

**Lake Argyle Figure 1** The annual catch, effort and catch per unit effort (CPUE, kg/100 m net day) for Lake Argyle catfish over the period 1987/88 to 1997/98.

## Kimberley Gillnet and Barramundi Managed Fishery

### MANAGEMENT OVERVIEW

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

The species taken are predominantly barramundi (*Lates calcarifer*) and threadfin salmon (*Eleutheronema tetradactylum*). The main areas of the fishery are the river systems of the northern Kimberley, the Fitzroy River, Roebuck Bay and Eighty Mile Beach.

Future management arrangements for this fishery are currently being considered.

As a result of the resource-sharing conflict between the KGBMF licensees and the recreational fishing sector, the Minister implemented a Fisheries Adjustment Scheme in April 1998 for voluntary surrender of KGBMF licences. This has reduced the number of KGBMF licences from 10 at the commencement of the scheme to seven as at June 1999.

### COMPLIANCE AND COMMUNITY EDUCATION OVERVIEW

Limited resources coupled with the extensive geographical area of this fishery impose restrictions on compliance monitoring. Resource-sharing issues are increasing the demand for compliance activity, with the major areas of concern being the Lower Ord River and Roebuck Bay. In addition, many remote areas which have traditionally been accessed by this fishery have now become frequently visited tourist destinations. This has resulted from the establishment of fly in/fly out remote fishing camps and the increasing use of helicopters as a transport medium for recreational fishing tours.

The majority of compliance activities in this fishery relate to recreational fishing and continue to be in response to information reports from the public. Patrols were conducted to investigate reports of netting in closed water areas of Roebuck Bay and netting activity near the southern boundary of the fishery at Anna Plains.

## RESEARCH OVERVIEW

The data necessary to assess the status of the series of barramundi stocks taken by this fishery is provided from CAESS. The following status report is compiled annually and provided to industry and regional management.

### Fishery Status Report

#### Main Features

##### Stock assessment complete:

*Only for barramundi (Lates calcarifer)*

##### Exploitation status:

*Barramundi fully exploited*

##### Breeding stock levels:

*Adequate for barramundi*

##### Previous catch projections for year 1997/98:

*Barramundi 28-47 tonnes*

##### Catch current season (1997/98):

*All species 138.9 tonnes*

*Barramundi 32.4 tonnes*

##### Estimated annual value for year 1997/98:

*All species \$584,000*

*Barramundi \$240,000*

##### Catch projection next year (1998/99):

*Barramundi 25-40 tonnes*

### Boundaries and Access

The boundaries of this limited entry fishery are 'all Western Australian waters lying north of 19° south latitude and west of 129° east longitude and within three nautical miles seawards of the low water mark of the mainland of Western Australia and the waters of King Sound of 16°21'38" south latitude'. Access to the fishery was by eight vessels during 1997/98. It should be noted that the distribution of barramundi catches in Western Australia extends further south to the Ashburton River near Onslow, however, these catches are outside the boundaries of the managed fishery.

### Annual Production

#### Main fishing method

Gillnet.

#### Landings

Each of five principal fishing areas is considered because of differing histories of development, effort application, recreational interest and unit stock considerations: Cambridge Gulf/Ord River, Kimberley coast (six river systems), King Sound/Fitzroy River, Broome coast, and Pilbara coast to the Ashburton River, the last of which is south of the prescribed restricted entry fishery (below latitude 19° S). Total landings of barramundi for all four prescribed fishing areas were 32.4 tonnes for 1997/98

(Barramundi Figure 1). This catch of barramundi was the lowest since 1981/82. In addition to the main target species, there was a reported catch of 106.6 tonnes of other fishes including approximately 3 tonnes of shark, 85.3 tonnes of giant threadfin and 18.2 tonnes of other finfish.

