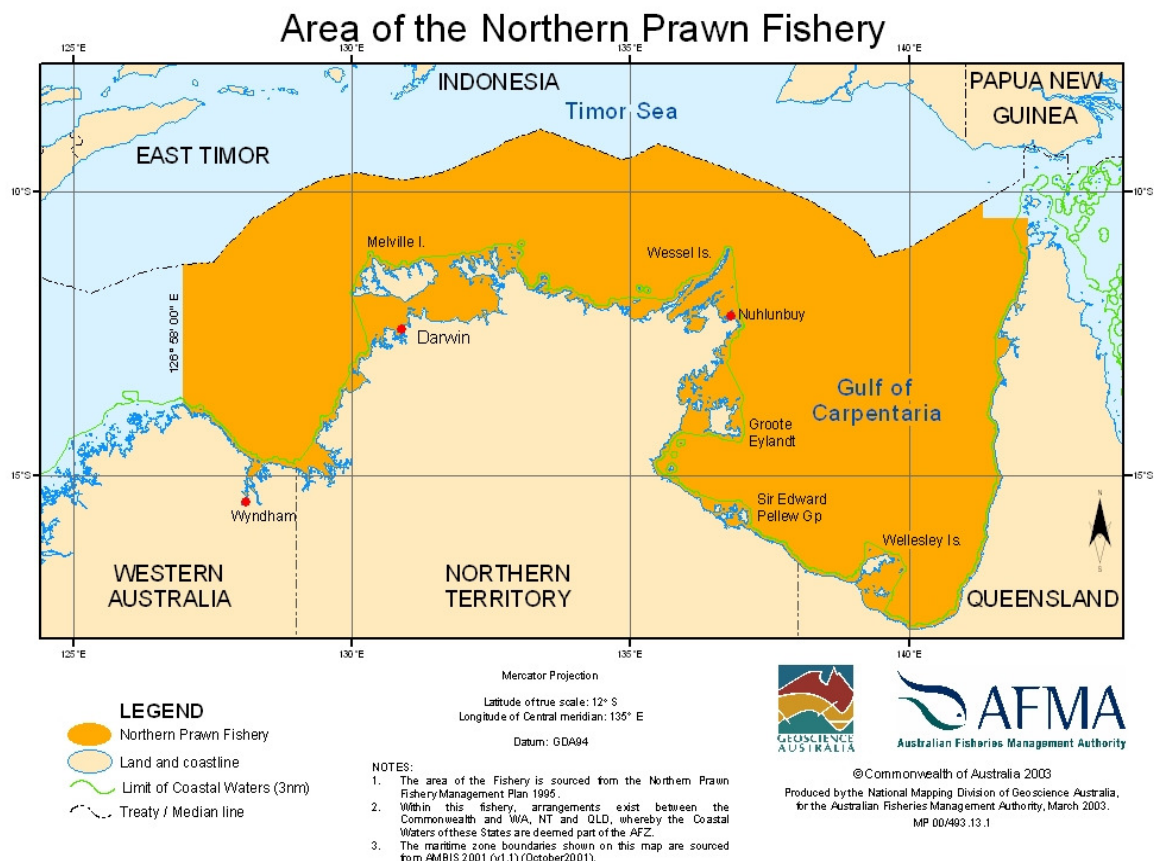


Figure 1: Northern Prawn Fishery Management Area.

Fishing Methods

Prawn trawling is an active fishing method which involves towing a conical-shaped net spread open by two or four steel or timber otter boards over the seabed, commonly called otter trawling. Ground chains are also used on the nets to stimulate prawns into the trawl mouth. Vessels in the NPF may tow a range of nets in a variety of configurations. These are regulated by the *Northern Prawn Fishery Management Plan 1995* (the Management Plan) and relevant Determinations. In addition to the main nets, a small “try-net” is also used to test the potential catches for a given area. All trawl nets (other than try-nets) in the NPF are required to be fitted with approved Turtle Excluder Devices (TEDs) and Bycatch Reduction Devices (BRDs).

Most of the vessels in the NPF are purpose built from steel and range in length from 17 m to 28 m. All NPF boats have modern, sophisticated catch handling, packing and freezing capabilities as well as wet (brine) holding facilities. All vessels use electronic aids such as colour echo sounders and Global Positioning Systems (GPS) and plotters. Satellite phones and fax equipment is used by most vessels and many have introduced on-board computing facilities, as well as electronic log books. All vessels are required to have a Vessel Monitoring System (VMS).

Management Information

The NPF is currently managed through a combination of input controls (limited entry, seasonal closures, permanent area closures, gear restrictions and operational controls) which are implemented under the Management Plan.

The Management Plan provides for the granting of fully transferable Statutory Fishing Rights (SFRs) that determine the number of trawlers that may operate (Class B SFRs) and the amount of gear (gear SFRs) used in the Fishery. In 2001, the Management Plan was amended to allow the total gear pool to be set by a Determination. The gear SFR is set as an amount of headrope length, which can be varied depending on the stock status and economic grounds.

In 2002 measures to reduce effort by 40% on tiger prawn stocks were introduced. This was achieved by shortening the seasons and a further 25% reduction in the value of an SFR from 24 August 2002. This resulted in a reduction in Class B SFRs from 119 to 102.

In 2006 the Commonwealth Government Structural Adjustment Package removed 42 Class B SFRs and approximately 30% of the effective effort from the NPF. The fishery is now composed of 52 vessels, which is the level estimated by the Australian Bureau of Agricultural and Resource Economics and Science (ABARES) to reach Maximum Economic Yield (MEY) in the NPF.

The industry has formed a company 'NPF Industry Pty Ltd' (NPMI) that incorporates around 95% of the fishery gear SFR holders.

In 2008, following a recommendation from the Northern Prawn Fishery Management Advisory Committee (NORMAC) there was an 8% increase in effort in the 2008 tiger prawn season. This translated into NPF gear SFRs increasing in value from 5.625 to 7.481 and Concessions Holders were permitted to use quad gear (with a 10% penalty applied).

In 2009 the tiger prawn season was increased by four weeks based on the outputs of the 2008 tiger prawn stock assessment, resulting in a season commencing 25 July and closing 19 December. This was the first time since the introduction of the mid-year closure in 1987 that the tiger prawn season commenced prior to 1 August.



In 2010 the banana season commenced 31 March at 2200 UTC, and concluded on 10 June at 0200 UTC, extending for 10 weeks. The tiger season commenced on 1 August at 0830 UTC and concluded 29 November at 2230 UTC, extending for 17 weeks.

Species

The NPF targets nine commercial species of prawns including white banana (*Fenneropenaeus merguensis*), red-legged banana (*F. indicus*), brown tiger (*Penaeus esculentus*), grooved tiger (*P. semisulcatus*), blue endeavour (*Metapenaeus endeavouri*), and red endeavour (*M. ensis*). Scampi, squid, scallops and bugs are also taken as by-product.

Data Collection Program

NPF operators are required to complete the 'Northern and Torres Strait Prawn Fisheries Daily Fishing Log' (NP16), a paper logbook on a daily basis. Alternatively, NPF operators can use an electronic version (e-log). In 2010 approximately 41 operators during the banana prawn season and 42 operators during the tiger prawn season used e-logs. Both paper logbook and e-log data is included in this data summary.

Methods Used For Preparing Data Summary

The data used to prepare the Northern Prawn Fishery Data Summary is comprised of logbook information (NP16 and e-log) submitted by NPF skippers and the seasonal landing returns (SLR-T01) completed by SFR holders. This information is stored by AFMA on the Northern Prawn, Kimberley Prawn and Torres Strait Prawn database.

The data used in this summary was extracted during March 2011 after making every effort to reconcile the data provided by skippers with that obtained from vessel owners. This was to ensure that the logbook data and the landings figures approximated each other as closely as possible.

The banana prawn catches recorded in the logbooks from 43 of 52 vessels were within 10% of the catch recorded in the seasonal landing returns for the banana prawn season. On average logbook catches of banana prawns were underestimated by 3.05% when compared to Seasonal Landing Returns (SLR), with the greatest discrepancy being 24.69% for the banana prawn season (catch from another fishery was included on the SLR in this instance). The tiger prawn catches recorded in the logbooks from 50 vessels out of 52 were within 10% of the catch recorded in the SLR for the tiger prawn season. On average logbook catches of tiger prawns were overestimated by 0.15% when compared to SLRs, with the greatest discrepancy being 20% for the tiger prawn season.

The catch and effort estimates in Table 1, Figure 2 and Figure 6 were derived from a combination of logbook and seasonal landing returns figures. The remainder of the tables and figures in the summary represent logbook data only. This may cause discrepancies between totals. Minor discrepancies may also occur due to rounding of values.

Banana and Tiger Prawn Fishery Components

Fishery statistics have been split into banana and tiger prawn fishery components according to the composition of the catch in logbook records. If half or more of a vessel's daily catch was banana prawns or there was no prawn catch and the vessel was fishing, the vessel was defined as operating in the banana prawn fishery on that day; otherwise it was defined as operating in the tiger prawn fishery. Fishing days where vessels have been searching, but have not supplied details of the area searched, have not been included in the effort figures.

Banana prawn fishery catch is the catch of all species (bananas + tigers + endeavours + kings) when a vessel is defined as fishing in the banana prawn fishery. Likewise, tiger prawn fishery catch is the catch of all species when a vessel is defined as operating in the tiger prawn fishery.

Catch and Effort Data for the Northern Prawn Fishery

Coverage

The fishery is split into two seasons. In 2010, the seasons were from 31 March UTC to 10 June UTC (banana prawn season) and from 01 August UTC to 29 November UTC (tiger prawn season). There were 72 days available to fish during the first season and 121 during the second season (a total of 193), which was 10 days less than 2009.

Catch

The total NPF prawn catch for 2010 was 7,711 t compared with 7,483 t in 2009 (Table 1). The catch of banana prawns in 2010 (5,642 t) was just below that of the previous year (5,881 t). The catch of tiger prawns increased by 30% from 1,250 t in 2009 to 1,628 t in 2010. Catches of endeavour prawns increased by 24% from 346 t in 2009 to 429 t in 2010 (Figure 2). In 2010 catches of king prawns increased from 7 t in 2009 to 12 t in 2010.

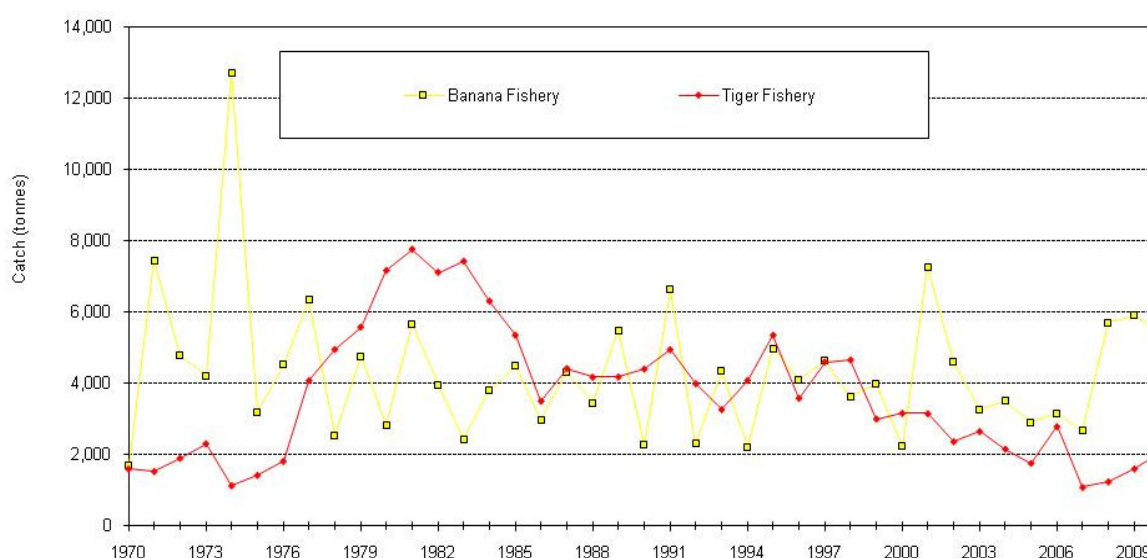


Figure 2: Catch in the banana and tiger prawn fisheries between 1970 and 2010.

Table 1: Annual reconciled landings, effort and vessel number in the NPF from 1970 to 2010.

Year	Banana (t)	Tiger (t)	Endeavour (t)	King (t)	Total Catch (t)	No. of Vessels	Banana Fishery Effort (days)	Tiger Fishery Effort (days)
1970	1,702	1,138	417	0	3,257	191	2,041	5,818
1971	7,364	1,183	400	0	8,948	169	5,571	6,057
1972	4,801	1,380	472	0	6,654	180	4,327	7,380
1973	4,226	1,672	594	0	6,492	217	4,917	7,362
1974	12,711	666	434	4	13,815	196	7,537	3,439
1975	3,160	973	444	6	4,583	107	5,361	6,010
1976	4,519	1,118	675	5	6,319	145	7,238	6,660
1977	6,345	2,900	1,125	28	10,398	193	7,257	11,673
1978	2,535	3,599	1,240	82	7,456	237	5,569	18,749
1979	4,775	4,218	1,213	94	10,300	240	7,328	17,791
1970-'79average	5,214	1,885	701	22	7,822	188	5,715	9,094
1980	2,835	5,124	1,891	111	9,964	269	8,391	30,594
1981	5,672	5,559	2,073	95	13,400	286	11,524	31,895
1982	3,875	4,891	2,124	144	11,036	271	8,751	32,956
1983	2,382	5,751	1,488	207	9,831	254	6,856	34,551
1984	3,770	4,525	1,714	83	10,095	252	5,932	32,447
1985	4,469	3,592	1,671	77	9,811	231	6,946	26,516
1986	2,935	2,682	748	85	6,451	238	7,132	26,669
1987	4,257	3,617	772	65	8,713	234	7,954	22,478
1988	3,381	3,458	669	81	7,591	222	6,655	26,264
1989	5,466	3,173	909	85	9,636	223	7,439	27,036
1980-'89average	3,904	4,237	1,406	103	9,653	248	7,758	29,141
1990	2,221	3,550	735	128	6,636	200	5,044	25,525
1991	6,605	3,987	879	81	11,554	172	6,515	20,744
1992	2,254	3,084	880	47	6,267	170	5,132	21,789
1993	4,292	2,515	733	35	7,572	127	6,299	16,019
1994	2,157	3,162	872	72	6,263	128	4,955	18,592
1995	4,961	4,125	1,150	58	10,294	125	4,880	16,834
1996	4,078	2,311	1,235	41	7,665	127	5,525	16,635
1997	4,587	2,694	1,870	51	9,202	129	5,476	15,385
1998	3,569	3,218	1,322	20	8,123	130	5,301	18,003
1999	3,904	2,136	885	21	6,947	129	5,639	12,675
1990-'99average	3,863	3,078	1,056	55	8,052	144	5,477	18,220
2000	2,195	2,190	958	13	5,335	121	3,697	12,736
2001	7,245	1,983	1,157	4	10,389	118	6,247	10,440
2002	4,577	1,943	411	5	6,936	114	4,148	8,718
2003	3,238	2,222	435	4	5,898	97	4,114	8,503
2004	3,520	1,767	396	3	5,686	96	3,985	7,793
2005	2,901	1,744	281	20	4,946	89	3,364	7,967
2006	3,117	1,802	363	28	5,310	77	3,283	6,983
2007	2,902	1,192	196	20	4,310	51	2,696	4,829
2008	5,816	1,021	213	7	7,058	53	3,347	4,556
2009	5,881	1,250	346	7	7,483	55	3,095	4,889
2000-'09average	4,139	1,711	476	11	6,335	87	3,798	7,741
2010	5,642	1,628	429	12	7,711	52	3,146	4,898

* Note: Catch data is extracted from Seasonal Landing Returns.



Catch by week

Figures 3 (a), (b) and (c) show the catch of banana and tiger prawns by week during 2008, 2009 and 2010. Unlike in 2008 and 2009, highest banana prawn catches were recorded during the third week in 2010, however this was likely to be a result of a cyclonic activity experienced in the Gulf during the first week of the season, preventing most of the fleet from fishing on a number of days over that period. Banana prawn catches in 2009 steadily declined over the first six weeks of the eight week season, whereas banana prawn catches in 2010 rose by 37% in week two, and then by 0.06% in week three before steadily declining over the remaining eight weeks.

In 2010, catches of tiger prawns were highest during weeks 5, 6 & 7 of tiger season, ranging from 109 t and 147 t.

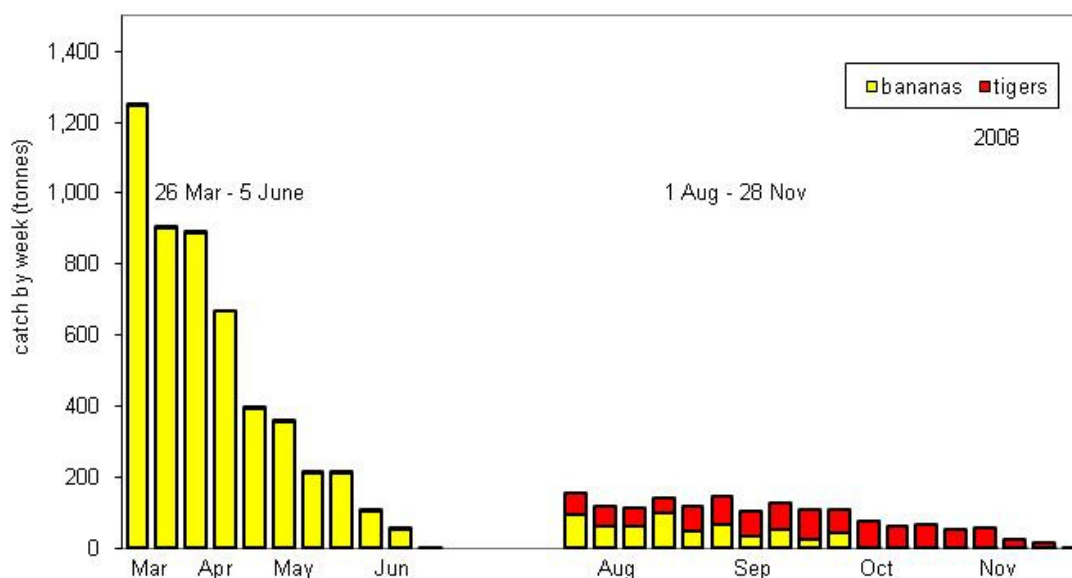


Figure 3a: Weekly catches of banana and tiger prawns (t) in the NPF in 2008.

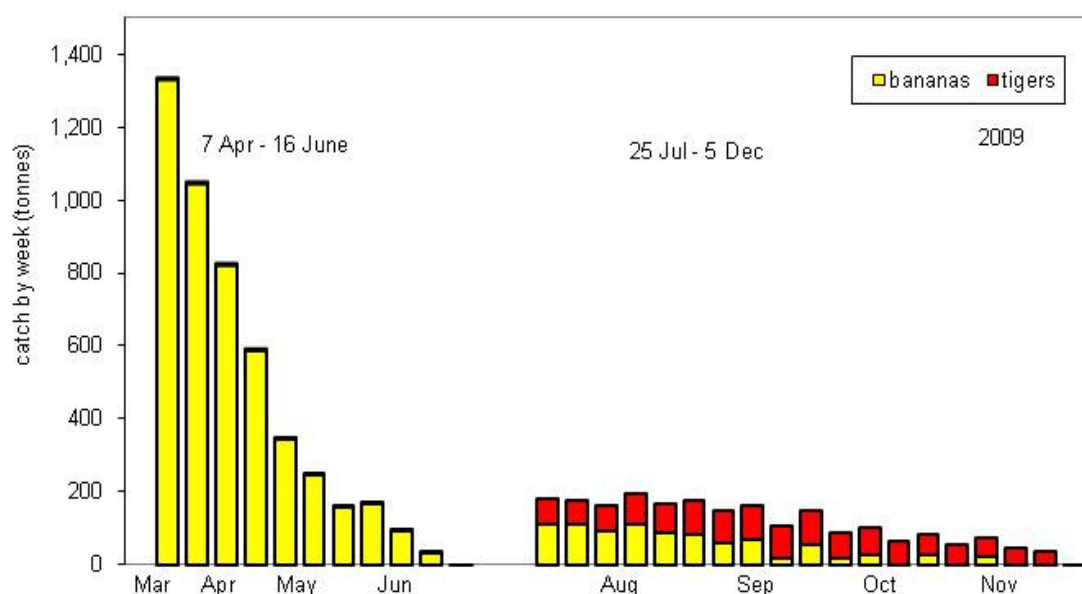


Figure 3b: Weekly catches of banana and tiger prawns (t) in the NPF in 2009.

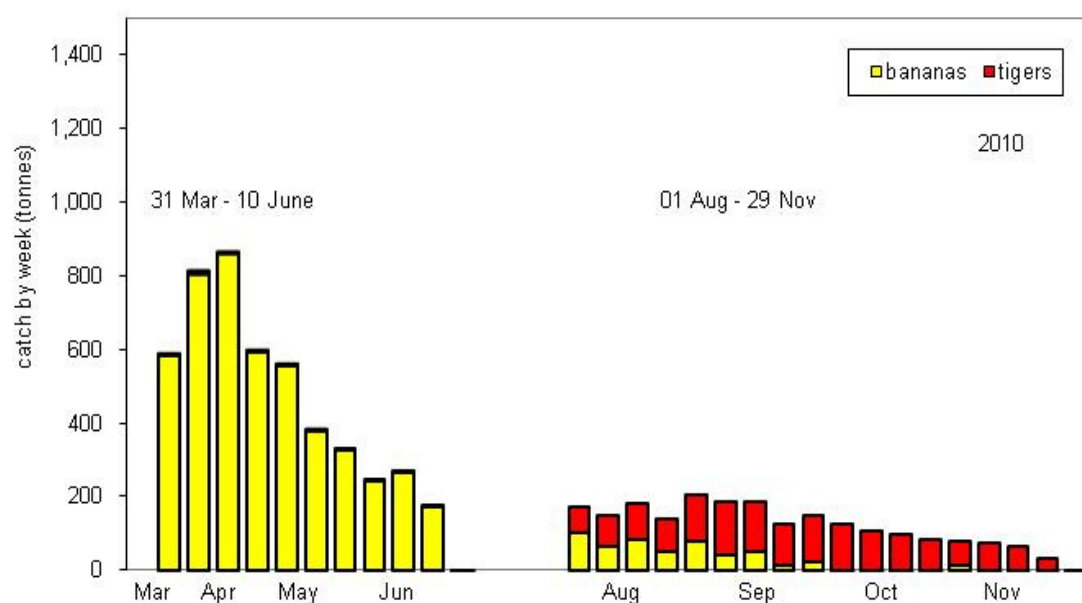


Figure 3c: Weekly catches of banana and tiger prawns (t) in the NPF in 2010.

Effort

Nominal and effective effort

Nominal effort is the number of days recorded by skippers in their logbooks. Effective effort applies only to the tiger prawn fishery and is based on the assumption that there has been an 'effort creep' (an increase in effectiveness of the gear utilised). A number of different approaches to effort creep

are being used by Northern Prawn Fishery Resource Assessment Group (NPRAG), including using an average 5% per year as well as variable effort creeps. As in previous years, for the purpose of preparing this report we have used 5%. Nominal effort in the banana prawn fishery increased by 51 days (1%) in 2010 compared to 2009. In the tiger prawn fishery, nominal effort increased by 9 days (0.1%) in 2010 compared to 2009. Effective effort in the tiger prawn fishery increased by 554 days compared to 2009.

