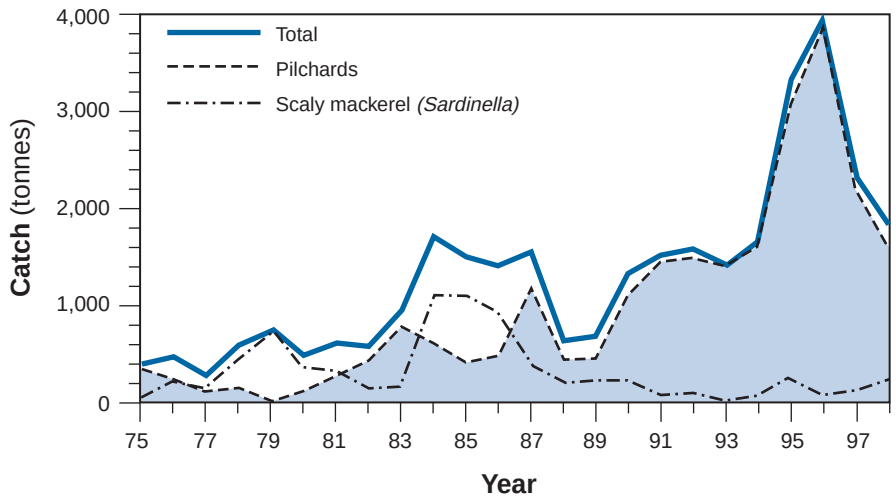


West Coast Purse Seine Figure 1 Annual catch of pilchards and scaly mackerel along the lower west coast.

Northern Demersal Scalefish Interim Managed Fishery

Management Overview

The Northern Demersal Scalefish Interim Managed Fishery (NDSIMF) was established on 1 January 1998. The boats with access to this fishery previously operated within the Kimberley Trap Fishery and the Kimberley Demersal Line Interim Managed Fishery. Several applicants seeking authorisation to operate within this fishery are involved in an independent tribunal process, which will determine their future access.

Both the trap and line sectors target demersal scalefish. The management methods for this fishery presently include a limited number of vessels, gear restrictions, size limits for some species and unitisation of time access.

This fishery was established by the Minister following a report from a working group set up in August 1995 to develop recommendations on long-term management arrangements for the Northern Demersal Scalefish Interim Managed Fishery.

In April 1998, the Minister appointed a Management Advisory Committee (MAC) for the fishery.

It is anticipated that the fishery will move to fully managed fishery status on 1 January 2000 at the cessation of the interim management arrangements.

The permit holders, the MAC and Fisheries WA are currently preparing a draft management plan for the Minister's consideration.

Compliance and Community Education Overview

The vessels in this fishery are based mainly at Broome, with some operating from Darwin at certain times of the year. During 1998/99 seven boats, utilising varying access entitlements, participated in the fishery. The fishery is under interim management arrangements and is managed mainly under time, gear and area restrictions.

The Vessel Monitoring System (VMS) is the major compliance tool used in this fishery, and compliance largely centres on the use of this system to manage individual fishing units' access time. Patrols were conducted to inspect catch during jetty unloads and at local processing establishments. Gear inspections were conducted during at-sea patrols using the joint agency patrol vessel *Walcott*.

Research Overview

A major research project is under way to assess the status of the major stocks which contribute to this fishery. This project will continue to the end of the year 1999/2000 and will provide the basis for setting long-term effort levels to maintain catches.

The following status report provides a synthesis of the current data from the fishery.

Fishery Status Report

Main Features

Stock assessment complete:
No

Exploitation status:
Fully exploited

Breeding stock levels:
Limited data

Previous catch projections for year 1998:
Not available

Catch current season (1998):
544 tonnes

Estimated annual value (to fishers) for year 1998:
$2.7 million

Catch projection next year (1999):
600-1,000 tonnes

Recreational component (1998):
Recreational fishing pressure in the Broome region is increasing, and potentially involves thousands of anglers per year. At present there is little recreational fishing effort directed towards deeper water fish species which are the key species targeted in the commercial fishery.

Boundaries and Access

The waters of the Northern Demersal Scalefish Interim Managed Fishery are defined as all Western Australian waters off the north coast of Western Australia east of longitude 120° E. These waters extend out to the edge of the Australian Fishing Zone (200 nautical mile) limit under the Offshore Constitutional Settlement arrangements (Northern Demersal Scalefish Figure 1).

