

**Rock Lobster Figure 6** Annual indices of puerulus settlement for the Abrolhos (A Zone), Seven Mile Beach (Dongara) (B Zone) and Alkimos (C Zone).

## South Coast Rock Lobster Fisheries

### MANAGEMENT OVERVIEW

*Esperance Rock Lobster Managed Fishery:* The Esperance Rock Lobster Managed Fishery has 11 vessels which operate between longitudes 120° and 125° E, catching the southern rock lobster, *Jasus edwardsii*. A maximum pot entitlement of 10 pots/ metre applies to any boat and there is a restriction of 90 pots on the overall pot entitlement on any licence. Favourable rock lobster habitat supports a small but significant and relatively secure rock lobster fishery.

*Other south coast rock lobster fishing endorsements:* In addition to the Esperance fishery, southern rock lobster are also taken by vessels endorsed to fish for lobsters on the south coast outside of the Esperance zone. These vessels operate in two zones, catching predominantly southern rock lobster, although catches of western rock lobster, *Panulirus cygnus*, have been reported in the area to the west of the Esperance fishery.

Effort in these areas adjacent to the Esperance fishery is controlled by a limitation on the number of endorsements issued and constraints on the number of rock lobster pots that a boat may carry. However, the fluctuating nature of recruitment into the fishery and scarcity of favourable rock lobster habitat mean that this fishery tends to be exploited on an opportunistic basis according to varying seasonal catchability. The fishery does not lend itself to full-time specialist rock lobster fishing; instead, rock lobster fishing operations

in these areas are generally part of more diversified fishing activities with the level of operation (pot lifts) and catch varying from year to year with the availability of lobsters.

It should also be noted that the future management of deep-sea crabs, which are taken in the area of the south coast and western rock lobster fisheries, is currently being reviewed by Fisheries WA.

*Windy Harbour/Augusta Rock Lobster Managed Fishery:* The small rock lobster fishery in this area was restructured in 1996 and now contains only two operators. It is therefore no longer reported as a separate fishery, for confidentiality reasons.

### COMPLIANCE AND COMMUNITY EDUCATION OVERVIEW

*Esperance Rock Lobster Managed Fishery:* Compliance in this fishery is based on pre-season gear checks and monitoring for protected lobsters during the season. All gear was found to be in legal condition prior to the commencement of the season.

One boundary infringement investigation was carried out utilising the agency patrol vessel *Walcott*, however no illegal activity was detected.

Compliance activity in the areas adjacent to the Esperance fishery was limited to pre-season gear checks and monitoring of landed catches both at fishing locations east of Esperance and in the district locations of Esperance, Albany and Augusta. Compliance was generally good.

## RESEARCH OVERVIEW

Research in this sector involved assessing the current status of the stocks in the area based on commercial catch returns and information from south coast rock lobster fishermen. This information is reflected in the following status report.

### Fishery Status Report

#### Main Features

##### Stock assessment complete:

Yes

##### Exploitation status:

*The Esperance Rock Lobster Managed Fishery is being fished at sustainable levels. The fisheries in the Great Australian Bight (GAB) and Albany zones are being locally depleted.*

##### Breeding stock levels:

*Southern rock lobster are likely to belong to a single stock. Breeding stock levels in Western Australia are not critical to the stock.*

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

40-70 tonnes

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

82 tonnes

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

\$2.3 million

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

50-80 tonnes

##### Recreational component (1997/98):

Negligible

### Boundaries and Access

The boundaries of the Esperance Rock Lobster Managed Fishery (ERLMF) are between longitudes 120° E (near Hopetoun) and 125° E (near Point Culver) seawards to the 200 nautical mile Australian Fishing Zone outer limit. In 1997/98, 11 vessels were licensed to fish in the area.

Boundaries for the neighbouring southern rock lobster fishery zones are defined as:

*Great Australian Bight (GAB) zone:* being the Australian Fishing Zone adjacent to the south coast of Western Australia, from longitude 125° E to longitude 129° E to the 200 m depth contour.

*Albany zone:* being the waters of the Australian Fishing Zone adjacent to the south coast of Western Australia, from longitude 116° E to longitude 120° E to the 200 m depth contour.

In 1997/98, 31 vessels were endorsed to fish in the GAB and Albany zones. Endorsements were frozen in October 1994 and fishermen without ongoing catch

history have been asked to show cause why their related rock lobster pot entitlements should not be cancelled. While the agency's intention is to reduce the number of pot entitlements as the opportunity arises, it is recognised that the Albany/GAB zones will never be a significant rock lobster fishery and will be best managed as an adjunct to fishers' other diverse operations.

### Annual Production

#### Main fishing method

Rock lobster pots.

#### Landings

A catch of 52 tonnes of southern rock lobsters was taken in the ERLMF in 1997/98, a similar catch to that made in the 1996/97 season (48 tonnes). The combined catch for the GAB and Albany southern rock lobster fishery zones in 1997/98 was 30 tonnes, similar to the 1996/97 figure (33 tonnes). Catches in the western sector of the open access area increased from 8 to 11 tonnes, but in the eastern sector of the fishery catches decreased from 25 to 19 tonnes.