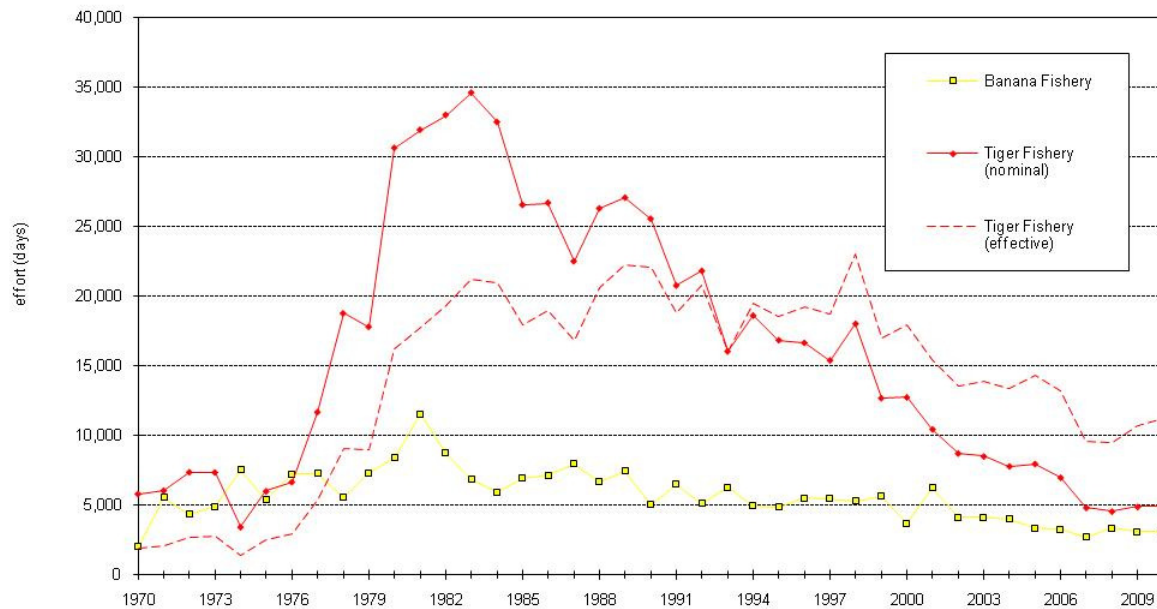


Figure 4: Effort in the banana and tiger prawn fisheries in the NPF between 1970 and 2010.

Catch Rate

It is worth noting that there have been a number of changes to headrope length implemented in the NPF over time. A reduction in headrope length of 25% came into effect at the start of the first season in 2005. More recently, an 8% increase in headrope length was implemented in the 2008 tiger prawn season. As a result “catch rate”, measured in terms of Catch per Unit Effort (CPUE), being tonnes per day may be affected. It is also important to note that trends in CPUE don’t necessarily reflect trends in stock abundance.

The banana prawn fishery CPUE decreased from a daily rate of 1.904 t per day in 2009 to 1.735 t per day in 2010. The nominal CPUE for the tiger prawn fishery increased from 0.325 t per day in 2009 to 0.416 t per day in 2010, while the effective CPUE increased from 0.149 t per day in 2009 to 0.181 t per day in 2010 (Figure 5).

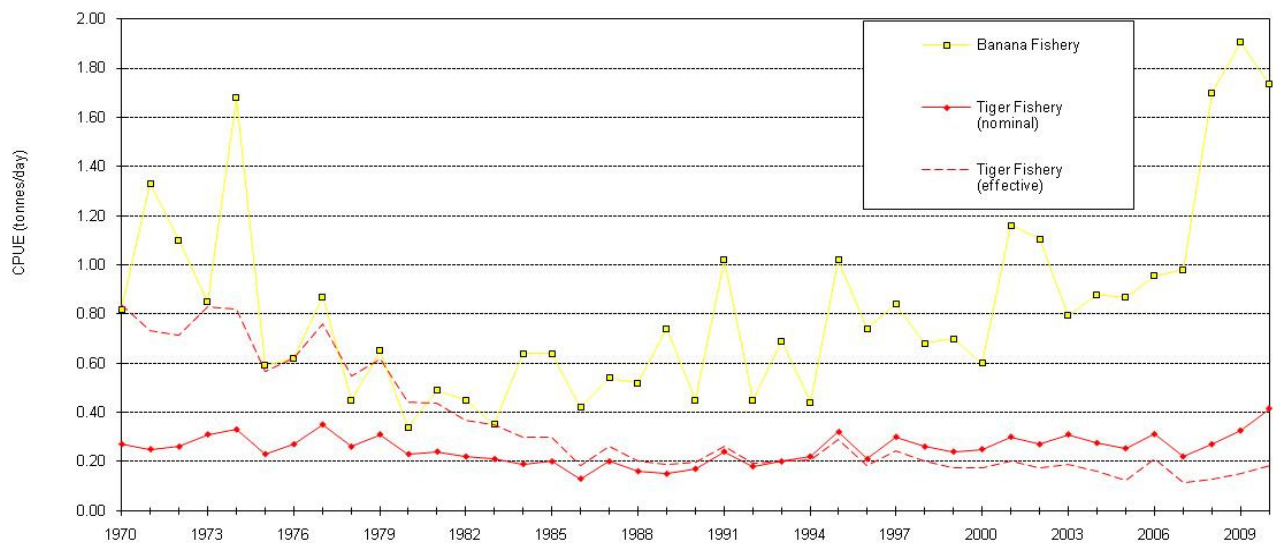


Figure 5: Catch rate in the banana and tiger prawn fisheries between 1970 and 2010.

Catch, effort and catch rate by month

The highest total prawn catches during the 2010 banana prawn season were obtained during April, whilst the highest total prawn catches during the 2010 tiger prawn season were obtained during August (Table 2).

Table 3 shows effort by month in the banana and tiger prawn seasons for 2010. Effort for 2010 in the banana prawn season was highest in April and lowest in June. Tiger prawn season effort was highest in October and lowest the following month in November as many boats began to return to port (Table 3).

Monthly CPUE for banana prawns were highest in April during the banana prawn season (Table 4). Monthly CPUE for both nominal and effective effort for tiger prawns were highest in April. This was the result of change to the Mornington/Sweers and Gulf of Carpentaria first season closures in 2010, which allowed targeting of tiger prawns from 1 May. These changes were implemented in response to outputs from the bioeconomic model produced by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), which found that there could be an increase in effort targeting tiger prawns.

Table 2: Monthly catch by species in 2010.

Catch (t)	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Grand Total
Banana	3,031	1,572	216	0	343	196	34	37	5,431
Tiger	16	3	2	0	389	557	451	216	1,635
Endeavour	1	2	0	0	127	69	97	129	425
King				0	1	0	0	0	1
Total	3,048	1,577	219	0	861	823	582	382	7,493

Table 3: Monthly effort in the banana and tiger prawn seasons in 2010.

Effort (days)	April	May	June	July	Aug	Sep	Oct	Nov	Grand Total
Banana Fishery	1,270	1,030	189	0	352	160	48	76	3,146
Tiger Fishery (nominal)	5	2	7	0	1,017	1,262	1,495	1,110	4,898
Tiger Fishery (effective)	11	5	16	0	2,331	2,893	3,427	2,544	11,226
Total	1,275	1,032	196	0	1,369	1,422	1,543	1,186	8,044

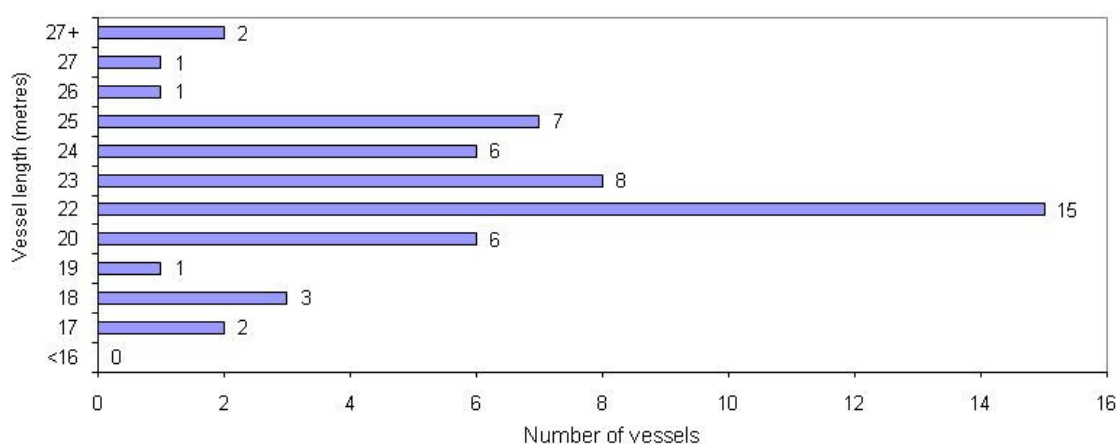
Table 4: Monthly catch rate for all species in the banana and tiger prawn seasons in 2010.

CPUE (t/day)	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Banana Fishery	2.389	1.531	1.146	0.000	1.002	1.252	0.688	0.558
Tiger Fishery (nominal)	2.730	0.015	0.279	0.000	0.500	0.493	0.367	0.306
Tiger Fishery (effective)	1.191	0.007	0.122	0.000	0.218	0.215	0.160	0.134

Vessel and gear information

Vessel length

A total of 52 different vessels fished in the NPF during 2010. As in 2009, the most common NPF vessel length in 2010 was between 22.0-22.9 metres (Figure 6).

**Figure 6:** Frequency of vessel lengths in the NPF fleet in 2010.

Distribution of catch by vessel

The majority of NPF vessels caught well in 2010: of the 52 vessels which fished during the 2010 banana prawn season, 44 of them (85%) caught >60 t (Figure 7a). Two vessels (4%) each caught 20–29 t, 30–39 t and 50–59 t respectively, while the remaining two vessels (4%) caught <20 t, and 40–49 t, respectively (Figure 7a).

Distribution of catch was more evenly spread during the 2010 tiger season. Of the 52 vessels which fished during the 2010 tiger prawn season, 23 of them (44%) caught ≥60 t, 13 vessels (25%) caught between 50–59 t, 9 vessels (17%) caught between 40–49 t, 6 vessels (11.5%) caught between 30–39 t, and the remaining vessel caught between 20–29 t (Figure 7b).

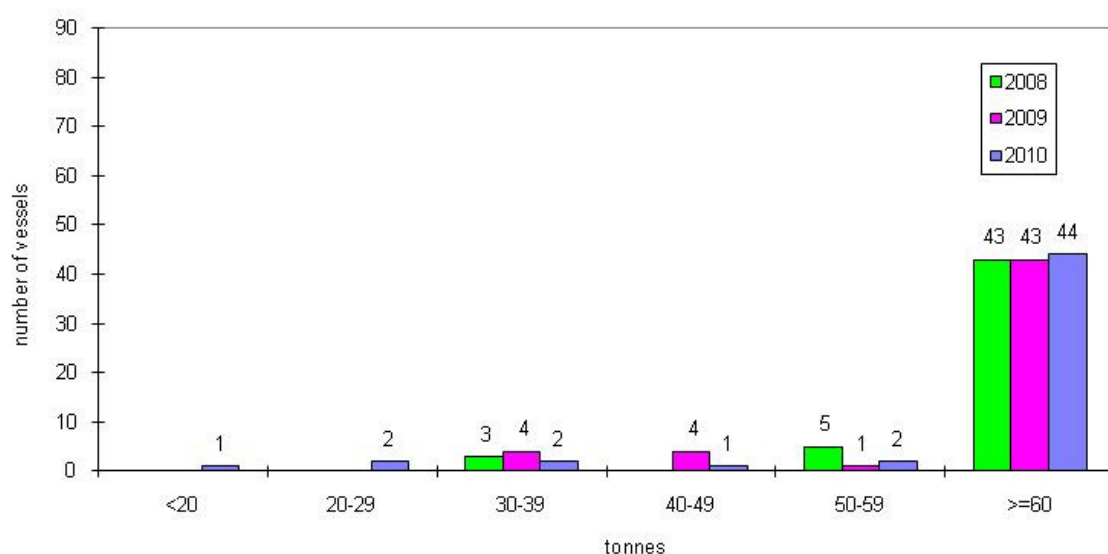


Figure 7a: Distribution of total catch in the banana prawn season, 2007-2010.

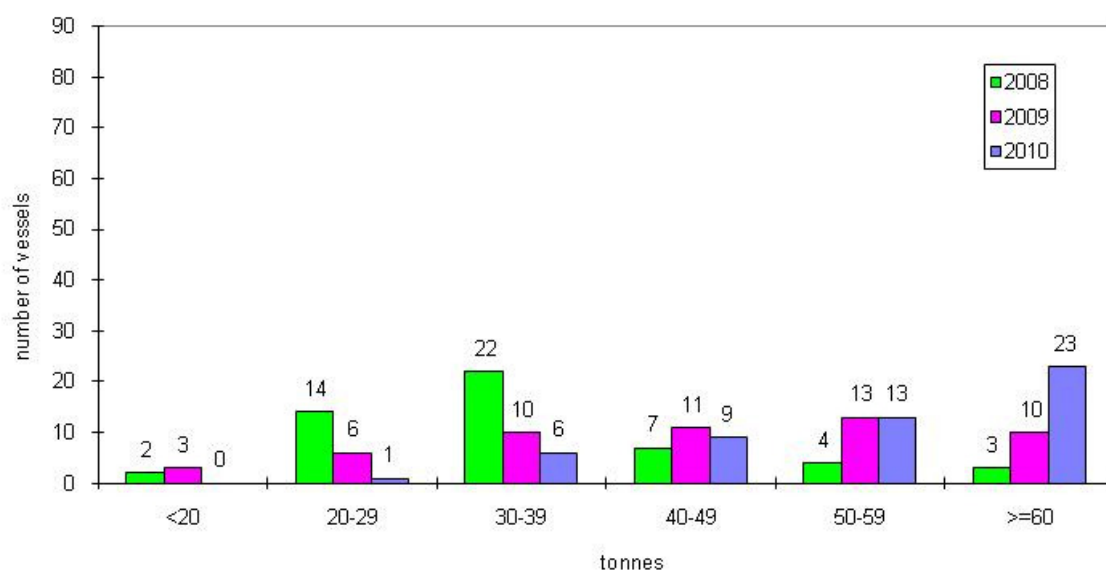


Figure 7b: Distribution of total catch in the tiger prawn season, 2007-2010.

Average catch per vessel

The average catch per vessel for all prawns increased (0.05%) from 136 t in 2009 to 144 t per vessel in 2010 (Figure 8a). The average catch per vessel for banana prawns in 2010 remained similar to 2009 at 104 t per vessel (Figure 8b). In 2010 average catches of tiger prawns per vessel increased 35% from 23 t in 2009 to 31 t per vessel in 2010 (Figure 8c).

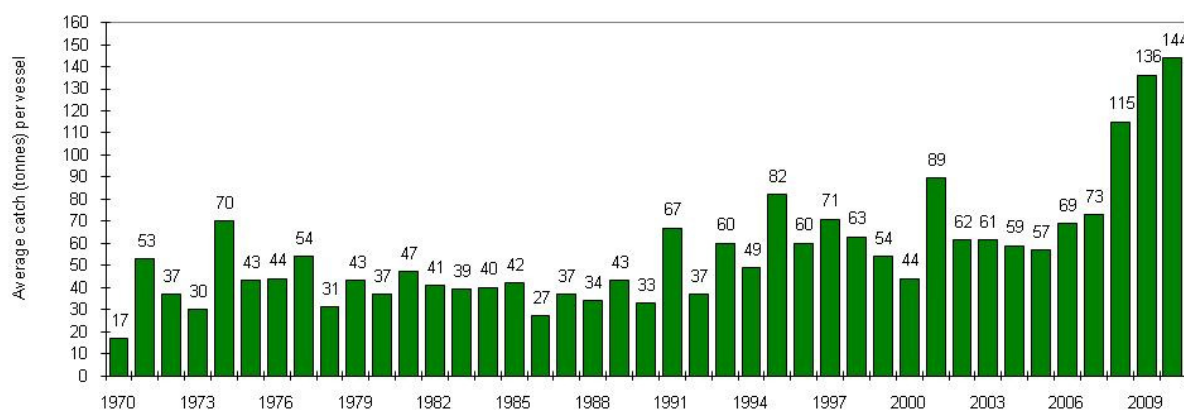


Figure 8a: Average total catch of all prawns per vessel in the NPF from 1970 to 2010.

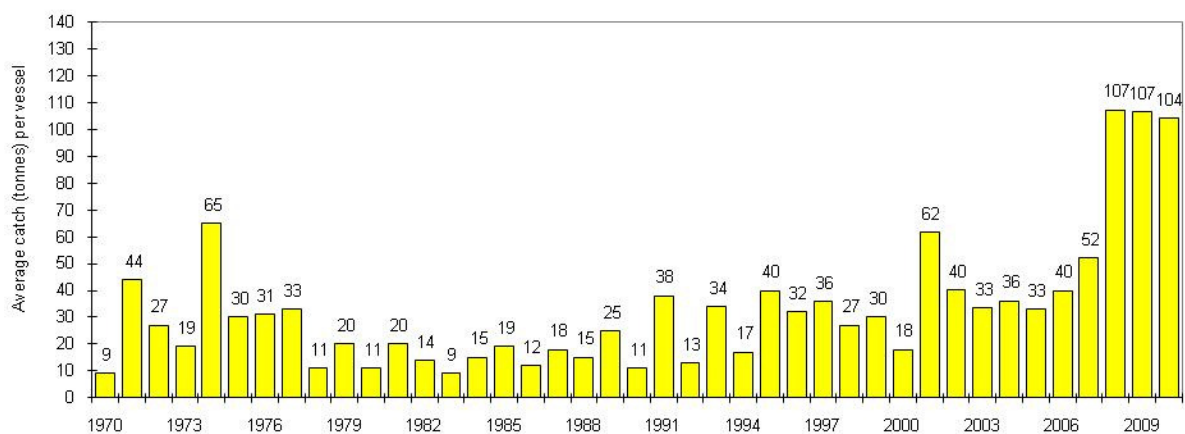


Figure 8b: Average total catch of banana prawns per vessel in the NPF from 1970 to 2010.

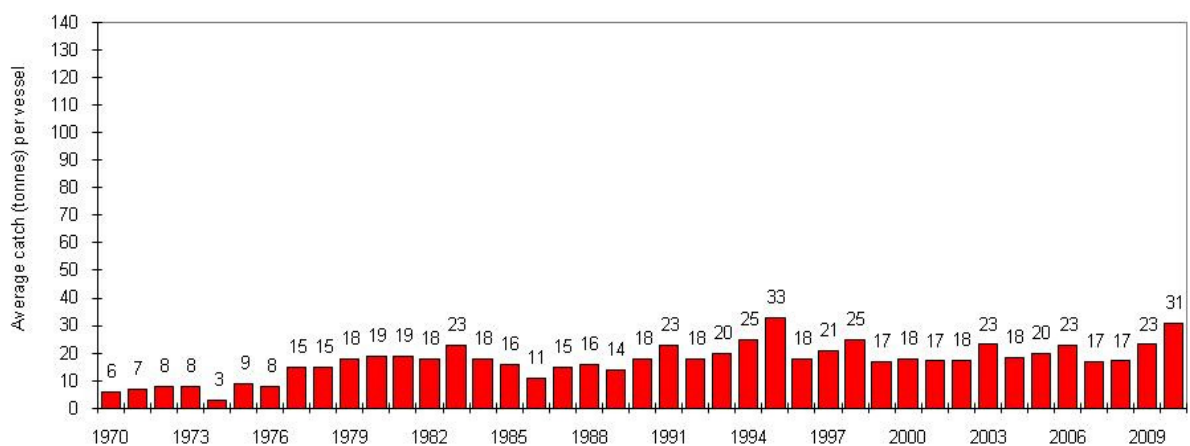


Figure 8c: Average total catch of tiger prawns per vessel in the NPF from 1970 to 2010.

Fishing Gear

Total tiger prawn headrope in 2010 stayed similar to 2009 at 1,414 fathoms (2.6km) compared to 1,408 (2.6km) in 2009 (Figure 9). The mean headrope length in 2010 was 27.18 fathoms (49.7m) compared with 26.56 fathoms (48.58m) in 2009 (Figure 10).

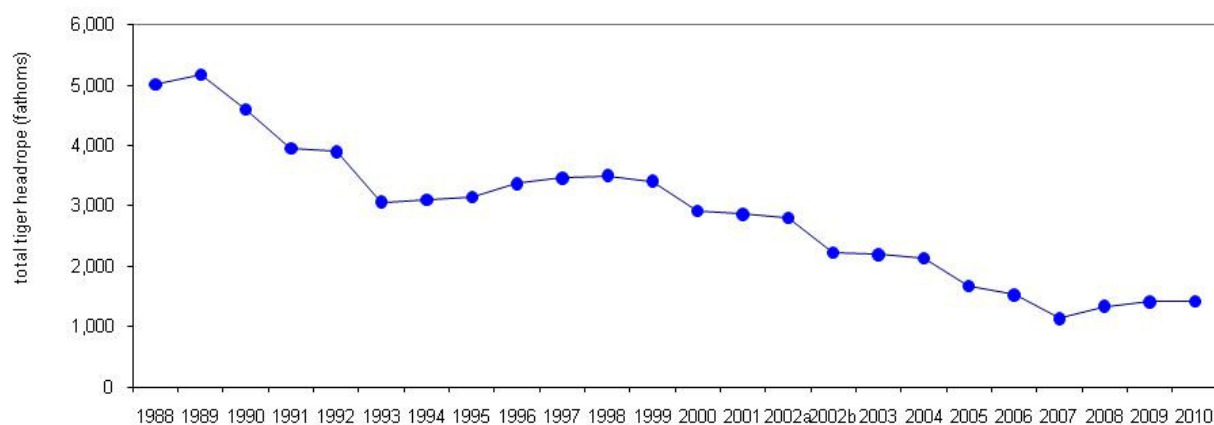


Figure 9: Total tiger prawn season headrope length in the NPF from 1988 to 2010.

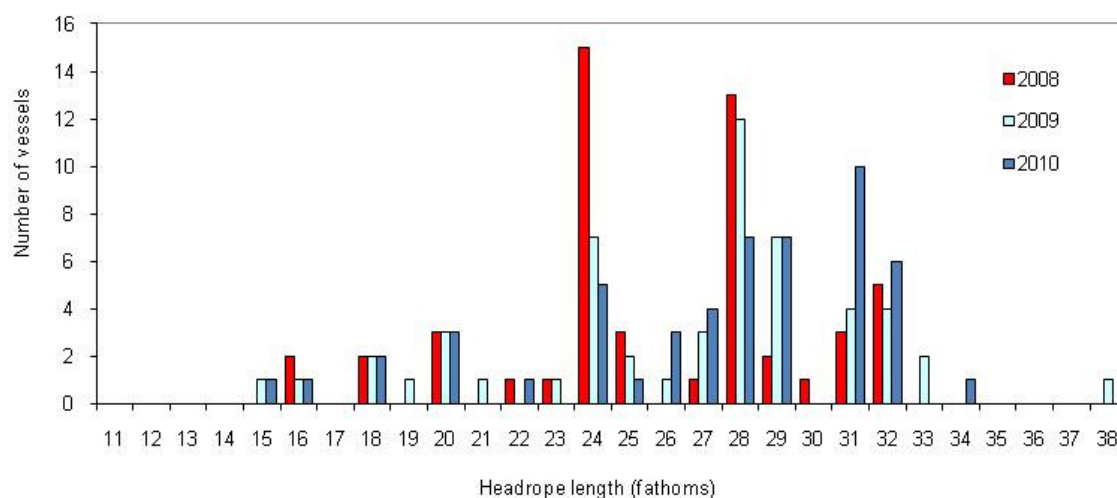


Figure 10: Frequency of headrope length for the tiger prawn season in the NPF from 2008 to 2010.