The fishery is further divided into two fishing zones, an inshore zone (Zone 1) and an offshore zone (Zone 2) (see Northern Demersal Scalefish Figure 1). The demersal scalefish resources of the deeper waters of the offshore zone (greater than 200 m depth) are currently being investigated; these waters are shown on Figure 1 as the research fishing zone.

The inshore waters in the vicinity of Broome are closed to commercial fishing. The closed area extends from Cape Bossut to Cape Coulomb, inside a line which approximates as closely as possible the 30 m bathymetric contour.

Access to the Northern Demersal Scalefish Interim Managed Fishery is currently limited to 11 vessels.

Annual Production

Main fishing method

Fish trap and line techniques, mainly handline/dropline.

Landings

The reported catch in the Northern Demersal Scalefish Interim Managed Fishery declined in 1997 and 1998 after steady increases in reported catches from 1992 to 1996 (see Northern Demersal Scalefish Figure 2, Northern Demersal Scalefish Table 1). The reported catches in both sectors (line and trap) of the fishery were down on previous years. The trap catch in 1998 was 499 tonnes, while the line catch was 45 tonnes. A number of operators within the NDSIMF are also involved in other fisheries in the region, such as the fishery for Spanish mackerel. The catches of pelagic fishes such as the mackerels are not included in the demersal scalefish catch. The catch of Spanish mackerel and other mackerels in the Kimberley region increased to over 500 tonnes in 1997, but was much reduced in 1998 at just over 400 tonnes (see Northern Demersal Scalefish Figure 3, Northern Demersal Scalefish Table 2).

Fishing effort

The fish trap effort (in boat days fished) in 1998 was down on the 1997 level of fishing effort in response to the introduction of management controls (see Northern Demersal Scalefish Table 1). A large proportion of the allocated effort in the fishery was not utilised and this was reflected in lower catches. However, the CPUE was relatively stable, suggesting that the reduction in catch was not related to a stock decline. The line effort recorded in 1998 was only 10% of that recorded in 1997 (Northern Demersal Scalefish Table 1). The reduced line effort in 1998 resulted from some fishers operating in other fisheries until the latter part of 1998 and a reduced number of line boats operating within the fishery.

Catch rate

Catch per unit effort in the trap fishery was comparatively stable prior to 1997. The 1997 CPUE was down on previous years and suggested a slight downward trend. However, the implementation of management controls (i.e. a limitation on the available fishing effort) in 1998 has corresponded to an increase in the trap CPUE. The CPUE of the line fishery has been relatively stable over the past three years.

Stock Assessment

The introduction of formal management procedures has restricted the number of vessels permitted to fish the NDSIMF. A target total allowable catch of 800 tonnes was adopted so that the industry will be well positioned when the results of the stock assessment are finalised. The control adopted to maintain a catch level of approximately 800 tonnes was a restriction on the number of trap or line days fished

by each vessel exploiting the NDSIMF demersal scalefish resource. Trap and line effort units are allocated on the basis of historical catch rates to enable the target catch to be achieved. Decision rules have been introduced to manage variations in catch around the target TAC.

A major three-year FRDC-funded research project began in 1997. The primary objective of this research project is to undertake a stock assessment of the key demersal finfish species in the NDSIMF, principally red emperor and goldband snapper. Preliminary results to date suggest a somewhat truncated length-frequency distribution for red emperor compared with the Pilbara fishery, which is currently operating above optimum levels. However, the level of exploitation of these species remains to be quantified in the Kimberley region.

Breeding Stock Levels

Limited data are available on breeding stock levels for the key species in this multi-species fishery at this stage in the research project. However, preliminary estimates of the size at maturity for goldband snapper and red emperor are approximately 46 cm and 44 cm fork length, respectively. Examination of the length-frequency distributions of these species from commercial catch sampling indicates that approximately 69% of goldband snapper and 68% of red emperor landed are above the preliminary estimates of the size at maturity.

Catch Projection for Year 1999

The allowable effort in 1999 has continued to be adjusted to target a TAC of approximately 800 tonnes. The effort level set for the 1999 calendar year was a total of approximately 1,716 fishing boat days, which is equitably distributed among all licence holders within the fishery. If the 1998 CPUE is maintained and all allocated effort is utilised, the target TAC of 800 tonnes will be achieved in the 1999 calendar year. If the CPUE and associated catch in 1999 decline below those achieved in 1998, a review will be undertaken to determine whether management action is required.