#### Fishing effort

The fishing effort in this gillnet fishery is calculated as the total annual number of fishing days by all boats multiplied by the average daily total of 100 m lengths of gillnet used per boat. During 1997/98, the total effort across the four prescribed fishing areas was 1,418 units.

#### Catch rate

Overall, the fishery peaked in the mid- to late 1980s and since then, total catch and effort have fallen, with an accompanying increase in catch per unit of effort.

### Stock Assessment

A biomass dynamics model was used to estimate preferred or optimum effort for the barramundi stock for each of the five principal fishing areas (including the Pilbara area which is outside the managed fishery). An annual effort of 500 units is the preferred level of effort from the model for Cambridge Gulf/Ord River and Broome. The preferred level is slightly higher for the Kimberley coast, King Sound/Fitzroy River and Pilbara coast. The 1997/98 fishing effort falls within the preferred levels described by the model, except on the Broome coast where equilibrium levels were exceeded.

### Breeding Stock Levels

Assessment of the stocks indicates adequate levels of breeding stock to maintain recruitment to the fishery.

### Catch Projection for Year 1998/99

The catch projection for barramundi for 1998/99 is 25-40 tonnes. This projection is derived by double exponential smoothed forecasting of the annual catches and the variation of observations around the predictions. The confidence intervals are set at 80%.

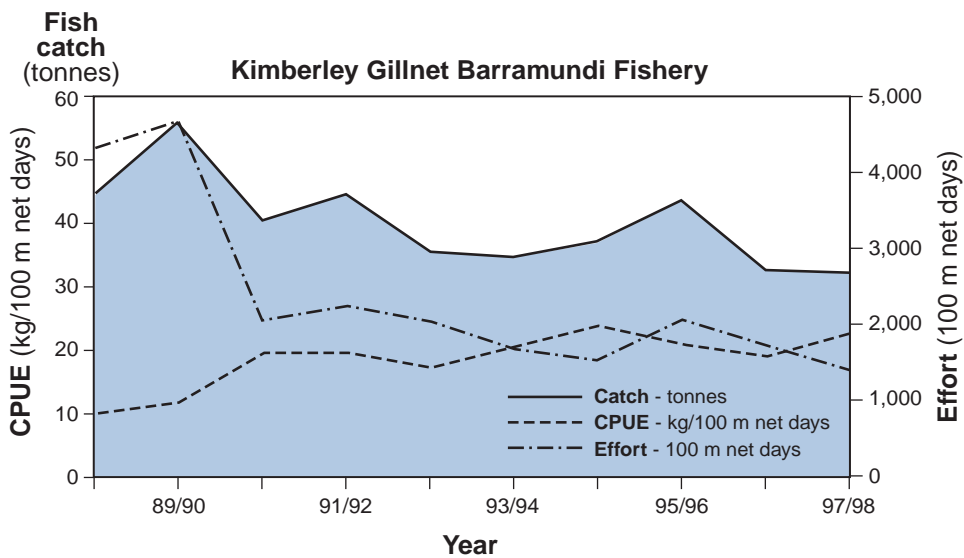
### Product Value for Year 1997/98

The landed value of the catch is approximately \$584,000 from the managed fishery.

### General Comments

An annual research report was made available for the annual management meeting held in Broome in March. Management needs to consider, at least, the five subdivisions of the barramundi stocks over such a large distribution, because of differing histories of development, effort application, recreational interest and unit stock considerations. Barramundi are fished by unrestricted fishing boat licensees along the Pilbara

coast. There are no management restrictions on these fishers. Resource sharing between commercial and recreational fishers on the Ord River is a current issue. However, recent and anticipated levels of commercial fishing of existing operators pose no threat to the viability of the resource. In this reporting year, the catch of threadfin salmon was considerable, and higher than the catch of barramundi.



**Barramundi Figure 1** The annual catch, effort and catch per unit effort (CPUE, kg/100 m net day) for barramundi from the Kimberley Gillnet and Barramundi Managed Fishery over the period 1988/89 to 1997/98.