

Shark Bay Scallop Managed Fishery

MANAGEMENT OVERVIEW

The Shark Bay Scallop Managed Fishery is Western Australia's most valuable scallop fishery, based on the take of southern saucer scallop (*Amusium balloti*).

Management of the fishery is complicated by two fishing fleets (prawns and scallops) having access to the scallop stock and competing directly for a share of the resource. To ensure equity between the two fleets, the 1999 scallop fishing season commenced on 5 May and will close on 25 October, the same day as the Shark Bay Prawn Managed Fishery. This management approach is aimed at maximising economic return to the stakeholders and reducing resource-sharing issues between the fleets, as well as maintaining adequate levels of breeding stock. Other management measures include limited entry, area closures, vessel capacity and crew limits.

Catch in this fishery varies widely depending on the strength of recruitment. Most of the catch is marketed to South-East Asia as frozen scallop meat (roe-off).

A cooperative approach to the development of management strategies in this fishery is achieved through the Shark Bay Scallop Management Advisory Committee (MAC), which includes representatives from both the Shark Bay Scallop and Shark Bay Prawn Managed Fisheries. A new Chair was appointed to the Shark Bay Scallop MAC in 1999.

COMPLIANCE AND COMMUNITY EDUCATION OVERVIEW

Licence and gear inspections were carried out by Fisheries Officers from Carnarvon and Denham.

Aircraft were again used extensively by officers at Carnarvon. The use of a large patrol vessel from Geraldton (which paid particular attention to surveillance of closed waters and placed officers on board trawlers to inspect catch and gear) supplemented these activities.

The PV *John Brockman*, commissioned in May 1998 and located at Denham, undertook patrols in the fishery, concentrating on the waters of Denham Sound and to the east of Bernier and Dorre Islands.

The Vessel Monitoring System (VMS) at Carnarvon was again trialled in May and June 1999.

Fisheries Officers provided information on conservation, stock management and compliance to operators within the industry during pre-season briefings.

RESEARCH OVERVIEW

Research for monitoring the status of the scallop stock in Shark Bay is based on detailed research logbook records and factory receipts provided by industry. In addition, an annual research survey is carried out which, together with existing detailed biological knowledge, enables a catch forecast to be provided annually.

The following status report summarises the research findings for this fishery.

Fishery Status Report

Main Features

Stock assessment complete:

Yes

Exploitation status:

Fully exploited

Breeding stock levels:

Adequate

Previous catch projection for year 1998:

180-250 tonnes (meat weight)

Catch current season (1998):

252 tonnes (meat weight)

Estimated annual value (to fishers) for year 1998:

\$5.5 million

Catch projection next year (1999):

210-440 tonnes (meat weight)

Recreational component (1997):

Not applicable

Boundaries and Access

The outer boundaries of the fishery encompass 'the waters of the Indian Ocean and Shark Bay between 23°34' south latitude and 26°30' south latitude and adjacent to Western Australia on the landward side of the 200 m isobath, together with those waters of Shark Bay south of 26°30' south latitude'. Within these general areas, scallop trawling only occurs in waters east of the outer islands of Shark Bay, in depths between 16 m and 40 m. In addition to the outer shelf region, a reef area eastward of the Naturaliste Channel, between the northern end of Dirk Hartog Island and the southern end of Bernier Island, is also closed to scallop (and prawn) trawling; and no scallop trawling is allowed east of a line extending northward from Cape Peron to the mainland.

Fourteen vessels with Class A licences (scallop only) and 27 vessels with Class B licences (prawn and scallop) are endorsed to fish the waters of Shark Bay and Denham Sound. The boundaries for Class A vessels are the waters of Shark Bay and Denham Sound west of

longitude 113°30'36" E and north of a line running due east from the northern extremity of Cape Bellefin to Peron Peninsula (see Prawn Figure 1).

The 1998 scallop season commenced on 16 May. Owing to low catches, trawling for scallop by Class A vessels ceased during July, although the season officially closed on 3 November.

Annual Production

Main fishing method

Otter trawl.

Landings

The total scallop catch for this fishery was 252 tonnes meat weight (or 1,260 tonnes whole weight). The Class A fleet caught 177 tonnes, which is 70% of the total catch. The Class B fleet caught 75 tonnes, which represents the remaining 30% of the total catch (Scallop Figure 1).

Fishing effort

The total effort recorded by the Class A vessels in 1998 was 12,224 hours.

Catch rate

A total catch per unit effort of 14.5 kg/hr was recorded for the Class A fleet.

Stock Assessment

The status of the stock is determined from a pre-season (November–December) survey of recruitment and residual stock. This survey enables the start date of the fishery to be determined and allows management of the spawning stock. Recruitment of juveniles to the stock in 1997 was poor, as measured using the data from the November scallop survey. This poor recruitment was reflected in the low catch (252 tonnes) taken in 1998, though the total catch was at the upper end of the range projected for the season.

Breeding Stock Levels

The management arrangements for the fishery over the past years have ensured that some spawning has occurred each year before the bulk of the stock has been taken. Annual variations in recruitment seem to be dominated by environmental factors which are believed to be correlated inversely with the strength of the Leeuwin Current.

Catch Projection for Year 1999

The catch projection for the 1999 season is approximately 210–440 tonnes (meat weight), based on the November 1998 survey which indicated that recruitment was low.

Product Value for Year 1998

The wholesale price of scallops varies depending on the type of product (grade and meat condition) and the market forces operating at any one time. The average price for scallop meat was \$22/kg (meat weight).

General Comments

A relationship exists between sea level (at Fremantle) and the recruitment of scallops in Shark Bay. Generally, high sea levels correlate with poor recruitment.

During 1997, however, the correlation with sea level predicted a better recruitment than was observed in the November survey, while the 1998 recruitment was again low due to poor environmental conditions. This suggests a need to examine the mechanisms that control recruitment success in greater detail in future projects in order to explain more of the inter-annual variation which occurs. The low catch for the 1998 season was expected; however, the recovery of this fishery to average catch levels (similar to those before the peak years of 1991–1993) is expected if environmental conditions (including the El Niño/Southern Oscillation index) remain favourable.

When the Shark Bay scallop season commenced in May 1998, the market demand was not strong, owing to the economic downturn in the Asian region. The price for scallop meat was weak and averaged around \$22/kg. The low price was not due to over-supply of scallop meat, as the catch of scallop from Canada (which is in direct competition with Australia) was also low.