Catch and effort by statistical area in the NPF

All areas

Catch and effort has been partitioned into the 15 statistical areas illustrated below (Figure 11) and is detailed on the following pages. The highest banana prawn catches were recorded in the Bold area with 1,097 t (Figure 12). The highest catches of tiger prawns were recorded in the Groote area with 618 t (Figure 13).

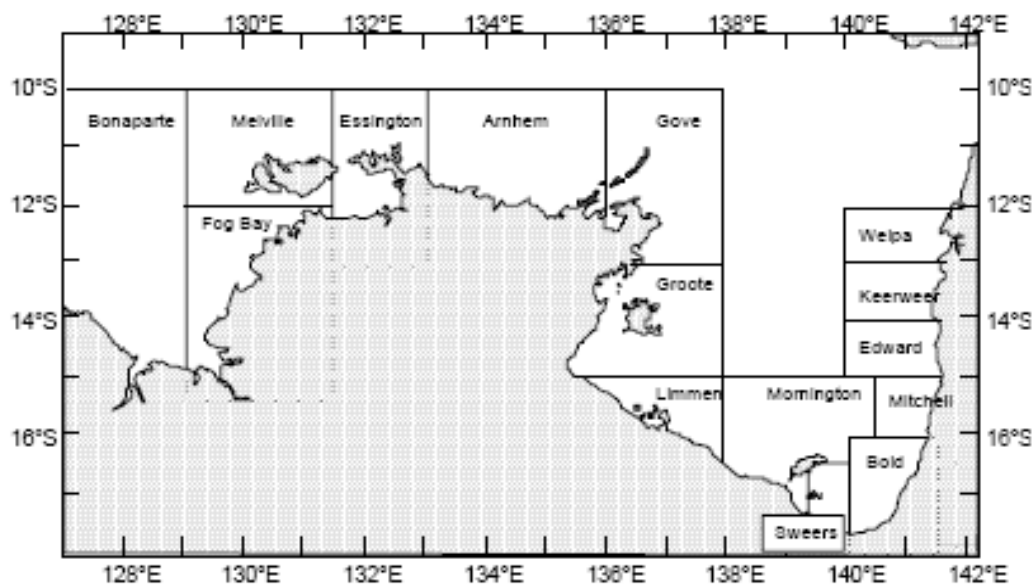


Figure 11: Statistical areas of the NPF.

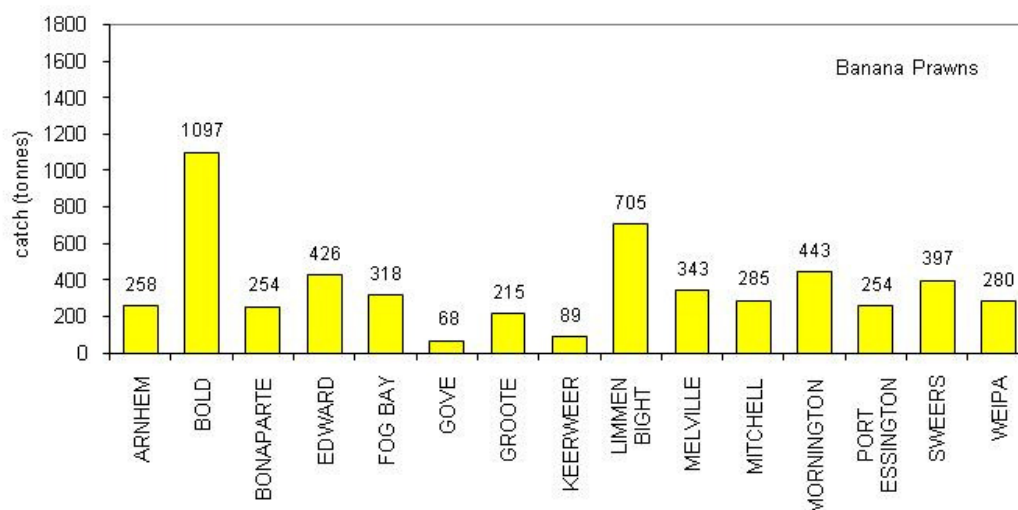


Figure 12: Total catch of banana prawns for each statistical area of the NPF in 2010.

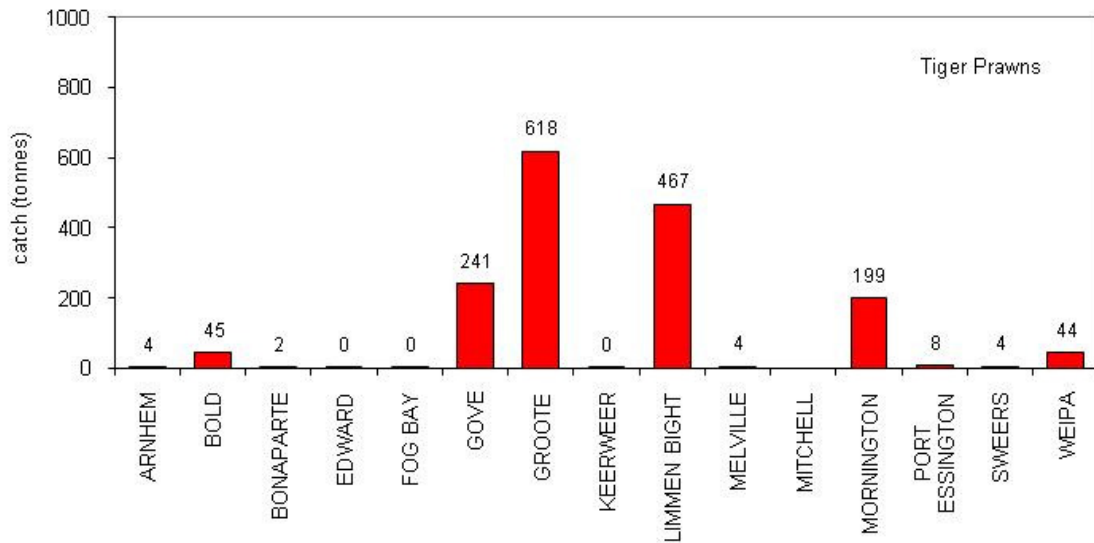


Figure 13: Total catch of tiger prawns for each statistical area of the NPF in 2010.

Weipa

Banana prawn catches decreased from 455 t in 2009 to 280 t in 2010. Tiger prawn catches decreased from 62 t in 2009 to 44 t in 2010 and catches of endeavour prawns decreased from 43 t in 2009 to 25 t in 2010 (Figure 14). Banana prawns dominated the catch in this area during 2010, comprising 80% (Figure 15).

Effort in the banana prawn fishery decreased from 245 days in 2009 to 173 days in 2010 (Figure 16a). CPUE of banana prawns decreased from 1.86 t per day in 2009 to 1.61 t per day in 2010 (Figure 16b). Effort in the tiger prawn fishery decreased from 350 days in 2009 to 194 days in 2010 (Figure 16a). Nominal and effective CPUE of tiger prawns increased from 0.302 t and 0.138 t per day in 2009 respectively, to 0.355 t and 0.162 t per day in 2010 (Figure 16c).

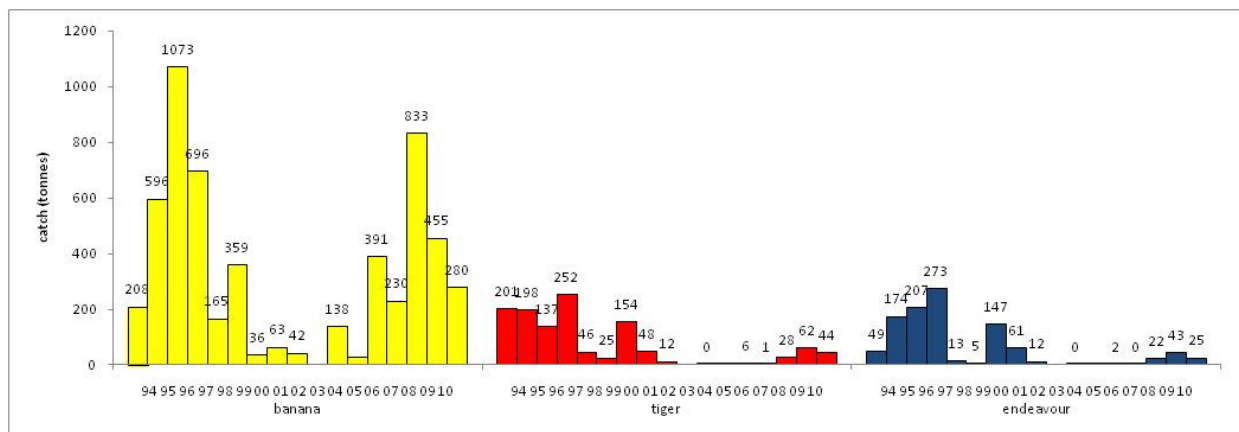
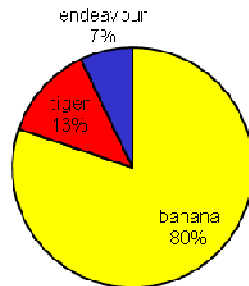


Figure 14: Catch by species in the Weipa area between 1994 and 2010.

a)



b)

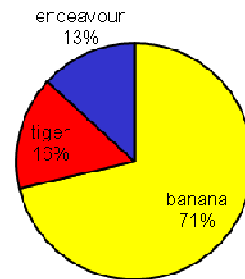


Figure 15: (a) Percentage catch of prawn species in the Weipa area during 2010, and (b) percentage catch of prawn species in the Weipa area from 1994 to 2010 (b).

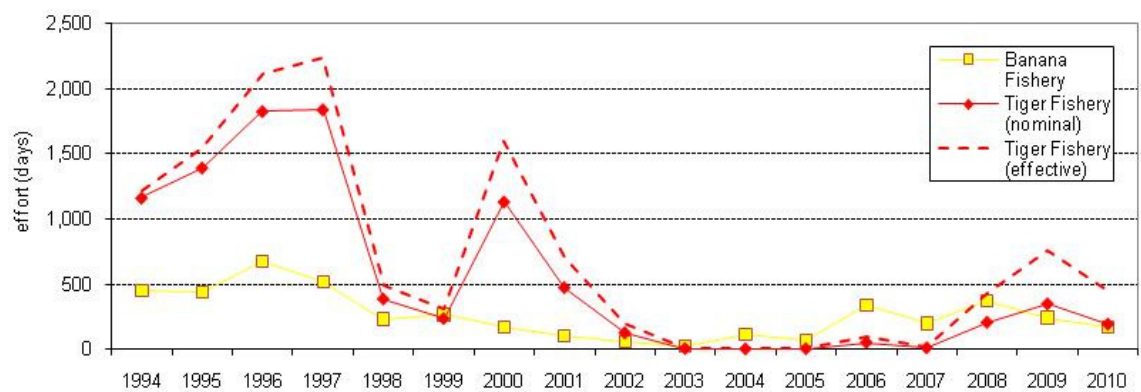


Figure 16a: Effort for the banana and tiger prawn fisheries in the Weipa area between 1994 and 2010.

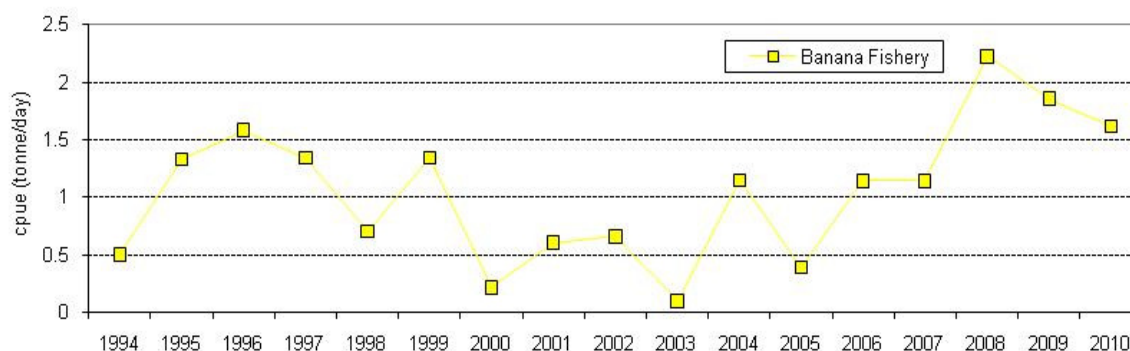


Figure 16b: Catch rate for the banana prawn fishery in the Weipa area between 1994 and 2010.

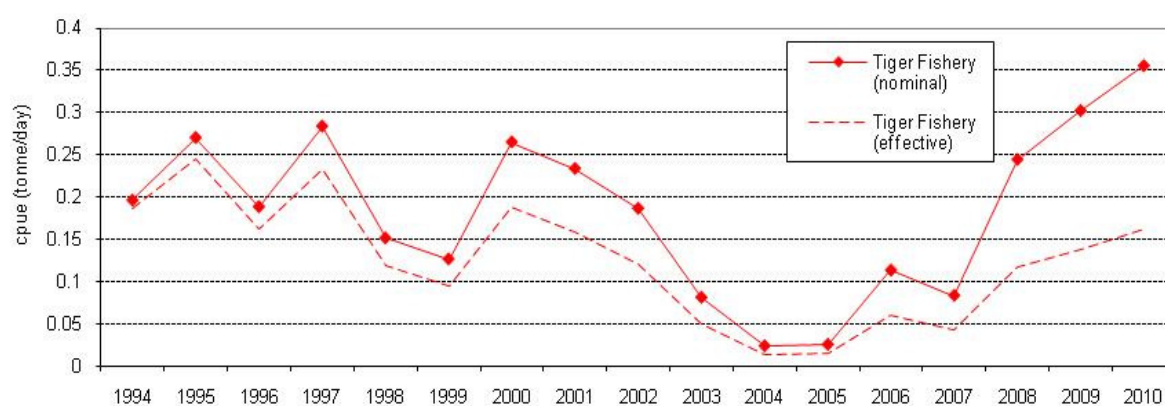


Figure 16c: Catch rate for the tiger prawn fishery in the Weipa area between 1994 and 2010.

Keerweer

Banana prawn catches decreased from 258 t in 2009 to 89 t in 2010. Catches of tiger and endeavour prawns were less than 1 t (Figure 17). Banana prawns comprised 100% of the catch in 2010 (Figure 18a).

Effort in the banana prawn fishery decreased from 142 days in 2009 to 75 days in 2010 (Figure 19a). CPUE of banana prawn decreased from 1.818 t per day in 2009 to 1.189 t per day in 2010 (Figure 19b). Effort and CPUE in the tiger prawn fishery was zero in 2010 (Figure 19a, c).

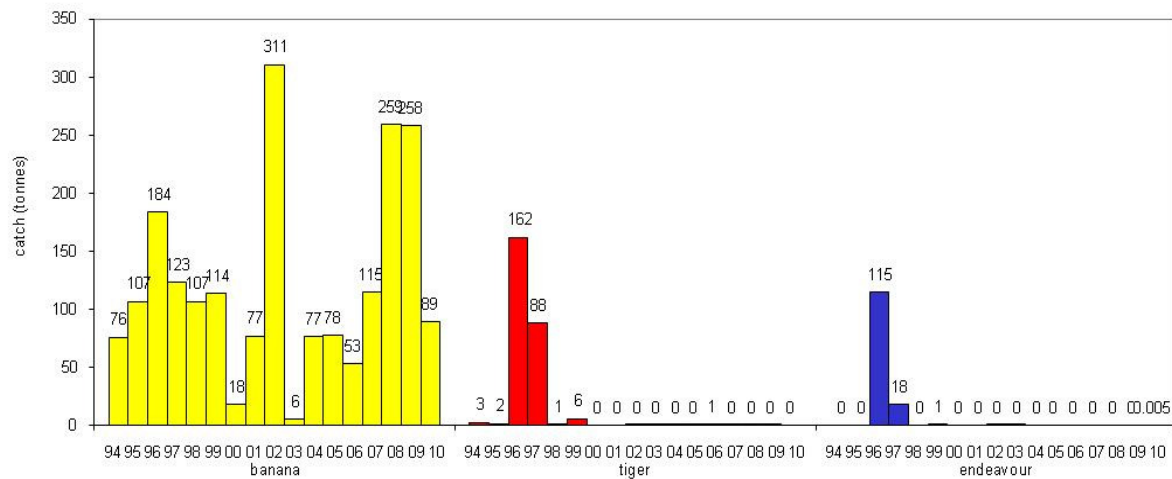
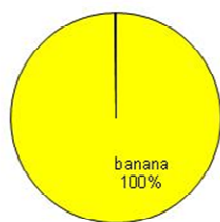


Figure 17: Catch by species in the Keerweer area between 1994 and 2010.

a)



b)

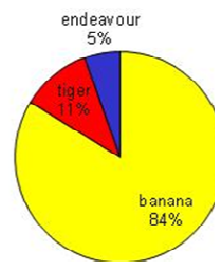


Figure 18: (a) Percentage catch of prawn species in the Keerweer area during 2010 and (b) percentage catch of prawn species in the Keerweer area from 1994 to 2010.

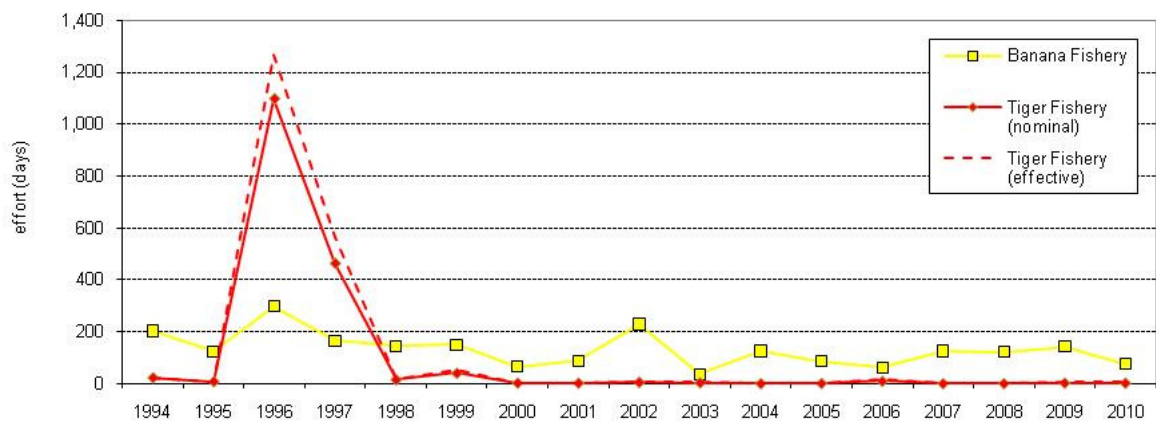


Figure 19a: Effort for the banana and tiger prawn fisheries in the Keerweer area between 1994 and 2010.

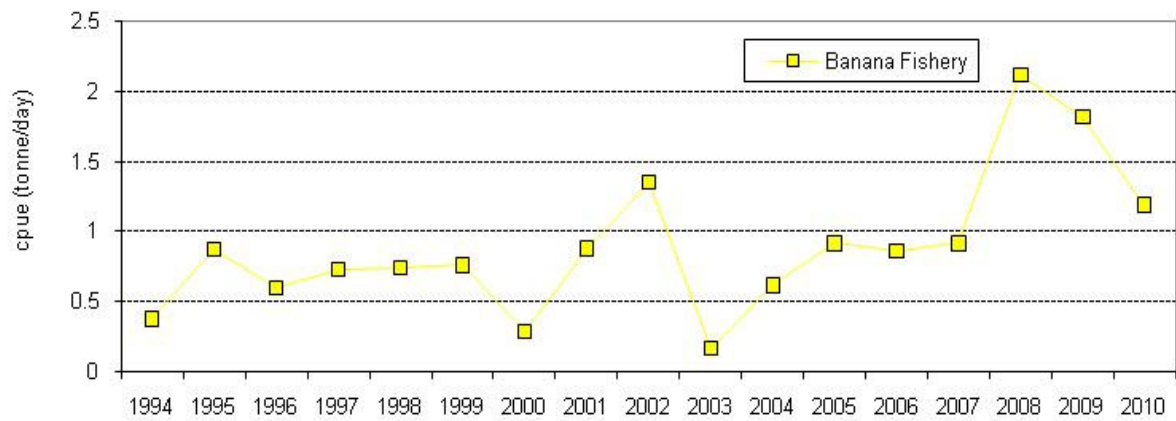


Figure 19b: Catch rate for the banana prawn fishery in the Keerweer area between 1994 and 2010.

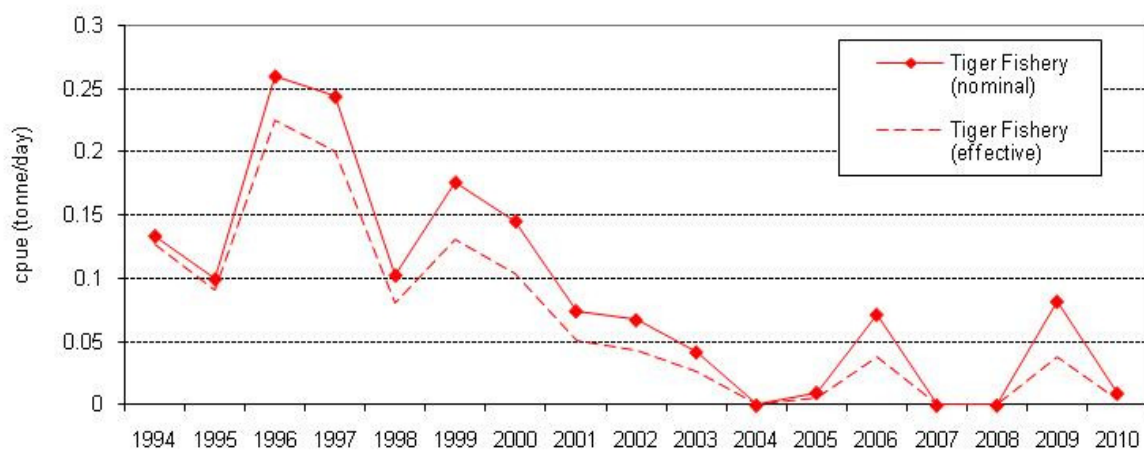


Figure 19c: Catch rate for the tiger prawn fishery in the Keerweer area between 1994 and 2010.

Edward

Banana prawn catches in the Edward area decreased from 450 t in 2009 to 426 t in 2010. Both tiger and endeavour prawn catches were less than one tonne (Figure 20). Banana prawns comprised 100% of the catch in 2010 (Figure 21).

Effort in the banana prawn fishery increased 30 days in 2010 from 198 days in 2009 (Figure 22a). CPUE of banana prawn decreased from 2.273 t per day in 2009 to 1.868 t per day in 2010 (Figure 22b). Effort and CPUE in the tiger prawn fishery in 2009 was zero (Figure 22a, c).