Product Value for Year 1998

The NDSIMF principally targets the high-value species such as red emperor and goldband snapper and landed a total of 544 tonnes of demersal scalefish in 1998, for a catch value of over $2.7 million. This value is down about 10% from the previous year owing to the lower catch. However, the average price received was marginally better in 1998.

General Comments

Currently, the demersal fishes of the Kimberley region are likely to be fully exploited and some species may be over-exploited. Detailed stock assessments of the key demersal finfish species to determine the stock exploitation status will be undertaken at the conclusion of the initial three-year research project in 1999/2000.

Northern Demersal Scalefish Table 1 Demersal finfish catches by method in the NDSIMF (longitude 120° to 129° E).

Year	Line		Fish trap		Total catch (kg)
	Catch (kg)	Effort** (block days)*	Catch (kg)	Effort (block days)*	
1985	9,031	310	3,832	261	12,863
1986	10,985	219	1,092	111	12,077
1987	29,680	498	150	49	29,830
1988	11,015	572	11,186	203	22,201
1989	27,205	267	26,595	81	53,800
1990	5,826	91	203,941	395	209,767
1991	20,407	255	316,228	750	336,635
1992	30,693	433	695,954	1,776	726,647
1993	24,240	283	747,215	1,713	771,455
1994	76,930	453	656,937	1,349	733,867
1995	272,840	1,204	555,162	1,200	828,002
1996	243,863	1,319	706,063	1,412	949,926
1997	147,582	788	555,172	1,293	702,754
1998	44,703	79	498,984	845#	543,687

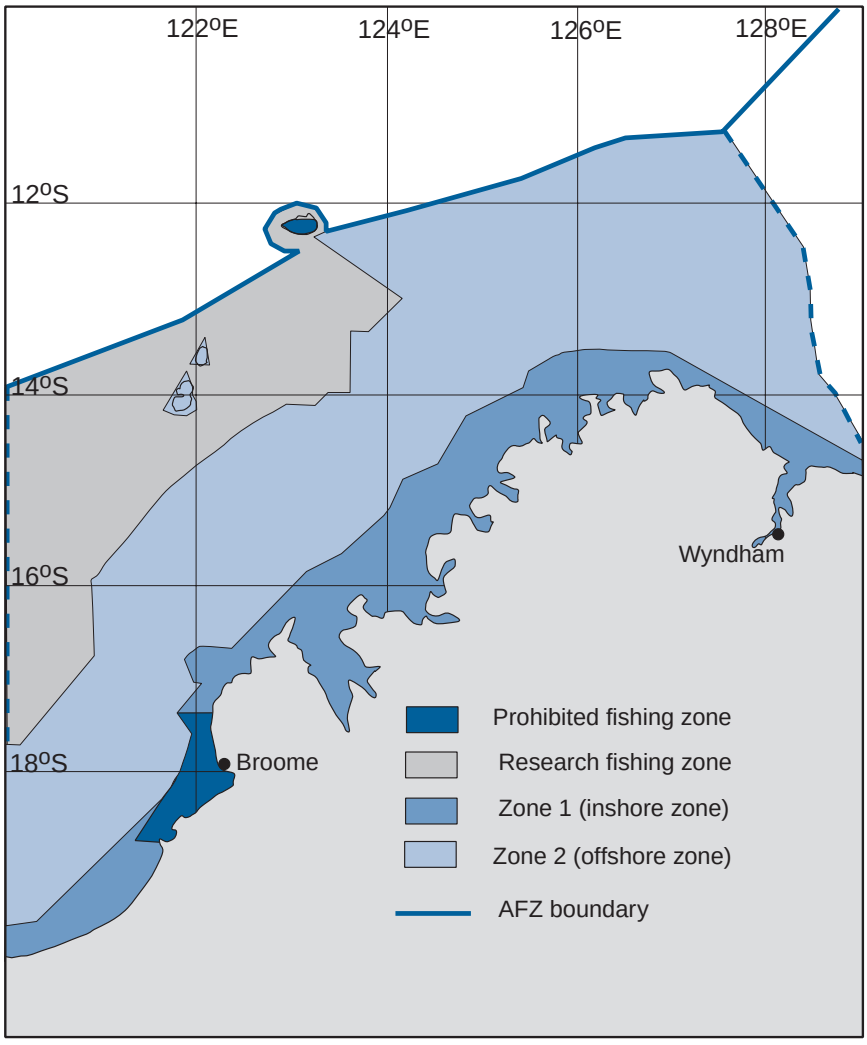
* Block days are defined as the number of days on which fishing occurred in a particular block by a particular vessel (that is, block boat days).

