

Herring Figure 1 Catches of Australian herring from the south coast and the total Western Australian catch for the period 1976 to 1998.

Lake Argyle Freshwater Catfish Fishery

MANAGEMENT OVERVIEW

The only commercial freshwater fishery in Western Australia is in Lake Argyle in the Kimberley. This fishery specifically targets catfish (silver cobbler) and is managed through a set of licensing conditions. There is a two-month closure which falls during the wet season breeding period of November and December.

Future management measures for this fishery will include a review of the possible impact of latent effort within the fishery and a shift in the seasonal closures to better accommodate the wet season breeding period.

COMPLIANCE AND COMMUNITY EDUCATION OVERVIEW

Officers stationed in the East Kimberley region together with officers on patrol from Broome monitor this catfish fishery.

No compliance problems were encountered, however compliance for this fishery remains a low priority.

RESEARCH OVERVIEW

Data for assessing the status of this fish stock are derived from CAESS returns provided by industry. These data are analysed annually using standard fisheries models to enable the following status report to be provided for management.

Fishery Status Report

Main Features

Stock assessment complete:

Yes

Exploitation status:

Fully exploited

Breeding stock levels:

Decreasing

Previous catch projections for year 1997/98:

101-138 tonnes

Catch current season (1997/98):

141 tonnes

Estimated annual value (to fishers) for year 1997/98:

\$387,000

Catch projection next year (1998/99):

102-142 tonnes

Boundaries and Access

The fishery is contained in the impounded waters of the Ord River at Lake Argyle and on part of Lake Kununurra. During 1997/98 there were six licensees who had access to Lake Argyle.

Annual Production

Main fishing method

Gillnet.

Landings

The fishery reached a peak catch in 1988/89 (133 tonnes), then fluctuated at a lower level until 1993/94. Between 1993/94 and 1996/97 there was a trend towards increasing catches in this fishery, with the catch in 1996/97 (147 tonnes) being the highest catch on record. The 1997/98 catch was 141.0 tonnes.

Fishing effort

Nominal effort in this gillnet fishery is calculated as the total number of fishing days by all boats multiplied by the average daily total/boat of 100 m lengths of gillnet used. The fishing effort during 1997/98 was 7,893 units, which is lower than the previous year.

Catch rate

Since 1983, the catch rate has remained fairly constant, although it declined in the three years from 1993/94 to 1995/96. During the past three years the CPUE has remained fairly constant.

Stock Assessment

A standard analysis of catch and effort data from monthly returns is undertaken annually. Assessment showed that the fishing effort applied in recent years may be exploiting the stock at an unsustainable level. A sustainable catch of approximately 100-120 tonnes, at

4,000 units of effort, has been estimated from the plateau of the catch and effort relationship (surplus production model) since 1987/88. A biomass dynamics model gives equilibrium values for catch and effort of approximately 100 tonnes and 4,000 units respectively. In a long-term scenario, the stock may not be sustainable with the levels of effort of nearly 8,000 units now in the fishery.

Breeding Stock Levels

Assessment of the current stock indicates that the breeding stock level may not be sufficient to maintain existing recruitment to the fishery if fishing continues at the current level.

Catch Projection for Year 1998/99

The catch projection for 1998/99 is 102-142 tonnes. This estimate is based on the average of the observed catches for the past 10 years and the 95% confidence limits.

Product Value for Year 1997/98

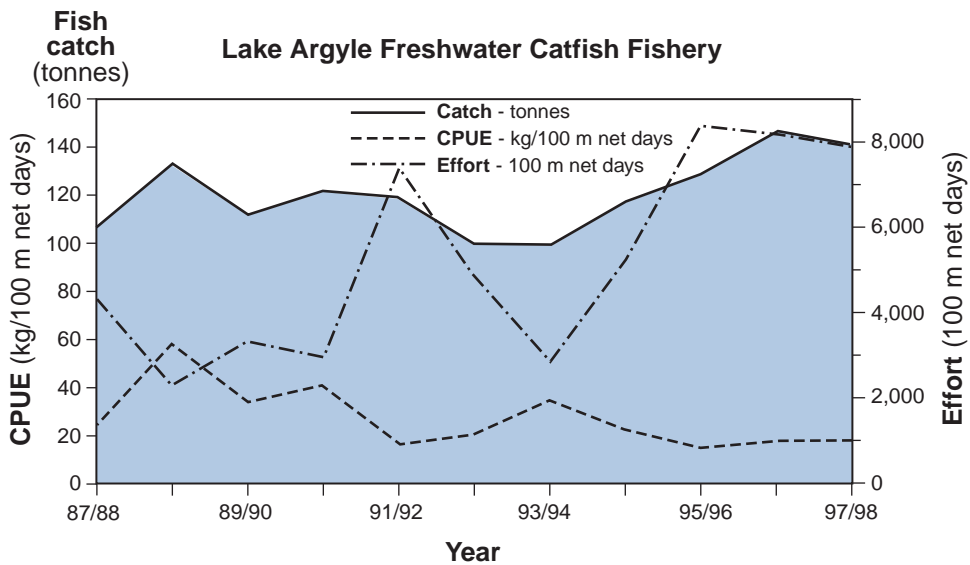
The landed value of the catch is approximately \$387,000.

General Comments

An annual research report was made available for the annual management meeting with operators in Kununurra in February.

There has been some interest in whether the annual catches of Lake Argyle catfish are related to the area of Lake Argyle. Correlation analysis of the annual catch (tonnes) against the lake area did not produce a significant relationship.

With the introduction of licence transferability, the unused ('latent') effort in this fishery is of biological concern because of the specialised reproductive behaviour and the very low fecundity of the species, which predisposes the stock to recruitment over-fishing. Noting that the current effort being expended in the fishery over the past two years is well above that needed for the estimated sustainable yield, management action is needed to contain any further increases in effort. Without a reduction in effort, the stock is likely to decline in future years.



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.