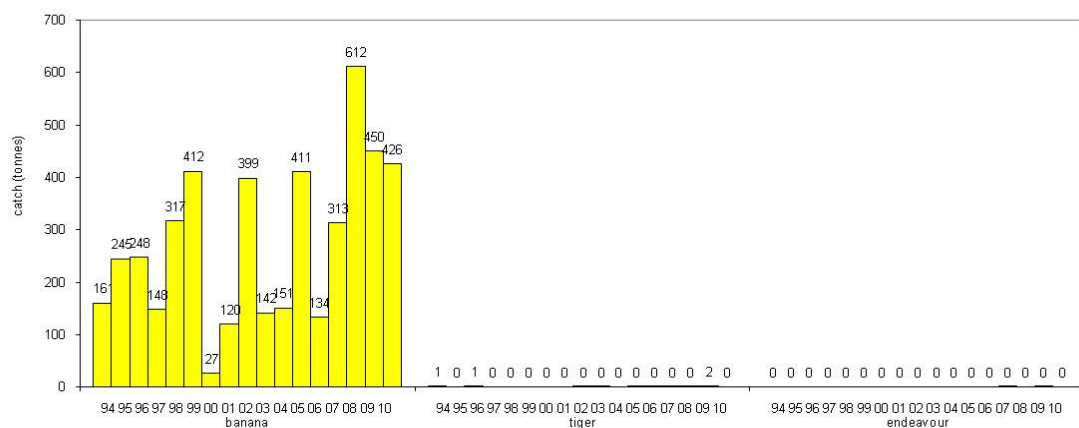
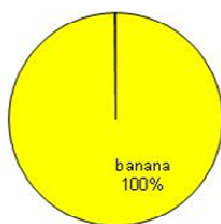


Figure 20: Catch by species in the Edward area between 1994 and 2010.

a)



b)

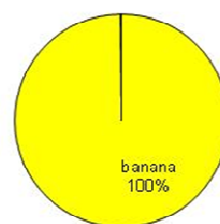


Figure 21: (a) Percentage catch of prawn species in the Edward area during 2010 and (b) percentage catch of prawn species in the Edward area from 1994 to 2010.

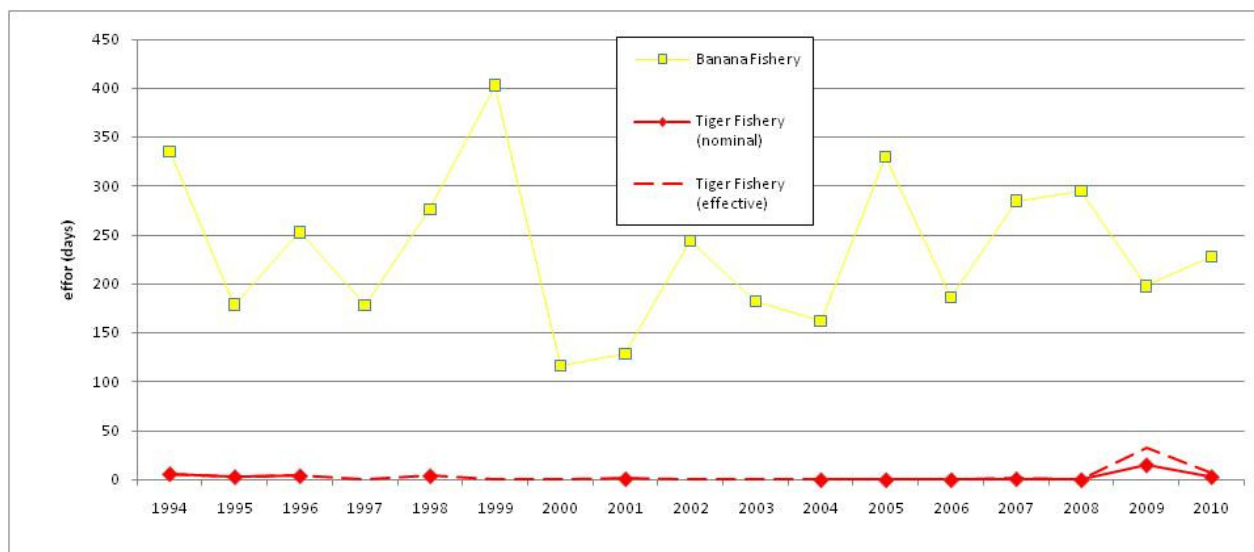


Figure 22a: Effort for the banana and tiger prawn fisheries in the Edward area between 1994 and 2010.

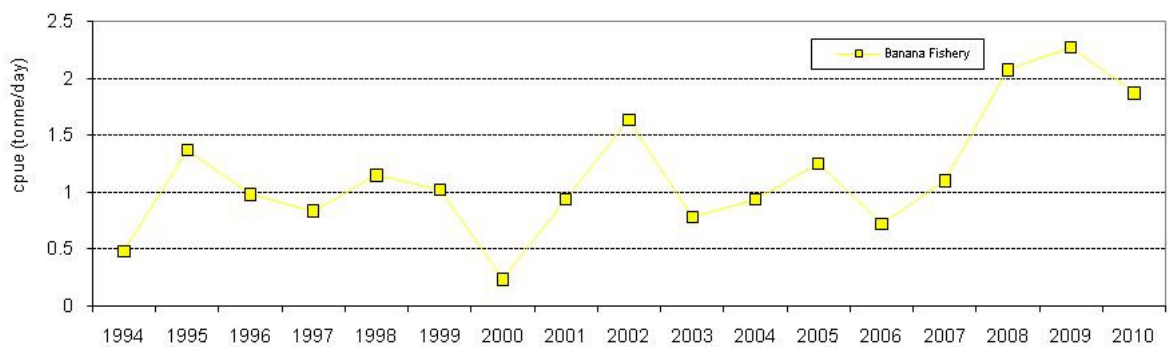


Figure 22b: Catch rate for the banana prawn fishery in the Edward area between 1994 and 2010.

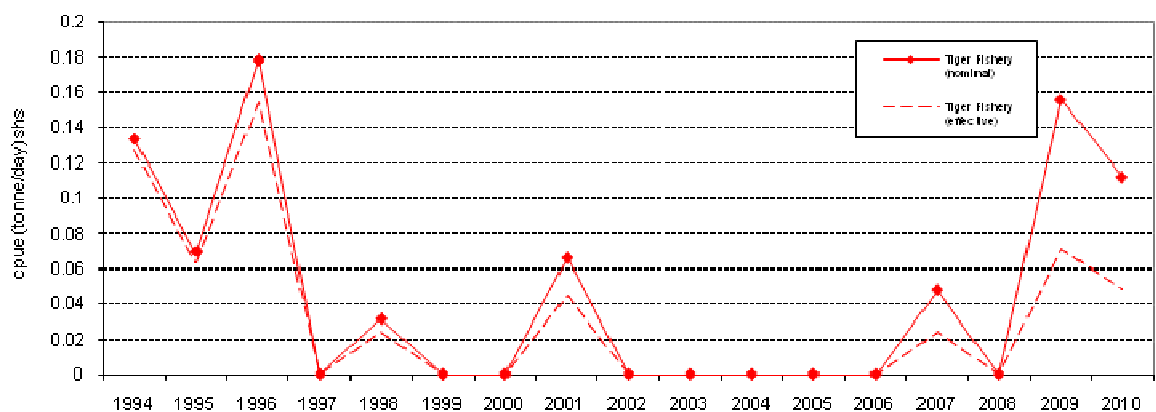


Figure 22c: Catch rate for the tiger prawn fishery in the Edward area between 1994 and 2010.

Mitchell

Banana prawn catches in the Mitchell area have remained similar in 2010 (285 t), compared to 282 t in 2009. Tiger and endeavour prawn catches remained at less than one tonne (Figure 23). Banana prawns comprised 100% of the catch in this area during 2010 (Figure 24).

Effort in the banana prawn fishery decreased from 160 days in 2009 to 147 in 2010 (Figure 25a). CPUE of banana prawns increased slightly from 1.761 t per day in 2009 to 1.940 t per day in 2010 (Figure 25b). There was no change in effort and CPUE in the tiger prawn fishery in 2010 (Figure 25a, c).

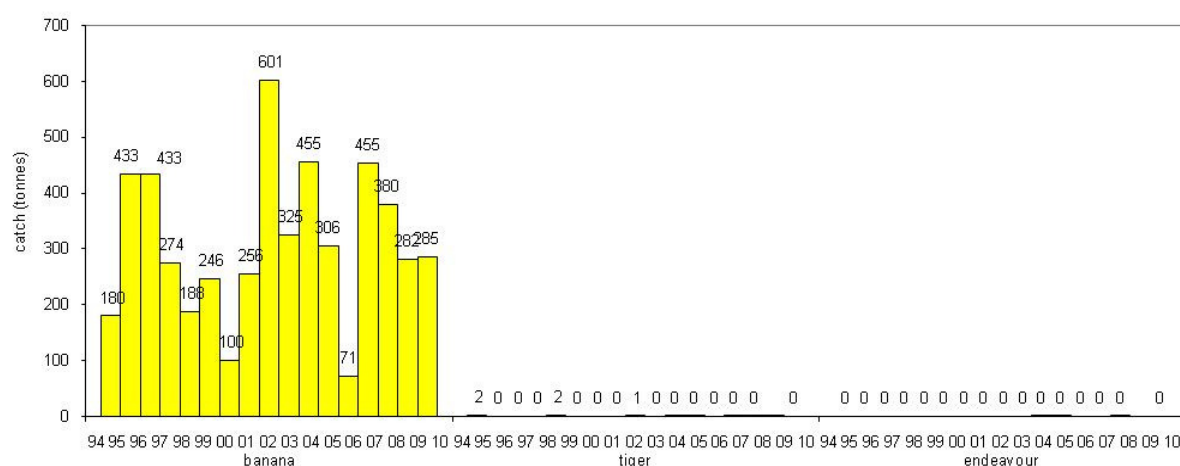


Figure 23: Catch by species in the Mitchell area between 1994 and 2010.

a)



b)

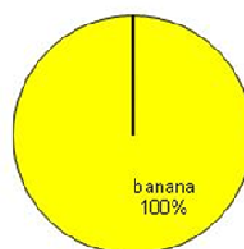


Figure 24: Percentage catch of prawn species in the Mitchell area during 2010 (a) and percentage catch of prawn species in the Mitchell area from 1994 to 2010.

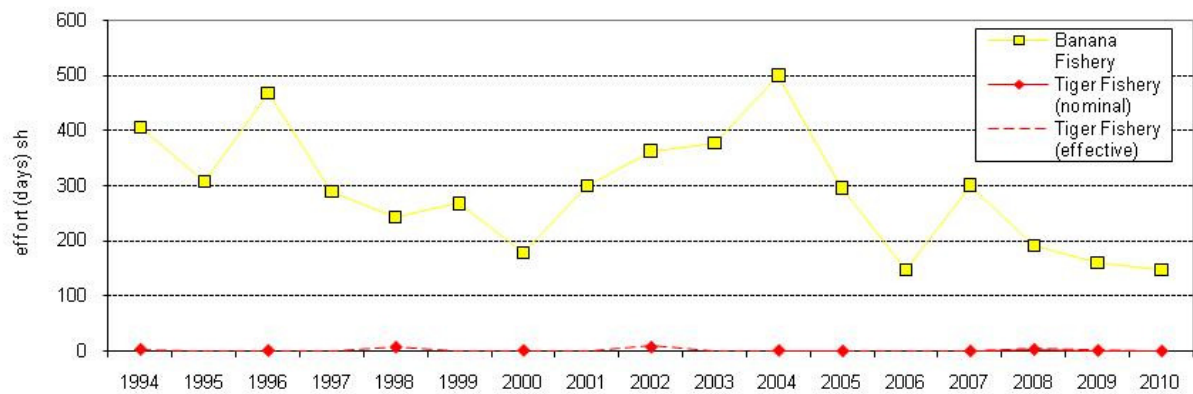


Figure 25a: Effort for the banana and tiger prawn fisheries in the Mitchell area between 1994 and 2010.

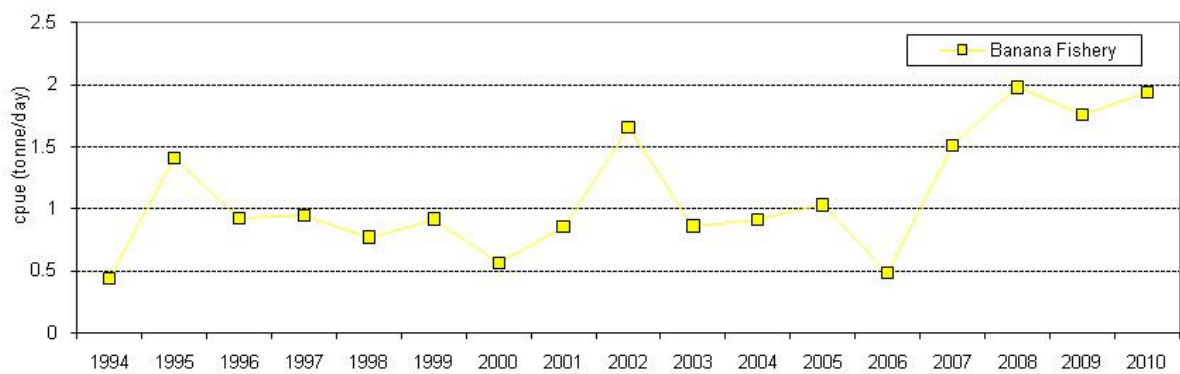


Figure 25b: Catch rate for the banana prawn fishery in the Mitchell area between 1994 and 2010.

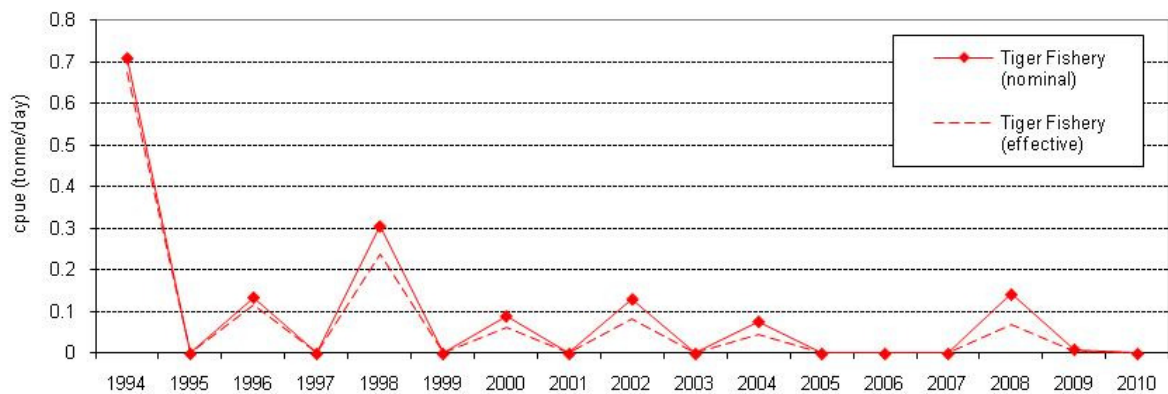


Figure 25c: Catch rate for the tiger prawn fishery in the Mitchell area between 1994 and 2010.

Bold

Banana prawn catches in the Bold area decreased from 1,614 t in 2009 to 1,097 t in 2010. Catches of tiger prawns decreased from 52 t in 2009 to 45 t in 2010, while endeavour prawns catches decreased from 41 t in 2009 to 16 t in 2010 (Figure 26). Banana prawns dominated the catch in this area in 2010, comprising 95% of the catch (Figure 27a).

Effort in the banana prawn fishery decreased from 531 days in 2009 to 442 in 2010 (Figure 28a). CPUE of banana prawns decreased from 3.04 t per day in 2009 to 2.47 t per day in 2010 (Figure 28b). Effort in the tiger prawn fishery continued to decline from 168 days in 2009 to 87 in 2010 (Figure 28a). Nominal and effective CPUE of tiger prawns increased from 0.559 t and 0.256 t per day respectively in 2009, to 0.739 and 0.322 t per day in 2010 (Figure 28c).

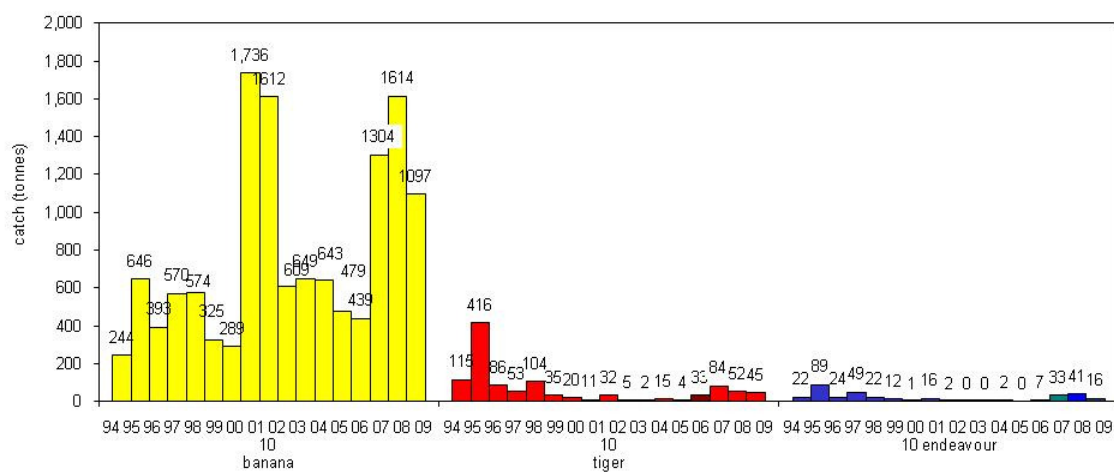
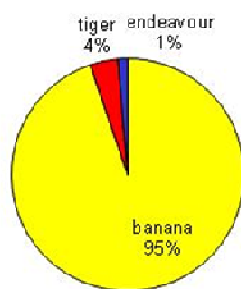


Figure 26: Catch by species in the Bold area between 1994 and 2010.

a)



b)

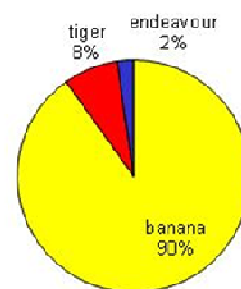


Figure 27: (a) Percentage catch of prawn species in the Bold area during 2010 and (b) catch of prawn species in the Bold area from 1994 to 2010 (b).

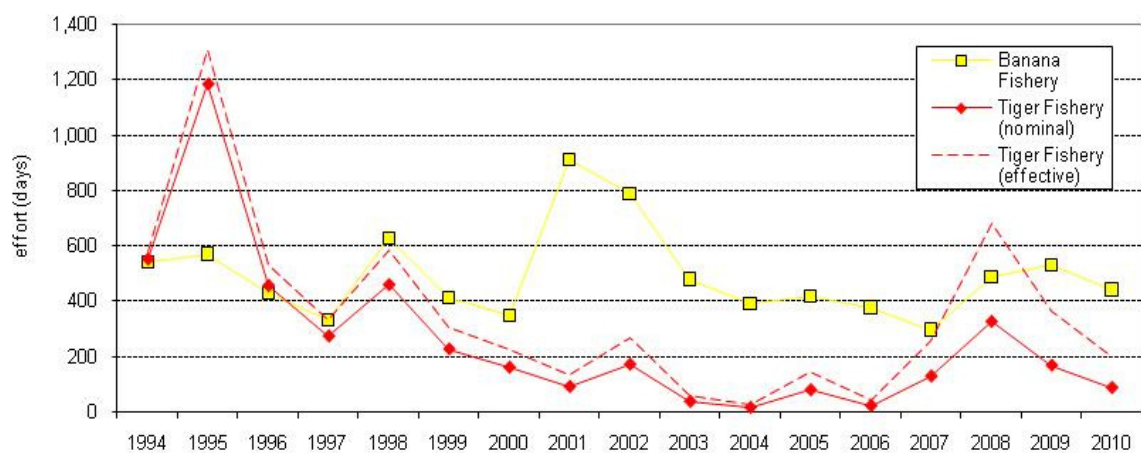


Figure 28a: Effort for the banana and tiger prawn fisheries in the Bold area between 1994 and 2010.

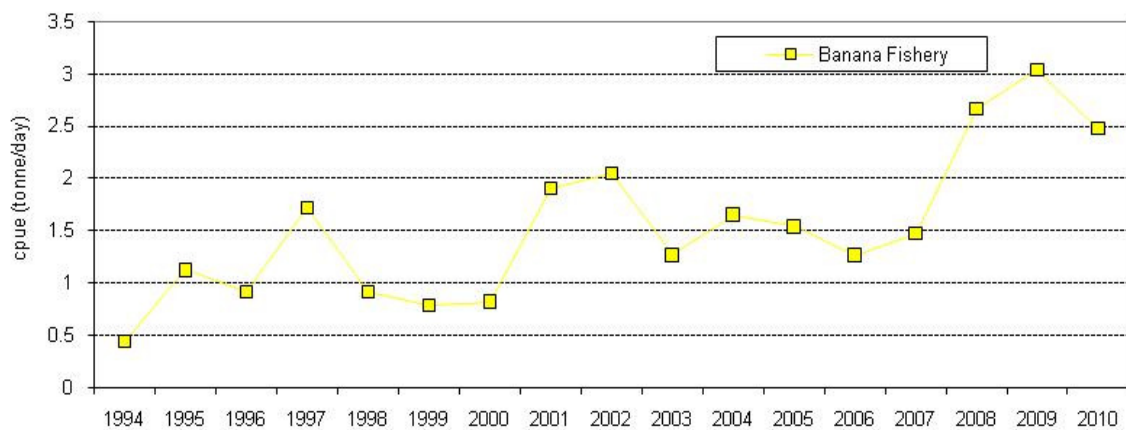


Figure 28b: Catch rate for the banana prawn fishery in the Bold area between 1994 and 2010.

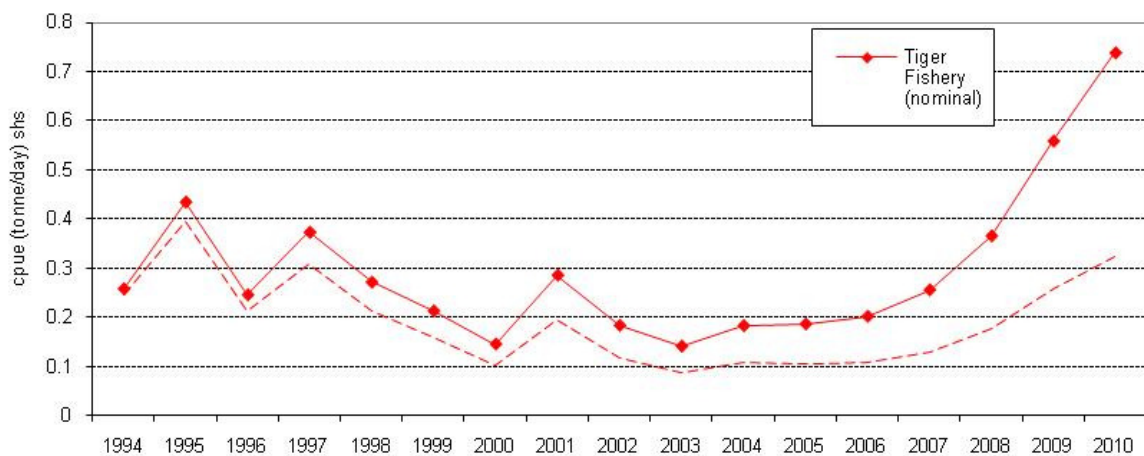


Figure 28c: Catch rate for the tiger prawn fishery in the Bold area between 1994 and 2010.

Sweers

Banana prawn catches in the Sweers area increased from 178 t in 2009 to 397 t in 2010. Catches of tiger and endeavour prawns were similar to 2009 at 4 t and 7 t, respectively, compared to 4 t and 3 t in 2009 (Figure 29). Banana prawns comprised 97% of the catch for 2010 (Figure 30).