#### Fishing effort

The ERLMF experienced an 8% decrease in nominal fishing effort levels from 67,700 pot lifts in 1996/97 to 62,500 pot lifts in 1997/98. Total effort for the Albany and GAB zones in the 1997/98 season was 88,600 pot lifts, a decrease of 3,500 pot lifts (3.3%) on the previous season's 91,600 pot lifts. Fishing effort increased in the Albany zone, from 21,600 pot lifts in 1996/97 to 29,100 pot lifts in 1997/98, and decreased in the GAB zone, from 70,000 pot lifts in 1996/97 to 59,400 pot lifts in 1997/98. Effort figures are confounded in the Albany zone, because an unknown amount of the effort recorded there may have targeted deep-water crabs rather than lobsters.

#### Catch rate

The catch per unit of fishing effort for the 1997/98 season in the ERLMF increased by 18.3%, from 0.71 kg/pot lift in 1996/97 to 0.84 kg/pot lift in 1997/98. The combined catch per unit of fishing effort for the GAB and Albany zones in the 1997/98 season was 0.34 kg/pot lift, a 6% decrease from the 0.36 kg/pot lift for the 1996/97 season. Catch rates increased from the 1996/97 value in the Albany sector of the open access fishery by 9%, from 0.35 to 0.38 kg/pot lift, but decreased in the GAB by 14%, from 0.36 to 0.31 kg/pot lift.

### Stock Assessment

Indications from production modelling of the Western Australian portion of the southern lobster resource, and from a postal survey in which commercial fishers were asked to quantify the amount of available ground colonised by lobsters, suggest that the western and eastern zones are not suited to southern lobster colonisation. The survey of fishers showed that the

western and eastern zones only have about 10% of the amount of ground available for lobster colonisation compared with what can be found in the optimal fishing areas inside the ERLMF. Production modelling results show that the eastern and western zones probably only had biomasses of legal-sized lobsters of between 30 and 100 tonnes prior to exploitation. In comparison, the Esperance area has a long history of sustained exploitation (Rock Lobster Figure 7), and though inconclusive, model results would suggest that the virgin biomass for this part of the fishery was substantial (of the order of 600-1,000 tonnes).

Stock assessments for the GAB and Albany zones show that sustainable yields in both zones are small and, at current fishing levels, the biomass in both areas is being rapidly depleted. Current rates of exploitation will probably lead to lobster fishing in the GAB and Albany zones becoming uneconomic in the future. The unsustainable fishing pressure in the neighbouring zones should not affect the ERLMF, because recruitment to that zone is not considered to be dependent on egg production from Western Australian waters.

**Breeding Stock Levels**

The stock of southern rock lobster in Western Australian waters is at the western edge of its distribution. Puerulus settlement to this region is probably derived from the bulk of the stock in South Australian, Tasmanian and Victorian waters and, as such, the broodstock in this area probably makes an

insignificant contribution to the southern lobster larval pool. Available evidence would suggest that recruitment may be sporadic and driven by large-scale environmental factors rather than localised breeding stock levels.

**Catch Projection for Year 1998/99**

50-80 tonnes.

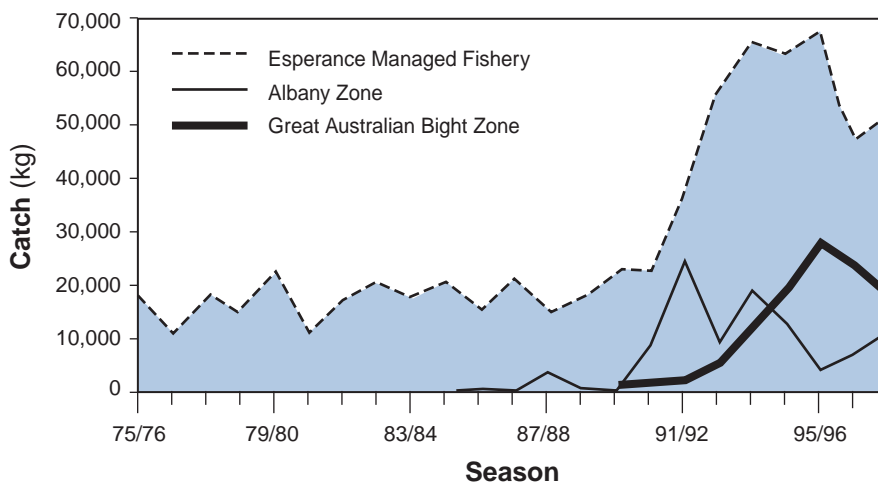
**Product Value for Year 1997/98**

\$2.3 million.

**General Comments**

If the management objective were to fish the eastern and western zones to economically viable levels, then current effort levels would need to be drastically reduced. However, it has been accepted that reducing fishing effort in these zones to such levels is unattainable in the medium term and the agency has therefore adopted a policy whereby it will reduce the number of pot entitlements as the opportunity arises and manage the fishery as an adjunct to fishers' other activities.

The ERLMF is a more productive fishery than the outer zones. It would appear to be reasonably stable in the short to medium term, but landings are in the upper bounds of what is predicted to be sustainable by the model. There are indications that the catch per unit of effort (CPUE) may be declining and these trends will need to be closely monitored in the future.



**Rock Lobster Figure 7** Seasonal catches of southern rock lobster by management area, 1975/76 to 1997/98.