** Line methods that have been selected for the calculation of effort include handline, dropline and longline only.

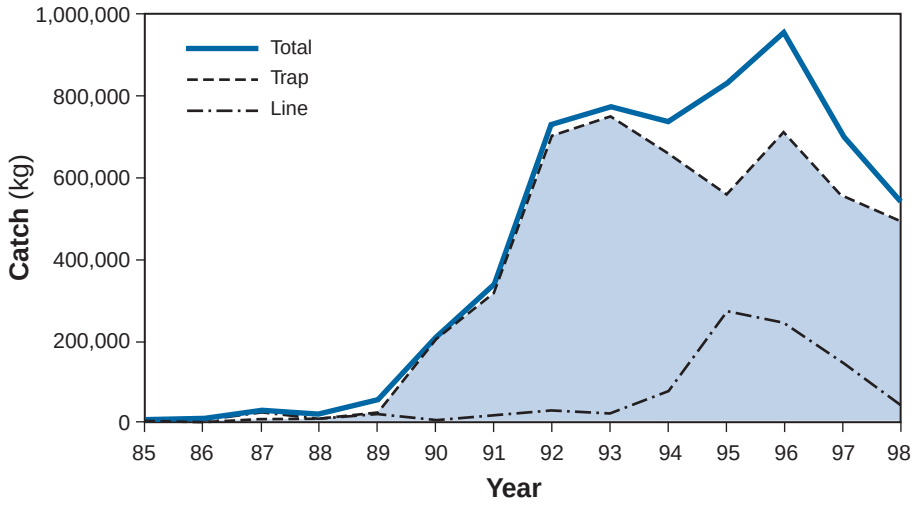
\# Trap fishing effort in 1998 has been converted to standard trap fishing days for comparison with previous years.

Northern Demersal Scalefish Table 2 Catches of mackerel in the Kimberley region (longitude 120° to 129° E).

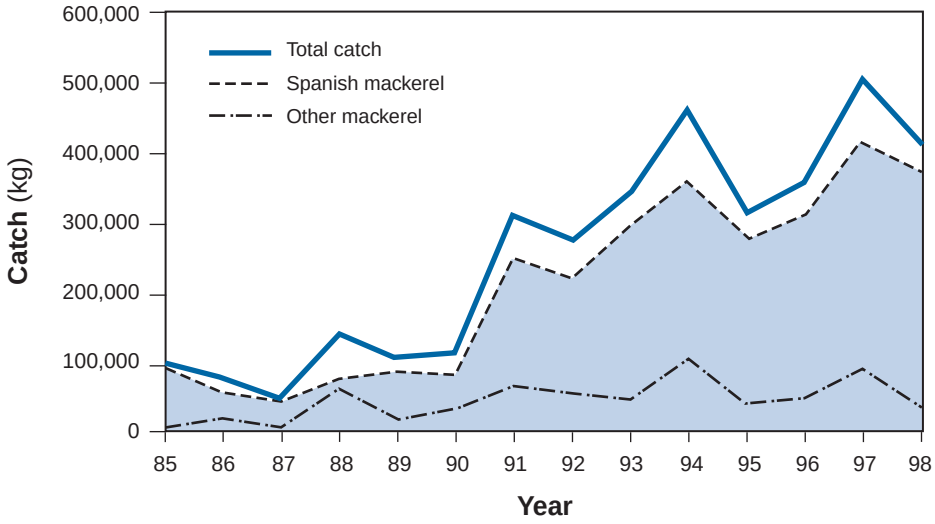
Year	Spanish mackerel (kg)	Other mackerel (kg)	Total catch (kg)
1985	92,303	7,361	99,664
1986	58,069	18,590	76,659
1987	44,663	4,074	48,737
1988	77,111	63,643	140,754
1989	88,150	17,705	105,855
1990	80,935	33,113	114,048
1991	247,287	63,886	311,173
1992	221,008	53,716	274,724
1993	294,170	45,699	339,869
1994	357,485	103,198	460,683
1995	274,634	40,062	314,695
1996	310,426	47,540	357,966
1997	415,017	89,663	504,680
1998	374,534	36,325	410,859



Northern Demersal Scalefish Figure 1 Boundaries and access zones of the NDSIMF.



Northern Demersal Scalefish Figure 2 Catch of demersal scalefish in the NDSIMF.



Northern Demersal Scalefish Figure 3 Catch of Spanish mackerel in the Kimberley region.