Effort in the banana fishery increased from 61 days in 2009 to 179 days in 2010 (Figure 31a). CPUE of banana prawn reduced slightly from 2.924 t per day in 2009 to 2.213 t per day in 2010 (Figure 31b). Effort in the tiger prawn fishery increased from 11 days in 2009 to 22 days in 2010 (Figure 31a). Nominal and effective CPUE of tiger prawns for 2010 decreased slightly from 0.702 and 0.322 t per day, respectively in 2009 to 0.576 and 0.251 t per day in 2010 (Figure 31c).

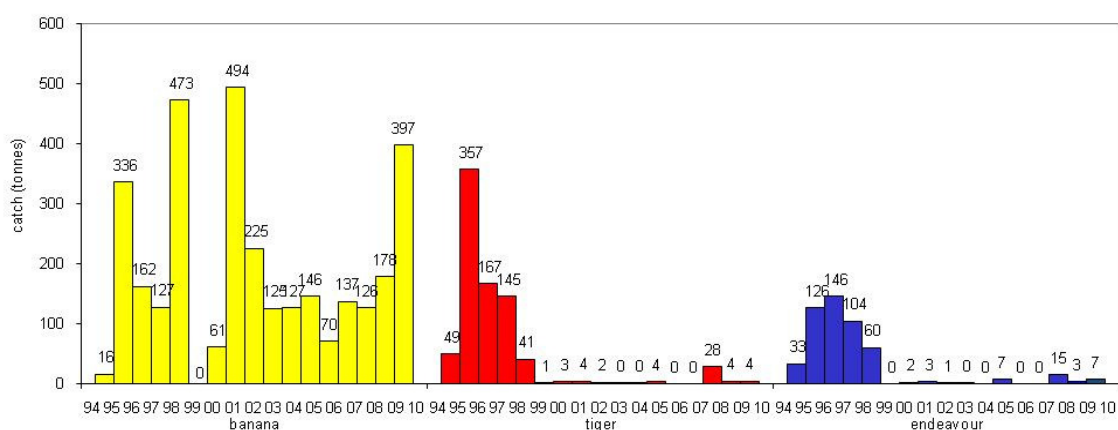
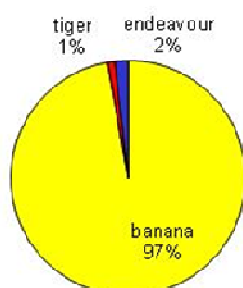


Figure 29: Catch by species in the Sweers area between 1994 and 2010.

a)



b)

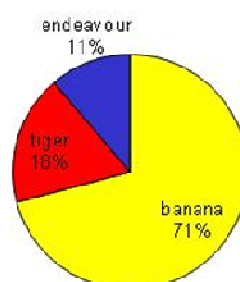


Figure 30: (a) Percentage catch of prawn species in the Sweers area during 2010, and (b) percentage catch of prawn species in the Sweers area from 1994 to 2010 (b).

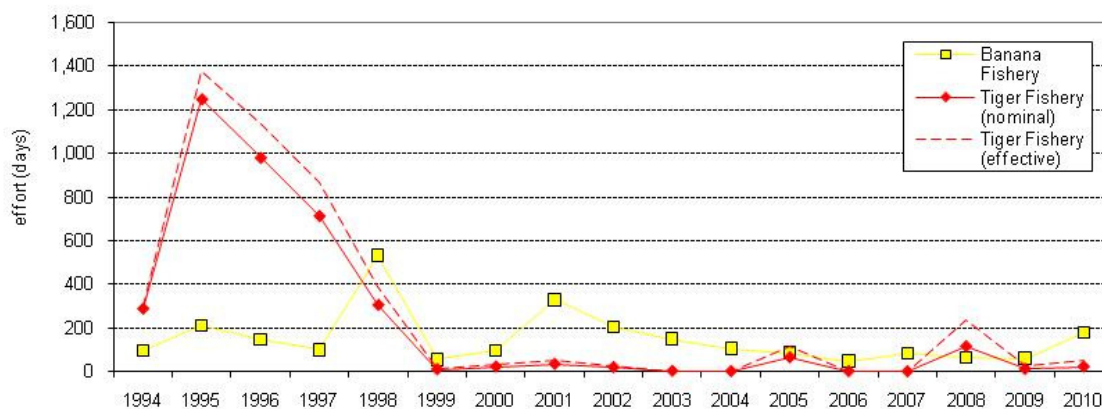


Figure 31a: Effort for the banana and tiger prawn fisheries in the Sweers area between 1994 and 2010.

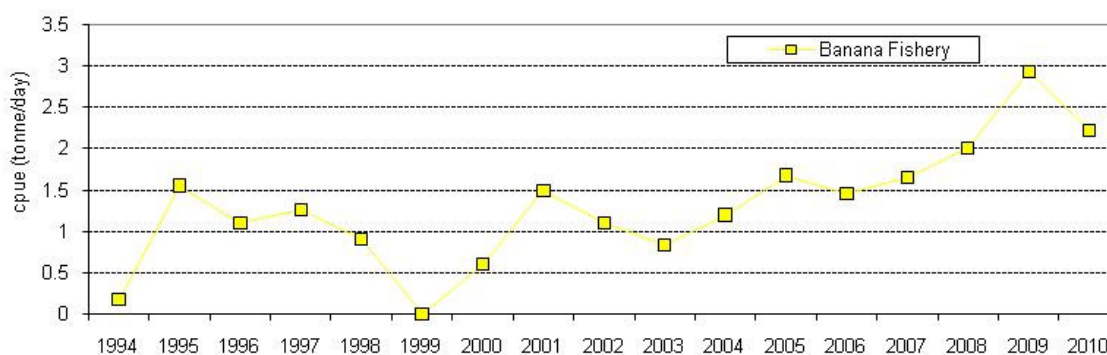


Figure 31b: Catch rate for the banana prawn fishery in the Sweers area between 1994 and 2010.

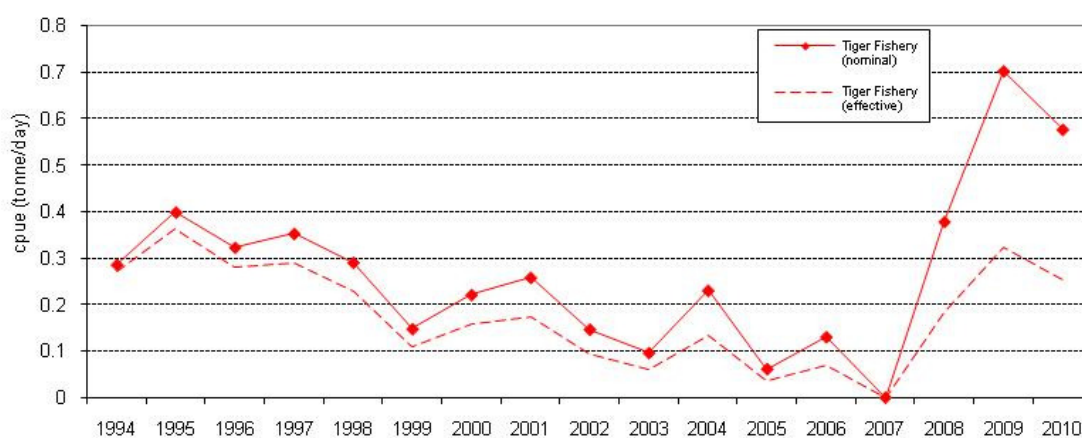


Figure 31c: Catch rate for the tiger prawn fishery in the Sweers area between 1994 and 2010.

Mornington

Banana prawn catches in the Mornington area decreased from 634 t in 2009 to 443 t in 2010. Catches of tiger prawns also decreased from 342 t in 2009 to 199 t in 2010. Endeavour prawn catches reduced from 54 t in 2009 to 40 t in 2010 (Figure 32). Banana prawns dominated the catch in this area, contributing to 65% of the catch in 2010 (Figure 33).

Effort in the banana fishery decreased from 286 days in 2009 to 258 in 2010 (Figure 34a). CPUE of banana prawn decreased from 2.202 t per day in 2009 to 1.711 t per day in 2010 (Figure 34b). Effort in the tiger prawn fishery decreased from 1111 days in 2009 to 528 in 2010 (Figure 34a). Nominal and effective CPUE of tiger prawns increased from 0.361 t and 0.165 t per day, respectively in 2009 to 0.456 and 0.199 t per day in 2010 (Figure 34c).

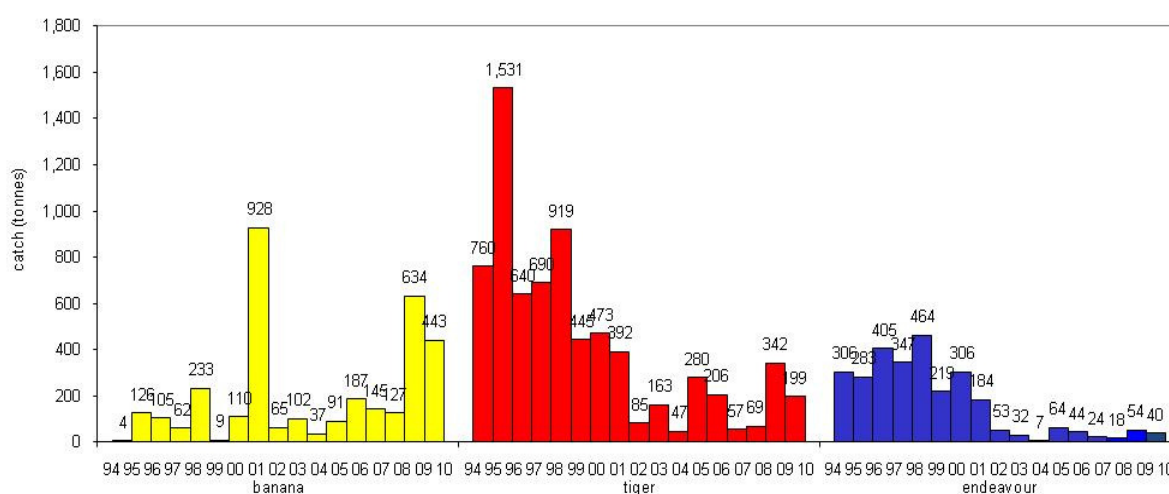
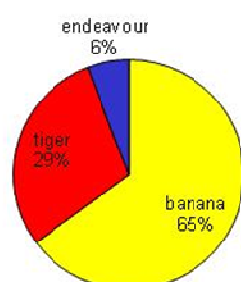


Figure 32: Catch by species in the Mornington area between 1994 and 2010.

a)



b)

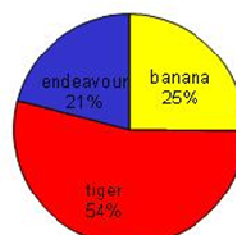


Figure 33: Percentage catch of prawn species in the Mornington area during 2010 (a) and percentage catch of prawn species in the Mornington area from 1994 to 2010 (b).

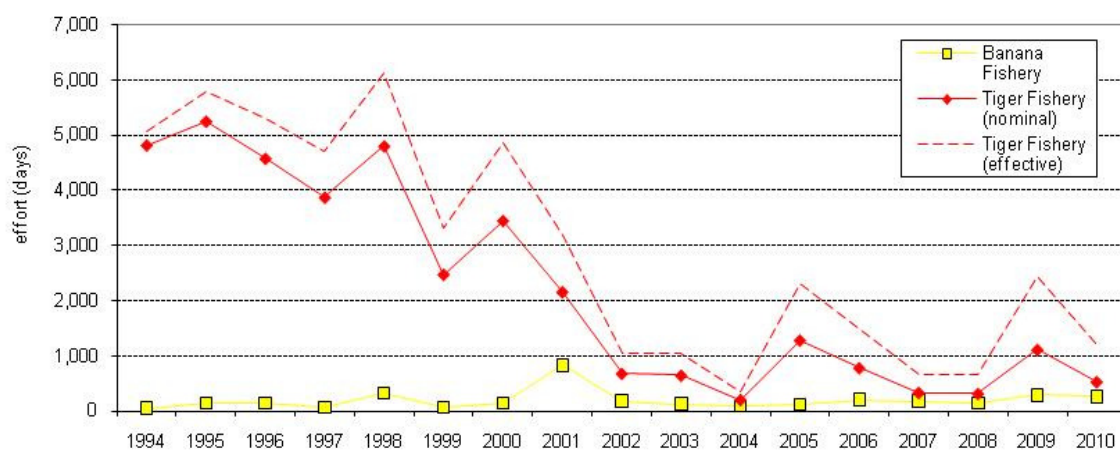


Figure 34a: Effort for the banana and tiger prawn fisheries in the Mornington area between 1994 and 2010.

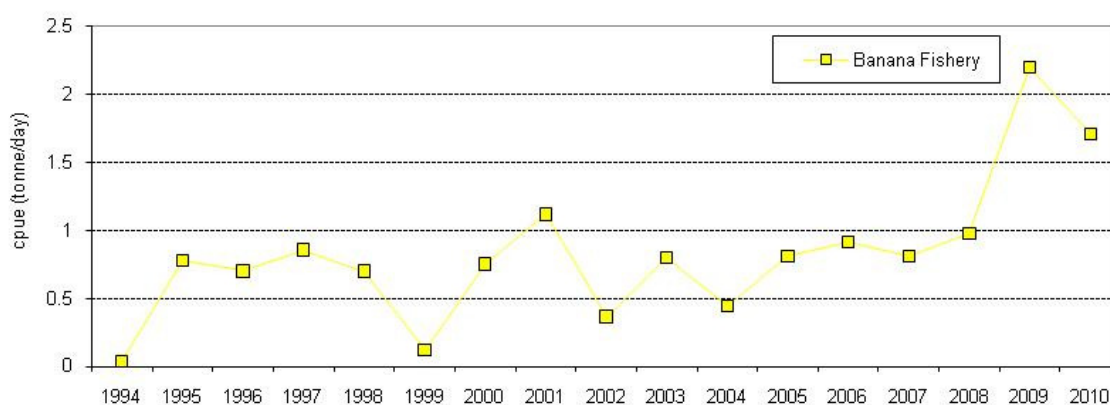


Figure 34b: Catch rate for the banana prawn fishery in the Mornington area between 1994 and 2010.

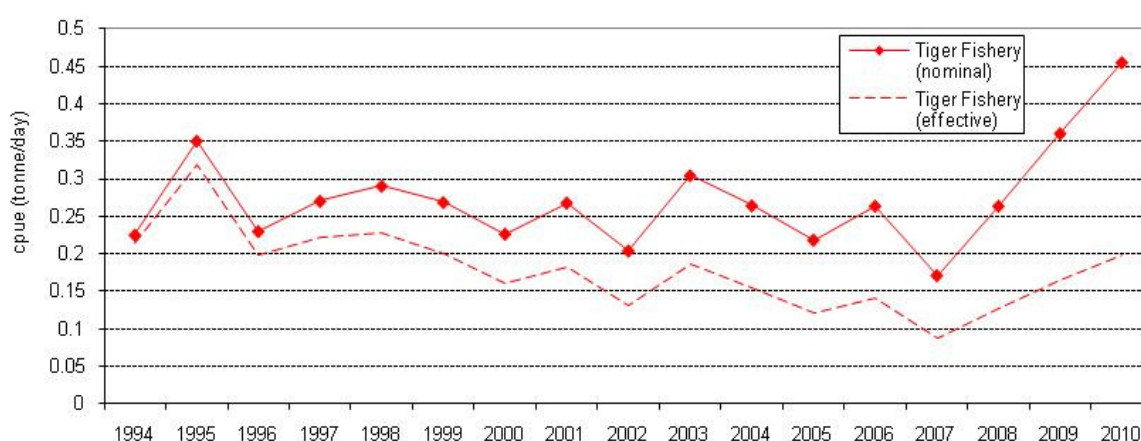


Figure 34c: Catch rate for the tiger prawn fishery in the Mornington area between 1994 and 2010.

Limmen Bight

Banana prawn catches in the Limmen Bight area significantly increased from 380 t in 2009 to 705 t in 2010. Catches of tiger prawns decreased from 581 t in 2009 to 467 t in 2010. Endeavour prawn catches remained constant at 80 t in 2010 compared to 85 t in 2009 (Figure 35). Banana prawns dominated in catch for 2010 in this area, comprising 95% of the total catch (Figure 36).

Effort in the banana fishery increased from 272 days in 2009 to 317 days in 2010 (Figure 37a). CPUE of banana prawns increased from 1.419 t per day in 2009 to 2.232 t per day in 2010 (Figure 37b). Effort in the tiger prawn fishery decreased from 1951 days in 2009 to 1245 in 2010 (Figure 37a). Nominal and effective CPUE of tiger prawns increased from 0.338 and 0.155 t per day in 2009 to 0.436 and 0.200 t per day, respectively in 2010 (Figure 37c).

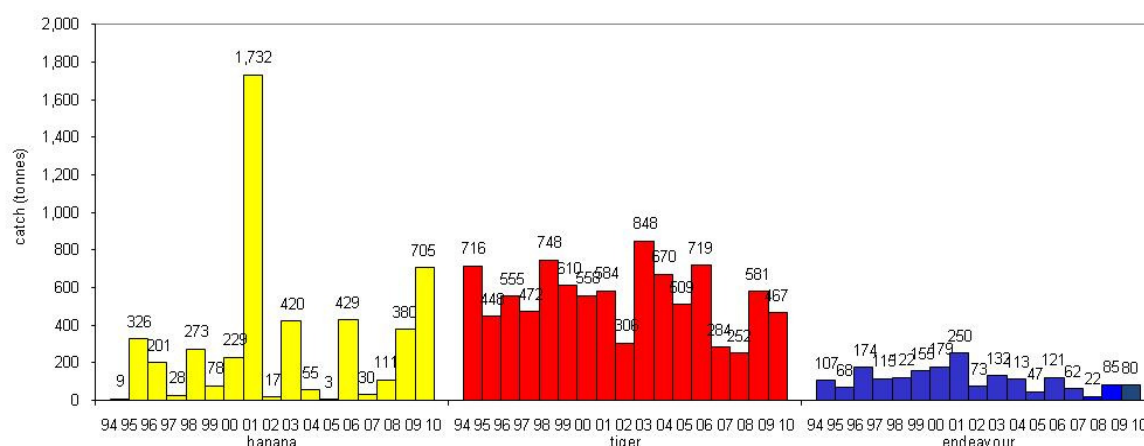


Figure 35: Catch by species in the Limmen Bight area between 1994 and 2010.

a)

b)



Figure 36: Percentage catch of prawn species in the Limmen Bight area during 2010 (a) and percentage catch of prawn species in the Limmen Bight area from 1994 to 2010 (b).

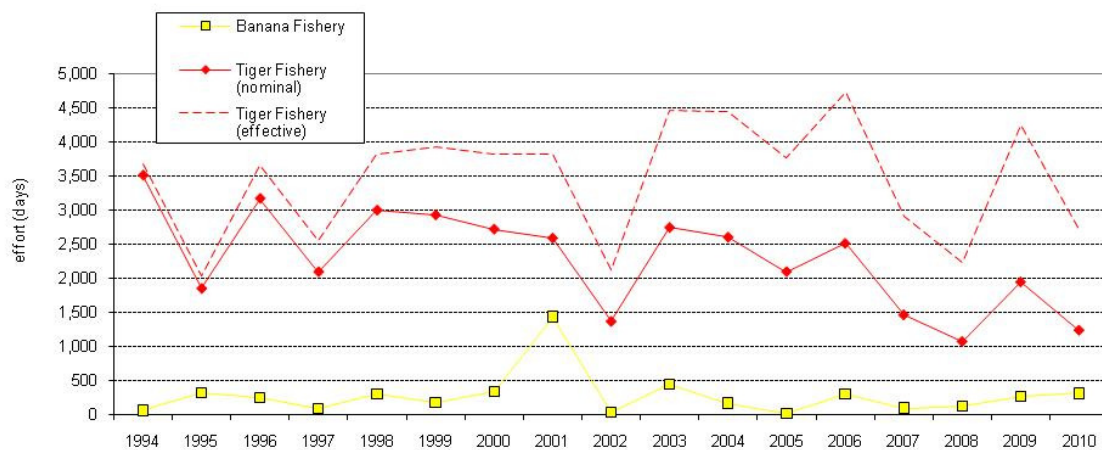


Figure 37a: Effort for the banana and tiger prawn fisheries in the Limmen Bight area between 1994 and 2010.

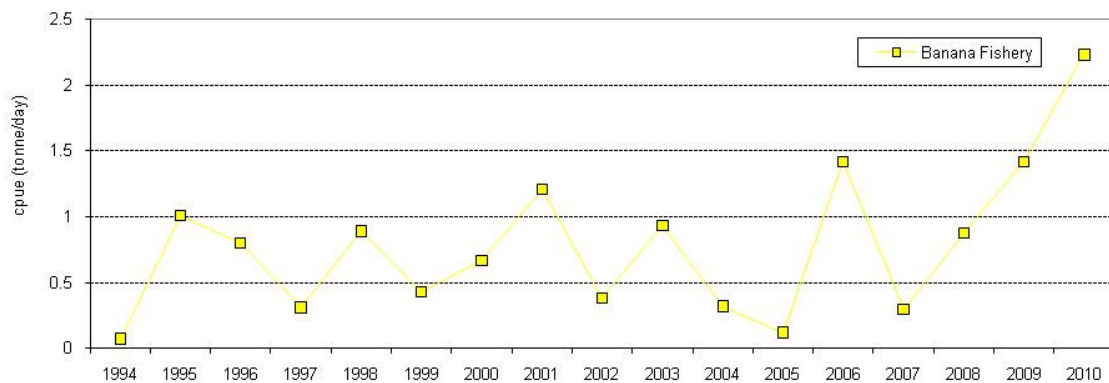


Figure 37b: Catch rate for the banana prawn fishery in the Limmen Bight area between 1994 and 2010

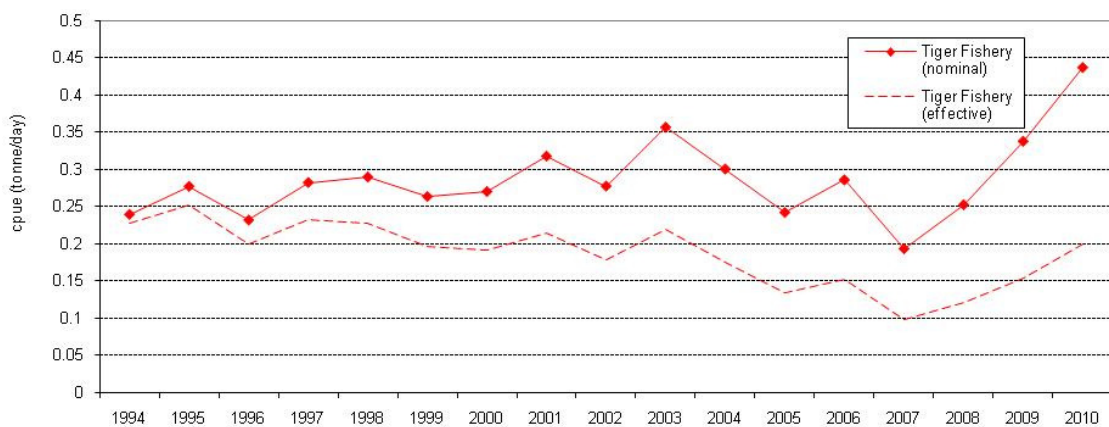


Figure 37c: Catch rate for the tiger prawn fishery in the Limmen Bight area between 1994 and 2010.

Groote

Banana prawn catches in the Groote area increased from 149 t in 2009 to 215 t in 2010. Catches of tiger prawns increased significantly from 138 t in 2009 to 618 t in 2010. Endeavour prawn catches increased from 71 t in 2009 to 207 t in 2010 (Figure 38). In 2010, prawn catch comprised of 59% tiger prawns, 21% banana prawns and 20% endeavour prawns (Figure 39).

Effort in the banana fishery almost doubled from 146 days in 2009 to 235 in 2010 (Figure 40a). CPUE of banana prawns decreased from 1.044 t per day in 2009 to 0.96 t per day in 2010 (Figure 40c). Effort in the tiger prawn fishery also increased markedly from 818 days in 2009 to 2059 days in 2010 (Figure 40a). Nominal and effective CPUE of tiger prawns increased from 0.252 and 0.116 t per day in 2009 to 0.394 and 0.180 t per day in 2010, respectively (Figure 40b).

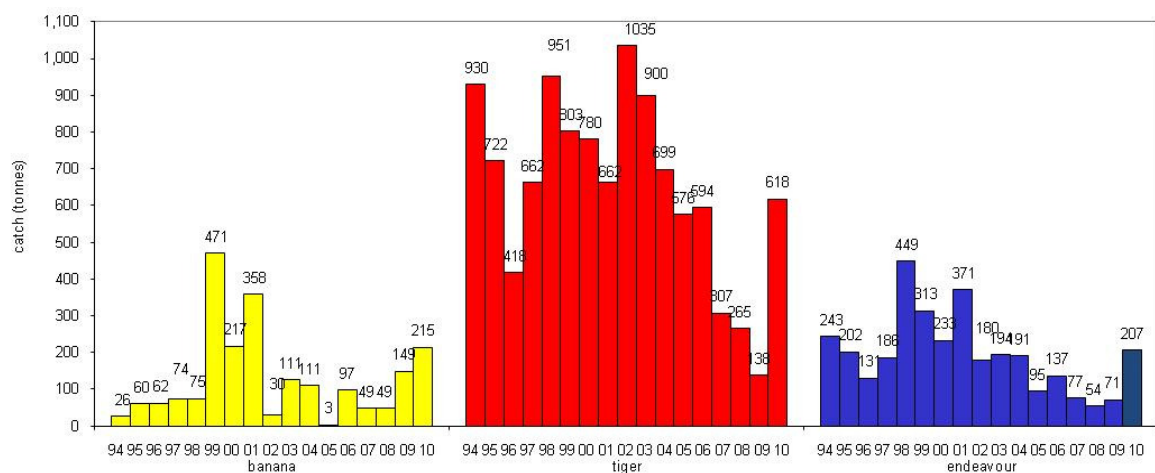
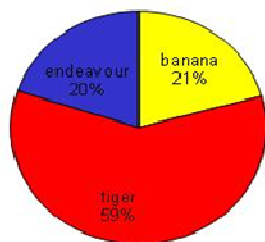


Figure 38: Catch by species in the Groote area between 1994 and 2010.

a)



b)

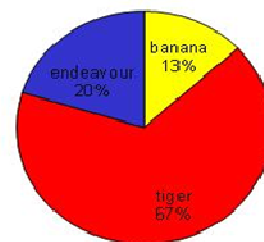


Figure 39: Percentage catch of prawn species in the Limmen Bight area during 2010 (a) and percentage catch of prawn species in the Groote area from 1994 to 2010 (b).

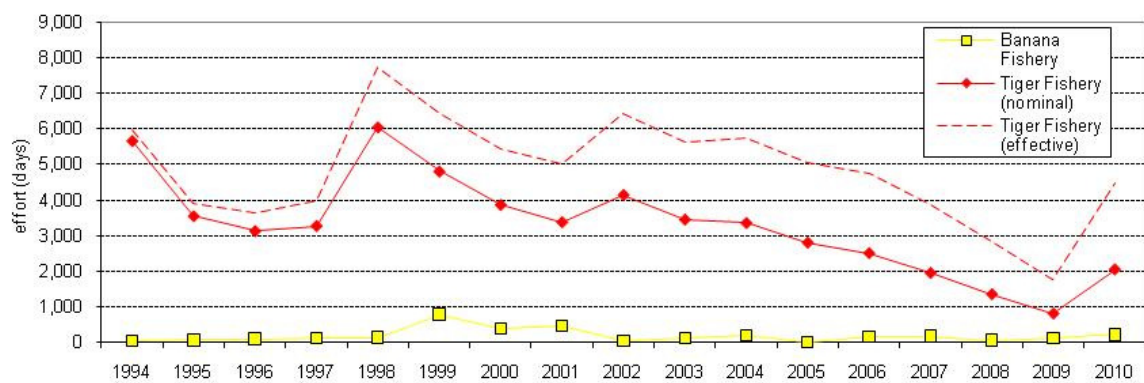


Figure 40a: Effort for the banana and tiger prawn fisheries in the Groote area between 1994 and 2010.

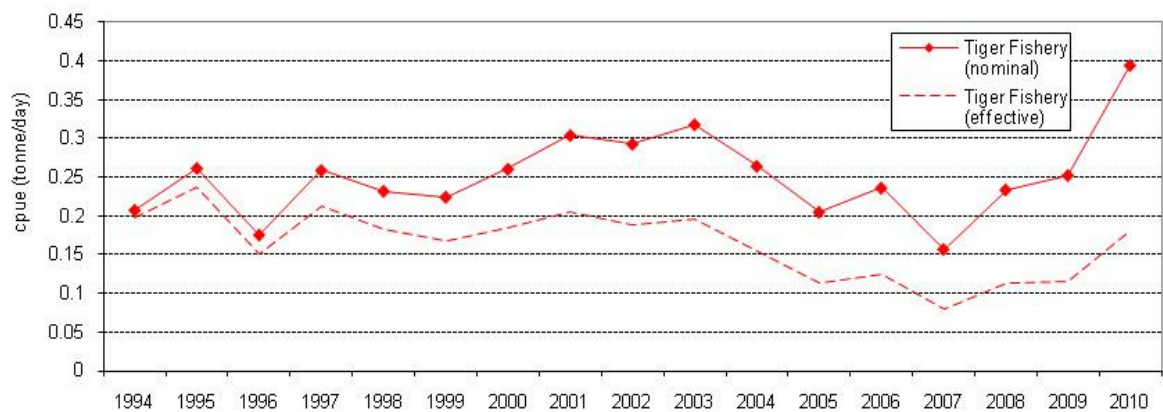


Figure 40b: Catch rate for the tiger prawn fishery in the Groote area between 1994 and 2010.

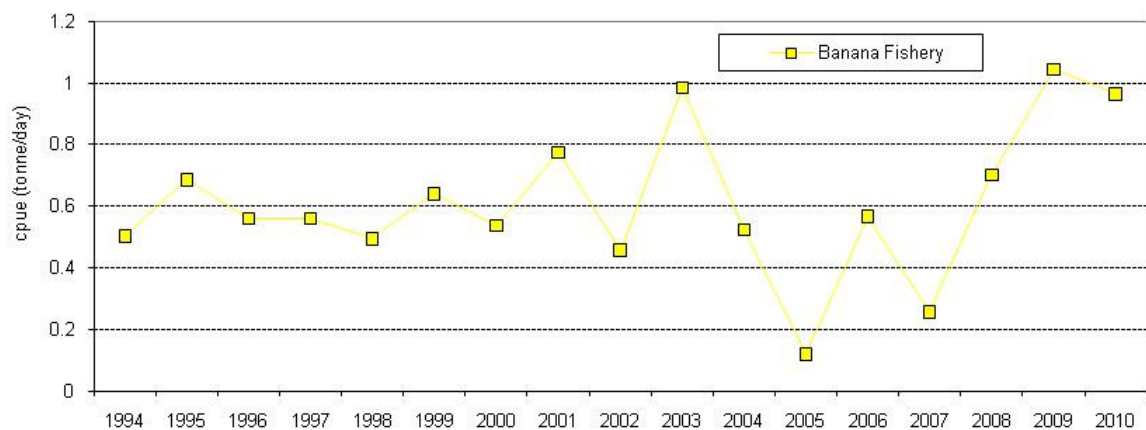


Figure 40c: Catch rate for the banana prawn fishery in the Groote area between 1994 and 2010.

Gove

Banana prawn catches in the Gove area increased from 11 t in 2009 to 68 t in 2010. Catches of tiger prawns increased markedly from 35 t in 2009 to 241 t in 2010, while endeavour prawn catches increased from 13 t in 2008 to 35 t in 2010 (Figure 41). Tiger prawns dominated the catch for 2010 in this area, contributing to 70% of the catch, with banana prawns comprising 20% and endeavour prawns the remaining 10% (Figure 42).

Effort in the banana fishery increased from 15 days in 2009 (Figure 43a) to 51 in 2010. CPUE of banana prawns increased significantly from 0.706 t per day in 2009 to 1.291 t per day in 2010 (Figure 43b). Effort in the tiger prawn fishery increased from 240 days in 2009 to 706 days in 2010 (Figure 43a). Nominal and effective CPUE for tiger prawns increased from 0.201 and 0.092 t per day respectively in 2009 to 0.393 and 0.171 t per day in 2010 (Figure 43c).

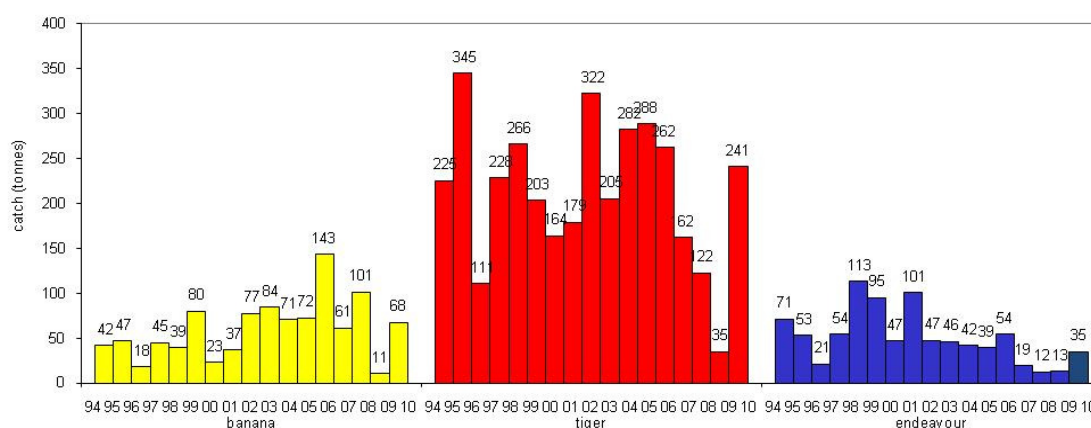


Figure 41: Catch by species in the Gove area between 1994 and 2010.

a) b)



Figure 42: Percentage catch of prawn species in the Gove area during 2010 (a) and percentage catch of prawn species in the Gove area from 1994 to 2010 (b).

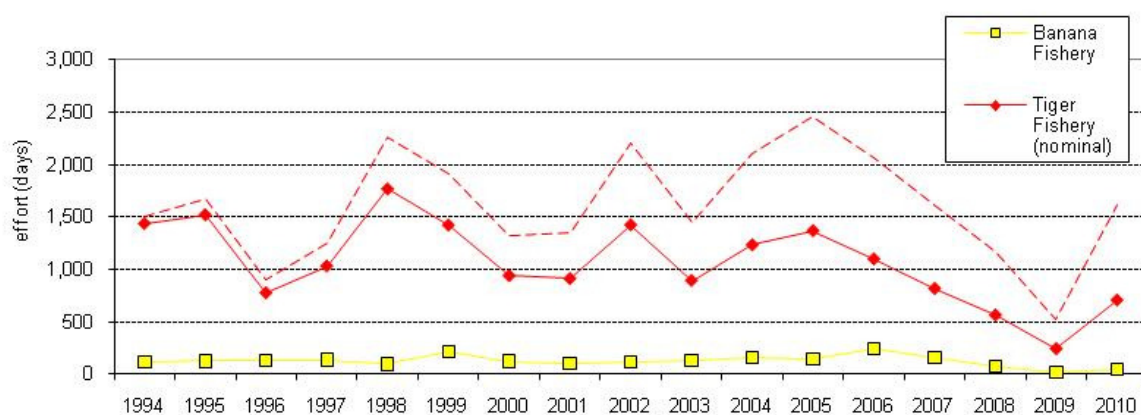


Figure 43a: Effort for the banana and tiger prawn fisheries in the Gove area between 1994 and 2010.

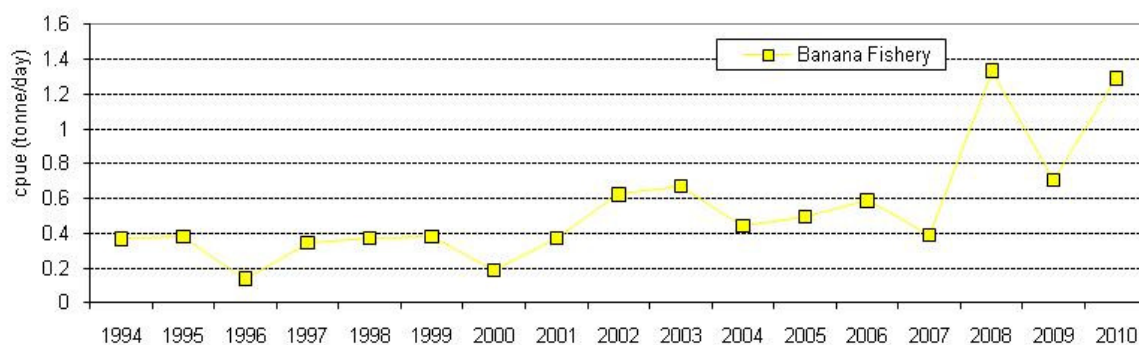


Figure 43b: Catch rate for the banana prawn fishery in the Gove area between 1994 and 2010.

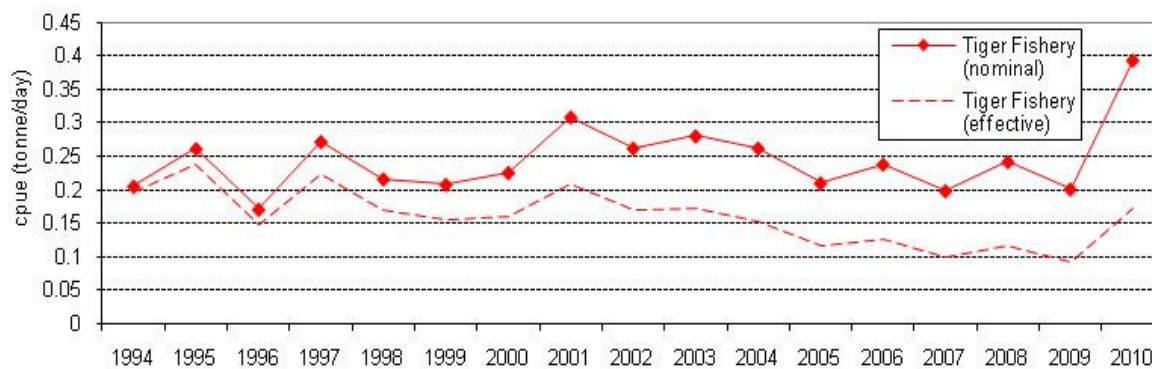


Figure 43c: Catch rate for the tiger prawn fishery in the Gove area between 1994 and 2010.

Arnhem

Banana prawn catches in the Arnhem area increased significantly from 48 t in 2009 to 258 t in 2010. Catches of tiger prawns decreased from 9 t in 2009 to 4 t in 2010. Endeavour prawn catches remained at less than one tonne in 2010 (Figure 44). Banana prawns dominated the catch for 2010, contributing to 99% of the catch (Figure 45).

Effort in the banana fishery increased from 35 days in 2009 to 124 days in 2010 (Figure 46a). CPUE of banana prawns increased from 1.374 t per day in 2009 to 2.078 t per day in 2010 (Figure 46b). Effort in the tiger prawn fishery decreased from 38 days in 2009 to 17 days in 2010 (Figure 46a). Nominal and effective CPUE of tiger prawns decreased from 0.236 and 0.108 t per day in 2009, to 0.214 and 0.093 t per day, respectively (Figure 46c).

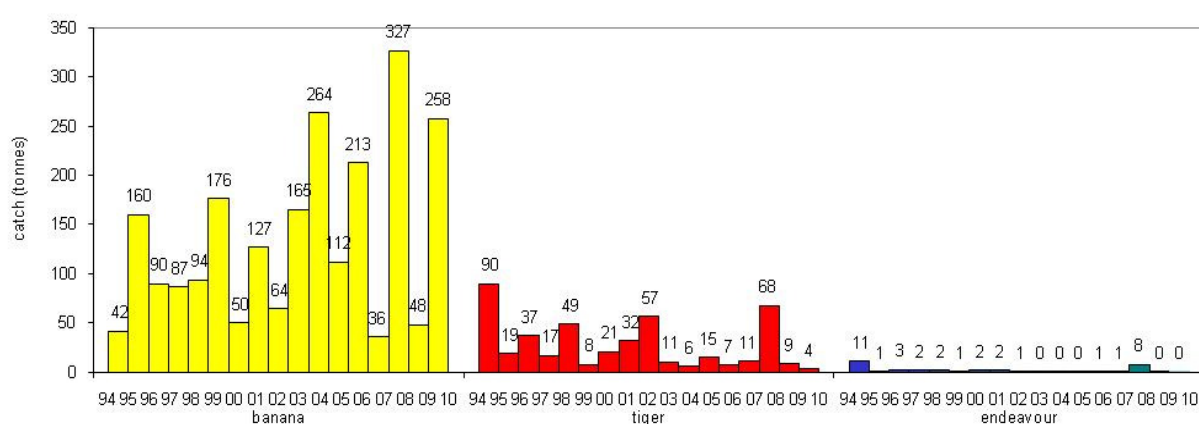
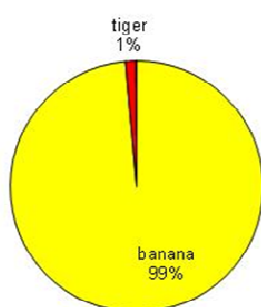


Figure 44: Catch by species in the Arnhem area between 1994 and 2010.

a)



b)

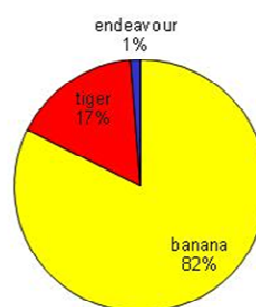


Figure 45: Percentage catch of prawn species in the Arnhem area during 2010 (a) and percentage catch of prawn species in the Arnhem area from 1994 to 2010 (b).

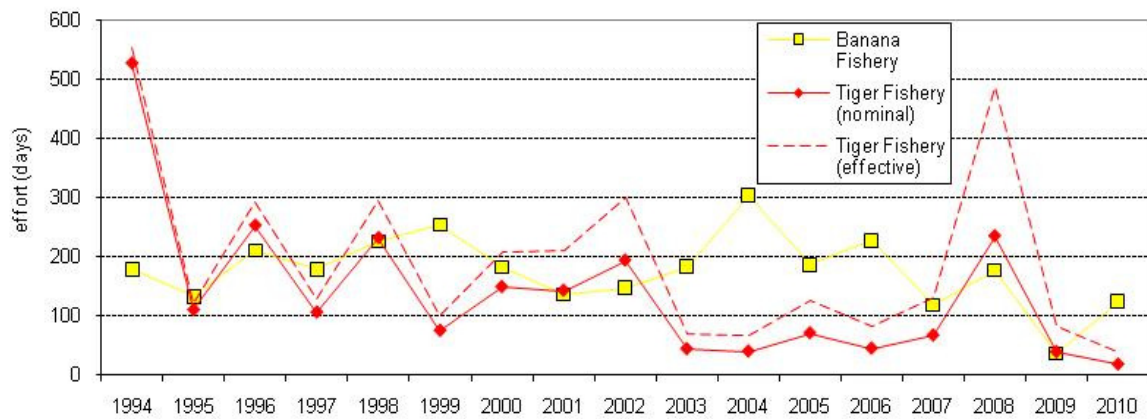


Figure 46a: Effort for the banana and tiger prawn fisheries in the Arnhem area between 1994 and 2010.

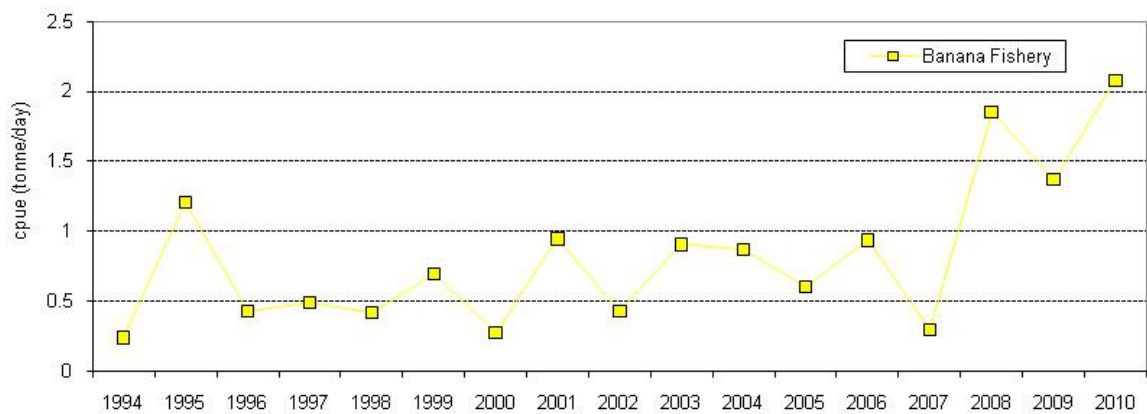


Figure 46b: Catch rate for the banana prawn fishery in the Arnhem area between 1994 and 2010.

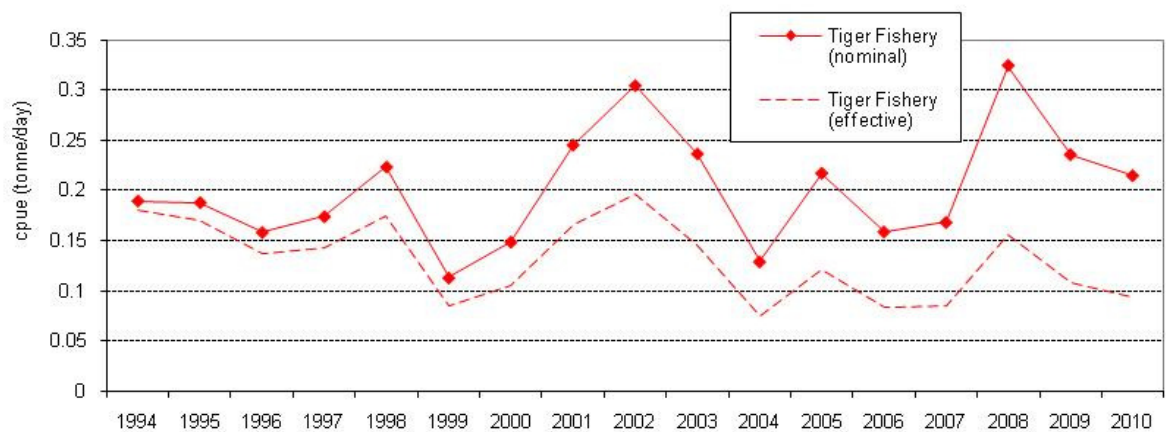


Figure 46c: Catch rate for the tiger prawn fishery in the Arnhem area between 1994 and 2010.

Port Essington

Banana prawn catches in the Port Essington area increased from 107 t in 2009 to 254 t in 2010. Tiger prawn catches reduced from 15 t in 2009 to 8 t in 2010. Endeavour prawn catches reduced from 5 t in 2009 to 3 t in 2010 (Figure 47). Banana prawns dominated catches at 96% (Figure 48).

Effort in the banana fishery increased from 103 days in 2009 to 208 days in 2010 (Figure 49a). CPUE of banana prawns increased from 1.062 t per day in 2009 to 1.24 t per day in 2010 (Figure 49b). Effort in the tiger prawn fishery decreased from 51 days in 2009 to 18 days in 2010 (Figure 49a). Nominal and effective CPUE of tiger prawns decreased from 0.332 and 0.152 t per day in 2009 to 0.323 and 0.141 t per day in 2010, respectively (Figure 49c).

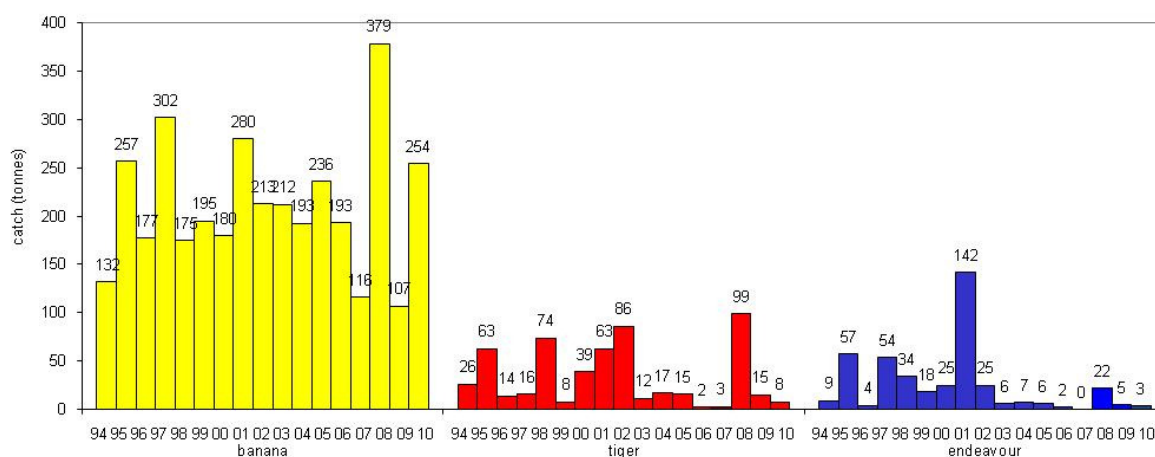


Figure 47: Catch by species in the Port Essington area between 1994 and 2010.

a)

b)

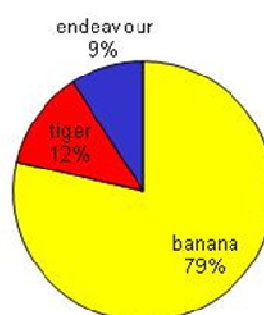
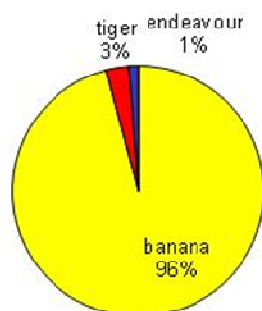


Figure 48: (a) Percentage catch of prawn species in the Port Essington area during 2010, and (b) percentage catch of prawn species in the Port Essington area from 1994 to 2010.

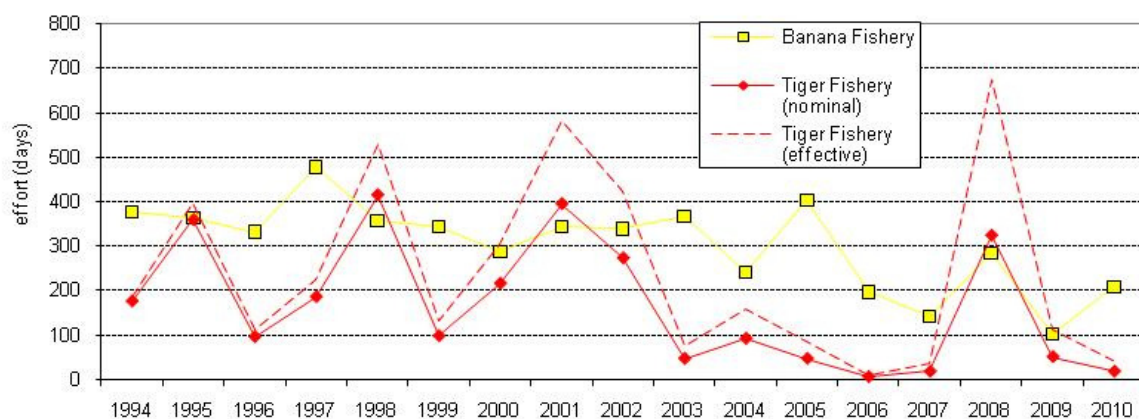


Figure 49a: Effort for the banana and tiger prawn fisheries in the Port Essington area between 1994 and 2010.

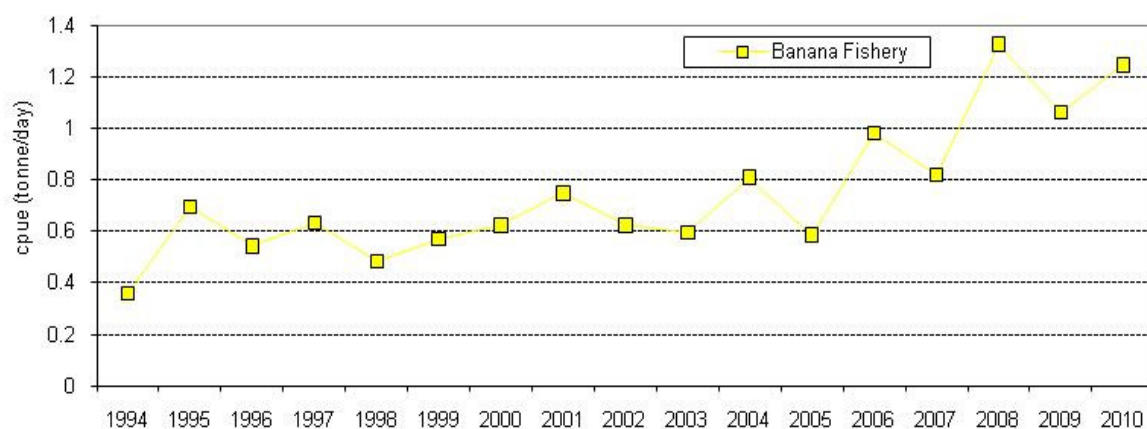


Figure 49b: Catch rate for the banana prawn fishery in the Port Essington area between 1994 and 2010.

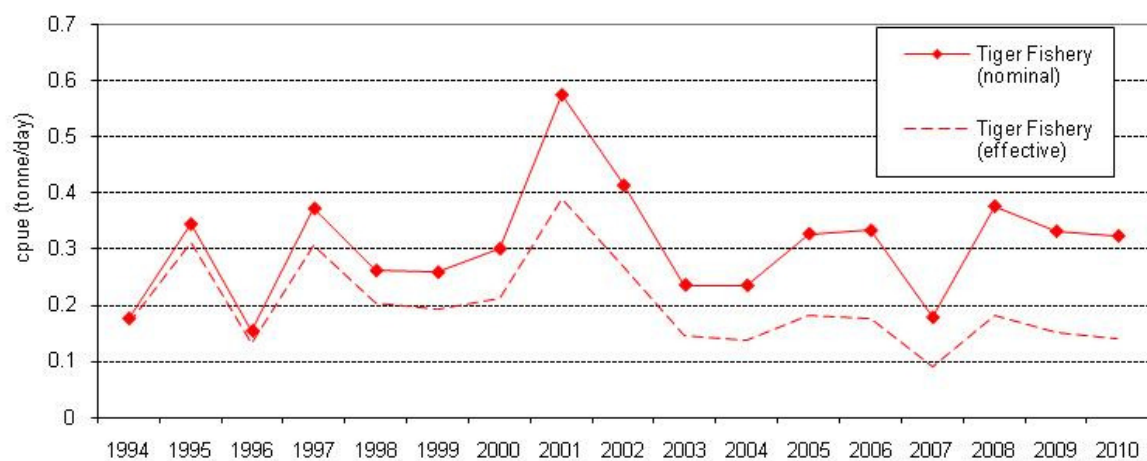


Figure 49c: Catch rate for the tiger prawn fishery in the Port Essington area between 1994 and 2010.

Melville

Banana prawn catches in the Melville area increased from 302 t in 2009 to 343 t in 2010. Catches of tiger and endeavour prawns were 4 t and 3 t in 2010, respectively (Figure 50). Banana prawns comprised 98% of the catch in 2010 (Figure 51).

Effort in the banana fishery increased from 208 days in 2009 to 294 in 2010 (Figure 52a). CPUE of banana prawns decreased from 1.488 t per day in 2009 to 1.186 in 2010 (Figure 52b). Effort in the tiger prawn fishery decreased from 34 days in 2009 to 7 days in 2010 (Figure 52a). Nominal and effective CPUE for tiger prawns decreased from 0.358 and 0.164 t per day, respectively in 2009 to 0.172 and 0.075 t per day in 2010 (Figure 52c).

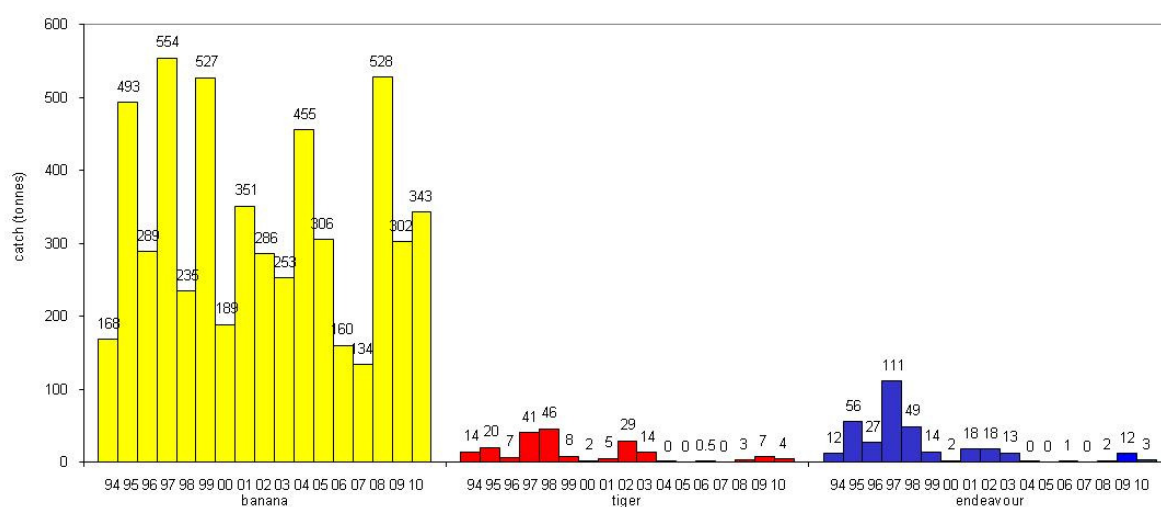


Figure 50: Catch by species in the Melville area between 1994 and 2010.

a)

b)



Figure 51: (a) Percentage catch of prawn species in the Melville area during 2010, and (b) percentage catch of prawn species in the Melville area from 1994 to 2010.

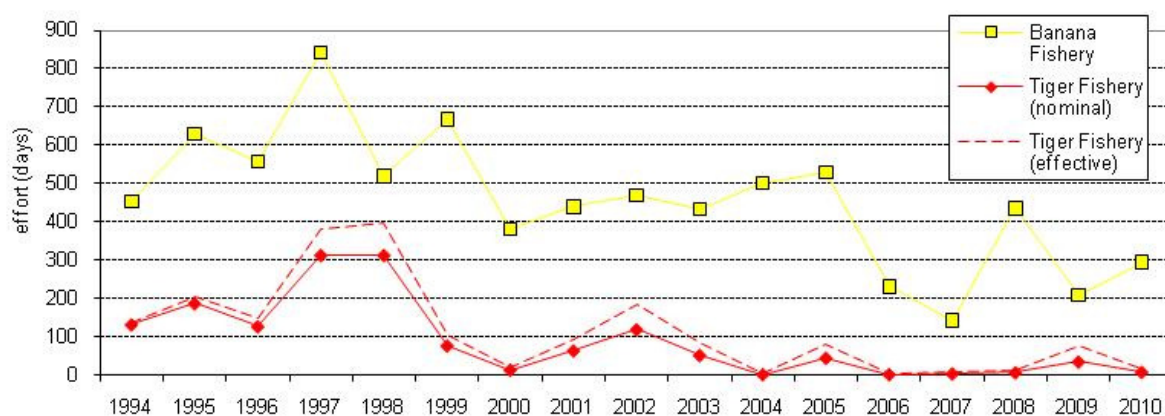


Figure 52a: Effort for the banana and tiger prawn fisheries in the Melville area between 1994 and 2010.

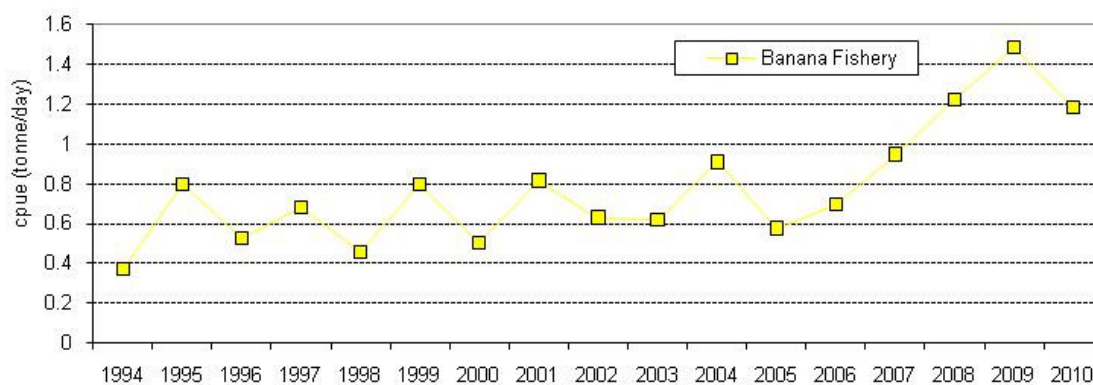


Figure 52b: Catch rate for the banana prawn fishery in the Melville area between 1994 and 2010.

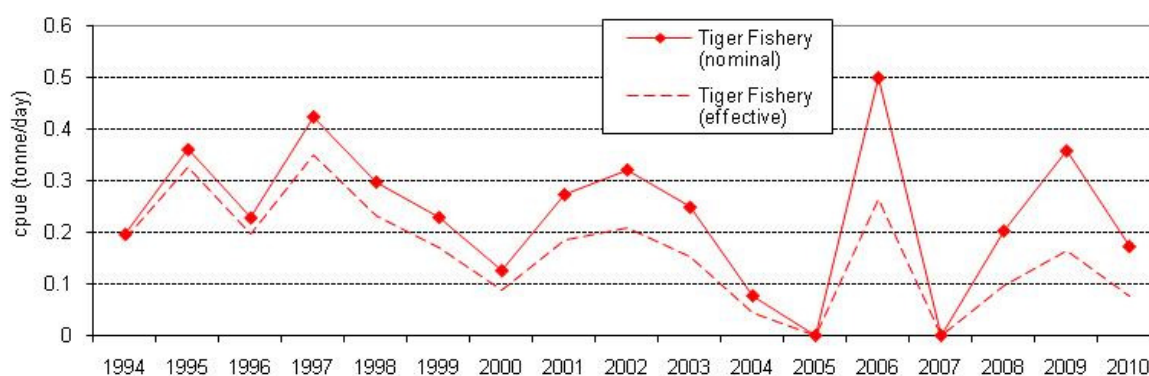


Figure 52c: Catch rate for the tiger prawn fishery in the Melville area between 1994 and 2010.

Fog Bay

Banana prawn catches in the Fog Bay area increased from 287 t in 2009 to 318 t in 2010. Catches of tiger and endeavour prawns in 2010 were the less than one tonne (Figure 53). Banana prawns comprised 100% of the catch for 2010 in this area (Figure 54).

Effort in the banana fishery increased from 107 days in 2009 to 180 days in 2010 (Figure 55a). CPUE of banana prawns decreased from 2.682 t per day in 2009 to 1.765 t per day in 2010 (Figure 55b). No effort was expended in the tiger prawn fishery in 2010 (Figure 55a). Both nominal and effective CPUE were zero in 2010 (Figure 55c).

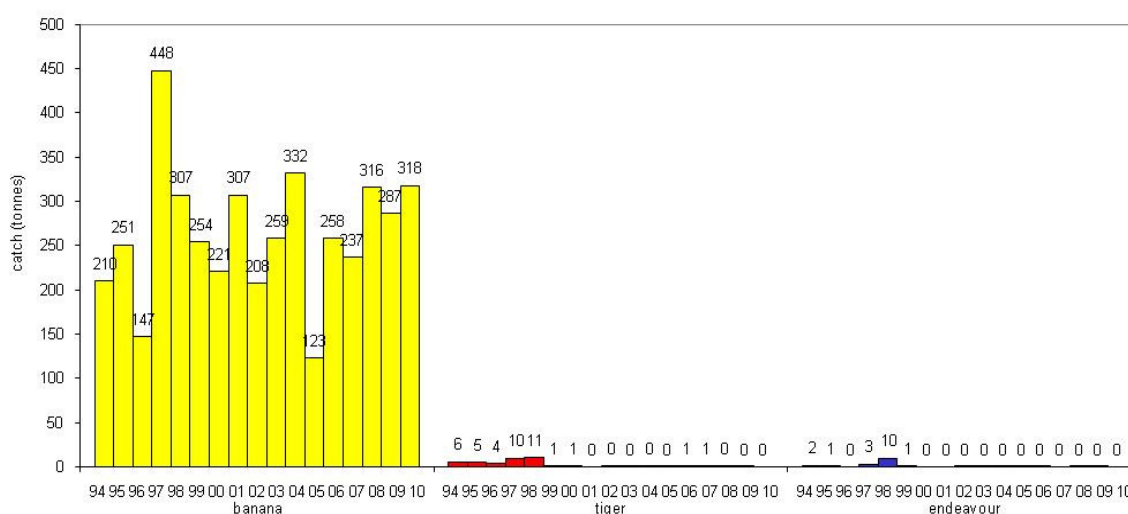
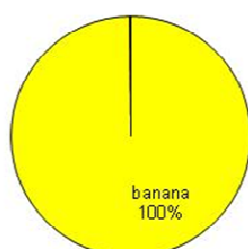


Figure 53: Catch by species in the Fog Bay area between 1994 and 2010.

a)



b)

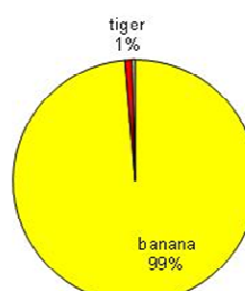


Figure 54: Percentage catch of prawn species in the Fog Bay area during 2010 (a) and percentage catch of prawn species in the Fog Bay area from 1994 to 2010 (b).

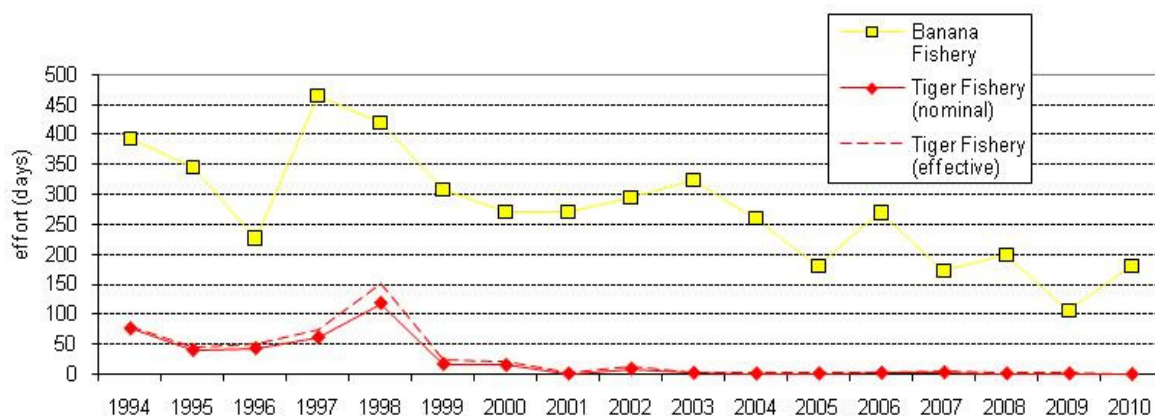


Figure 55a: Effort for the banana and tiger prawn fisheries in the Fog Bay area between 1994 and 2010.

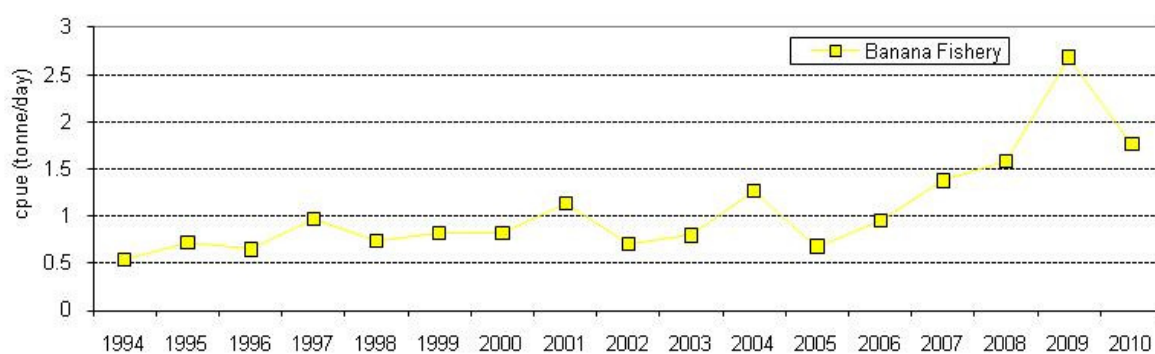


Figure 55b: Catch rate for the banana prawn fishery in the Fog Bay area between 1994 and 2010.

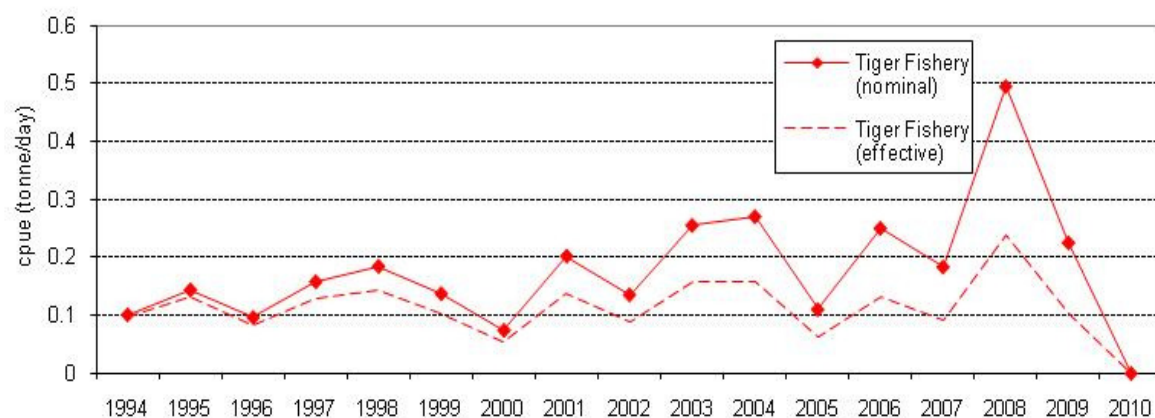


Figure 55c: Catch rate for the tiger prawn fishery in the Fog Bay area between 1994 and 2010.

Bonaparte

Banana prawn catches in the Bonaparte area decreased from 612 t in 2009 to 254 t in 2010. Catches of tiger prawns and endeavour prawns were 2 t and 9 t in 2010, respectively (Figure 56). Banana prawns comprised 96% of the catch for 2010 in this area (Figure 57).

Effort in the banana fishery significantly decreased from 444 days in 2009 to 218 days in 2010 (Figure 58a). CPUE of banana prawns increased from 1.415 t per day in 2009 to 1.199 t in 2010 (Figure 58b). Effort in the tiger prawn fishery decreased from 13 days in 2009 to 10 days in 2010 (Figure 58a). Nominal and effective CPUE of tiger prawns decreased from 0.397 and 0.182 t per day respectively in 2009 to 0.352 and 0.153 t per day in 2010. (Figure 58c).

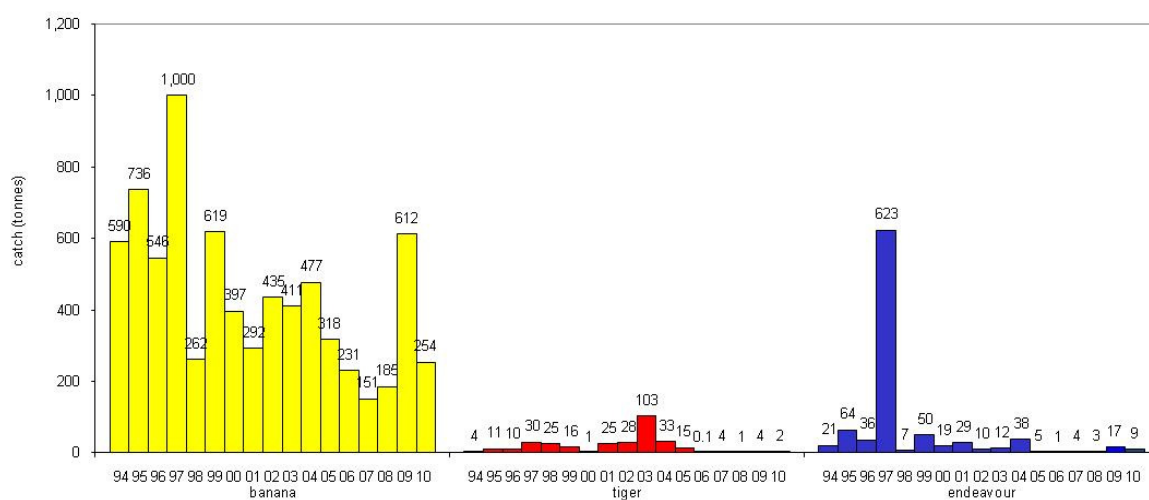
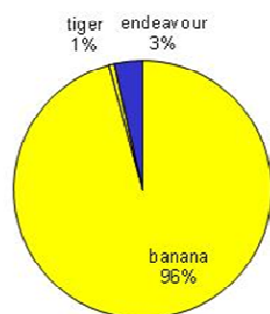


Figure 56: Catch by species in the Bonaparte area between 1994 and 2010.

a)



b)

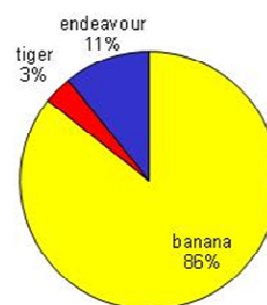


Figure 57: (a) Percentage catch of prawn species in the Bonaparte area during 2010, and (b) percentage catch of prawn species in the Bonaparte area from 1994 to 2010.

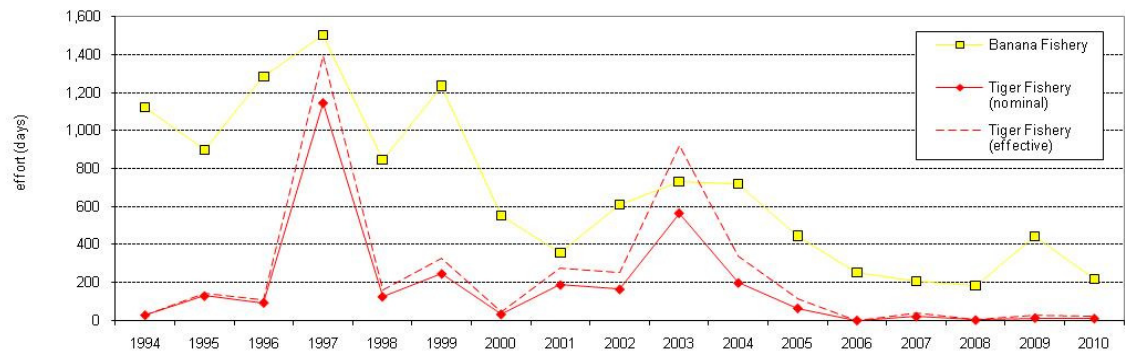


Figure 58a: Effort for the banana and tiger prawn fisheries in the Bonaparte area between 1994 and 2010.

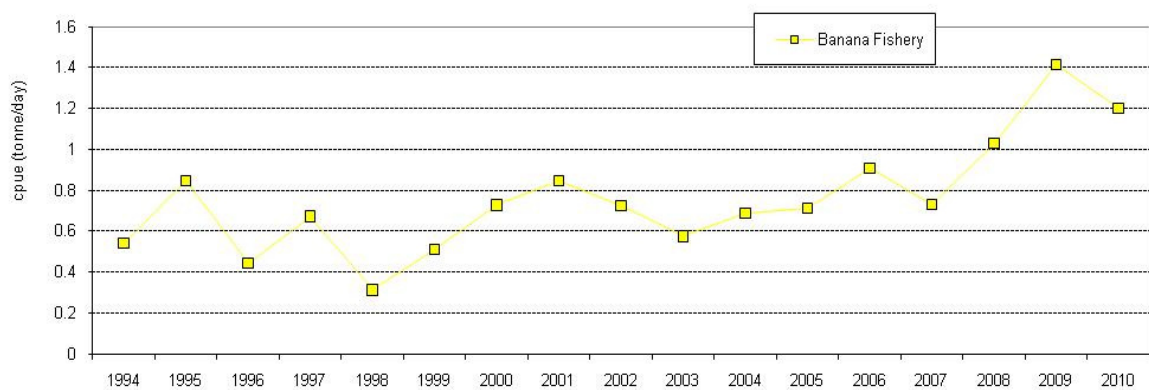


Figure 58b: Catch rate for the banana prawn fishery in the Bonaparte area between 1994 and 2010.

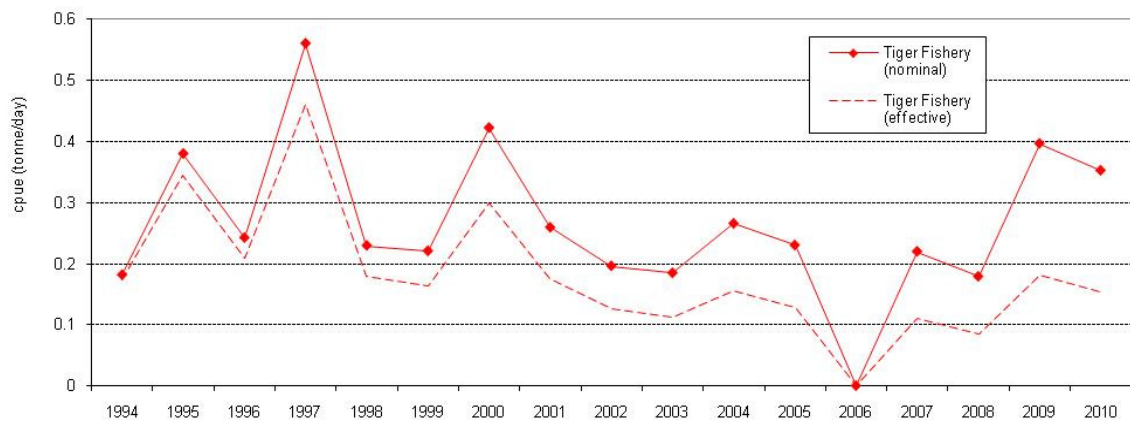


Figure 58c: Catch rate for the tiger prawn fishery in the Bonaparte area between 1994 and 2010.

Bycatch in the Northern Prawn Fishery

Turtle bycatch

A total of 27 turtle interactions were reported in the NPF during 2010 (Table 5). Green turtles were the most numerous (11 interactions), followed by Flatback turtles and Pacific (Olive) Ridley turtles, each with 6 interactions (Figure 59). All turtles were released alive. Turtle bycatch in the NPF was highest in the Limmen Bight, where 10 of 27 interactions occurred (Figure 60).

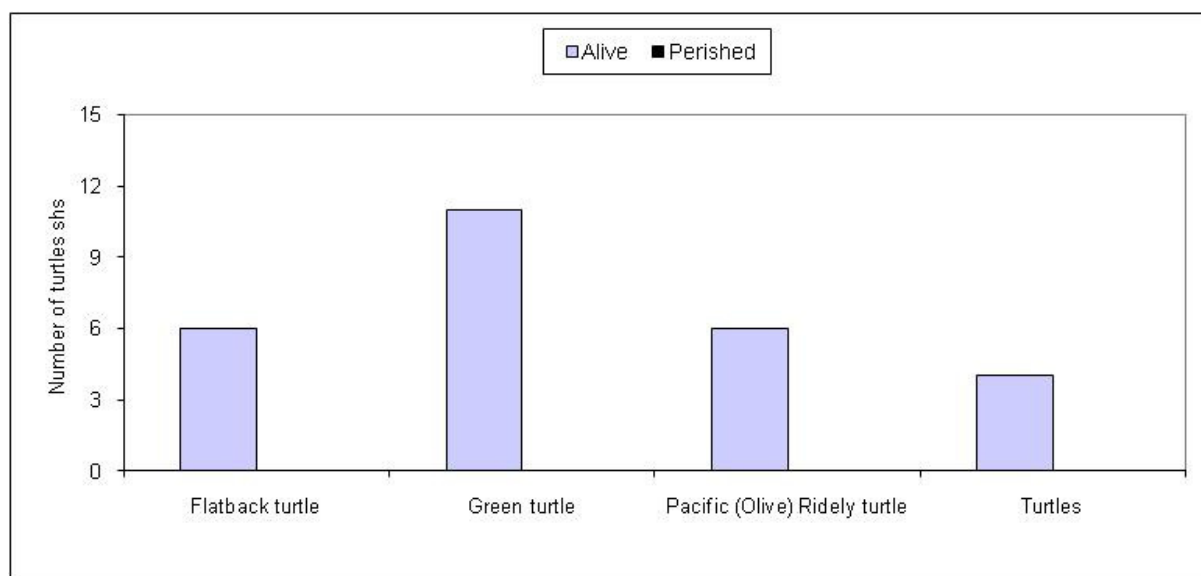


Figure 59: Turtle bycatch in the NPF by area in 2010.

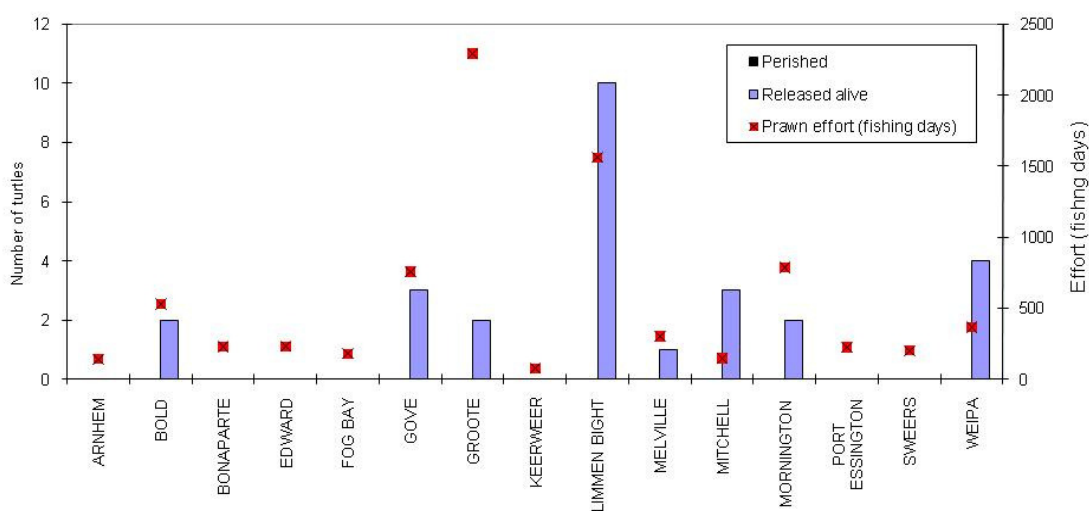


Figure 60: Turtle bycatch in the NPF by species in 2010.

Table 5: Turtle bycatch by species for each area, 2007-2010.

Statistical Area	Turtle Species	Released Alive				Perished				Condition Unknown			
		07	08	09	10	07	08	09	10	07	08	09	10
ARNHEM	Flatback												
	Green			1									
	Hawksbill			1									
	Leatherback												
	Loggerhead		1										
	Pacific Ridley												
	Unidentified species	1	2										
BOLD	Flatback		4	1	1								
	Green				1								
	Hawksbill		1										
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species			1									
BONAPARTE	Flatback												
	Green												
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species			2									
EDWARD	Flatback												
	Green	1											
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species		1	2									
FOG BAY	Flatback												
	Green	2											
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species												
GOVE	Flatback	2			2								
	Green												
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley	2											
	Unidentified species	1	2		1								
GROOTE	Flatback	8			1								
	Green	1		1	1								
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley	3											
	Unidentified species	3	1	7									
LIMMEN BIGHT	Flatback		1	1	2								
	Green			1	1								
	Hawksbill		1										
	Leatherback												
	Loggerhead	1											

Statistical Area	Turtle Species	Turtle Species				Released Alive				Perished			
		07	08	09	10	07	08	09	10	07	08	09	10
	Pacific Ridley				5								
	Unidentified species	2		9	2		3						
MELVILLE	Flatback												
	Green												
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species	7			1	1							
MITCHELL	Flatback												
	Green				3								
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species		1	1									
MORNINGTON	Flatback												
	Green			4	1								
	Hawksbill												
	Leatherback												
	Loggerhead		1										
	Pacific Ridley	1	2	1	1								
	Unidentified species	1		7									
PORT ESSINGTON	Flatback												
	Green												
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley		1										
	Unidentified species	2	1	1									
SWEERS	Flatback		2										
	Green												
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species												
WEIPA	Flatback		1										
	Green	3			4								
	Hawksbill												
	Leatherback												
	Loggerhead												
	Pacific Ridley												
	Unidentified species	14	3	2									
TOTAL ALL AREAS	Flatback	10	8	2	6								
	Green	7		7	11								
	Hawksbill		2	1									
	Leatherback												
	Loggerhead	1	2	0									
	Pacific Ridley	6	3	1	6								
	Unidentified species	31	11	32	4	1	3						
GRAND TOTAL	ALL SPECIES	55	26	43	27	0	1	3	0	0	0	0	0



Sea snake bycatch

A total of 7,470 seasnakes interactions were recorded during 2010. The majority of sea snakes (6,322 individuals, representing 85% of the total) were released alive. 636 (8.5%) perished, 97 (1.3%) were released injured, and 415 (5%) of seasnakes caught were released with condition unknown (Table 6). Seasnake bycatch was significantly higher in the Groote area compared to all other regions (2,472 individuals) and was lowest in Arnhem (28), followed by Keerweer (31). The number of seasnakes interactions recorded in 2010 was comparable to 2009 (7470 and 7315, respectively). The percentage of seasnakes released alive in 2010 was also comparable to 2009 (85% and 87% respectively).

Table 6: Seasnake bycatch by area in the NPF for 2010.

Statistical area	Released alive	Perished	Released injured	Condition unknown	Total
ARNHEM	23	5			28
BOLD	361	47	3		411
BONAPARTE	84	29	3		116
EDWARD	114	11			125
FOG BAY	103	5	1		109
GOVE	430	60	11	119	620
GROOTE	2,345	179	26	192	2,742
KEERWEER	30	1			31
LIMMEN BIGHT	1,162	164	7	74	1,407
MELVILLE	324	53	2		379
MITCHELL	141	7	8		156
MORNINGTON	534	31	16	13	594
PORT ESSINGTON	128	15		1	144
SWEERS	122	9			131
WEIPA	421	20	20	16	477
Total	6,322	636	97	415	7,470

Scampi Catch

Due to data confidentiality requirements scampi catch cannot be disclosed.

Scientific Observer and Crew Member Observer coverage

Tables 7 and 8 enable comparison of recorded interactions with TEP species occurring within the Crew Member Observer (CMO), Scientific Observer and logbook datasets.

In 2010, the number of fishing days observed from logbook returns (8,044 days), scientific observers (143 days) and CMOs (394 days) remained similar to 2009, during which 7,984 days, 144 days, and 394 days were observed, respectively.

Recorded interactions with seasnakes and sawfish were lowest from CMO data, however recorded interactions with turtles and syngnathids were lowest in Scientific Observer data (Table 7). Logbook return data contained lowest reported per boat per day interactions with seasnakes,



turtles, syngnathids and sawfish (Table 8). Reported interactions with syngnathids per boat per day were highest within CMO data (Table 8).

Table 7: Comparison of TEP species interactions reported by Scientific Observers, CMOs and in logbooks in the NPF during the 2010 tiger prawn season.

	Vessel Returns	Fishing Days*	Total Sea Snakes	Total Turtles	Total Syngnathids	Total Sawfish
Logbook Returns	52	8044	7470	27	18	183
Crew Member Observers	5	394	442	9	46	21
Scientific Observers**	9	143	583	8	3	82

*Days fishing practices were observed.

**Scientific observer results includes data collected during gear trials.

Table 8: Comparison of TEP species interactions reported by Scientific Observers, CMOs and in logbooks per boat day during in the NPF during the 2010 tiger prawn season.

	Sea Snakes per Fishing Day	Turtles per Fishing Day	Syngnathids per Fishing Day	Sawfish per Fishing Day
Logbook Returns	0.929	0.003	0.002	0.023
Crew Member Observers	1.122	0.023	0.117	0.053
Scientific Observers*	4.077	0.056	0.021	0.573

*Scientific observer results include data collected during gear trials.

State/Territory specific data

Total prawn catch in Queensland decreased in 2009/10, from 3,866 t in 2008/09 to 2,969 in 2009/10. Total prawn catch also declined in Western Australia, from 72 t in 2008/09 to less than one tonne in 2009/10. An increase in the total prawn catch was observed in the Northern Territory, from 931 t in 2008/09 to 1875 t in 2009/10.

Banana prawn catch decreased in Queensland in 2009/10 from 3,858 in 2008/09 to 2,952 in 2009/10. Banana prawn catch increased in the Northern Territory from 930 t in 2008/09 to 1,868 t in 2009/10. Banana prawn catch in Western Australia reduced from 72 t in 2008/09 to less than one tonne in 2009/10 (Table 9).

Tiger prawn catches increased in both Queensland and the Northern Territory in 2009/10, from 8 t and 1 t respectively in 2008/09, to 17 t and 4 t, respectively. Tiger prawn catches in Western Australia remained at less than one tonne in 2009/10.

Catches of both endeavour and king prawns in Queensland and Western Australia were less than one tonne in 2009/10. Three tonnes of endeavour prawns were caught in the Northern Territory in 2009/10, with king prawn catches less than one tonne for the same period (Table 9).

Table 9: Prawn catch by State/Territory from 1990/91 to 2009/10 financial years.

<i>State</i>	<i>Financial Year</i>	<i>Banana (t)</i>	<i>Tiger (t)</i>	<i>Endeavour (t)</i>	<i>King (t)</i>	<i>Total Catch (t)</i>
Queensland	1990/91	4,646	1,151	269	51	6,117
	1991/92	1,392	1,710	548	30	3,680
	1992/93	1,857	968	357	18	3,200
	1993/94	904	1,032	416	8	2,360
	1994/95	2,540	1,883	346	24	4,793
	1995/96	2,562	1,570	761	23	4,916
	1996/97	2,050	1,259	817	15	4,141
	1997/98	1,986	1,318	878	11	4,193
	1998/99	1,548	634	335	5	2,522
	1999/00	637	629	348	1	1,615
	2000/01	3,651	553	352	4	4,560
	2001/02	3,286	372	211	1	3,870
	2002/03	1,307	97	54	1	1,459
	2003/04	1,639	152	14	0	1,805
	2004/05	1,700	70	7	0	1,777
	2005/06	1,384	217	46	9	1,656
	2006/07	1,839	192	46	8	2,085
	2007/08	3,578	126	32	8	3,744
	2008/09	3,858	8	0	0	3,866
	2009/10	2,952	17	0	0	2,969
Northern Territory	1990/91	1,430	2,156	380	46	4,012
	1991/92	669	2,332	434	27	3,462
	1992/93	1,639	1,907	437	18	4,001
	1993/94	697	1,768	403	18	2,886
	1994/95	1,536	1,855	423	19	3,833
	1995/96	1,072	1,615	434	6	3,127
	1996/97	1,472	1,184	387	9	3,052
	1997/98	1,241	1,466	490	9	3,206
	1998/99	1,549	2,141	778	6	4,474
	1999/00	1,247	1,564	586	11	3,408
	2000/01	2,323	1,546	489	3	4,361
	2001/02	1,789	1,561	892	1	4,243
	2002/03	1,509	1,797	333	2	3,641
	2003/04	1,437	1,985	390	1	3,813
	2004/05	838	1,683	368	2	2,891
	2005/06	1,495	1,587	316	19	3,417
	2006/07	783	1,582	304	19	2,688
	2007/08	1,550	1,100	164	12	2,826
	2008/09	930	1	0	0	931
	2009/10	1,868	4	3	0	1,875
Western Australia	1990/91	579	86	42	0	707
	1991/92	231	8	11	0	250
	1992/93	498	5	6	0	509
	1993/94	828	4	13	0	845
	1994/95	414	2	16	0	432
	1995/96	713	18	65	0	796
	1996/97	1,079	5	38	0	1,122
	1997/98	756	66	686	1	1,509
	1998/99	519	23	17	0	559

1999/00	329	2	38	0	369
2000/01	281	16	23	0	320
2001/02	345	23	28	0	396
2002/03	509	75	8	0	592
2003/04	461	49	13	0	523
2004/05	293	29	36	0	358
2005/06	231	0	1	0	232
2006/07	108	190	0	0	298
2007/08	151	5	4	0	160
2008/09	72	0	0	0	72
2009/10	0	0	0	0	0

Byproduct of the NPF by State/Territory

Due to confidentiality reasons, catches of Australian Scampi is not included the table below, either under individual species or total catches. Total byproduct retained in the NPF and State/Territory in 2010 was 22,450 kg, with highest retained byproduct levels from the Northern Territory, and lowest from Western Australia. Moreton bay bugs were the largest component of byproduct catches, with 13,834 kg retained (Table 10).

Table 10: Retained byproduct of the NPF by State/Territory in 2010 (kilograms).

Species	NT	QLD	WA	Total
Bugs - Shovel nosed and slipper lobsters	2,634	1,015		3,649
Champagne lobster - Spear lobster	231			231
Cuttlefishes	2,614	743		3,357
Golden snapper - Fingermark seaperch	25			25
Mangrove Jack	47	98		145
Moreton Bay bugs	13,834	2,779	13	16,626
Octopuses	77			77
Pink snapper	10			10
Pomfret	504	20		524
Saddle-tailed seaperch - Crimson seaperch	18			18
Scallops	946			946
Squids	964	238		1,202
Whittings	46			46
Wolf Herring	500			500
Total	22,450	4,893	13	27,356

